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Oil Conservation Division

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Site Assessment/Characterization

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

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

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

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

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

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

01111 C-141	3 1:52:13 PM State of New Mexico	Page 2 ofIncident IDnAPP2219226827
age 4	Oil Conservation Division	District RP
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public health or the environm failed to adequately investig addition, OCD acceptance of and/or regulations.	ment. The acceptance of a C-141 report by the OCD does gate and remediate contamination that pose a threat to grou of a C-141 report does not relieve the operator of responsib	and perform corrective actions for releases which may endanger not relieve the operator of liability should their operations have ndwater, surface water, human health or the environment. In ility for compliance with any other federal, state, or local laws
Printed Name:Dale Wo Signature:Dale U/ email:dale.woodall@dvr		Env. Professional 2/7/2023 one: _(405)318-4697

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Oil Conservation Division

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Remediation Plan

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

X Detailed description of proposed remediation technique

Scaled sitemap with GPS coordinates showing delineation points

 $\overline{\mathbf{X}}$ Estimated volume of material to be remediated

X Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC

X Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: Each of the following items must be con	nfirmed as part of any request for deferral of remediation.
Contamination must be in areas immediately under or around pr deconstruction.	roduction equipment where remediation could cause a major facility
Extents of contamination must be fully delineated.	
Contamination does not cause an imminent risk to human health	n, the environment, or groundwater.
rules and regulations all operators are required to report and/or file of which may endanger public health or the environment. The accepta liability should their operations have failed to adequately investigate surface water, human health or the environment. In addition, OCD responsibility for compliance with any other federal, state, or local l	e and remediate contamination that pose a threat to groundwater, acceptance of a C-141 report does not relieve the operator of
Printed Name: Dale Woodall	Title: <u>Env. Professional</u>
Signature: Dale Woodall	Date: <u>2/7/2023</u>
email:dale.woodall@dvn.com	Telephone: (405)-318-4697
OCD Only	
Received by:	Date:
Approved Approved with Attached Conditions of	Approval Denied Deferral Approved
Signature:	Date:

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Oil Conservation Division

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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.

<u>Closure Report Attachment Checklist</u>: Each of the following items must be included in the closure report.

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

X 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)

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

 $\overline{\mathbf{X}}$ 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: Dale Woodall	Title: <u>Env. Professsional</u>
Signature: Dale Woodall	Date: _2/7/2023
email:dale.woodall@dvn.com	Telephone: (405)-318-4697

OCD Only

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Received by: _

Date:

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

Closure Approved by:	Date:
Printed Name:	Title:

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Closure

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Title: Env. Professsional

Printed Name:	Dale Woodall
---------------	--------------

Signature: Dale Woodall _____ Date: _2/7/2023_____

email: dale.woodall@dvn.com

Telephone: (405)-318-4697

OCD Only

Received by: Robert Hamlet

Date: 6/9/2023

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 Approv	ed by: <u>Robert Hamlet</u>	Date:	6/9/2023
Printed Name:	Robert Hamlet	Title:	Environmental Specialist - Advanced



 February 7, 2023
 Vertex Project #: 22E-02537

 Spill Closure Report:
 Helios 6 Federal Com 1H and 3H Battery/Hackberry 6 Federal 1 Well Pad Unit J, Section 6, Township 19 South, Range 31 East, API: N/A County: Eddy Incident ID: nAPP2116940090, nAPP2219226827

 Prepared For:
 Devon Energy Production Company 6488 Seven Rivers Highway Artesia, New Mexico 88210

 New Mexico Oil Conservation Division – District 2 – Artesia

811 S. 1st Street Artesia, New Mexico 88210

Devon Energy Production Company (Devon) retained Vertex Resource Services Inc. (Vertex) to conduct a Spill Assessment for multiple produced water releases at the same location, registered at Helios 6 Federal Com 1H and 3H Battery, and Hackberry 6 Federal 1 Battery Well Pad, (hereafter referred to as "Helios/Hackberry"). Devon submitted initial C-141 Release Notifications (Attachment 1) to New Mexico Oil Conservation Division (NMOCD) District 2 on July 7, 2021, and July 11, 2022. Incident IDs nAPP2116940090 and nAPP2219226827 were assigned to the incidents.

This letter provides a description of the release assessments and remediation activities and demonstrates that closure criteria established in Table I of 19.15.29.12 *New Mexico Administrative Code* (NMAC; New Mexico Oil Conservation Division, 2018) are being met and all applicable regulations are being followed. This document is intended to serve as a final report to obtain approval from NMOCD for the closure of these releases, with the understanding that they were reclaimed per 19.15.29.13.

Site Characterization

The site is located approximately 10 miles southeast of Loco Hills, New Mexico at 32.687850 ° N, 103.907000 ° W (Google Inc., 2022). The legal location for the site is Section 6, Township 19 South and Range 31 East in Eddy County, New Mexico. The spill area is located on Bureau of Land Management property. An aerial photograph and site schematic are included on Figure 1 (Attachment 2).

The Geological Map of New Mexico (New Mexico Bureau of Geology and Mineral Resources, 2022) indicates the site's surface geology is comprised primarily of Qp – Piedmont alluvial deposits (Holocene to lower Pleistocene). The predominant soil texture on the site is gravelly fine sandy loam. The Natural Resources Conservation Service *Web Soil Survey* characterizes the predominant soil texture on the site as Simona gravelly fine sandy loam. It tends to be well drained with very high runoff and very low available moisture levels in the soil profile (United States Department of Agriculture, Natural Resources Conservation Service, 2022).

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The surrounding landscape is associated with plains, uplands, fan piedmonts, and alluvial fans at elevations of 2,842 to 4,500 feet above sea level. The climate is semi-arid, with annual precipitation ranging between 8 to 13 inches. Historically, the plant community has grassland aspect, dominated by grasses with shrubs. Black grama is dominant with yucca, javalina bush, range ratany, prickly pear and mesquite. Overgrazing and extended drought can reduce grass cover (United States Department of Agriculture, Natural Resources Conservation Service, 2022).

There is no surface water located at Helios/Hackberry. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 Mexico Administrative Code (New Mexico Oil Conservation Division, 2018), is the Pecos River located approximately 800 feet west of the site (Google Inc., 2022). There are no continuous flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

Incident Description

nAPP2116940090

The first release occurred on June 17, 2021, due to a pinhole leak on a water transfer line. The incident resulted in the release of approximately 91.82 barrels of produced water into the pasture north of the pad site. Approximately 73 barrels of free fluid were removed during the initial spill clean-up.

nAPP2219226827

The second release was discovered on July 9, 2022, due to equipment failure on the same pipeline as the first release. The incident resulted in the release of approximately 7 barrels of produced water into the pasture north of the pad site. Approximately 2 barrels of free fluid were removed during the initial spill clean-up.

Closure Criteria Determination

The depth to groundwater was determined by drilling a borehole permitted by the New Mexico Office of the State Engineer within a 0.5-mile radius of the site. The borehole was drilled to a depth of 105 feet, was left open as per requirements on the WR-07 Application for Permit to Drill a well With No Water Right, and an interface probe was lowered to the bottom of the borehole to investigate if groundwater may have accumulated in the 72-hour waiting period; no water was present at that time. The borehole was then plugged as per requirements on the WR-08, Well Plugging Plan of Operations. Documentation used in closure criteria determination (Attachment 4) research was included in the Characterization and Remediation Plan submitted and approved by NMOCD. The DFR associated with this site visit is included in Attachment 5.

The closure criteria determined for the site are associated with the following constituent concentration limits as presented in Table 1.

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Table 1. Closure Criteria for Soils to Remediation & Reclamation Standards			
	Constituent	Limit	
	Chloride	600 mg/kg	
0-4 feet bgs (19.15.29.13)	TPH (GRO+DRO+MRO)	100 mg/kg	
	Chloride	20,000 mg/kg	
	TPH (GRO+DRO+MRO)	2,500 mg/kg	
DTGW > 100 feet (19.15.29.12)	GRO+DRO	1,000 mg/kg	
	BTEX	50 mg/kg	
	Benzene	10 mg/kg	

bgs – below ground surface

DTGW – depth to groundwater

TPH – Total petroleum hydrocarbons = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO) BTEX – Benzene, toluene, ethylbenzene, and xylenes

Remedial Actions

An initial site inspection was completed for the first release on June 28, 2021, which identified the location of the impact specified in the initial C-141 Report and estimated the approximate volume of the release. The impacted area was determined to be approximately 158 feet long and 104 feet wide; the total affected area was determined to be 1,527 square feet. The DFR associated with the site inspection is included in Attachment 5.

A site inspection was conducted for the second release on November 3, 2022. More horizontal boreholes were established to ensure that the second release did not migrate further than the first release. The two releases were vertically delineated to the >100' criteria to 4 feet below ground surface (bgs) as required by NMOCD. The DFR associated with this site visit is included in Attachment 5.

Remediation efforts began on January 4, 2023, and were completed on January 20, 2023. Vertex personnel supervised the excavation of impacted soils. Field screening was completed on a total of 126 sample points and consisted of analysis using a photoionization detector (volatile hydrocarbons), Dexsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons) and silver nitrate titration (chlorides). Field screening results were used to identify areas requiring further remediation from those areas showing concentrations below determined closure criteria levels. Soils were removed to a depth of 4 feet bgs. Impacted soil was transported by a licensed waste hauler and disposed of at an approved waste management facility.

During excavation activities, Vertex provided three 48-hour notifications of confirmation sampling to NMOCD between December 28, 2022, and January 19, 2023 (Attachment 6), as required by Subparagraph (a) of Paragraph (1) of Subsection D 19.15.29.12 NMAC. Confirmatory composite samples were collected from the base and walls of the excavation in 200-square-foot increments. A total of 131 samples, including one background sample, were collected for laboratory analysis following NMOCD soil sampling procedures. Samples were submitted to Hall Environmental Analysis Laboratory under chain-of-custody (COC) protocols and analyzed for BTEX (EPA Method 8021B), total petroleum hydrocarbons (GRO, DRO, MRO – EPA Method 8015D) and total chlorides (EPA Method 300.0). Laboratory results are presented in Table 3 (Attachment 3) and laboratory data reports are included in Attachment 7. All confirmatory samples collected and analyzed were below the closure criteria for the site.

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Closure Request

Vertex recommends no additional remediation action to address the releases at Helios/Hackberry. Laboratory analyses of confirmatory samples collected show final confirmatory values below the selected NMOCD closure criteria for areas where depth to groundwater is more than 100 feet bgs as presented in Table 1. There are no anticipated risks to human, ecological, or hydrological receptors at this release site.

The excavation will be backfilled with non-waste-containing, uncontaminated, earthen material, sourced locally, and placed to meet the site's existing grade to prevent water ponding and erosion. The site will then be reclaimed and seeded as required by Subsection A of 19.15.29.13 NMAC. This will take place when closure approval is received from NMOCD.

Vertex requests that these incidents (nAPP2116940090 and nAPP2219226827) be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. Devon certifies that all information in this report and the attachments are correct and that they have complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NMOCD requirements to obtain on the releases at Helios/Hackberry.

Should you have any questions or concerns, please do not hesitate to contact Chance Dixon at 575.988.1472 or cdixon@vertex.ca.

Sally Carttar, B.A. INT. ENVIRONMENTAL TECHNOLOGIST, REPORTING

Date

Chance Dixon, B.Sc. SR. ENVIRONMENTAL TECHNOLOGIST, REPORT REVIEW Date

Attachments

Attachment 1. NMOCD C-141 Reports

Attachment 2. Figures

Attachment 3. Tables

- Attachment 4. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
- Attachment 5. Daily Field Reports with Photographs
- Attachment 6. Required 48-Hour Notification of Confirmatory Sampling to Regulatory Agencies
- Attachment 7. Laboratory Data Reports and Chain of Custody Forms

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ATTACHMENT 1

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

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

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Release Notification

Responsible Party

Responsible Party Devon Energy Production Company	OGRID ₆₁₃₇	
Contact Name Wesley Mathews	Contact Telephone	
Contact email Wesley.Mathews@dvn.com Incident # (assigned by OCD)		
Contact mailing address 6488 Seven Rivers Hwy Artesia, NM 88210		

Location of Release Source

Latitude 32.6880381

Longitude -103.9071575

(NAD 83 in decimal degrees to 5 decimal places)

Site Name Helios 6 Fed Com 1H & 3H Battery	Site Type Oil
Date Release Discovered 6/17/2021	API# (if applicable)

Unit Letter	Section	Township	Range	County
J	6	19S	31E	Eddy

Surface Owner: State Federal Tribal Private (Name: _____

Nature and Volume of Release

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

Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
Produced Water	Volume Released (bbls) 91.82 BBLS	Volume Recovered (bbls) 73 BBLS
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	Yes No
Condensate	Volume Released (bbls)	Volume Recovered (bbls)
Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release		

Cause of Release Pin hole leak on water transfer line.

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Was this a major	If YES, for what reason(s) does the responsible part	ty consider this a major release	
release as defined by 19.15.29.7(A) NMAC?	This is considered a major release beca	ause it is over 25 BBLS	
Yes No			
If YES, was immediate n	otice given to the OCD? By whom? To whom? Who	en and by what means (phone, o	email, etc)?
Immediate notice w	as given by NOR on the OCD website.		
	Initial Respons	e	
The responsible	party must undertake the following actions immediately unless the	ry could create a safety hazard that wou	ld result in injury
The source of the rele	ease has been stopped.		
The impacted area ha	s been secured to protect human health and the enviro	onment.	
Released materials ha	ave been contained via the use of berms or dikes, abso	orbent pads, or other containme	nt devices.
All free liquids and r	ecoverable materials have been removed and manage	d appropriately.	

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If all the actions described above have not been undertaken, explain why:

Spill was not in containment.

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

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

Printed Name: Kendra DeHoyos	Title: EHS Associate
Signature: Kendra DeHoyas	Date: 7/7/2021
email: Kendra.DeHoyos@dvn.com	Telephone: 575-748-0167
OCD Only	
Received by: Ramona Marcus	Date: <u>10/5/2021</u>

NAPP2116940090

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Spill	Volume(Bbl	s) Calculator		
Inpu	its in blue, O	utputs in red		
Conte	aminated Soil	measurement		
Area (square	e feet)	Depth(inches)		
7877.94	9	1.000		
Cubic Feet of Soi	Impacted	656.496		
Barrels of Soil I	mpacted	<u>117.02</u>		
Soil Typ	e	Clay/Sand		
Barrels of water Assuming 100% Saturation		17.55		
Saturation	Fluid presen	ent with shovel/backhoe		
Estimated Barrels of water Released		17.55		
	Free Standing	Fluid Only		
Area (square feet)		Depth(inches)		
2500		2.000		
Standing fluid		74.272		
Total fluids spilled		91.825		

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Site Assessment/Characterization

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Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	🗌 Yes 🗶 No
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Are the lateral extents of the release overlying an unstable area such as karst geology?	Yes X No
Are the lateral extents of the release within a 100-year floodplain?	🗌 Yes 🔀 No
Did the release impact areas not on an exploration, development, production, or storage site?	🗌 Yes 🗶 No

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- X Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- X Boring or excavation logs
- $\overline{\mathbf{X}}$ Photographs including date and GIS information
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public health or the enviro failed to adequately inves addition, OCD acceptance and/or regulations. Printed Name: <u>Dale V</u> Signature: <u>Dale U</u>	re required to report and/or file certain release no onment. The acceptance of a C-141 report by the tigate and remediate contamination that pose a th e of a C-141 report does not relieve the operator of Voodall Voodall dvn.com	OCD does not relieve the reat to groundwater, surfa	e operator of liability sh ace water, human health liance with any other fe ional	ould their operations have or the environment. In
OCD Only Received by:		Date:		

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Remediation Plan

<u>Remediation Plan Checklist</u>: Each of the following items must be included in the plan.

X Detailed description of proposed remediation technique

Scaled sitemap with GPS coordinates showing delineation points

 $\overline{\mathbf{X}}$ Estimated volume of material to be remediated

X Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC

X Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: Each of the following items must be con	nfirmed as part of any request for deferral of remediation.
Contamination must be in areas immediately under or around p deconstruction.	roduction equipment where remediation could cause a major facility
Extents of contamination must be fully delineated.	
Contamination does not cause an imminent risk to human healt	h, the environment, or groundwater.
	e and remediate contamination that pose a threat to groundwater, acceptance of a C-141 report does not relieve the operator of
Printed Name: Dale Woodall	Title: Env. Professional
Signature: Dala Woodall	Date: _2/7/2023
email:dale.woodall@dvn.com	Telephone: (405)-318-4697
OCD Only	
Received by:	Date:
Approved Approved with Attached Conditions of	Approval Denied Deferral Approved
Signature:	Date:

•

Page 6

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.

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

 \overline{X} 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)

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

X 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: Dale Woodall	Title:Env. Professional
Signature: Dale Woodall	Date: _2/7/2023
email: _dale.woodall@dvn.com	Telephone: (405)-318-4697
OCD Only	
Received by:	Date:
	of liability should their operations have failed to adequately investigate and water, human health, or the environment nor does not relieve the responsible for regulations.
Closure Approved by:	Date:
Printed Name:	Title:

District I 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

)

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Incident ID	
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Release Notification

Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

Location of Release Source

Longitude

Latitude	

Site Name	Site Type
Date Release Discovered	API# (if applicable)

(NAD 83 in decimal degrees to 5 decimal places)

Unit Letter	Section	Township	Range	County

Surface Owner: State Federal Tribal Private (Name: _

Nature and Volume of Release

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

obls)
obls)
obls)
Mcf)
overed (provide units)
>

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Oil Conservation Division

Incident ID	
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Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?	If YES, for what reason(s) does the responsible party consider this a major release?
Yes No	
If YES, was immediate n	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Initial Response

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

The source of the release has been stopped.

The impacted area has been secured to protect human health and the environment.

Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

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

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

Printed Name:	Title:
Signature: Kendra Ruiz	Date:
email:	Telephone:
OCD Only	
Received by: Jocelyn Harimon	Date:

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Sp	oill Volume(Bbl	s) Calculator
li I	nputs in blue, O	utputs in red
Co	ontaminated Soil	measurement
Length(Ft)	Width(Ft)	Depth(Ft)
35	15.000	0.500
Cubic Feet of S	Soil Impacted	262.500
Barrels of Sc	il Impacted	46.79
Soil T	ype	Clay/Sand
Barrels of Oil Assuming 100% Saturation		7.02
Saturation	Damp no fluid when squeezed	
Estimated Barrels of Oil Released		0.70
	Free Standing	Fluid Only
Length(Ft)	Width(Ft)	Depth(Ft)
<u>0</u>	0.000	0.000
Standin	g fluid	0.000
<u>Total fluid</u>	ds spilled	<u>7.019</u>

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

Operator:	OGRID:
DEVON ENERGY PRODUCTION COMPANY, LP	6137
333 West Sheridan Ave.	Action Number:
Oklahoma City, OK 73102	127694
	Action Type:
	[C-141] Release Corrective Action (C-141)

CONDITIONS

Created By Condition Condition Date 7/21/2022 jharimon None

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Action 127694

Received by OCD: 2/7/2023 1:52:13 PM Form C-141 State of New Mexico

Oil Conservation Division

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Site Assessment/Characterization

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

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

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

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

- X Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- X Field data
- X Data table of soil contaminant concentration data
- $\overline{\mathbf{X}}$ Depth to water determination
- X Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- X Boring or excavation logs
- X Photographs including date and GIS information
- X Topographic/Aerial maps
- \overline{X} Laboratory data including chain of custody

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

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		Incident ID nAPP2219226827
age 4	Oil Conservation Division	District RP
		Facility ID
		Application ID
public health or the environm failed to adequately investig addition, OCD acceptance of and/or regulations.	ment. The acceptance of a C-141 report by the OCD does n gate and remediate contamination that pose a threat to groun of a C-141 report does not relieve the operator of responsibil	nd perform corrective actions for releases which may endanger not relieve the operator of liability should their operations have dwater, surface water, human health or the environment. In lity for compliance with any other federal, state, or local laws
Printed Name: <u>Dale Wo</u> Signature: <u>Dale W</u> email: <u>dale.woodall@dv</u>		nv. Professional /7/2023 ne: _(405)318-4697

Received by OCD: 2/7/2023 1:52:13 PM Form C-141 State of New Mexico

Oil Conservation Division

Incident ID	nAPP2219226827
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Remediation Plan

<u>Remediation Plan Checklist</u>: Each of the following items must be included in the plan.

X Detailed description of proposed remediation technique

Scaled sitemap with GPS coordinates showing delineation points

 $\overline{\mathbf{X}}$ Estimated volume of material to be remediated

X Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC

X Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: Each of the following items must be confirmed as part of any request for deferral of remediation.		
Contamination must be in areas immediately under or around pr deconstruction.	roduction equipment where remediation could cause a major facility	
Extents of contamination must be fully delineated.		
Contamination does not cause an imminent risk to human health	n, the environment, or groundwater.	
rules and regulations all operators are required to report and/or file of which may endanger public health or the environment. The accepta liability should their operations have failed to adequately investigate surface water, human health or the environment. In addition, OCD responsibility for compliance with any other federal, state, or local l Printed Name: Dale Woodall	e and remediate contamination that pose a threat to groundwater, acceptance of a C-141 report does not relieve the operator of	
Signature: Dale Woodall	Date: <u>2/7/</u> 2023	
email: _dale.woodall@dvn.com	Telephone: (405)-318-4697	
OCD Only		
Received by:	Date:	
Approved Approved with Attached Conditions of	Approval Denied Deferral Approved	
Signature:	Date:	

Page 5

Page 6

Oil Conservation Division

Incident ID	nAPP2219226827
District RP	
Facility ID	
Application ID	

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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.

<u>Closure Report Attachment Checklist</u>: Each of the following items must be included in the closure report.

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

X 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)

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

X 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: Dale Woodall	Title: <u>Env. Professsional</u>
Signature: Dale Woodall	Date: _2/7/2023
email:dale.woodall@dvn.com	Telephone: (405)-318-4697

OCD Only

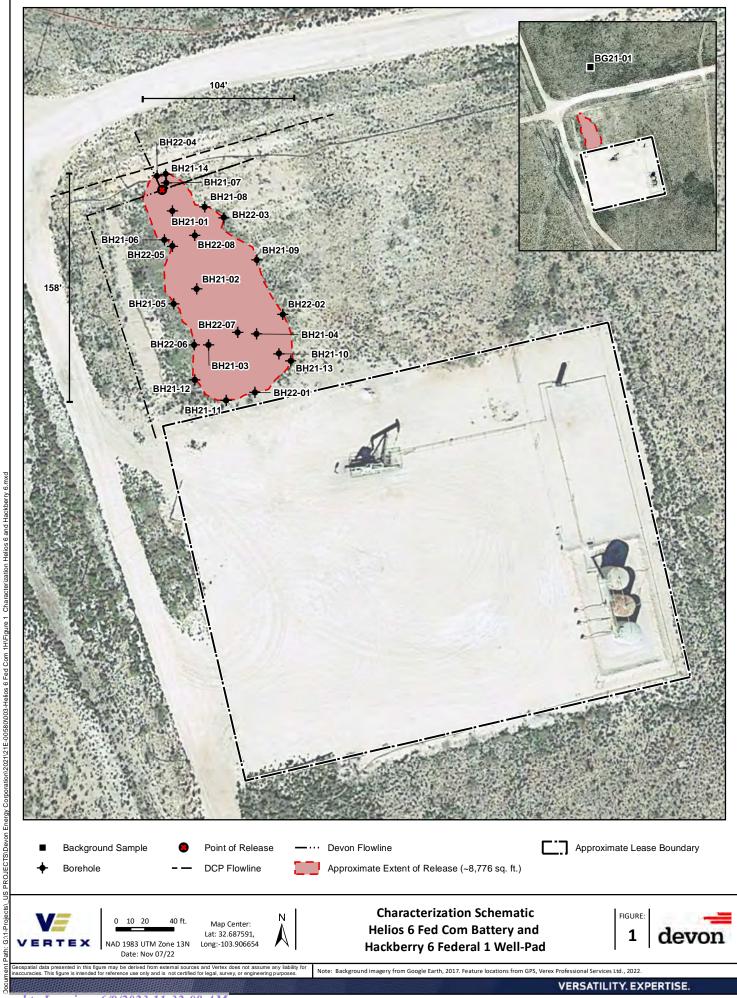
Received by:

Date:

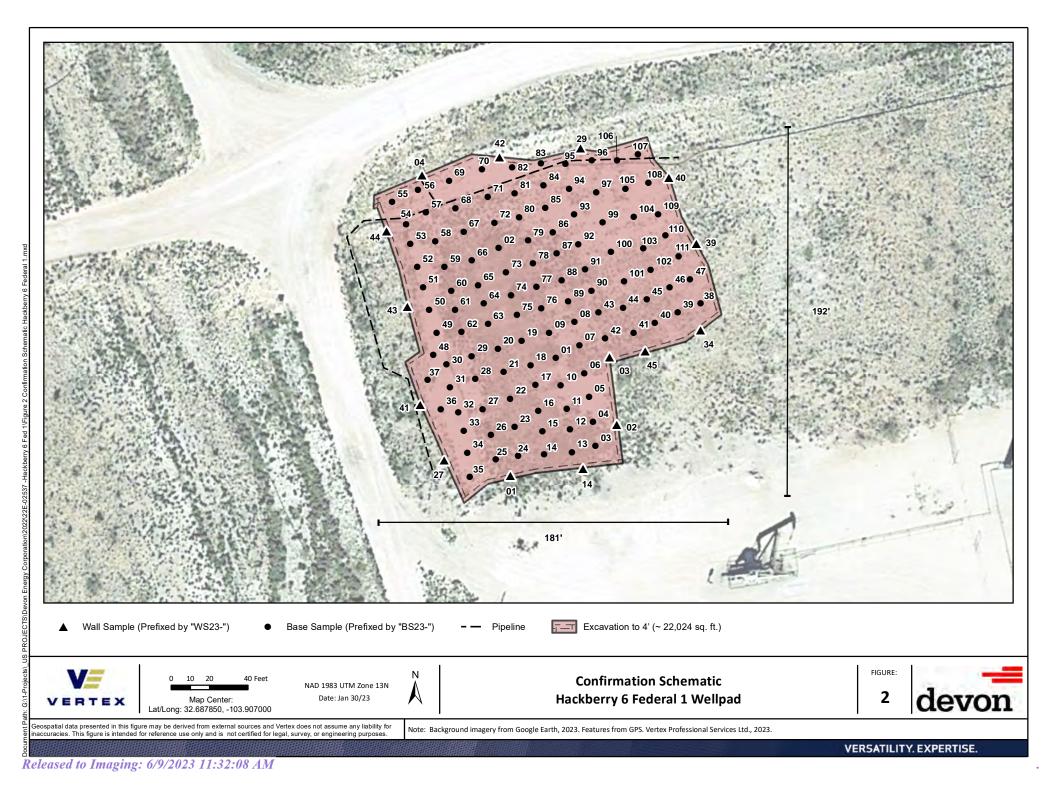
Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance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

Closure Approved by:	_ Date:
Printed Name:	Title:

ATTACHMENT 2



Released to Imaging: 6/9/2023 11:32:08 AM



ATTACHMENT 3

Client Name: Devon Energy Production Company Site Name: Helios 6 Fed Com 1H 3H Project #: 21E-00580-003 Lab Report(s): 2106D66, 2107069

	Table 2. Init	ial Characteriza	tion Sam	ple/Field	Screen a	nd Labora	atory Res	ults - Dep	th to Gro	undwate	r >100 fe	et bgs	
	Sample Descri	otion	Fi	eld Screeni	ng			Petrole	eum Hydrod	arbons			
				oFI		Vola	atile			Extractable	;		Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroF	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride
DC34_04	0	c /22 /2024	(ppm)	(ppm)	(+/-)	(mg/kg)	(mg/kg) ND	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg) ND	(mg/kg)	(mg/kg) ND
BG21-01	0	6/22/2021	0	_	ND	ND		ND	ND	ND		ND	
BG21-01	1	6/22/2021	0	-	ND ND	ND	ND	ND	ND	ND	ND	ND	ND ND
BG21-01	2	6/22/2021	0	39		ND	ND	ND	ND	ND	ND	ND	
BH21-01	0.5	6/22/2021	1	—	8,188	ND	ND	ND	ND	ND	ND	ND	12,000.0
BH21-01	1	6/22/2021	1	_	7,091	—	_	_	_	—	_	_	_
BH21-01	2	6/22/2021	1	—	8,083	—	—	-	-	—	-	_	_
BH21-01	3	6/22/2021	2	1,037	7,233	—	_	-	-	_	_	_	_
BH21-01	4	6/30/2021	2	_	2,411	—	_	—	_		_	_	—
BH21-01	6	6/30/2021	1	_	9,427	_		_	_		_	_	_
BH21-01	8	6/30/2021	0	_	3,319	_	_	_	_	_	_	_	_
BH21-01	10	6/30/2021	1	_	7,468	_	_	_	_	_	_	_	—
BH21-01	11	6/30/2021	1	—	6,661	—	—	—	_	—	—	-	11,000.0
BH21-02	0.5	6/22/2021	3	—	5,590	ND	ND	ND	ND	ND	ND	ND	11,000.0
BH21-02	1	6/22/2021	1	—	8,520	—	—	—	-	_	_	—	—
BH21-02	2	6/22/2021	0	—	9,671	—	—	—	-	—	—	—	—
BH21-02	3	6/22/2021	1	57	6,289	—	—	—	-	—	—	—	—
BH21-02	3.5	6/23/2021	—	—	7,630	—	—	—	—	—	—	—	—

	Table 2. Init	tial Characteriza	tion Sam	ple/Field	Screen a	nd Labora	atory Res	ults - Dep	th to Gro	undwate	r >100 fe	et bgs	
	Sample Descri	ption	Fi	eld Screeni	ng			Petrole	eum Hydro	carbons			
				oFl		Vol	atile			Extractable	9		Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroF	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	, Total Petroleum Hydrocarbons (TPH)	Chloride
			(ppm)	(ppm)	(+/-)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH21-02	4	6/30/2021	1	_	5,097	_	_	_	_	_	_	_	_
BH21-02	6	6/30/2021	1	—	4,215	—	—	—	_	—	—	-	—
BH21-02	8	6/30/2021	1	—	2,338	—	_	_	_	_	_	_	—
BH21-02	12	6/30/2021	1	41	331	ND	ND	ND	ND	ND	ND	ND	150.0
BH21-03	0.5	6/22/2021	_	—	9,824	ND	ND	ND	ND	ND	ND	ND	13,000.0
BH21-03	1	6/22/2021	—	—	8,835	—	—	—	—	—	—	_	—
BH21-03	2	6/22/2021	_	—	8,614	—	—	—	—	—	—	_	—
BH21-03	3	6/22/2021	—	—	8,556	—	—	—	—	—	—	—	—
BH21-03	3.5	6/23/2021	—		10,366	—	—	—	—	—	—	—	—
BH21-03	4	6/28/2021	_	_	6,279	—	_	—	_	_	_	_	—
BH21-03	5	6/28/2021	_	_	6,256	—	_	_	_	_	_	_	—
BH21-03	7	6/28/2021	_	_	5,092	_	_	—	_	_	_	_	—
BH21-03	8	6/28/2021		—	5,658	-	_	—	_	—	_	—	—
BH21-03	9	6/28/2021		—	1,367	-	_	-	_	—	_	_	—
BH21-03	10	6/30/2021	0	—	950	_	_	—	_	—	_	_	—
BH21-03	11	6/30/2021	1	—	664	—	—	—	_	—	—	—	—
BH21-03	12	6/30/2021	1	44	107	ND	ND	ND	ND	ND	ND	ND	170.0
BH21-04	0.5	6/22/2021	_	—	14,605	ND	ND	ND	28	98	28	126	18,000.0
BH21-04	1	6/22/2021	—	—	6,090	_	—	_	_	—	—	_	—
BH21-04	2	6/22/2021	_	—	7,618	_	—	_	_	—	—	_	—
BH21-04	3	6/22/2021	_	—	7,257	_	—	_	_	—	—	_	—
BH21-04	3.5	6/23/2021	—	—	10,044	_	—	—	—	—	—	_	—
BH21-04	4	6/30/2021	0	—	2,932	_	_	_	_	—	_	_	—

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	Table 2. Init	tial Characteriza	tion Sam	ple/Field	Screen a	nd Labora	atory Res	ults - Dep	th to Gro	undwate	r >100 fe	et bgs	
	Sample Descri	otion	Fi	eld Screeni	ng			Petrole	eum Hydro	carbons			
				oFl		Vol	atile			Extractable	9		Inorganic
Sample ID	Depth (ft)	Sample Date	ත් ප් Volatile Organic Compounds (PID) පූ	ର୍ଗ ସୁ ଞ୍ଜି Extractable Organic Compounds (PetroFl	+) -) -)	euseue (mg/kg)	gg/gg (gg/gg)	ସ୍ଥ ଜୁ ଅ	ଅ ଅନୁ biesel Range Organics (DRO)	ଅ ଅନୁ Motor Oil Range Organics (MRO) ଅ	(OXO + OXO) (mg/kg)	ଅ ଅନ୍ଥ ସେଥା Petroleum Hydrocarbons (TPH)	(mg/kg)
BH21-04	6	6/30/2021	1	_	4,620	_	_	_	_	_	_	_	_
BH21-04	9	6/30/2021	1	—	6,410	_		_	_		_	_	_
BH21-04	11	6/30/2021	1	—	6,386	—	_	_	_	_	_	_	—
BH21-04	12	6/30/2021	1	-	6,085	—	-			—	_	—	—
BH21-04	13	6/30/2021	1	_	6,726	—	_	—	_	_	_	—	—
BH21-04	14	6/30/2021	1	—	6,560	—	_	—	_	_	_	—	—
BH21-04	15	6/30/2021	2	—	4,698	ND	ND	ND	ND	ND	ND	ND	6,700.0
BH21-05	0.5	6/23/2021	_	—	24	ND	ND	ND	ND	ND	ND	ND	ND
BH21-06	0.5	6/23/2021	_	_	71	ND	ND	ND	ND	ND	ND	ND	ND
BH21-07	0.5	6/23/2021	—	—	2,803	—	_	—	_	_	—	—	—
BH21-08	0.5	6/23/2021	_	—	28	ND	ND	ND	ND	ND	ND	ND	ND
BH21-09	0.5	6/23/2021	—	68	250	ND	ND	ND	ND	ND	ND	ND	120.0
BH21-10	0.5	6/23/2021	—	—	568	—	—	_	—	—	—	—	—
BH21-11	0.5	6/23/2021	—	—	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH21-12	0.5	6/23/2021	—	—	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH21-13	0.5	6/23/2021	—		138	ND	ND	ND	ND	ND	ND	ND	ND
BH21-14	0.5	6/23/2021	—	—	282	ND	ND	ND	ND	ND	ND	ND	330.0
BH22-01	0	11/3/2022	0	21	228	ND	ND	ND	ND	ND	ND	ND	ND
BH22-01	2	11/3/2022	0	—	135	ND	ND	ND	ND	ND	ND	ND	ND
BH22-02	0	11/3/2022	0	48	342	ND	ND	ND	ND	ND	ND	ND	ND
BH22-02	2	11/3/2022	0	_	174	ND	ND	ND	ND	ND	ND	ND	ND
BH22-03	0	11/3/2022	0	55	205	ND	ND	ND	ND	ND	ND	ND	ND

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	Table 2. Init	tial Characteriza	tion Sam	ple/Field	Screen a	nd Labora	atory Res	ults - Dep	th to Gro	undwate	r >100 fe	et bgs	
	Sample Descri	ption	Fi	eld Screeni	ng			Petrole	eum Hydroo	arbons			
				oFl		Vol	atile			Extractable	9		Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroF	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	, Total Petroleum Hydrocarbons (TPH)	Chloride
			(ppm)	(ppm)	(+/-)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH22-03	2	11/3/2022	0		69	ND	ND	ND	ND	ND	ND	ND	ND
BH22-04	0	11/3/2022	0	65	310	ND	ND	ND	ND	ND	ND	ND	ND
BH22-04	2	11/3/2022	0	—	212	ND	ND	ND	ND	ND	ND	ND	130.0
BH22-05	0	11/3/2022	0	64	477	ND	ND	ND	ND	ND	ND	ND	ND
BH22-05	2	11/3/2022	0	—	255	ND	ND	ND	ND	ND	ND	ND	ND
BH22-06	0	11/3/2022	0	74	380	ND	ND	ND	ND	ND	ND	ND	ND
BH22-06	2	11/3/2022	0	_	174	ND	ND	ND	ND	ND	ND	ND	ND
BH22-07	0	11/3/2022	0	164	7,426	ND	ND	ND	ND	ND	ND	ND	9,000.0
BH22-07	2	11/3/2022	0	24	7,995	ND	ND	ND	ND	ND	ND	ND	7,000.0
BH22-07	4	11/3/2022	0	50	7,925	ND	ND	ND	14	ND	14	14	6,600.0
BH22-08	0	11/3/2022	0	124	8,455	ND	ND	ND	ND	ND	ND	ND	7,100.0
BH22-08	2	11/3/2022	0	40	8,790	ND	ND	ND	ND	ND	ND	ND	5,600.0
BH22-08	4	11/3/2022	0	25	4,550	ND	ND	ND	41	110	41	151	7,300.0

"ND" Not Detected at the Reporting Limit

"-" indicates not analyzed/assessed

Bold and Shaded indicates exceedance outside of regulator criteria (Off-site)

Client Name: Devon Energy Production Company

Site Name: Helios 6 Fed Com 1/Hackberry 6 Federal 1 Wellpad

NMOCD Tracking #: nAPP2116940090, nAPP2219226827

Project #: 22E-02537

Lab Report(s): 2301225, 2301270, 2301321, 2301461, 2301574, 2301376, 2301522, 2301870, 2301754, 2301764, 2301711, 2301631

	Т	able 3. Confirmat	ory Sampl	e Field Sci	reen and L	aboratory	Results -	Depth to	Groundwa	ter >100 f	eet bgs		
9	Sample Descrip	otion	Fi	eld Screeni	ng			Petrole	eum Hydro	carbons			
			spu			Vol	atile			Extractable	9		Inorganic
Sample ID	Depth (ft)	Sample Date	B Volatile Organic Compounds B (PID)	 Extractable Organic Compounds (PetroFlag) 	(Ducentration	euseue Beuzeug (mg/kg)	(mg/kg)	Ba Ba Sasoline Range Organics (GRO)	ad Diesel Range Organics // (DRO)	a) Motor Oil Range Organics (MRO)	(Othor - Droc) (mg/kg)	표 Total Petroleum Hydrocarbons (TPH)	(mg/gg)
WS23-01	0-4	01/04/2023	-	67	318	ND	ND	ND	ND	ND	ND	ND	ND
WS23-02	0-4	01/04/2023	-	191	551	ND	ND	ND	9.6	ND	9.6	9.6	110
WS23-03	0-4	01/04/2023	-	206	654	ND	ND	ND	ND	ND	ND	ND	140
WS23-14	0-4	01/06/2023	-	48	390	ND	ND	ND	ND	ND	ND	ND	320
WS23-27	0-4	01/10/2023	0	12	210	ND	ND	ND	ND	ND	ND	ND	120
WS23-29	0-4	01/10/2023	0	49	220	ND	ND	ND	ND	ND	ND	ND	140
WS23-34	0-4	01/12/2023	0	84	378	ND	ND	ND	ND	ND	ND	ND	540
WS23-39	0-4	01/13/2023	0	59 28	218 90	ND ND	ND	ND ND	ND	ND	ND	ND	100
WS23-40	0-4	01/13/2023	0	28 19	90 170	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND 79
WS23-41	0-4	01/13/2023	0	19 26	488	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	79 170
WS23-42 WS23-43	0-4 0-4	01/13/2023	0	26 57	488 600	ND ND	ND ND	ND ND	ND	ND	ND ND	ND ND	170 ND
WS23-43 WS23-44	0-4	01/20/2023 01/20/2023	1	33	578	ND	ND	ND	ND	ND	ND	ND	ND
WS23-44 WS23-45	0-4	01/20/2023	1	133	340	ND	ND	ND	ND	ND	ND	ND	ND
BS23-45	4	01/09/2023	0	60	7,720	ND	ND	ND	ND	ND	ND	ND	7800
BS23-02	4	01/09/2023	0	80	7,318	ND	ND	ND	ND	ND	ND	ND	8100
BS23-03	4	01/10/2023	0	35	200	ND	ND	ND	ND	ND	ND	ND	150
BS23-04	4	01/10/2023	0	120	668	ND	ND	ND	13	ND	13	13	790
BS23-05	4	01/10/2023	0	121	1,753	ND	ND	ND	24	ND	24	24	1700
BS23-06	4	01/11/2023	0	61	9,902	ND	ND	ND	ND	ND	ND	ND	7100
BS23-07	4	01/11/2023	0	24	3,426	ND	ND	ND	ND	ND	ND	ND	1900
BS23-08	4	01/11/2023	0	110	4,103	ND	ND	ND	11	ND	11	11	4200
BS23-09	4	01/11/2023	0	171	5,400	ND	ND	ND	9.6	ND	9.6	9.6	3000
BS23-10	4	01/11/2023	0	185	7,711	ND	ND	ND	15	ND	15	15	6100
BS23-11	4	01/11/2023	0	98	6,812	ND	ND	ND	ND	ND	ND	ND	7800
BS23-12	4	01/11/2023	0	188	8,052	ND	ND	ND	ND	ND	ND	ND	7000
BS23-13	4	01/11/2023	0	159	6,350	ND	ND	ND	ND	ND	ND	ND	5600
BS23-14	4	01/11/2023	0	188	8,052	ND	ND	ND	ND	ND	ND	ND	6500
BS23-15	4	01/11/2023	0	187	10,053	ND	ND	ND ND	ND	ND	ND	ND	12000
BS23-16	4	01/11/2023	0	183 97	9,150 5,042	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	8300 4600
BS23-17	4	01/11/2023	0	97 150	7,661	ND	ND	ND ND	ND	ND	ND	ND	4600 8500
BS23-18	4	01/11/2023	0	150	6,730	ND ND	ND ND	ND ND	26	ND 67	ND 26	93	6700
BS23-19 BS23-20	4	01/11/2023 01/11/2023	0	323	7,837	ND	ND	ND	31	71	31	102	9100
BS23-20 BS23-21	4	01/11/2023	0	113	6,562	ND	ND	ND	11	ND	11	102	9200
BS23-21 BS23-22	4	01/11/2023	0	143	9,055	ND	ND	ND	ND	ND	ND	ND	6800
BS23-22 BS23-23	4	01/11/2023	0	190	10,039	ND	ND	ND	ND	ND	ND	ND	9000
BS23-24	4	01/11/2023	0	165	8,241	ND	ND	ND	ND	ND	ND	ND	7400
BS23-25	4	01/11/2023	0	246	9,550	ND	ND	ND	28	51	28	79	10000
BS23-26	4	01/13/2023	0	741	3,607	ND	ND	ND	73	100	73	173	3500
BS23-27	4	01/13/2023	0	675	5,880	ND	ND	ND	64	90	64	154	6000
BS23-28	4	01/16/2023	0	664	2,975	ND	ND	ND	220	260	220	480	3000
BS23-29	4	01/16/2023	0	819	3,120	ND	ND	ND	170	210	170	380	2700
BS23-30	4	01/16/2023	0	1,241	3,320	ND	ND	ND	310	520	310	830	3000
BS23-31	4	01/16/2023	0	149	2,605	ND	ND	ND	12	ND	12	12	2700
BS23-32	4	01/16/2023	0	183	2,845	ND	ND	ND	25	56	25	81	3600
BS23-33	4	01/16/2023	0	159	955	ND	ND	ND	30	48	30	78	2200
BS23-34	4	01/16/2023	0	112	1,205	ND	ND	ND	26	ND	26	26	1200
BS23-35	4	01/16/2023	0	54	640	ND	ND	ND	13	ND	13	13	730
BS23-36	4	01/16/2023	0	38	1,443	ND	ND	ND	ND	ND	ND	ND	1200
BS23-37	4	01/16/2023	0	101	835	ND	ND	ND	ND	ND	ND	ND	490
BS23-38	4	01/16/2023	0	12	1,770	ND	ND	ND	ND	ND	ND	ND	1200



.

					0.070								0.4.00
BS23-39	4	01/16/2023	0	51	2,870	ND	ND	ND	ND	ND	ND	ND	2100
BS23-40	4	01/16/2023	0	102	1,480	ND	ND	ND	ND	ND	ND	ND	1600
BS23-41	4	01/16/2023	0	40 19	1,090 433	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	1200 230
BS23-42 BS23-43	4	01/16/2023 01/16/2023	0	52	988	ND	ND	ND	ND	ND	ND	ND	650
BS23-45 BS23-44	4	01/16/2023	0	56	1,463	ND	ND	ND	ND	ND	ND	ND	1600
BS23-44 BS23-45	4	01/16/2023	0	49	2,393	ND	ND	ND	ND	ND	ND	ND	2200
BS23-45	4	01/16/2023	0	81	1,190	ND	ND	ND	9.6	ND	9.6	9.6	910
BS23-47	4	01/16/2023	0	26	543	ND	ND	ND	ND	ND	ND	ND	510
BS23-48	4	01/17/2023	0	248	1,255	ND	ND	ND	33	64	33	97	1100
BS23-49	4	01/17/2023	0	378	1,490	ND	ND	ND	65	100	65	165	1400
BS23-50	4	01/17/2023	0	8	1,430	ND	ND	ND	52	96	52	148	1600
BS23-51	4	01/17/2023	0	316	1,662	ND	ND	ND	39	85	39	124	1600
BS23-52	4	01/17/2023	0	482	3,633	ND	ND	ND	76	160	76	236	3100
BS23-53	4	01/17/2023	0	479	3,012	ND	ND	ND	88	160	88	248	2600
BS23-54	4	01/17/2023	0	154	2,440	ND	ND	ND	32	ND	32	32	2200
BS23-55	4	01/17/2023	0	115	1,445	ND	ND	ND	ND	ND	ND	ND	1100
BS23-56	4	01/17/2023	0	575	4,043	ND	ND	ND	180	ND	180	180	3700
BS23-57	4	01/17/2023	0	990	8,762	ND	ND	ND	150	ND	150	150	7100
BS23-58	4	01/18/2023	1	678	4,498	ND	ND	ND	180	340	180	520	9700
BS23-59	4	01/18/2023	1	769	2,385	ND	ND	ND	170	240	170	410	4500
BS23-60	4	01/18/2023	1	594	1,132	ND	ND	ND	150	240	150	390	2200
BS23-61	4	01/18/2023	2	325	5,230	ND	ND	ND	70	100	70	170	8100
BS23-62	4	01/18/2023	1	745 919	3,948	ND	ND	ND ND	310 190	460	310 190	770 490	4200 8700
BS23-63	4	01/18/2023	1	273	8,920 12,598	ND ND	ND ND	ND ND	190 56	300 81	190 56	490 137	8700 17000
BS23-64 BS23-65	4	01/18/2023 01/18/2023	1	273	9,993	ND ND	ND ND	ND ND	120	81 150	120	270	17000
BS23-65 BS23-66	4	01/18/2023	1	714	7,055	ND	ND	ND	120	220	120	380	6800
BS23-67	4	01/18/2023	1	926	6,900	ND	ND	ND	390	670	390	1060	5900
BS23-67	4	01/18/2023	1	1,054	5,595	ND	ND	ND	330	590	330	920	5200
BS23-69	4	01/18/2023	1	726	5,560	ND	ND	ND	390	700	390	1090	4900
BS23-70	4	01/18/2023	1	1,145	3,495	ND	ND	ND	540	890	540	1430	3300
BS23-71	4	01/18/2023	1	1,180	2,940	ND	ND	ND	390	690	390	1080	2400
BS23-72	4	01/18/2023	1	1,157	2,620	ND	ND	ND	450	570	450	1020	2700
BS23-73	4	01/18/2023	1	688	7,813	ND	ND	ND	150	240	150	390	7800
BS23-74	4	01/18/2023	1	511	10,880	ND	ND	ND	160	220	160	380	11000
BS23-75	4	01/18/2023	1	474	8,605	ND	ND	ND	66	140	66	206	7700
BS23-76	4	01/19/2023	2	267	5,753	ND	ND	ND	49	79	49	128	9800
BS23-77	4	01/19/2023	2	249	5,008	ND	ND	ND	27	ND	27	27	8200
BS23-78	4	01/19/2023	2	581	3,495	ND	ND	ND	96	140	96	236	6000
BS23-79	4	01/19/2023	2	257	3,068	ND	ND	ND	76	120	76	196	4200
BS23-80	4	01/19/2023	1	1,008	1,788	ND	ND	ND	380	600	380	980	2400
BS23-81	4	01/19/2023	2	800	1,690	ND	ND	ND	170	320	270	590	2100
BS23-82	4	01/19/2023	1	880 485	1,613 1,108	ND ND	ND ND	ND ND	200 310	220 370	200 310	420 680	1900 1300
BS23-83	4	01/19/2023			,	ND	ND	ND	540		540	1430	2400
BS23-84 BS23-85	4	01/19/2023 01/19/2023	1	1,120 660	1,930 2,073	ND	ND	ND	140	890 ND	140	1430	3200
BS23-85 BS23-86	4	01/19/2023	1	231	1,498	ND	ND	ND	21	ND	21	21	1400
BS23-80 BS23-87	4	01/19/2023	1	390	1,573	ND	ND	ND	28	ND	28	28	1400
BS23-88	4	01/19/2023	1	152	1,638	ND	ND	ND	15	ND	15	15	3100
BS23-89	4	01/19/2023	1	104	3,380	ND	ND	ND	10	ND	10	10	5200
BS23-90	4	01/19/2023	1	102	1,018	ND	ND	ND	ND	ND	ND	ND	1000
BS23-91	4	01/19/2023	2	63	1,505	ND	ND	ND	ND	ND	ND	ND	2400
BS23-92	4	01/19/2023	1	358	2,498	ND	ND	ND	44	60	44	104	4300
BS23-93	4	01/19/2023	2	120	2,690	ND	ND	ND	13	ND	13	13	4900
BS23-94	4	01/19/2023	1	358	1,978	ND	ND	ND	80	130	80	210	2600
BS23-95	4	01/19/2023	1	664	1,505	ND	ND	ND	33	ND	33	33	2100
BS23-96	4	01/19/2023	1	868	2,100	ND	ND	ND	470	610	470	1080	2700
BS23-97	4	01/19/2023	1	319	1,833	ND	ND	ND	63	94	63	157	2200
BS23-98	4	01/19/2023	1	421	1,625	ND	ND	ND	39	69	39	108	2300
BS23-99	4	01/19/2023	1	352	1,755	ND	ND	ND	39 ND	80	39 ND	119	2300
BS23-100	4	01/20/2023	2	92	2,258	ND	ND	ND	ND	ND	ND	ND	2800
BS23-101	4	01/20/2023	1	81 268	1,283 1,458	ND ND	ND ND	ND ND	ND 20	ND ND	ND 20	ND 20	1700 2000
BS23-102	4	01/20/2023	1	268 440	1,458	ND ND	ND ND	ND ND	20 39	ND 64	20 39	20 103	1800
BS23-103 BS23-104	4	01/20/2023 01/20/2023	1	440 346	1,493	ND ND	ND ND	ND ND	43	63	39 43	103	2300
BS23-104 BS23-105	4	01/20/2023	1	538	3,385	ND	ND	ND	43 100	180	43 100	280	2300
0020-100	4	01/20/2023							76				2300
BS23-106	4	01/20/2023	1	569	1,750	ND	ND	ND	/n	130	76	206	2700



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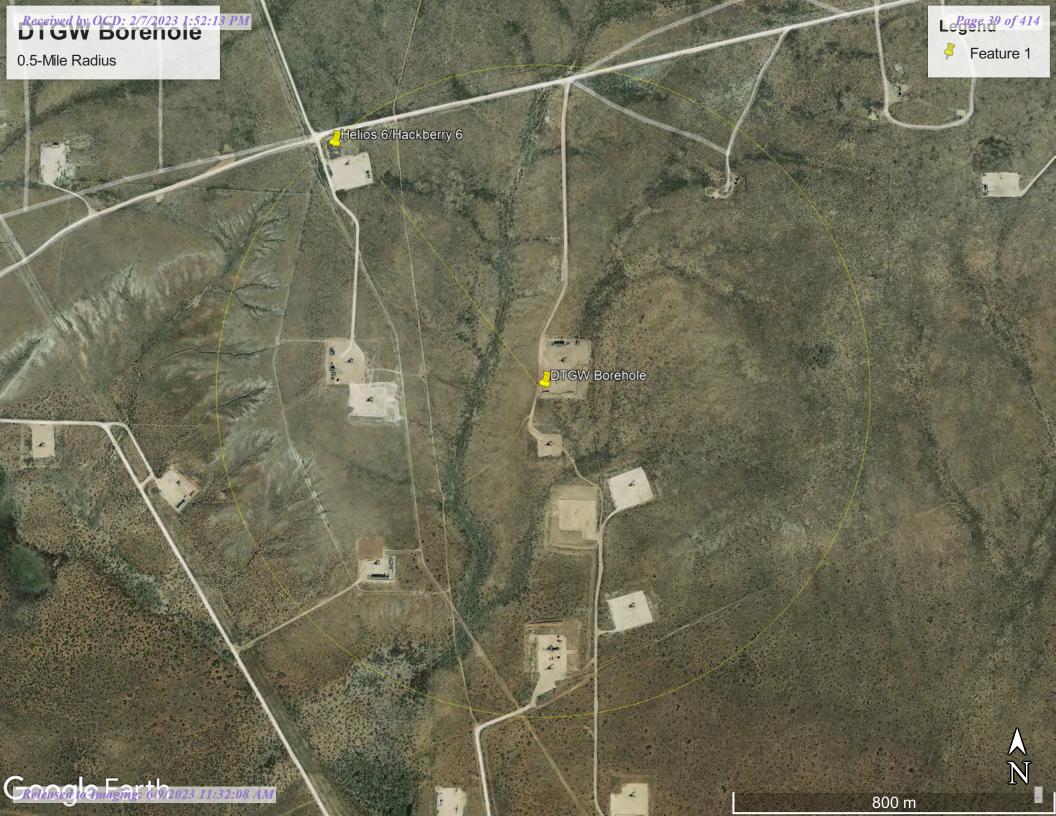
BS23-107	4	01/20/2023	1	339	2,575	ND	ND	ND	40	62	40	102	2300
BS23-108	4	01/20/2023	1	251	1,600	ND	ND	ND	38	63	38	101	2200
BS23-109	4	01/20/2023	2	202	2,965	ND	ND	ND	25	ND	25	25	2900
BS23-110	4	01/20/2023	1	197	1,330	ND	1600						
BS23-111	4	01/20/2023	1	210	1,025	ND	ND	ND	21	ND	21	21	960

"ND" Not Detected at the Reporting Limit "-" indicates not analyzed/assessed Bold and green shaded indicates exceedance outside of NMOCD Reclamation Criteria (off-pad)

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ATTACHMENT 4







WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

		OSE POD N	O. (WELI.	. NO.)		Transforment of the Astronomy	WELL TAG ID NO).	A COLUMN A	OSE FILE NO	(S).	anville arace and the	
	9 () 4 ()												
i i i K		WELL OWN Devon JEn		E(S)						PHONE (OPT	IONAL)		
北部	5 1 -				·····								
NOLUVUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU	3	WELL OWN 6488 7 Riv			ADDRESS					CITY		STATE	ZIP
			ي جلت خد د مانه			Leader Strategy (1997)	ates for the second of the	There is a set of the	where many little are	Artesia	NM 88210		
2		WELL			D	igrees 32	MINUTES 40		NDS .		1. An Optimized States and Construction Processing of the Construction of the Const	anatang ing nang salah salah salah sa	The complete of
開始 国	GENERAL AND	LOCATIO		LATT	TUDE	·			.79 _N	J	' REQUIRED: ONE TEN	TH OF A SECOND	
N.S.		(FROM G			HTUDE	103	54		32 W		QUIRED: WGS 84		
C F		DESCRIPTI	ON RELA	TING	WELL LOCATION TO	STREET ADD	RESS AND COMMO	N LANDN	ARKS - PLS	S (SECTION, TO	WNSHJIP, RANGE) WI	IERE AVAILABLE	. Taylor Besterningerede
					ĩ			·					
		LICENSE NO	<u>(1999)</u>).		NAME OF LICENSED	DRILLER	analaharina at 2000 (Sectors Instanting	in a start and a start of	and the set of the set	an a far an	NAME OF WELL DR	an a	
新闻		18	33				Jason Maley				1	in Resources, Inc	
		DRILLING S	TARTED		DRILLING ENDED	DEPTH OF CO	OMPLETED WELL (F	T)	BORE HO	E DEPTH (FT)			
气的: 1945年 1947年		12/1:	3/22		12/13/22		105	`	1	105	DEPTH WATER FIRST ENCOUNTERED (FT) NONC		
			5 W07 7 1				······		I		WATER LEVEL	DATE STATE	C MEASURED
N.		COMPLETE	U WIGLEL	15:	ARTESIAN *add Contralizer info be	I DRY HO low	LE [_] SHALLC	W (UNC	ONFINED)	IN COM (FT)	PLETED WELL		C MEABORED
CASE/G INFORMATION		DRILLING F	LUID:		AIR	MUD	ADDITIV	ES – SPE	CIFY:	<u>-</u>		,,,,	
RM.		DRILLING M	IETHOD:	[]] p	OTARY HAM	IER [CAB	LE TOOL DTH	ER – SPE	CIFY:		CHECK	HERE IF PITLESS AD.	APTER IS
P	印刷章 第5	DEPTH	(feet bg	 1)		CASING	MATERIAL ANI	<u>ארייי</u> געריע	and POS Steppensions?	a Mandaraha ata Kataga ata K		LED Contraction (Contraction) I	
			TC	·	BORE HOLE	GRADE		CASING CONNECTION		CASING	CASING WALL	1 2201	
SD	巖				(inches)	(include	each casing string, sections of screen)	and	Т	YPE	INSIDE DIAM. (inches)	THICKNESS (inches)	SIZE (inches)
		0	80		6		inch pvc sch 40			ing diameter)	2		
2.DRILLING &		80	100)	6	L	inch pvc sch 40		····	read	2	Sch (10)	
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	<u> </u>		is their similar to be a single	elequel.	ad dig was when denoting the principal damp and		and the second	<u>aé da a</u> k	alstan barn fitsina par	International and the second	August 1 15 allocate areas - if line		
施加		DEPTH	feet bgi)	BORE HOLE	LIST ANNU	JLAR SEAL MATER RANGE B			PACK SIZE-	AMOUNT	METHO	OD OF
UAU		FROM	TO		DIAM. (inches)	*(if using Ce	ntralizers for Artesia			spacing below)	(cubic feet)	PLACE	
MATERIAL				·									
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ANNULAR)) ()												
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<u>152019</u>	<u>(á)</u>	· · · · ·											
		SE INTERI	VAL US	E			·······		,		WELL RECORD &	LOG (Version 09/2	22/2022)
	EN			<u>. </u>			POD NO		·	TRN N			
1.0	CA	TION							v	VELL TAG IE	NO.	PAGE	JOF 2

	, odstanica, 1. grad	i dudst den de	i anti di internatione anna estato est	an garan ar an	naa hiin adam wayaa hiina ahii		
	DEPTH (FROM	feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL F INCLUDE WATER-BEARING CAVITIES ((attach supplemental sheets to fully d	OR FRACTURE ZON	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER- BEARING ZONES (gpm)
	0	30	30	red sand and white caliel	hic	Y &	-
	30	40	Y ON				
	40	50	10	red clay		Y (\$	* ********************************
	50	60	10	pink sand and calichic	}	Y 🚷	
	60	70	10	red clay moist	· · · · · · · · · · · · · · · · · · ·	Y 🕅	
(1) (月11-1)	70	80	10	pink sandy calichie		Y G	
4.HYDROGROLOGICLOC OF WELL	80	105	25	red five sand	, passas 	Y (§	ļ
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	METHOD U	SED TO ES	TIMATE YIELD	OF WATER-BEARING STRATA:		TOTAL ESTIMATED	
	PUMI	2 🛄 Al	IR LIFT	BAILER OTHER SPECIFY:		WELL YIELD (gpm):	`
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	WELL TEST TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.						
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E.	PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:						IAN LICENSEE:
	THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:						IS A TRUE AND
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	OCATION WELL TAG ID NO. PAGE 2 OF 2						

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PLUGGING RECORD



NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

 B) Date well plugging plan of operations was approved by the State Engineer:	<u>- 88 JI</u>
City: Artesia State: New Mexico Zip code II. WELL PLUGGING INFORMATION: Vision Resources, Inc Zip code 1) Name of well drilling company that plugged well: Vision Resources, Inc Expiration Date: Zip code 2) New Mexico Well Driller License No.: WD 1833 Expiration Date: Zip code 3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Zip code 3) Well plugging began: 12-16-22 Date well plugging concluded: 12-16-22 4) Date well plugging began: 12-16-22 Date well plugging concluded: 12-16-22 5) GPS Well Location: Latitude: 32 deg, 40 min, 56.79 sec 6) Depth of well confirmed at initiation of plugging as: 105 ft below ground level (bgl), by the following manner: tape 7) Static water level measured at initiation of plugging: dry ft bgl deg yes yes 8) Date well plugging plan of operations was approved by the State Engineer: yes yes yes yes yes	
II. WELL PLUGGING INFORMATION: 1) Name of well drilling company that plugged well: Vision Resources, Inc 2) New Mexico Well Driller License No.: WD 1833 Expiration Date:	
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 New Mexico Well Driller License No.: <u>WD 1833</u> Expiration Date:	2-31-23
 Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):	2-31-23
 4) Date well plugging began: <u>12-16-22</u> Date well plugging concluded: <u>12-16-22</u> 5) GPS Well Location: Latitude: <u>32</u> deg, <u>40</u> min, <u>56.79</u> sec Longitude: <u>103</u> deg, <u>54</u> min, <u>4.32</u> sec_pWGS 6) Depth of well confirmed at initiation of plugging as: <u>105</u> ft below ground level (bgl), by the following manner: <u>tape</u> 7) Static water level measured at initiation of plugging: <u>dry</u> ft bgl 8) Date well plugging plan of operations was approved by the State Engineer: <u>yes</u> Were all plugging activities consistent with an approved plugging plan? 	
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 B) Date well plugging plan of operations was approved by the State Engineer: yes Were all plugging activities consistent with an approved plugging plan? 	
Were all plugging activities consistent with an approved plugging plan?	
Were all plugging activities consistent with an approved plugging plan? yes	
differences between the approved plugging plan and the well as it was plugged (attach additional page	ease descri

Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with 10) horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

<u>Depth</u> (ft bgl)	Plugging <u>Material Used</u> (include any additives used)	Volume of <u>Material Placed</u> (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement <u>Method</u> (tremie pipe, other)	<u>Comments</u> ("casing perforated first", "open annular space also plugged", etc.)
	Barold Hele Plug	155	154,21	open Hale	
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I. SIGNA'	TURE:	MULTIPLY BY cubic feet x 7.48 cubic yards x 201.97	05 = gallons		

For each interval plugged, describe within the following columns:

III. SIGNATURE:

I, Jason Maley

I, Jason Maley , say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller

Date

Version: September 8, 2009 Page 2 of 2 **U.S. Fish and Wildlife Service**

National Wetlands Inventory

Page 44 of 414 Hackberry 6 Federal 1 Well Pad 800 Feet (



December 2, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- **Freshwater Pond**

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Lake Other Riverine

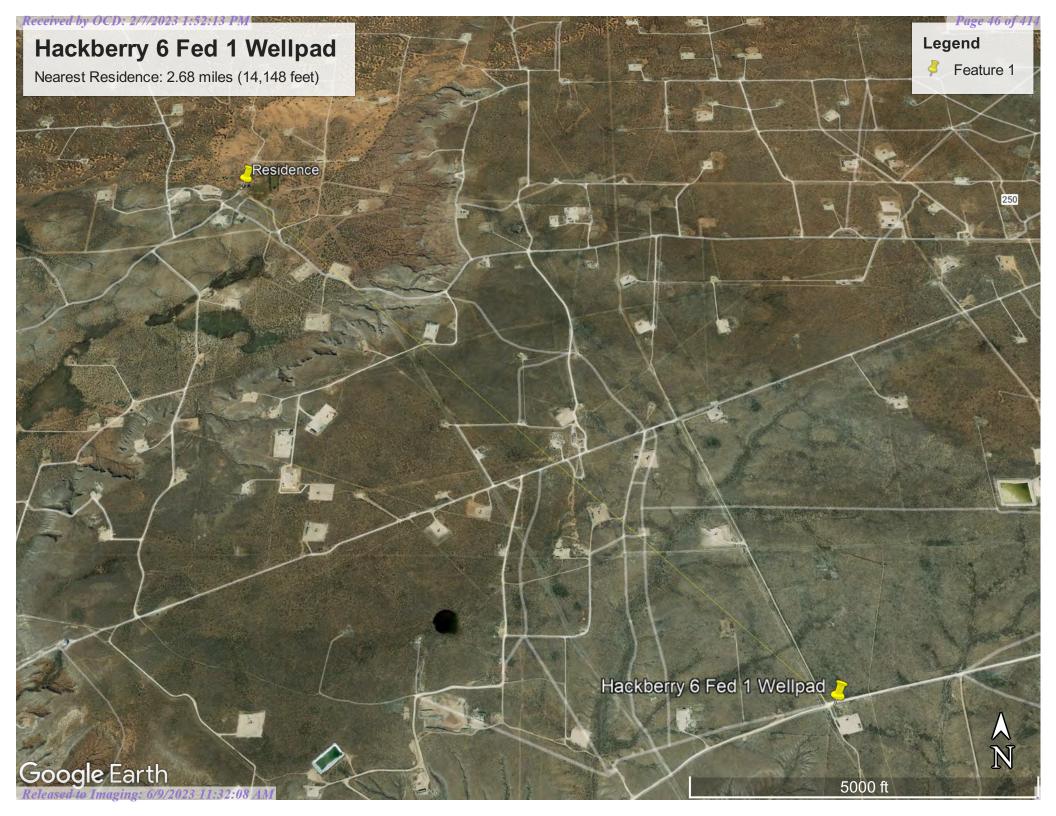
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

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National Wetlands Inventory (NWI) This page was produced by the NWI mapper

Reserved, by OGD: 2/7/2023 1:52:13 PM





2022 1.52.12 DI Recei d by OCD

U.S. Fish and Wildlife Service National Wetlands Inventory

7, Hackberry 6 Fed 1 Wellpad to Wetland

Page 47 of 414



Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- **Freshwater Pond**

Freshwater Emergent Wetland

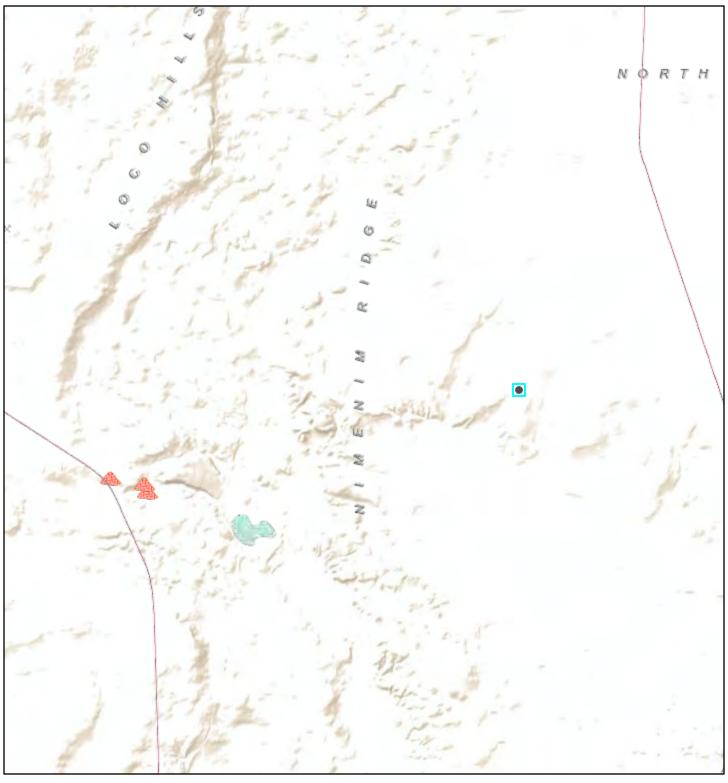
Freshwater Forested/Shrub Wetland

Lake Other Riverine Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Released to Imaging: 6/9/2023 11:32:08 AM

National Wetlands Inventory (NWI) This page was produced by the NWI mapper

Active Mines in New Mexico



12/2/2022, 8:27:51 AM	1:72,224
Registered Mines	0 0.5 1 2 mi
* Aggregate, Stone etc.	0 0.75 1.5 3 km
🐣 Potash	

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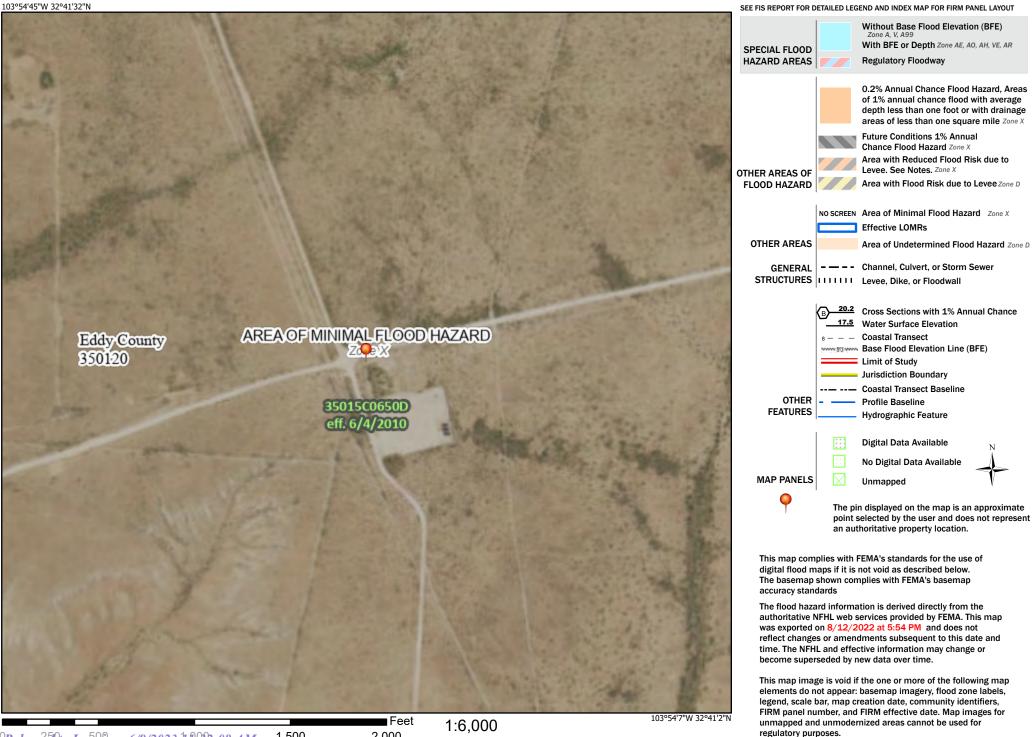
Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

Received by OCD: 2/7/2023 1:52:13 PM National Flood Hazard Layer FIRMette



Legend

Page 49 of 414



Releasea to Imaging: 6/9/2023 1.9.92:08 AM 1,500 2.000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Eddy Area, New Mexico

SG—Simona gravelly fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1w5w Elevation: 2,750 to 5,000 feet Mean annual precipitation: 8 to 16 inches Mean annual air temperature: 57 to 70 degrees F Frost-free period: 180 to 230 days Farmland classification: Not prime farmland

Map Unit Composition

Simona and similar soils: 95 percent Minor components: 5 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Simona

Setting

Landform: Plains, alluvial fans Landform position (three-dimensional): Rise Down-slope shape: Convex, linear Across-slope shape: Linear Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 19 inches: gravelly fine sandy loam *H2 - 19 to 23 inches:* indurated

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 7 to 20 inches to petrocalcic
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7e Hydrologic Soil Group: D Ecological site: R070BD002NM - Shallow Sandy Hydric soil rating: No

Minor Components

Simona

Percent of map unit: 4 percent Ecological site: R070BD002NM - Shallow Sandy Hydric soil rating: No

Playa

Percent of map unit: 1 percent Landform: Playas Landform position (three-dimensional): Talf Down-slope shape: Concave, convex Across-slope shape: Concave, linear Ecological site: R070BC017NM - Bottomland Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Eddy Area, New Mexico Survey Area Data: Version 18, Sep 8, 2022



Conservation Service

USDA Natural Resources

Ecological site R070BD002NM Shallow Sandy

Accessed: 12/02/2022

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

Associated sites

R070BD004NM	Sandy	
	Sandy sites often occur in association or in a complex with Shallow Sandy Sites.	

Similar sites

ſ	R070BD004NM	Sandy
		Sandy ecological sites are similar to Shallow Sandy sites in species composition and Transition pathways.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This site occures on plains, alluvial fans, uplands, or fan piedmonts. The parent material consists of mixed loamy alluvium or eolian material derived from igneous and sedimentory bedrock. The petrocalcic layer is at a depth of 10 to 25 inches and undulating.

Slopes are nearly level to undulating, usually less than 9 percent. Elevations range from 2,842 to 4,500 feet.

Table 2. Representative physiographic features

Landforms	(1) Plain(2) Fan piedmont(3) Alluvial fan	
Elevation	2,842–4,500 ft	
Slope	1–9%	
Aspect	Aspect is not a significant factor	

Climatic features

The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common.

Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity – short duration thunderstorms.

Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes. The average annual temperature is 61 degrees with extremes of 25 degrees below zero in the winter to 112 degrees in the summer.

The average frost-free season is from 207 to 220 days. The last killing frost is in late March or early April, and the first killing frost is in late October or early November.

Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture, annual forbs and cool season grasses can make up an important component of the site. The vegetation of this site can take advantage of the moisture and the time it falls. Because of the soil profile, little moisture can be stored in the soil for any length of time. Moisture is readily available to the plants from the time it falls. Strong winds from the southwest blow from January through June which rapidly dries out the soil profile during a critical period for plant growth.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

Table 3. Representative climatic features

Frost-free period (average)	221 days
Freeze-free period (average)	240 days
Precipitation total (average)	13 in

Influencing water features

This site is not influenced from water from wetlands or streams.

Soil features

Soils are very shallow to shallow, less than 20 inches in depth. Surface and subsurface textures are gravelly loamy sand, gravelly fine sandy loam or fine sandy loam.

An indurated calache layer occurs at depths of 6 to 25 inches and is at an average of 15 inches from the surface. Underlying material textures are very gravelly fine sandy loam, very gravelly sandy loam, gravelly fine sandy loam. Gravels are calcium carbonate concretions, calcium carbonate content ranges from 30 to 65 percent.

The indurated caliche layer typically holds water up in the profile for short periods within the root zone of plants. These soils will blow if left unprotected by vegetation.

Minimum and maximum values listed below represent the characteristic soils for this site.

Characteristic soils are: Simona Jerag

Table 4. Representative soil features

Surface texture	(1) Fine sandy loam(2) Loamy fine sand(3) Gravelly fine sandy loam			
Family particle size	(1) Loamy			
Drainage class	Well drained to moderately well drained			
Permeability class	Moderately slow to moderate			

Soil depth	7–24 in
Surface fragment cover <=3"	5–25%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	1–2 in
Calcium carbonate equivalent (0-40in)	5–15%
Electrical conductivity (0-40in)	0–4 mmhos/cm
Sodium adsorption ratio (0-40in)	0
Soil reaction (1:1 water) (0-40in)	7.4–8
Subsurface fragment volume <=3" (Depth not specified)	5–25%
Subsurface fragment volume >3" (Depth not specified)	0%

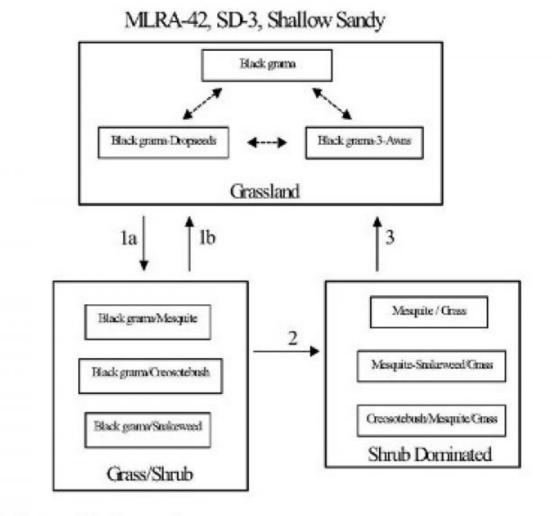
Ecological dynamics

Overview

The Shallow Sandy site occurs on upland plains, and tops of low ridges and mesas, associated with Sandy, Loamy Sand, and Shallow sites. Coarse to moderately coarse soil surface textures, shallow depth (<20 inches) to an indurated caliche layer (petrocalcic horizon), and an overwhelming dominance by black grama help to distinguish this site. The historic plant community of the Shallow Sandy site is a black grama dominated grassland sparsely dotted with shrubs. Shrubs, especially mesquite and creosotebush can increase or colonize due to the dispersal of shrub seeds by livestock or wildlife. This increase in mesquite and colonization of creosotebush may be enhanced by proximity to areas with existing high shrub densities. Fire suppression, and the loss of grass cover due to overgrazing or drought may facilitate the increase and encroachment of shrubs. Persistent loss of grass cover, competition for resources by shrubs, and periods of climate with increased winter precipitation and dry summers, may initiate the transition to a shrub-dominated state.

State and transition model

Plant Communities and Transitional Pathways (diagram)



1a. Seed dispersal, drought, overgrazing, fire suppression.

1b. Prescribed fire, brush control, prescribed grazing.

2. Persistent loss of grass cover, resource competition, increased winter precipitation.

3. Brush control, range seeding, prescribed grazing,

State 1 Historic Climax Plant Community

Community 1.1 Historic Climax Plant Community

Grassland: This site responds well to management and is resistant to state change, due to the shallow depth to petrocalcic horizon and sandy surface textures. The sandy surface textures allow rapid water infiltration and the petrocalcic horizon helps to keep water perched and available to shallow rooted grasses. Black grama is the dominant species in the historic plant community, averaging 50 to 60 percent of the total production for this site. Bush muhly, blue grama, and dropseeds are present as sub-dominants. Typically, yucca, javalinabush, range ratany, prickly pear, and mesquite are sparsely dotted across the landscape. Leatherweed croton, cutleaf

happlopappus, wooly groundsel, and threadleaf groundsel are common forbs. Continuous heavy grazing or extended periods of drought will cause a loss of grass cover characterized by a decrease in black grama, bush muhly, blue and sideoats grama, plains bristlegrass, and Arizona cottontop. Dropseeds and or threeawns may increase and become sub-dominant to black grama. Continued loss of grass cover in conjunction with dispersal of shrub seeds and fire suppression is believed to cause the transition to a state with increased amounts of shrubs (Grass/Shrub state). Diagnosis: Black grama is the dominant grass species. Grass cover uniformly distributed. Shrubs are a minor component averaging only two to five percent canopy cover. Litter cover is high (40-50 percent of area), and litter movement is limited to smaller size class litter and short distances (<. 5m). Other grasses that could appear on this site would include: six-weeks grama, fluffgrass, false-buffalograss, hairy grama, little bluestem, bristle panicum, cane bluestem, Indian ricegrass, tridens spp., and red lovegrass. Other woody plants include: pricklypear, cholla, fourwing saltbush, catclaw mimosa, winterfat, American tarbush and mesquite. Other forbs include: globemallow, verbena, desert holly, senna, plains blackfoot, trailing fleabane, fiddleneck, deerstongue, wooly Indianwheat, and locoweed.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	474	652	830
Forb	78	107	136
Shrub/Vine	48	66	84
Total	600	825	1050

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	30-35%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	40-50%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	15-25%

Figure 5. Plant community growth curve (percent production by month). NM2802, R042XC002NM-Shallow Sandy-HCPC. SD-3 Shallow Sandy - Warm season plant community.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	3	5	10	10	25	30	12	5	0	0

State 2 Grass/Shrub

Community 2.1 Grass/Shrub

Grass/Shrub: This state is characterized by the notable presence of shrubs, especially mesquite, broom snakeweed, and/or creosotebush, however grasses remain as the dominant species. Black grama is the dominant

grass species. Threeawns and or dropseeds are sub-dominant. The susceptibility of the Shallow Sandy site to shrub encroachment may be higher when located adjacent to other sites with high densities of mesquite or creosotebush. Retrogression within this site is characterized by decreases in grass cover and increasing densities of shrubs. Diagnosis: Black grama remains as the dominant grass species. Grass cover varies in response to the amount of shrub increase, ranging from uniform to patchy. Shrubs are found at increased densities relative to the grassland state, especially mesquite, creosotebush, or broom snakeweed. Transition to Grass/Shrub (1a) Historically fire may have kept mesquite and other shrubs in check by completely killing some species and disrupting seed production cycles and suppressing the establishment of shrub seedlings in others. Fire suppression combined with seed dispersal by livestock and wildlife is believed to be the factors responsible for the establishment and increase in shrubs.1, 3 Loss of grass cover due to overgrazing, prolonged periods of drought, or their combination, reduces fire fuel loads and increases the susceptibility of the site to shrub establishment. Key indicators of approach to transition: Increase in the relative abundance of dropseeds and threeawns Presence of shrub seedlings Loss of organic matter—evidenced by an increase in physical soil crusts 8 Transition back to Grassland (1b) Brush control is necessary to initiate the transition back to the grassland state. If adequate fuel loads remain, possibly the reintroduction of fire as a management tool will assist in the transition back, however, mixed results have been observed concerning the effects of fire on black grama grasslands.6 Prescribed grazing will help ensure adequate rest following brush control and will assist in the establishment and maintenance of grass cover capable of sustaining fire.

State 3 Shrub Dominated

Community 3.1 Shrub Dominated

Shrub-Dominated: Across the range of soil types included in the Shallow Sandy site, mesquite is typically the dominant shrub, but it does occur as a co-dominant or sub-dominant species with creosotebush or broom snakeweed. Mesquite tends to dominate when the Shallow Sandy site occurs as part of a complex or in association with Sandy or Loamy Sand sites. Creosotebush tends to dominate on Shallow Sandy sites that occur as part of, or adjacent to Shallow Sites. Broom snakeweed increases in response to heavy grazing, but tends to cycle in and out depending on timing of rainfall. However, once the site is dominated by shrubs and snakeweed becomes well established, it tends to remain as a major component in the shrub dominated state. Diagnosis: Mesquite, creosotebush, or snakeweed cover is high, exceeding that of grasses. Grass cover is patchy with large connected bare areas present. Black grama, threeawns, or dropseeds may be the dominant grass. Evidence of accelerated wind erosion in the form of pedestalling of plants, and soil deposition around shrub bases may be common. Transition to Shrub-Dominated (2) Persistent loss of grass cover and the resulting increased competition between shrubs and remaining grasses for dwindling resources (especially soil moisture) may drive this transition.5 Additionally periods of increased winter precipitation may facilitate periodic episodes of shrub expansion and establishment. 4 Key indicators of approach to transition: Increase in size and frequency of bare patches. Loss of grass cover in shrub interspaces. Increased signs of erosion, evidenced by pedestalling of plants, and soil and litter deposition on leeward side of plants. 7 Transition back to Grassland (3) Brush control is necessary to reduce competition from shrubs and reestablish grasses. Range seeding may be necessary if insufficient grasses remain, The benefits, and costs, will vary depending upon the degree of site degradation, and adequate precipitation following seeding.

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre	
Grass	/Grasslike				
1	Warm Season			413–495	;
	black grama	BOER4	Bouteloua eriopoda	413–495	; _
2	Warm Season			41–83	3
	bush muhly	MUPO2	Muhlenbergia porteri	41–83	3 –
3	Warm Season	41–83	3		

	blue grama	BOGR2	Bouteloua gracilis	41–83	_
4	Warm Season	25–41			
	sideoats grama	BOCU	Bouteloua curtipendula	25–41	_
5	Warm Season	41–83			
	spike dropseed	SPCO4	Sporobolus contractus	41–83	_
	sand dropseed	SPCR	Sporobolus cryptandrus	41–83	_
	mesa dropseed	SPFL2	Sporobolus flexuosus	41–83	_
6	Warm Season			17–41	
	threeawn	ARIST	Aristida	17–41	_
7	Warm Season	41–83			
	Arizona cottontop	DICA8	Digitaria californica	41–83	_
	plains bristlegrass	SEVU2	Setaria vulpiseta	41–83	_
8	Warm Season			41–83	
	mat sandbur	CELO3	Cenchrus longispinus	41–83	_
	hooded windmill grass	CHCU2	Chloris cucullata	41–83	_
9	Other Perennial Grasses	-		25–41	
	Grass, perennial	2GP	Grass, perennial	25–41	_
Shru	ıb/Vine				
10	Shrub			8–25	
	javelina bush	COER5	Condalia ericoides	8–25	
11	Shrub	•		8–25	
	уисса	YUCCA	Уисса	8–25	
12	Shrub	•		8–25	
	jointfir	EPHED	Ephedra	8–25	
	littleleaf ratany	KRER	Krameria erecta	8–25	
13	Shrub		•	8–25	
	featherplume	DAFO	Dalea formosa	8–25	
14	Shrub			8–25	
	broom snakeweed	GUSA2	Gutierrezia sarothrae	8–25	
15	Other Shrubs			25–41	
	Shrub (>.5m)	2SHRUB	Shrub (>.5m)	25–41	
Forb					
16	Forb			17–41	
	leatherweed	CRPOP	Croton pottsii var. pottsii	17–41	
	Goodding's tansyaster	MAPIG2	Machaeranthera pinnatifida ssp. gooddingii var. gooddingii	17–41	
17	Forb	17–41			
	woolly groundsel PACA		Packera cana	17–41	
	threadleaf ragwort SEFLF		Senecio flaccidus var. flaccidus	17–41	
18	Forb		·	8–25	
	whitest evening primrose	OEAL	Oenothera albicaulis	8–25	
19	Other Forbs	8–25			
	Forb (herbaceous, not grass nor grass-like)	2FORB	Forb (herbaceous, not grass nor grass- like)	8–25	

Animal community

This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, swift fox, black-tailed jackrabbit, spotted ground squirrel, Ord's kangaroo rat, northern grasshopper mouse, coyote, horned lark, meadowlark, lark bunting, scaled quail, morning dove, side-blotched lizard, round-tailed horned lizard, marbled whiptail, prairie rattlesnake and ornate box turtle.

Hydrological functions

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.

Hydrologic Interpretations Soil Series Hydrologic Group Jarag D Simona D

Recreational uses

This site offers recreation for hiking, horseback riding, nature observation and photography, and quail and dove hunting. During years of abundant spring moisture, this site displays a riot of color from wildflowers during May and June. A few summer and fall flowers also occur.

Wood products

The natural potential plant community of this site affords little or no wood products. Where the site has been invaded by mesquite or cholla cactus the roots and stems of these plants provide attractive material for a variety of curiosities, such as lamps and small furniture.

Other products

This site is suitable for grazing by all kinds and classes of livestock during all seasons of the year. Because of the sandy textures and shallow profile, this site will respond rapidly to management. As this site deteriorates, plants such as black grama, bush muhly, blue and sideoats grama, plains bristlegrass and Arizona cottontop, will decrease and be replaced by plants such as threeawns, mesquite, creosote bush, and broom snakeweed. This also causes a decrease in ground cover, leaving the soil to blow. This site responds best to a system of management that rotates the season of use.

Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month Similarity Index Ac/AUM $100 - 76\ 2.5 - 3.5$ $75 - 51\ 3.2 - 4.6$ $50 - 26\ 4.5 - 7.5$ $25 - 0\ 7.6$ +

Inventory data references

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Desertic Basins, Plains and Mountains, Major Land Resource Areas of New Mexico. This site has been mapped and correlated with soils in the following soil surveys. Eddy County, Lea County, and Chaves County.

Other references

Literature References:

1. Brooks, M.L. and D.A. Pyke. 2001. Invasive plants and fire in the deserts of North America. Pages 1–14 in K.E.M. Galley and T.P. Wilson (eds.). Proceedings of the Invasive Species Workshop: the Role of Fire in the Control and Spread of Invasive Species.

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4. Moir, W.H., and J. A. Ludwig. 1991. Plant succession and changing land features in desert grasslands. P. 15-18. In P.F. Ffolliott and W.T. Swank (eds.) People and the temperate region: a summary of research from the United States Man and the Biosphere Program 1991. U.S. Dept. State, Publ No. 9839, Nat. Tech. Info. Serv., U.S. Dept. Commerce, Springfield, Illinois. 63 p.

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7. U.S. Department of Agriculture, Natural Resources Conservation Service. 2001. Soil Quality Information Sheets. Rangeland Soil Quality—Wind Erosion. Rangeland Sheet 10 [Online]. Available: http://www.statlab.iastate.edu/survey/SQI/range.html

8. U.S. Department of Agriculture, Natural Resources Conservation Service. 2001. Soil Quality Information Sheets. Rangeland Soil Quality—Physical and Biological Soil Crusts. Rangeland Sheet 7 [Online]. Available: http://www.statlab.iastate.edu/survey/SQI/range.html

Contributors

David Trujillo Don Sylvester

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

- 1. Number and extent of rills:
- 2. Presence of water flow patterns:
- 3. Number and height of erosional pedestals or terracettes:
- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):
- 5. Number of gullies and erosion associated with gullies:
- 6. Extent of wind scoured, blowouts and/or depositional areas:
- 7. Amount of litter movement (describe size and distance expected to travel):
- 8. Soil surface (top few mm) resistance to erosion (stability values are averages most sites will show a range of values):
- 9. Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):
- 10. Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:
- 11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):
- 12. Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):

Dominant:

Sub-dominant:

Other:

Additional:

- 13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):
- 14. Average percent litter cover (%) and depth (in):
- 15. Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annualproduction):
- 16. Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:
- 17. Perennial plant reproductive capability:

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Qep Pgr Qp TRcu Pr Esri, NASA, NGA, USGS, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line Released to Imaging: 6/9/2025 Fp. 2.08: Muural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed June, 2022., NMBGMR



Hackberry 6 Fed 1 Wellpad

Residence

Nearest Residence: 2.68 miles (14,148 feet)

Received by OCD: 2/7/2023 1:52:13

Page 64 of 414 Legend Feature 1

222

N

1 mi

Hackberry 6 Fed 1 Wellpad

Well Tag (CP 00357 POD 1) 32.651263, 103.914825

Google Earth



New Mexico Office of the State Engineer Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)	(R=POD been rep O=orpha C=the fil closed)	laced, ned,		(1				W 2=NE est to la	3=SW 4=SI	E) JAD83 UTM in	meters)	(In fe	et)	
	closed)	POD Sub-		Q			ie sinan		(It		incurs)	(in ic	,	ater
POD Number	Code	basin	County	-	-	-	ec Tws	Rng	Х	Y	DistanceDep	thWellDept		
<u>CP 00767 POD1</u>		СР	ED		3	2 3	5 18S	30E	599300	3619158* 🧧	3692	500		
<u>CP 00873 POD1</u>		СР	LE		1	1 1	9 198	31E	601772	3613147* 🧲	4138	340	180	160
<u>CP 00818 POD1</u>		СР	LE		1	4 2	6 18S	30E	599289	3620364* 🧧	4450	240		
<u>CP 00829 POD1</u>		СР	LE		2	4 1	6 19S	31E	606165	3614009* 🧉	4917	120		
<u>CP 00357 POD1</u>		СР	ED	4	4	1 2	4 19S	30E	600667	3612631* 🧉	4932	630		
<u>CP 00647 POD1</u>	0	СР	ED	4	2	2 1	5 19S	30E	598235	3614621* 🧉	4956	200	92	108
										Aver	rage Depth to Wate	r:	136 fee	t
											Minimum Dep	th:	92 fee	t
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Record Count: 6														
UTMNAD83 Radius	s Search (ii	n meters) <u>:</u>											
Easting (X): 602	2448.65		North	ning ((Y):	36	17230			Radius: 5000				
*UTM location was derived	from PLSS	- see Help	p											
The data is furnished by the Maccuracy, completeness, reliable									iderstanding tl	hat the OSE/ISC r	nake no warranties, o	expressed or imp	plied, concern	ing the

8/12/22 7:40 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

U.S. Fish and Wildlife Service

National Wetlands Inventory

Page 66 of 414 Hackberry 6 Federal 1 Well Pad 800 Feet (



December 2, 2022

Wetlands

- Estuarine and Marine Deepwater
 - Estuarine and Marine Wetland

Released to Imaging: 6/9/2023 11:32:08 AM

- **Freshwater Pond**

Freshwater Emergent Wetland

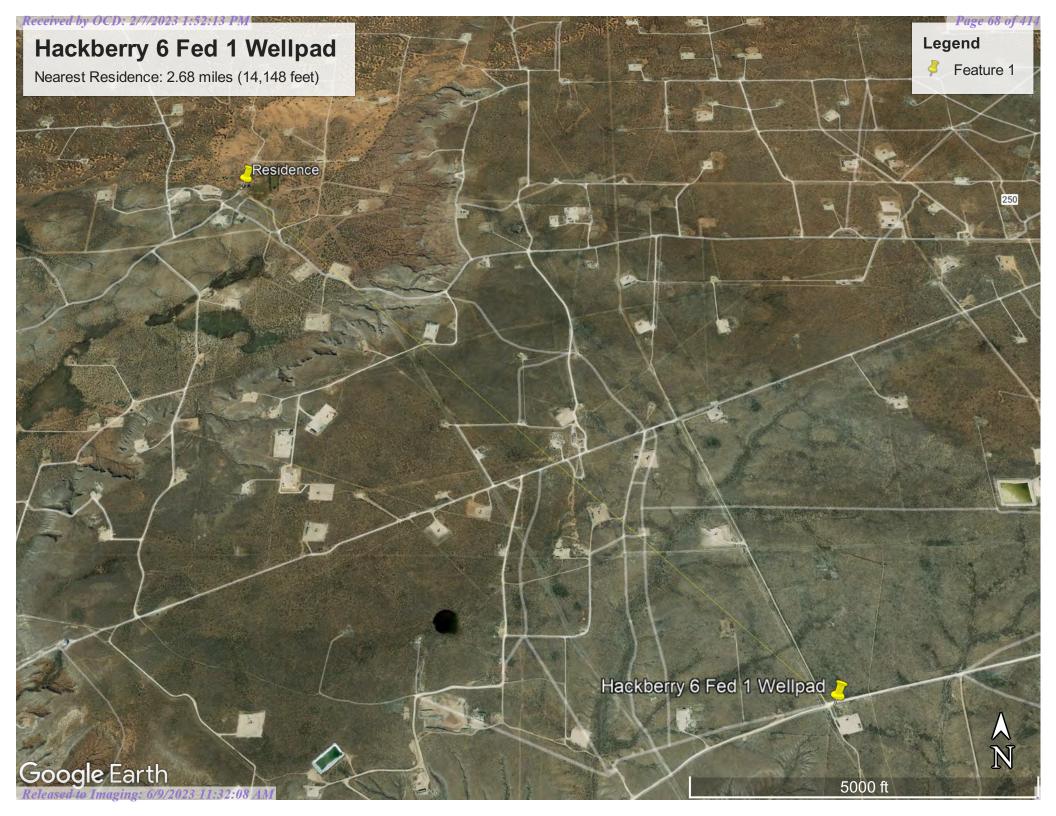
Freshwater Forested/Shrub Wetland

Lake Other Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Reserved, by OGD: 2/7/2023 1:52:13 PM





U.S. Fish and Wildlife Service

National Wetlands Inventory

7, Hackberry 6 Fed 1 Wellpad to Wetland

Page 69 of 414



August 12, 2022

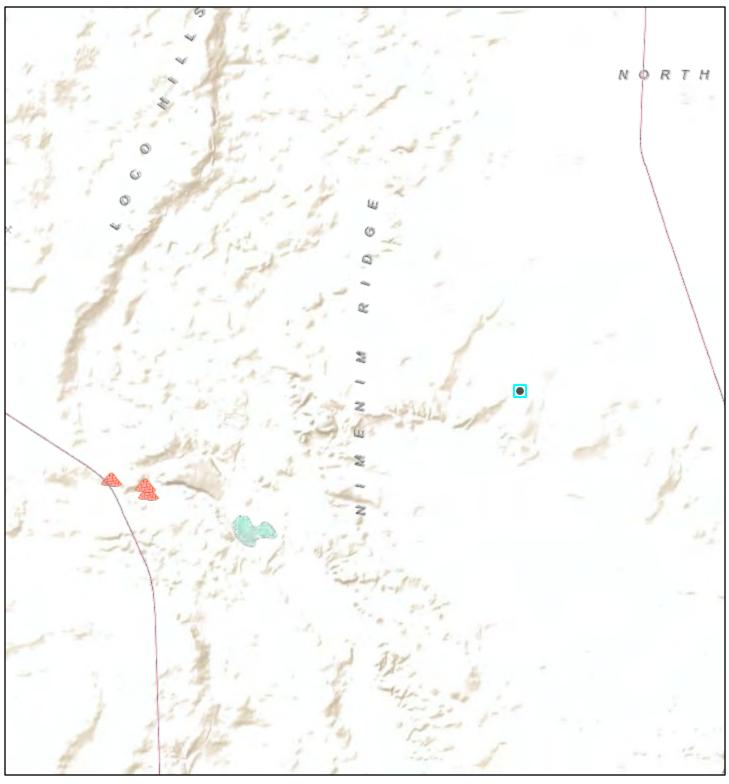
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Forested/Shrub Wetland **Freshwater Pond**

Freshwater Emergent Wetland

Lake Other Riverine Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Active Mines in New Mexico





Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

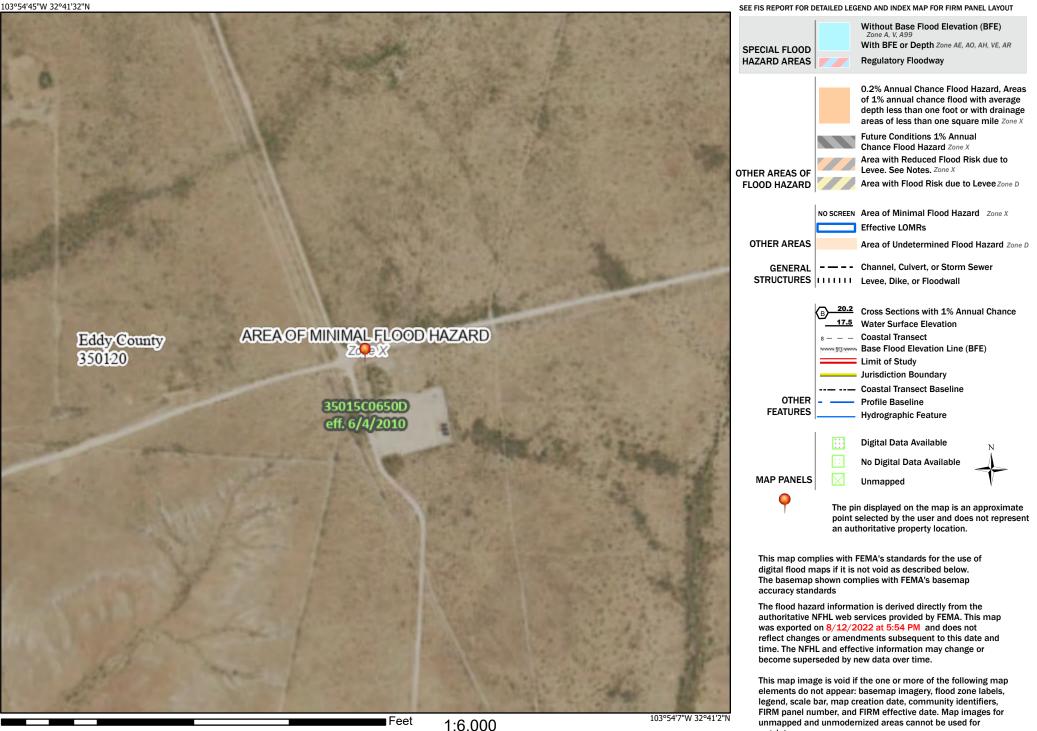
Received by OCD: 2/7/2023 1:52:13 PM National Flood Hazard Layer FIRMette



Legend

regulatory purposes.

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Releasea to Imaging: 6/9/2023 1992:08 AM 1,500 2.000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Eddy Area, New Mexico

SG—Simona gravelly fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1w5w Elevation: 2,750 to 5,000 feet Mean annual precipitation: 8 to 16 inches Mean annual air temperature: 57 to 70 degrees F Frost-free period: 180 to 230 days Farmland classification: Not prime farmland

Map Unit Composition

Simona and similar soils: 95 percent Minor components: 5 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Simona

Setting

Landform: Plains, alluvial fans Landform position (three-dimensional): Rise Down-slope shape: Convex, linear Across-slope shape: Linear Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 19 inches: gravelly fine sandy loam *H2 - 19 to 23 inches:* indurated

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 7 to 20 inches to petrocalcic
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified Land capability classification (nonirrigated): 7e Hydrologic Soil Group: D Ecological site: R070BD002NM - Shallow Sandy Hydric soil rating: No

Minor Components

Simona

Percent of map unit: 4 percent Ecological site: R070BD002NM - Shallow Sandy Hydric soil rating: No

Playa

Percent of map unit: 1 percent Landform: Playas Landform position (three-dimensional): Talf Down-slope shape: Concave, convex Across-slope shape: Concave, linear Ecological site: R070BC017NM - Bottomland Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Eddy Area, New Mexico Survey Area Data: Version 18, Sep 8, 2022



Conservation Service

USDA Natural Resources

Ecological site R070BD002NM Shallow Sandy

Accessed: 12/02/2022

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

Figure 1. Mapped extent

Areas shown in blue indicate the maximum mapped extent of this ecological site. Other ecological sites likely occur within the highlighted areas. It is also possible for this ecological site to occur outside of highlighted areas if detailed soil survey has not been completed or recently updated.

Associated sites

R070BD004NM	Sandy	
	Sandy sites often occur in association or in a complex with Shallow Sandy Sites.	

Similar sites

ſ	R070BD004NM	Sandy
		Sandy ecological sites are similar to Shallow Sandy sites in species composition and Transition pathways.

Table 1. Dominant plant species

Tree	Not specified	
Shrub	Not specified	
Herbaceous	Not specified	

Physiographic features

This site occures on plains, alluvial fans, uplands, or fan piedmonts. The parent material consists of mixed loamy alluvium or eolian material derived from igneous and sedimentory bedrock. The petrocalcic layer is at a depth of 10 to 25 inches and undulating.

Slopes are nearly level to undulating, usually less than 9 percent. Elevations range from 2,842 to 4,500 feet.

Table 2. Representative physiographic features

Landforms	(1) Plain(2) Fan piedmont(3) Alluvial fan
Elevation	2,842–4,500 ft
Slope	1–9%
Aspect	Aspect is not a significant factor

Climatic features

The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common.

Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity – short duration thunderstorms.

Temperatures are characterized by distinct seasonal changes and large annual and diurnal temperature changes. The average annual temperature is 61 degrees with extremes of 25 degrees below zero in the winter to 112 degrees in the summer.

The average frost-free season is from 207 to 220 days. The last killing frost is in late March or early April, and the first killing frost is in late October or early November.

Temperature and rainfall both favor warm season perennial plant growth. In years of abundant spring moisture, annual forbs and cool season grasses can make up an important component of the site. The vegetation of this site can take advantage of the moisture and the time it falls. Because of the soil profile, little moisture can be stored in the soil for any length of time. Moisture is readily available to the plants from the time it falls. Strong winds from the southwest blow from January through June which rapidly dries out the soil profile during a critical period for plant growth.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

Table 3. Representative climatic features

Frost-free period (average)	221 days	
Freeze-free period (average)	240 days	
Precipitation total (average)	13 in	

Influencing water features

This site is not influenced from water from wetlands or streams.

Soil features

Soils are very shallow to shallow, less than 20 inches in depth. Surface and subsurface textures are gravelly loamy sand, gravelly fine sandy loam or fine sandy loam.

An indurated calache layer occurs at depths of 6 to 25 inches and is at an average of 15 inches from the surface. Underlying material textures are very gravelly fine sandy loam, very gravelly sandy loam, gravelly fine sandy loam. Gravels are calcium carbonate concretions, calcium carbonate content ranges from 30 to 65 percent.

The indurated caliche layer typically holds water up in the profile for short periods within the root zone of plants. These soils will blow if left unprotected by vegetation.

Minimum and maximum values listed below represent the characteristic soils for this site.

Characteristic soils are: Simona Jerag

Table 4. Representative soil features

Surface texture	(1) Fine sandy loam(2) Loamy fine sand(3) Gravelly fine sandy loam		
Family particle size	(1) Loamy		
Drainage class	Well drained to moderately well drained		
Permeability class	Moderately slow to moderate		

Soil depth	7–24 in
Surface fragment cover <=3"	5–25%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	1–2 in
Calcium carbonate equivalent (0-40in)	5–15%
Electrical conductivity (0-40in)	0–4 mmhos/cm
Sodium adsorption ratio (0-40in)	0
Soil reaction (1:1 water) (0-40in)	7.4–8
Subsurface fragment volume <=3" (Depth not specified)	5–25%
Subsurface fragment volume >3" (Depth not specified)	0%

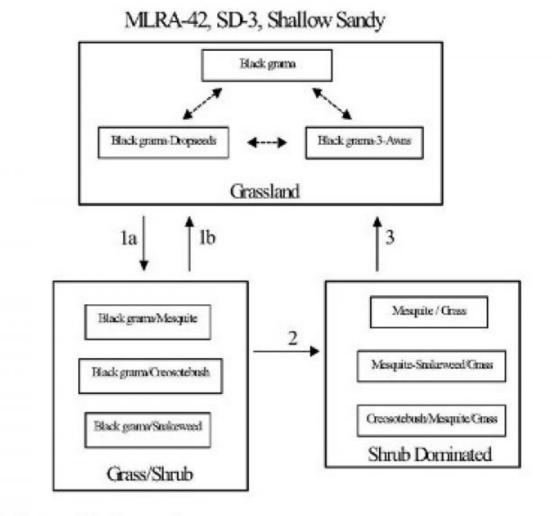
Ecological dynamics

Overview

The Shallow Sandy site occurs on upland plains, and tops of low ridges and mesas, associated with Sandy, Loamy Sand, and Shallow sites. Coarse to moderately coarse soil surface textures, shallow depth (<20 inches) to an indurated caliche layer (petrocalcic horizon), and an overwhelming dominance by black grama help to distinguish this site. The historic plant community of the Shallow Sandy site is a black grama dominated grassland sparsely dotted with shrubs. Shrubs, especially mesquite and creosotebush can increase or colonize due to the dispersal of shrub seeds by livestock or wildlife. This increase in mesquite and colonization of creosotebush may be enhanced by proximity to areas with existing high shrub densities. Fire suppression, and the loss of grass cover due to overgrazing or drought may facilitate the increase and encroachment of shrubs. Persistent loss of grass cover, competition for resources by shrubs, and periods of climate with increased winter precipitation and dry summers, may initiate the transition to a shrub-dominated state.

State and transition model

Plant Communities and Transitional Pathways (diagram)



1a. Seed dispersal, drought, overgrazing, fire suppression.

1b. Prescribed fire, brush control, prescribed grazing.

2. Persistent loss of grass cover, resource competition, increased winter precipitation.

3. Brush control, range seeding, prescribed grazing,

State 1 Historic Climax Plant Community

Community 1.1 Historic Climax Plant Community

Grassland: This site responds well to management and is resistant to state change, due to the shallow depth to petrocalcic horizon and sandy surface textures. The sandy surface textures allow rapid water infiltration and the petrocalcic horizon helps to keep water perched and available to shallow rooted grasses. Black grama is the dominant species in the historic plant community, averaging 50 to 60 percent of the total production for this site. Bush muhly, blue grama, and dropseeds are present as sub-dominants. Typically, yucca, javalinabush, range ratany, prickly pear, and mesquite are sparsely dotted across the landscape. Leatherweed croton, cutleaf

happlopappus, wooly groundsel, and threadleaf groundsel are common forbs. Continuous heavy grazing or extended periods of drought will cause a loss of grass cover characterized by a decrease in black grama, bush muhly, blue and sideoats grama, plains bristlegrass, and Arizona cottontop. Dropseeds and or threeawns may increase and become sub-dominant to black grama. Continued loss of grass cover in conjunction with dispersal of shrubs seeds and fire suppression is believed to cause the transition to a state with increased amounts of shrubs (Grass/Shrub state). Diagnosis: Black grama is the dominant grass species. Grass cover uniformly distributed. Shrubs are a minor component averaging only two to five percent canopy cover. Litter cover is high (40-50 percent of area), and litter movement is limited to smaller size class litter and short distances (<. 5m). Other grasses that could appear on this site would include: six-weeks grama, fluffgrass, false-buffalograss, hairy grama, little bluestem, bristle panicum, cane bluestem, Indian ricegrass, tridens spp., and red lovegrass. Other woody plants include: pricklypear, cholla, fourwing saltbush, catclaw mimosa, winterfat, American tarbush and mesquite. Other forbs include: globemallow, verbena, desert holly, senna, plains blackfoot, trailing fleabane, fiddleneck, deerstongue, wooly Indianwheat, and locoweed.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	474	652	830
Forb	78	107	136
Shrub/Vine	48	66	84
Total	600	825	1050

Table 6. Ground cover

Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	30-35%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	40-50%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	15-25%

Figure 5. Plant community growth curve (percent production by month). NM2802, R042XC002NM-Shallow Sandy-HCPC. SD-3 Shallow Sandy - Warm season plant community.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	3	5	10	10	25	30	12	5	0	0

State 2 Grass/Shrub

Community 2.1 Grass/Shrub

Grass/Shrub: This state is characterized by the notable presence of shrubs, especially mesquite, broom snakeweed, and/or creosotebush, however grasses remain as the dominant species. Black grama is the dominant

grass species. Threeawns and or dropseeds are sub-dominant. The susceptibility of the Shallow Sandy site to shrub encroachment may be higher when located adjacent to other sites with high densities of mesquite or creosotebush. Retrogression within this site is characterized by decreases in grass cover and increasing densities of shrubs. Diagnosis: Black grama remains as the dominant grass species. Grass cover varies in response to the amount of shrub increase, ranging from uniform to patchy. Shrubs are found at increased densities relative to the grassland state, especially mesquite, creosotebush, or broom snakeweed. Transition to Grass/Shrub (1a) Historically fire may have kept mesquite and other shrubs in check by completely killing some species and disrupting seed production cycles and suppressing the establishment of shrub seedlings in others. Fire suppression combined with seed dispersal by livestock and wildlife is believed to be the factors responsible for the establishment and increase in shrubs.1, 3 Loss of grass cover due to overgrazing, prolonged periods of drought, or their combination, reduces fire fuel loads and increases the susceptibility of the site to shrub establishment. Key indicators of approach to transition: Increase in the relative abundance of dropseeds and threeawns Presence of shrub seedlings Loss of organic matter—evidenced by an increase in physical soil crusts 8 Transition back to Grassland (1b) Brush control is necessary to initiate the transition back to the grassland state. If adequate fuel loads remain, possibly the reintroduction of fire as a management tool will assist in the transition back, however, mixed results have been observed concerning the effects of fire on black grama grasslands.6 Prescribed grazing will help ensure adequate rest following brush control and will assist in the establishment and maintenance of grass cover capable of sustaining fire.

State 3 Shrub Dominated

Community 3.1 Shrub Dominated

Shrub-Dominated: Across the range of soil types included in the Shallow Sandy site, mesquite is typically the dominant shrub, but it does occur as a co-dominant or sub-dominant species with creosotebush or broom snakeweed. Mesquite tends to dominate when the Shallow Sandy site occurs as part of a complex or in association with Sandy or Loamy Sand sites. Creosotebush tends to dominate on Shallow Sandy sites that occur as part of, or adjacent to Shallow Sites. Broom snakeweed increases in response to heavy grazing, but tends to cycle in and out depending on timing of rainfall. However, once the site is dominated by shrubs and snakeweed becomes well established, it tends to remain as a major component in the shrub dominated state. Diagnosis: Mesquite, creosotebush, or snakeweed cover is high, exceeding that of grasses. Grass cover is patchy with large connected bare areas present. Black grama, threeawns, or dropseeds may be the dominant grass. Evidence of accelerated wind erosion in the form of pedestalling of plants, and soil deposition around shrub bases may be common. Transition to Shrub-Dominated (2) Persistent loss of grass cover and the resulting increased competition between shrubs and remaining grasses for dwindling resources (especially soil moisture) may drive this transition.5 Additionally periods of increased winter precipitation may facilitate periodic episodes of shrub expansion and establishment. 4 Key indicators of approach to transition: Increase in size and frequency of bare patches. Loss of grass cover in shrub interspaces. Increased signs of erosion, evidenced by pedestalling of plants, and soil and litter deposition on leeward side of plants. 7 Transition back to Grassland (3) Brush control is necessary to reduce competition from shrubs and reestablish grasses. Range seeding may be necessary if insufficient grasses remain, The benefits, and costs, will vary depending upon the degree of site degradation, and adequate precipitation following seeding.

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)
Grass	/Grasslike				
1	Warm Season			413–495	
	black grama	BOER4	Bouteloua eriopoda	413–495	_
2	Warm Season			41–83	
	bush muhly	MUPO2	Muhlenbergia porteri	41–83	_
3	Warm Season	-		41–83	

	blue grama	BOGR2	Bouteloua gracilis	41–83	_
4	Warm Season	•		25–41	
	sideoats grama	BOCU	Bouteloua curtipendula	25–41	_
5	Warm Season	41–83			
	spike dropseed	SPCO4	Sporobolus contractus	41–83	_
	sand dropseed	SPCR	Sporobolus cryptandrus	41–83	_
	mesa dropseed	SPFL2	Sporobolus flexuosus	41–83	_
6	Warm Season			17–41	
	threeawn	ARIST	Aristida	17–41	_
7	Warm Season			41–83	
	Arizona cottontop	DICA8	Digitaria californica	41–83	_
	plains bristlegrass	SEVU2	Setaria vulpiseta	41–83	_
8	Warm Season			41–83	
	mat sandbur	CELO3	Cenchrus longispinus	41–83	_
	hooded windmill grass	CHCU2	Chloris cucullata	41–83	
9	Other Perennial Grasses	•		25–41	
	Grass, perennial	2GP	Grass, perennial	25–41	_
Shrı	ıb/Vine				
10	Shrub			8–25	
	javelina bush	COER5	Condalia ericoides	8–25	
11	Shrub	•		8–25	
	уисса	YUCCA	Уисса	8–25	
12	Shrub	8–25			
	jointfir	EPHED	Ephedra	8–25	
	littleleaf ratany	KRER	Krameria erecta	8–25	_
13	Shrub	-1		8–25	
	featherplume	DAFO	Dalea formosa	8–25	
14	Shrub	1		8–25	
	broom snakeweed	GUSA2	Gutierrezia sarothrae	8–25	
15	Other Shrubs	•		25–41	
	Shrub (>.5m)	2SHRUB	Shrub (>.5m)	25–41	
Forb)	•	· · ·		
16	Forb			17–41	
	leatherweed	CRPOP	Croton pottsii var. pottsii	17–41	
	Goodding's tansyaster	MAPIG2	Machaeranthera pinnatifida ssp. gooddingii var. gooddingii	17–41	
17	Forb	•		17–41	
	woolly groundsel	PACA15	Packera cana	17–41	
	threadleaf ragwort	SEFLF	Senecio flaccidus var. flaccidus	17–41	
18	Forb		·	8–25	
	whitest evening primrose	OEAL	Oenothera albicaulis	8–25	
19	Other Forbs	I	·	8–25	
	Forb (herbaceous, not grass nor grass-like)	2FORB	Forb (herbaceous, not grass nor grass- like)	8–25	

Animal community

This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, swift fox, black-tailed jackrabbit, spotted ground squirrel, Ord's kangaroo rat, northern grasshopper mouse, coyote, horned lark, meadowlark, lark bunting, scaled quail, morning dove, side-blotched lizard, round-tailed horned lizard, marbled whiptail, prairie rattlesnake and ornate box turtle.

Hydrological functions

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.

Hydrologic Interpretations Soil Series Hydrologic Group Jarag D Simona D

Recreational uses

This site offers recreation for hiking, horseback riding, nature observation and photography, and quail and dove hunting. During years of abundant spring moisture, this site displays a riot of color from wildflowers during May and June. A few summer and fall flowers also occur.

Wood products

The natural potential plant community of this site affords little or no wood products. Where the site has been invaded by mesquite or cholla cactus the roots and stems of these plants provide attractive material for a variety of curiosities, such as lamps and small furniture.

Other products

This site is suitable for grazing by all kinds and classes of livestock during all seasons of the year. Because of the sandy textures and shallow profile, this site will respond rapidly to management. As this site deteriorates, plants such as black grama, bush muhly, blue and sideoats grama, plains bristlegrass and Arizona cottontop, will decrease and be replaced by plants such as threeawns, mesquite, creosote bush, and broom snakeweed. This also causes a decrease in ground cover, leaving the soil to blow. This site responds best to a system of management that rotates the season of use.

Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month Similarity Index Ac/AUM $100 - 76\ 2.5 - 3.5$ $75 - 51\ 3.2 - 4.6$ $50 - 26\ 4.5 - 7.5$ $25 - 0\ 7.6$ +

Inventory data references

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Desertic Basins, Plains and Mountains, Major Land Resource Areas of New Mexico. This site has been mapped and correlated with soils in the following soil surveys. Eddy County, Lea County, and Chaves County.

Other references

Literature References:

1. Brooks, M.L. and D.A. Pyke. 2001. Invasive plants and fire in the deserts of North America. Pages 1–14 in K.E.M. Galley and T.P. Wilson (eds.). Proceedings of the Invasive Species Workshop: the Role of Fire in the Control and Spread of Invasive Species.

2. Hennessy, J.T., R.P. Gibbens, J.M. Tromble, and M. Cardenas. 1983. Water properties of caliche. J. Range Manage. 36: 723-726.

3. Humphrey, R.R. 1974. Fire in the deserts and desert grassland of North America. In: Kozlowski, T. T.; Ahlgren, C. E., eds. Fire and ecosystems. New York: Academic Press: 365-400.

4. Moir, W.H., and J. A. Ludwig. 1991. Plant succession and changing land features in desert grasslands. P. 15-18. In P.F. Ffolliott and W.T. Swank (eds.) People and the temperate region: a summary of research from the United States Man and the Biosphere Program 1991. U.S. Dept. State, Publ No. 9839, Nat. Tech. Info. Serv., U.S. Dept. Commerce, Springfield, Illinois. 63 p.

5. Tiedemann, A. R. and J. O. Klemmedson. 1977. Effect of mesquite trees on vegetation and soils in the desert grassland. J. Range Manage. 30: 361-367.

6. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (2002, September). Fire Effects Information System, [Online]. Available: http://www.fs.fed.us/database/feis/ [accessed 2/10/03].

7. U.S. Department of Agriculture, Natural Resources Conservation Service. 2001. Soil Quality Information Sheets. Rangeland Soil Quality—Wind Erosion. Rangeland Sheet 10 [Online]. Available: http://www.statlab.iastate.edu/survey/SQI/range.html

8. U.S. Department of Agriculture, Natural Resources Conservation Service. 2001. Soil Quality Information Sheets. Rangeland Soil Quality—Physical and Biological Soil Crusts. Rangeland Sheet 7 [Online]. Available: http://www.statlab.iastate.edu/survey/SQI/range.html

Contributors

David Trujillo Don Sylvester

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

- 1. Number and extent of rills:
- 2. Presence of water flow patterns:
- 3. Number and height of erosional pedestals or terracettes:
- 4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):
- 5. Number of gullies and erosion associated with gullies:
- 6. Extent of wind scoured, blowouts and/or depositional areas:
- 7. Amount of litter movement (describe size and distance expected to travel):
- 8. Soil surface (top few mm) resistance to erosion (stability values are averages most sites will show a range of values):
- 9. Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):
- 10. Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:
- 11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):
- 12. Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):

Dominant:

Sub-dominant:

Other:

Additional:

- 13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):
- 14. Average percent litter cover (%) and depth (in):
- 15. Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annualproduction):
- 16. Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:
- 17. Perennial plant reproductive capability:

Page 85 of 414

Pgr Qp TRcu Pr Esri, NASA, NGA, USGS, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line Released to Imaging: 6/9/2025 Fp. 2.08: Muural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed June, 2022., NMBGMR

Qep



•

	ne: Hackberry 6 Fed 1 Wellpad			
pill Coo	ordinates:	X: 32.688026	Y: -103.907163	
ite Spe	cific Conditions	Value	Unit	
1	Depth to Groundwater	>100	feet	
2	Within 300 feet of any continuously flowing	800	Feet	
2	watercourse or any other significant watercourse	800	1000	
3	Within 200 feet of any lakebed, sinkhole or playa lake	4,819	Feet	
5	(measured from the ordinary high-water mark)	4,015		
4	Within 300 feet from an occupied residence, school,	, 14,148	Feet	
4	hospital, institution or church	1,)110		
	i) Within 500 feet of a spring or a private, domestic			
5	fresh water well used by less than five households for	14,148	Feet	
-	domestic or stock watering purposes, or			
	ii) Within 1000 feet of any fresh water well or spring	14,148	Feet	
	Within incorporated municipal boundaries or within a	No	(Y/N)	
_	defined municipal fresh water field covered under a			
6	municipal ordinance adopted pursuant to Section 3-27-			
	3 NMSA 1978 as amended, unless the municipality			
7	specifically approves	4 1 2 0	faat	
7	Within 300 feet of a wetland	4,129	feet	
8	Within the area overlying a subsurface mine	No	(Y/N)	
		Low	Critical	
9	Within an unstable area (Karst Map)		High	
			Medium	
			Low	
10	Within a 100-year Floodplain	Undetermined	Year	
11	Soil Type	SG	Soil	
12	Ecological Classification	Simona	Plant	
13	Geology	Qp	Age	
			<50'	
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	>100'	51-100'	
		1	>100'	

.

te Nan	ne: Hackberry 6 Fed 1 Wellpad		
oill Coc	rdinates:	X: 32.688026	Y: -103.907163
te Spe	cific Conditions	Value	Unit
1	Depth to Groundwater	>100	feet
2	ic ConditionsValueDepth to Groundwater>100Within 300 feet of any continuously flowing watercourse or any other significant watercourse800Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)4,819Within 300 feet for an occupied residence, school, hospital, institution or church14,148i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, or14,148Within 1000 feet of any fresh water well or spring ii) Within 1000 feet of any fresh water well or spring iii) Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27- NoNo3 NMSA 1978 as amended, unless the municipality specifically approves4,129Within an unstable area (Karst Map)LowWithin a 100-year FloodplainUndeterminedSoil TypeSGEcological ClassificationSimona	Feet	
Z	watercourse or any other significant watercourse	800	Teet
3	Within 200 feet of any lakebed, sinkhole or playa lake	1 819	Feet
J	(measured from the ordinary high-water mark)	4,619	Teet
4	•	14,148	Feet
-	hospital, institution or church	17,170	1000
	i) Within 500 feet of a spring or a private, domestic		
5	fresh water well used by less than five households for	14,148	Feet
5	domestic or stock watering purposes, or		
	ii) Within 1000 feet of any fresh water well or spring	14,148	Feet
	Within incorporated municipal boundaries or within a		
	defined municipal fresh water field covered under a		(Y/N)
6		No	
	3 NMSA 1978 as amended, unless the municipality		
			feet
7	Within 300 feet of a wetland	300 feet of a wetland 4,129	
8	Within the area overlying a subsurface mine	No	(Y/N)
			Critical
9	Within an unstable area (Karst Man)	Low	High
5			Medium
			Low
10	Within a 100-year Floodplain	Undetermined	Year
11	Soil Type	SG	Soil
12	Ecological Classification	Simona	Plant
13	Geology	Qp	Age
			<50'
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	>100'	51-100'
			>100'

ATTACHMENT 5



Client:	Devon Energy Corporation	Inspection Date:	6/21/2021
Site Location Name:	Helios 6 Fed Com 001H Battery	Report Run Date:	6/21/2021 9:19 PM
Client Contact Name:	Wes Matthews	API #:	30-015-38482
Client Contact Phone #:	(575) 748-0176		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	
		Summary of T	Times
Arrived at Site	6/21/2021 8:00 AM		
Departed Site	6/21/2021 12:00 PM		

Field Notes

15:10 Arrived on site to white line the spill for locators.

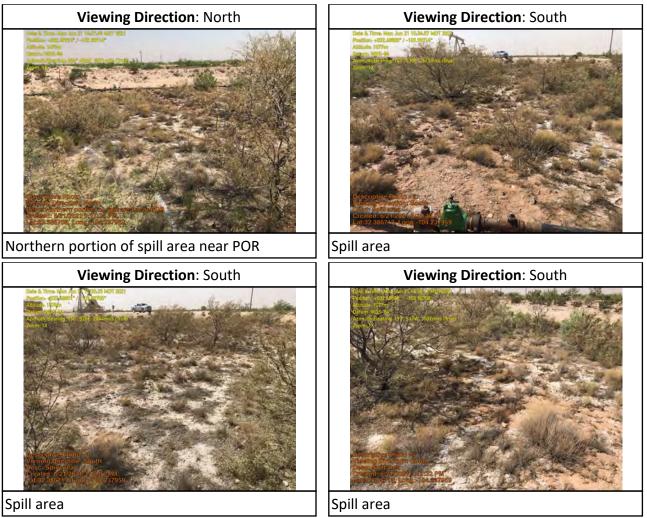
Next Steps & Recommendations

1 Characterization

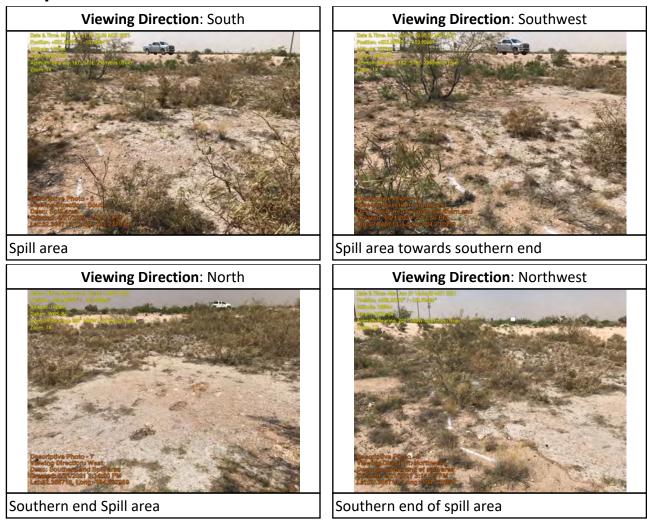


Site Photos Viewing Direction: South Viewing Direction: North Point of release Center spill area Viewing Direction: North Viewing Direction: North Spill area Northern spill area towards POR





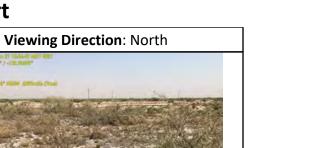




VE

VERTEX

Daily Site Visit Report





Center spill area

Run on 6/21/2021 9:19 PM UTC



Daily Site Visit Signature

Inspector: Austin Harris

Signature:

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Client:	Devon Energy Corporation	Inspection Date:	11/3/2022	
Site Location Name:	Hackberry 6 Fed 1 Wellpad	Report Run Date:	11/3/2022 8:06 PM	
Client Contact Name:	Jim Raley	API #:		
Client Contact Phone #:	575-748-0176			
Unique Project ID		Project Owner:		
Project Reference #		Project Manager:		
Summary of Times				
Arrived at Site	11/3/2022 8:45 AM			
Departed Site	11/3/2022 12:00 PM			

Field Notes

11:22 Arrived on site to assess the most recent release north of the pad. Line sweep was performed prior to collecting samples with a hand auger. No lines were detected in the sample areas.

Collected BH22-01 through BH22-06 around the release area for horizontal delineation to make sure the second release did not migrate further than the release labeled as "Helios".

- **11:14** Collected and field screened BH22-07 and BH22-08 down to 4' for vertical delineation.
- **11:15** BH22-01 through BH22-06 all field screened below strictest criteria at 0-2'. BH22-07 and BH22-08 field screened above strictest criteria on chlorides with EC and titration.

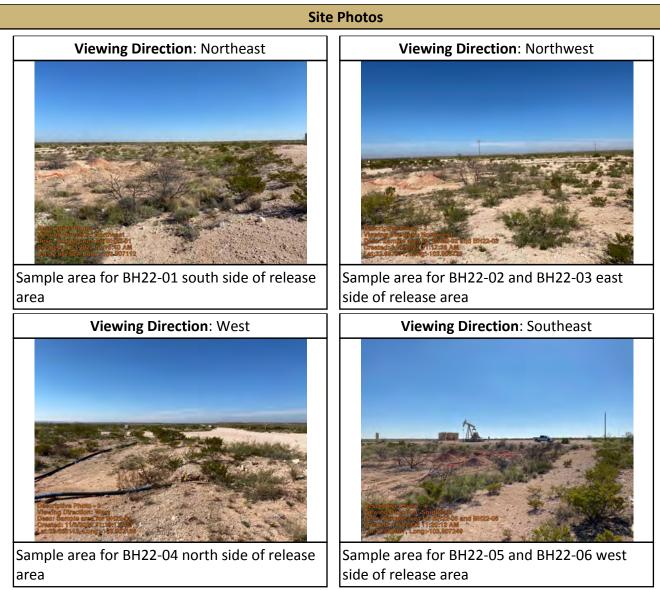
11:15 All samples will be sent to lab for analysis.

11:22 The recent release does not appear to have migrated further than the original release (Helios)

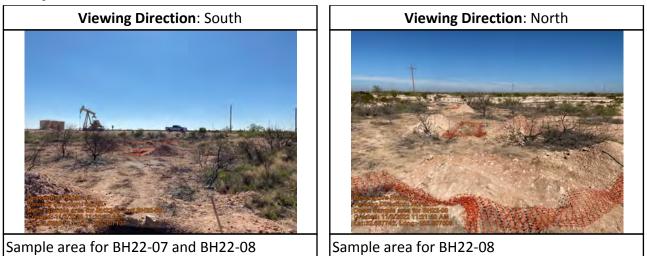
Next Steps & Recommendations

1 Send samples to lab for analysis and determine DTGW











Daily Site Visit Signature

Inspector: Chance Dixon

Signature:

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Client:	Devon Energy Corporation	Inspection Date:	12/13/2022	
Site Location Name:	Hackberry 6 Fed 1 Wellpad	Report Run Date:	12/13/2022 8:16 PM	
Client Contact Name:	Wes Matthews	API #:		
Client Contact Phone #:	(575) 748-0176			
Unique Project ID		Project Owner:		
Project Reference #		Project Manager:		
Summary of Times				
Arrived at Site	12/13/2022 10:50 AM			
Departed Site	12/13/2022 12:15 PM			

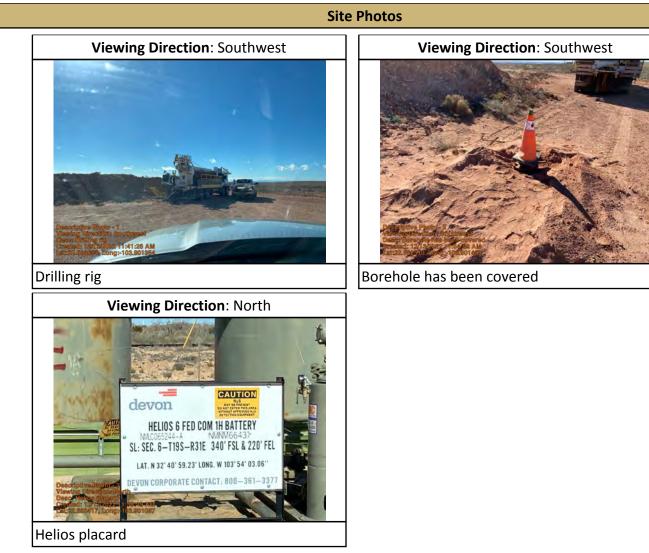
Field Notes

11:59 Arrived on site with Vision for DTGW borehole. Borehole was drilled to 105' on the southwest corner of the Helios 6 battery. Ran the sounder into the borehole to the bottom. No water was detected. Will run it again in 72 hours

Next Steps & Recommendations

1 Come back in 72 hours to run the sounder and remove the casing





Run on 12/13/2022 8:16 PM UTC



Daily Site Visit Signature

Inspector: Chance Dixon

Signature:

Run on 12/13/2022 8:16 PM UTC

•



Client:	Devon Energy Corporation	Inspection Date:	12/16/2022
Site Location Name:	Hackberry 6 Fed 1 Wellpad	Report Run Date:	12/16/2022 10:41 PM
Client Contact Name:	Wes Matthews	API #:	
Client Contact Phone #:	(575) 748-0176		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	
		Summary of 1	limes
Arrived at Site	12/16/2022 11:48 AM		
Departed Site	12/16/2022 1:13 PM		

Field Notes

12:44 Arrived on site to run sounder into the DTGW borehole and P&A it.

12:42 Sounder was ran all the way down to the bottom of the borehole at 105' with no water detected.

13:13 The borehole has been plugged to the surface with bentonite

Next Steps & Recommendations

1 Begin remediation for Hackberry/Helios with >100' criteria



Site Photos Viewing Direction: Northeast Viewing Direction: Northeast Sounder down to 105' Sounder down to 105' Viewing Direction: Northwest Viewing Direction: West Borehole being filled with plugging material Borehole has been plugged

Run on 12/16/2022 10:41 PM UTC







Daily Site Visit Signature

Inspector: Chance Dixon

Signature

Signature:

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Client:	Devon Energy Corporation	Inspection Date:	1/20/2023		
Site Location Name:	Hackberry 6 Fed 1 Wellpad	Report Run Date:	1/20/2023 11:07 PM		
Client Contact Name:	Wes Matthews	API #:			
Client Contact Phone #:	(575) 748-0176				
Unique Project ID		Project Owner:			
Project Reference #		Project Manager:			
		Summary of 1	Times		
Arrived at Site	1/20/2023 8:15 AM				
Departed Site	1/20/2023 2:15 PM				
		Field Note	25		
8:25 Completed safet	zy meeting.				
8:36 Collecting sampl	es beginning with 100				
9:34 Collected WS23-43 through 45					
11:44 Recollected 43 a	11:44 Recollected 43 and 44				

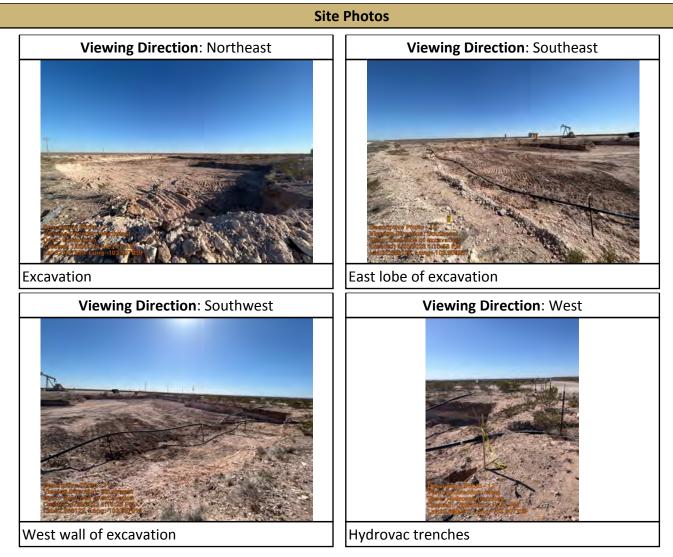
13:39 Finished screening all samples, prepared them for lab

Next Steps & Recommendations

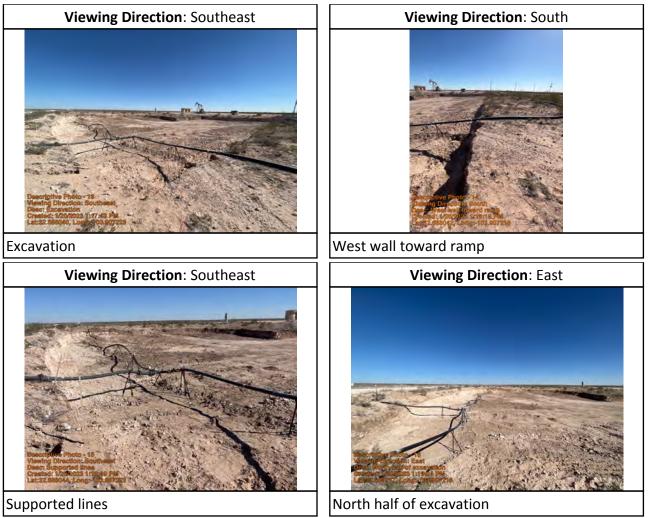
1 Await lab results and closure

.

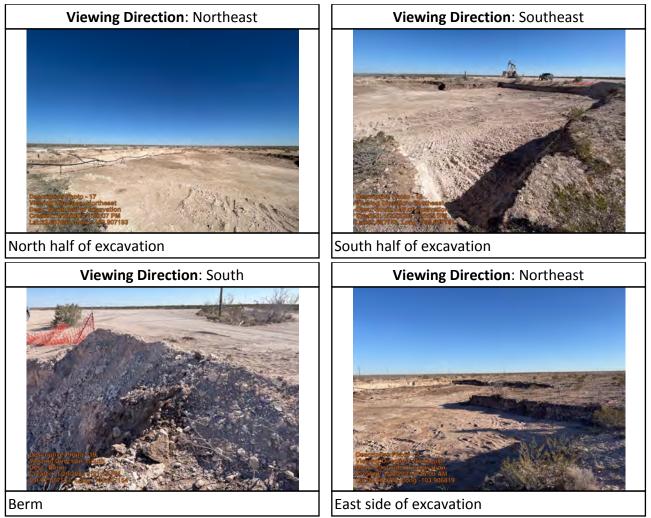




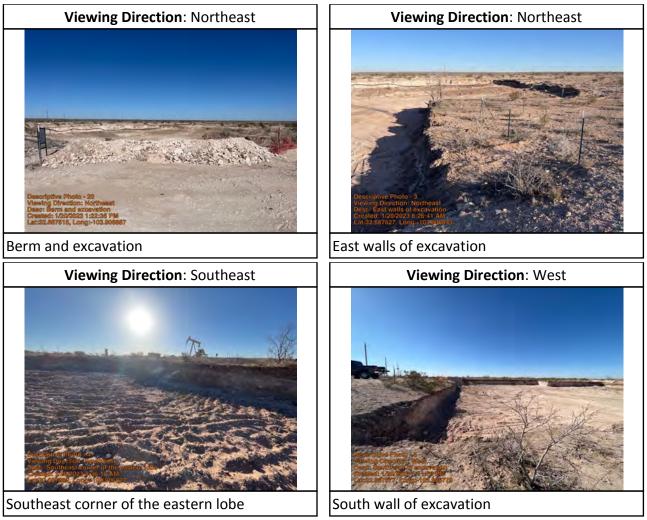




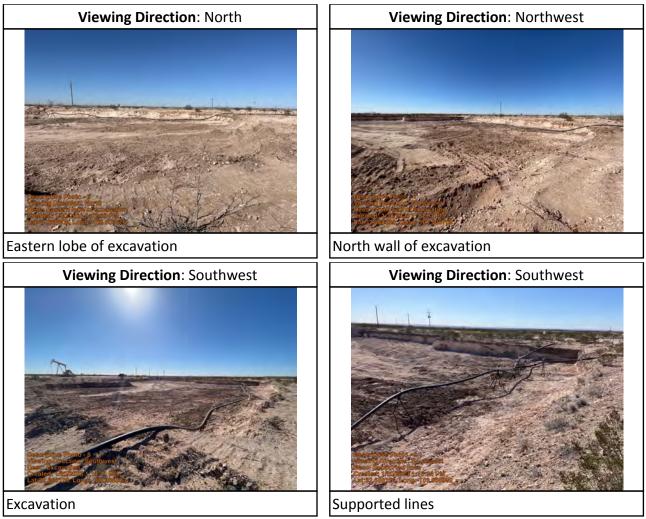






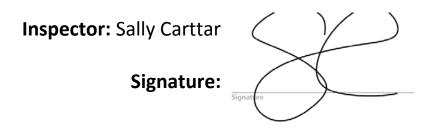








Daily Site Visit Signature



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ATTACHMENT 6



Dhugal Hanton <vertexresourcegroupusa@gmail.com>

48-Hour Notification - Helios 6 Fed Com Battery/Hackberry 6 Federal 1 Wellpad

8 messages

Dhugal Hanton <vertexresourcegroupusa@gmail.com> To: "Enviro, OCD, EMNRD" <OCD.Enviro@state.nm.us> Cc: wesley.mathews@dvn.com, KStallings@vertex.ca

Wed, Dec 28, 2022 at 3:57 PM

All,

Please accept this email as a notification that Vertex Resource Services has scheduled a sampling event to be conducted at the following releases.

nAPP2116940090 (Helios) nAPP2219226827 (Hackberry)

On Tuesday, January 3, 2023, Vertex will be on-site to conduct confirmation sampling. The sampling will continue through Tuesday, January 10, 2023. If you have any questions regarding this notification, please call me at 575-988-1472.

Thank you,

Chance Dixon B.Sc. Sr Environmental Technologist

Vertex Resource Services Inc. 3101 Boyd Drive, Carlsbad, NM 88220

C 575.988.1472

Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov> To: Dhugal Hanton <vertexresourcegroupusa@gmail.com> Cc: "Bratcher, Michael, EMNRD" <mike.bratcher@emnrd.nm.gov>, "Hamlet, Robert, EMNRD" <Robert.Hamlet@emnrd.nm.gov>

Wed, Dec 28, 2022 at 4:10 PM

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Jocelyn Harimon • Environmental Specialist

Environmental Bureau

EMNRD - Oil Conservation Division

1220 South St. Francis Drive | Santa Fe, NM 87505

(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov

http:// www.emnrd.nm.gov

Received by OCD: 2/7/2023 1:52:13 PM Gmail - 48-Hour Notification - Helios 6 Fed Com Battery/Hackberry 6 Federal 1 Wellpad



From: Dhugal Hanton <vertexresourcegroupusa@gmail.com> Sent: Wednesday, December 28, 2022 3:57 PM To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov> Cc: wesley.mathews@dvn.com; KStallings@vertex.ca Subject: [EXTERNAL] 48-Hour Notification - Helios 6 Fed Com Battery/Hackberry 6 Federal 1 Wellpad

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

[Quoted text hidden]

Dhugal Hanton <vertexresourcegroupusa@gmail.com> To: "Enviro, OCD, EMNRD" <OCD.Enviro@state.nm.us>

All,

Vertex respectfully requests that confirmation sampling for this location be extended to Monday, January 9, 2023, through January 13, 2023. If you have any questions, please call me at 575-988-1472.

Thank you,

Chance Dixon B.Sc. Sr Environmental Technologist

Vertex Resource Services Inc. 3101 Boyd Drive, Carlsbad, NM 88220

C 575.988.1472 [Quoted text hidden]

Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov> To: Dhugal Hanton <vertexresourcegroupusa@gmail.com> Cc: "Bratcher, Michael, EMNRD" <mike.bratcher@emnrd.nm.gov> Thu, Jan 5, 2023 at 10:00 AM

Thu, Jan 5, 2023 at 8:16 AM

Dhugal,

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

JH

Received by OCD: 2/7/2023 1:52:13 PM Gmail - 48-Hour Notification - Helios 6 Fed Com Battery/Hackberry 6 Federal 1 Wellpad

Jocelyn Harimon • Environmental Specialist

Environmental Bureau

EMNRD - Oil Conservation Division

1220 South St. Francis Drive | Santa Fe, NM 87505

(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov

http:// www.emnrd.nm.gov



From: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Sent: Thursday, January 5, 2023 8:17 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Subject: [EXTERNAL] Re: 48-Hour Notification - Helios 6 Fed Com Battery/Hackberry 6 Federal 1 Wellpad

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

All,

[Quoted text hidden] [Quoted text hidden]

Dhugal Hanton <vertexresourcegroupusa@gmail.com> To: "Enviro, OCD, EMNRD" <OCD.Enviro@emnrd.nm.gov> Thu, Jan 12, 2023 at 11:35 AM

Page 116 of 414

All,

Vertex respectfully requests that confirmation sampling for this location be extended to Monday, January 16, 2023, through January 20, 2023. If you have any questions, please call me at 575-988-1472.

Thank you,

Chance Dixon B.Sc. Sr Environmental Technologist

Vertex Resource Services Inc. 3101 Boyd Drive, Carlsbad, NM 88220

C 575.988.1472 [Quoted text hidden]

Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov> To: Dhugal Hanton <vertexresourcegroupusa@gmail.com> Thu, Jan 12, 2023 at 1:13 PM

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Jocelyn Harimon • Environmental Specialist

[Quoted text hidden]

Dhugal Hanton <vertexresourcegroupusa@gmail.com> To: "Enviro, OCD, EMNRD" <OCD.Enviro@state.nm.us>

All,

Vertex respectfully requests that confirmation sampling for this location be extended to Monday, January 23, 2023, through January 28, 2023. If you have any questions, please call me at 575-988-1472.

Thank you,

Chance Dixon B.Sc. Sr Environmental Technologist

Vertex Resource Services Inc. 3101 Boyd Drive, Carlsbad, NM 88220

C 575.988.1472

On Wed, Dec 28, 2022 at 3:57 PM Dhugal Hanton <vertexresourcegroupusa@gmail.com> wrote: [Quoted text hidden]

Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov> To: Dhugal Hanton <vertexresourcegroupusa@gmail.com> Cc: "Bratcher, Michael, EMNRD" <mike.bratcher@emnrd.nm.gov>, "Hamlet, Robert, EMNRD" <Robert.Hamlet@emnrd.nm.gov>

Thu, Jan 19, 2023 at 8:08 AM

Thu, Jan 19, 2023 at 7:33 AM

Mr. Hanton,

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

JH

Jocelyn Harimon • Environmental Specialist

Environmental Bureau

EMNRD - Oil Conservation Division

1220 South St. Francis Drive | Santa Fe, NM 87505

Received by OCP: 2/7/2023 1:52:13 PM Gmail - 48-Hour Notification - Helios 6 Fed Com Battery/Hackberry 6 Federal 1 Wellpad

(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov

http:// www.emnrd.nm.gov



From: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Sent: Thursday, January 19, 2023 7:33 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Subject: [EXTERNAL] Re: 48-Hour Notification - Helios 6 Fed Com Battery/Hackberry 6 Federal 1 Wellpad

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

All,

[Quoted text hidden]

[Quoted text hidden]

ATTACHMENT 7



July 06, 2021

John Hurt Vertex Resources Services, Inc. 3101 Boyd Drive Carlsbad, NM 88220 TEL: (505) 506-0040 FAX

RE: Helios 6 Fed Com 1H

OrderNo.: 2106D66

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: clients.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

Dear John Hurt:

Hall Environmental Analysis Laboratory received 15 sample(s) on 6/25/2021 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 or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

CLIENT: Vertex Resources Services, Inc.

Helios 6 Fed Com 1H

Analytical Report Lab Order 2106D66

Date Reported: 7/6/2021

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BG21-01 0-0.5' Collection Date: 6/22/2021 10:00:00 AM **Descrived Deter** 6/25/2021 7:20:00 AM

Lab ID: 2106D66-001	Matrix: SOIL	Received Date: 6/25/2021 7:30:00 AM					
Analyses	Result	RL Q	ual Units	DF	Date Analyzed		
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: BRM		
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	6/29/2021 11:18:56 PM		
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	6/29/2021 11:18:56 PM		
Surr: DNOP	65.1	70-130	S %Rec	1	6/29/2021 11:18:56 PM		
EPA METHOD 8015D: GASOLINE RANGE	E				Analyst: mb		
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	7/1/2021 2:20:00 PM		
Surr: BFB	91.5	70-130	%Rec	1	7/1/2021 2:20:00 PM		
EPA METHOD 8021B: VOLATILES					Analyst: mb		
Benzene	ND	0.024	mg/Kg	1	7/1/2021 2:20:00 PM		
Toluene	ND	0.048	mg/Kg	1	7/1/2021 2:20:00 PM		
Ethylbenzene	ND	0.048	mg/Kg	1	7/1/2021 2:20:00 PM		
Xylenes, Total	ND	0.097	mg/Kg	1	7/1/2021 2:20:00 PM		
Surr: 4-Bromofluorobenzene	88.4	70-130	%Rec	1	7/1/2021 2:20:00 PM		
EPA METHOD 300.0: ANIONS					Analyst: VP		
Chloride	ND	60	mg/Kg	20	7/1/2021 2:43:56 AM		

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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CLIENT: Vertex Resources Services, Inc.

Helios 6 Fed Com 1H

Analytical Report Lab Order 2106D66

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/6/2021 Client Sample ID: BG21-01 1.0' Collection Date: 6/22/2021 10:10:00 AM

Lab ID: 2106D66-002 Matrix: SOIL Received Date: 6/25/2021 7:30:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: BRM Diesel Range Organics (DRO) ND 8.7 mg/Kg 1 6/29/2021 11:43:22 PM Motor Oil Range Organics (MRO) ND 44 mg/Kg 1 6/29/2021 11:43:22 PM Surr: DNOP 56.1 70-130 S %Rec 1 6/29/2021 11:43:22 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: mb Gasoline Range Organics (GRO) ND 7/1/2021 2:40:00 PM 5.0 mg/Kg 1 Surr: BFB 91.4 70-130 %Rec 1 7/1/2021 2:40:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: mb Benzene ND 7/1/2021 2:40:00 PM 0.025 mg/Kg 1 Toluene ND 0.050 mg/Kg 1 7/1/2021 2:40:00 PM Ethylbenzene ND 0.050 mg/Kg 1 7/1/2021 2:40:00 PM Xylenes, Total ND 0.10 mg/Kg 1 7/1/2021 2:40:00 PM 7/1/2021 2:40:00 PM Surr: 4-Bromofluorobenzene 88.2 70-130 %Rec 1 Analyst: VP **EPA METHOD 300.0: ANIONS** Chloride ND 60 7/1/2021 2:56:20 AM

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- POL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits

ma/Ka

20

- Р Sample pH Not In Range
- Reporting Limit RL

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CLIENT: Vertex Resources Services, Inc.

Project: Helios 6 Fed Com 1H

Analytical Report Lab Order 2106D66

Date Reported: 7/6/2021

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BG21-01 2.0' Collection Date: 6/22/2021 10:15:00 AM

Lab ID: 2106D66-003	Matrix: SOIL	Re	Received Date: 6/25/2021 7:30:00 AM				
Analyses	Result	RL Q	Qual Units	DF	Date Analyzed		
EPA METHOD 8015M/D: DIESEL RAI	NGE ORGANICS				Analyst: BRM		
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	6/30/2021 12:07:42 AM		
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	6/30/2021 12:07:42 AM		
Surr: DNOP	58.6	70-130	S %Rec	1	6/30/2021 12:07:42 AM		
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst: mb		
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	7/1/2021 3:00:00 PM		
Surr: BFB	97.7	70-130	%Rec	1	7/1/2021 3:00:00 PM		
EPA METHOD 8021B: VOLATILES					Analyst: mb		
Benzene	ND	0.024	mg/Kg	1	7/1/2021 3:00:00 PM		
Toluene	ND	0.048	mg/Kg	1	7/1/2021 3:00:00 PM		
Ethylbenzene	ND	0.048	mg/Kg	1	7/1/2021 3:00:00 PM		
Xylenes, Total	ND	0.097	mg/Kg	1	7/1/2021 3:00:00 PM		
Surr: 4-Bromofluorobenzene	90.6	70-130	%Rec	1	7/1/2021 3:00:00 PM		
EPA METHOD 300.0: ANIONS					Analyst: VP		
Chloride	ND	60	mg/Kg	20	7/1/2021 3:08:45 AM		

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н
- Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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CLIENT: Vertex Resources Services, Inc.

Helios 6 Fed Com 1H

Analytical Report Lab Order 2106D66

Date Reported: 7/6/2021

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BH21-01 0-0.5' Collection Date: 6/22/2021 11:00:00 AM **Descrived Deter** 6/25/2021 7:20:00 AM

Lab ID: 2106D66-004	Matrix: SOIL	Rece	eived Date:	6/25/20	021 7:30:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst: BRM
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	6/30/2021 12:32:06 AM
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/30/2021 12:32:06 AM
Surr: DNOP	77.2	70-130	%Rec	1	6/30/2021 12:32:06 AM
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst: mb
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	7/1/2021 3:20:00 PM
Surr: BFB	96.6	70-130	%Rec	1	7/1/2021 3:20:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: mb
Benzene	ND	0.024	mg/Kg	1	7/1/2021 3:20:00 PM
Toluene	ND	0.048	mg/Kg	1	7/1/2021 3:20:00 PM
Ethylbenzene	ND	0.048	mg/Kg	1	7/1/2021 3:20:00 PM
Xylenes, Total	ND	0.096	mg/Kg	1	7/1/2021 3:20:00 PM
Surr: 4-Bromofluorobenzene	92.9	70-130	%Rec	1	7/1/2021 3:20:00 PM
EPA METHOD 300.0: ANIONS					Analyst: VP
Chloride	12000	600	mg/Kg	200	7/1/2021 7:50:42 AM

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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CLIENT: Vertex Resources Services, Inc.

Helios 6 Fed Com 1H

Analytical Report Lab Order 2106D66

Date Reported: 7/6/2021

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BH21-02 0-0.5' Collection Date: 6/22/2021 11:30:00 AM **Received Date:** 6/25/2021 7:30:00 AM

Lab ID: 2106D66-005	Matrix: SOIL	Received Date: 6/25/2021 7:30:00 AM					
Analyses	Result	RL Qu	al Units	DF	Date Analyzed		
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst: BRM		
Diesel Range Organics (DRO)	ND	9.0	mg/Kg	1	6/30/2021 12:56:24 AM		
Motor Oil Range Organics (MRO)	ND	45	mg/Kg	1	6/30/2021 12:56:24 AM		
Surr: DNOP	78.8	70-130	%Rec	1	6/30/2021 12:56:24 AM		
EPA METHOD 8015D: GASOLINE RANG	ЭЕ				Analyst: mb		
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	7/1/2021 3:40:00 PM		
Surr: BFB	95.8	70-130	%Rec	1	7/1/2021 3:40:00 PM		
EPA METHOD 8021B: VOLATILES					Analyst: mb		
Benzene	ND	0.024	mg/Kg	1	7/1/2021 3:40:00 PM		
Toluene	ND	0.048	mg/Kg	1	7/1/2021 3:40:00 PM		
Ethylbenzene	ND	0.048	mg/Kg	1	7/1/2021 3:40:00 PM		
Xylenes, Total	ND	0.096	mg/Kg	1	7/1/2021 3:40:00 PM		
Surr: 4-Bromofluorobenzene	92.2	70-130	%Rec	1	7/1/2021 3:40:00 PM		
EPA METHOD 300.0: ANIONS					Analyst: VP		
Chloride	11000	590	mg/Kg	200	7/1/2021 8:03:08 AM		

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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CLIENT: Vertex Resources Services, Inc.

Helios 6 Fed Com 1H

Analytical Report Lab Order 2106D66

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/6/2021 Client Sample ID: BH21-03 0-0.5' Collection Date: 6/22/2021 1:00:00 PM **Received Date:** 6/25/2021 7:30:00 AM

Lab ID: 2106D66-006	Matrix: SOIL	Received Date: 6/25/2021 7:30:00 AM					
Analyses	Result	RL Qu	al Units	DF	Date Analyzed		
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS				Analyst: BRM		
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	6/30/2021 1:20:45 AM		
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/30/2021 1:20:45 AM		
Surr: DNOP	84.4	70-130	%Rec	1	6/30/2021 1:20:45 AM		
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst: mb		
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	7/1/2021 4:00:00 PM		
Surr: BFB	96.6	70-130	%Rec	1	7/1/2021 4:00:00 PM		
EPA METHOD 8021B: VOLATILES					Analyst: mb		
Benzene	ND	0.024	mg/Kg	1	7/1/2021 4:00:00 PM		
Toluene	ND	0.048	mg/Kg	1	7/1/2021 4:00:00 PM		
Ethylbenzene	ND	0.048	mg/Kg	1	7/1/2021 4:00:00 PM		
Xylenes, Total	ND	0.095	mg/Kg	1	7/1/2021 4:00:00 PM		
Surr: 4-Bromofluorobenzene	90.9	70-130	%Rec	1	7/1/2021 4:00:00 PM		
EPA METHOD 300.0: ANIONS					Analyst: VP		
Chloride	13000	600	mg/Kg	200	7/1/2021 8:15:33 AM		

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 6 of 19

CLIENT: Vertex Resources Services, Inc.

Helios 6 Fed Com 1H

Analytical Report Lab Order 2106D66

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/6/2021 Client Sample ID: BH21-04 0-0.5' Collection Date: 6/22/2021 1:30:00 PM **Descrived Deter** 6/25/2021 7:20:00 AM

Lab ID: 2106D66-007	Matrix: SOIL	Received Date: 6/25/2021 7:30:00 AM					
Analyses	Result	RL Qu	al Units	DF	Date Analyzed		
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANICS				Analyst: SB		
Diesel Range Organics (DRO)	28	9.7	mg/Kg	1	7/2/2021 11:52:35 AM		
Motor Oil Range Organics (MRO)	98	48	mg/Kg	1	7/2/2021 11:52:35 AM		
Surr: DNOP	105	70-130	%Rec	1	7/2/2021 11:52:35 AM		
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst: mb		
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	7/1/2021 5:00:00 PM		
Surr: BFB	94.8	70-130	%Rec	1	7/1/2021 5:00:00 PM		
EPA METHOD 8021B: VOLATILES					Analyst: mb		
Benzene	ND	0.024	mg/Kg	1	7/1/2021 5:00:00 PM		
Toluene	ND	0.048	mg/Kg	1	7/1/2021 5:00:00 PM		
Ethylbenzene	ND	0.048	mg/Kg	1	7/1/2021 5:00:00 PM		
Xylenes, Total	ND	0.096	mg/Kg	1	7/1/2021 5:00:00 PM		
Surr: 4-Bromofluorobenzene	90.6	70-130	%Rec	1	7/1/2021 5:00:00 PM		
EPA METHOD 300.0: ANIONS					Analyst: VP		
Chloride	18000	1500	mg/Kg	500	7/1/2021 8:27:57 AM		

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL
- Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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CLIENT: Vertex Resources Services, Inc.

Helios 6 Fed Com 1H

Analytical Report Lab Order 2106D66

Date Reported: 7/6/2021

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BH21-05 Collection Date: 6/23/2021 9:00:00 AM **Received Date:** 6/25/2021 7:30:00 AM

Lab ID: 2106D66-008	Matrix: SOIL	Received Date: 6/25/2021 7:30:00 AM					
Analyses	Result	RL Qu	ual Units	DF	Date Analyzed		
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: BRM		
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	6/30/2021 2:09:21 AM		
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	6/30/2021 2:09:21 AM		
Surr: DNOP	60.6	70-130	S %Rec	1	6/30/2021 2:09:21 AM		
EPA METHOD 8015D: GASOLINE RANGE	E				Analyst: mb		
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	7/1/2021 5:20:00 PM		
Surr: BFB	95.5	70-130	%Rec	1	7/1/2021 5:20:00 PM		
EPA METHOD 8021B: VOLATILES					Analyst: mb		
Benzene	ND	0.024	mg/Kg	1	7/1/2021 5:20:00 PM		
Toluene	ND	0.048	mg/Kg	1	7/1/2021 5:20:00 PM		
Ethylbenzene	ND	0.048	mg/Kg	1	7/1/2021 5:20:00 PM		
Xylenes, Total	ND	0.096	mg/Kg	1	7/1/2021 5:20:00 PM		
Surr: 4-Bromofluorobenzene	90.1	70-130	%Rec	1	7/1/2021 5:20:00 PM		
EPA METHOD 300.0: ANIONS					Analyst: VP		
Chloride	ND	60	mg/Kg	20	7/1/2021 5:00:25 AM		

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Lab ID:

CLIENT: Vertex Resources Services, Inc.

2106D66-009

Helios 6 Fed Com 1H

Analytical Report Lab Order 2106D66

Date Reported: 7/6/2021

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BH21-06 Collection Date: 6/23/2021 9:30:00 AM Received Date: 6/25/2021 7:30:00 AM

Eub ID : 2100200000	Multim Soll						
Analyses	Result	RL Q)ual	Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS					Analyst: BRM	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	6/30/2021 2:33:54 AM	
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/30/2021 2:33:54 AM	
Surr: DNOP	65.9	70-130	S	%Rec	1	6/30/2021 2:33:54 AM	
EPA METHOD 8015D: GASOLINE RANG	GE					Analyst: mb	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/1/2021 5:40:00 PM	
Surr: BFB	86.2	70-130		%Rec	1	7/1/2021 5:40:00 PM	
EPA METHOD 8021B: VOLATILES						Analyst: mb	
Benzene	ND	0.024		mg/Kg	1	7/1/2021 5:40:00 PM	
Toluene	ND	0.048		mg/Kg	1	7/1/2021 5:40:00 PM	
Ethylbenzene	ND	0.048		mg/Kg	1	7/1/2021 5:40:00 PM	
Xylenes, Total	ND	0.096		mg/Kg	1	7/1/2021 5:40:00 PM	
Surr: 4-Bromofluorobenzene	87.9	70-130		%Rec	1	7/1/2021 5:40:00 PM	
EPA METHOD 300.0: ANIONS						Analyst: VP	
Chloride	ND	60		mg/Kg	20	7/1/2021 4:32:02 PM	

Matrix: SOIL

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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CLIENT: Vertex Resources Services, Inc.

Project: Helios 6 Fed Com 1H

Analytical Report Lab Order 2106D66

Date Reported: 7/6/2021

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BH21-08 Collection Date: 6/23/2021 10:00:00 AM **Descrived Deter** 6/25/2021 7:20:00 AM

Lab ID: 2106D66-010	Matrix: SOIL	Received Date: 6/25/2021 7:30:00 AM				
Analyses	Result	RL Q	Qual Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: BRM	
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	6/30/2021 2:58:10 AM	
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/30/2021 2:58:10 AM	
Surr: DNOP	68.2	70-130	S %Rec	1	6/30/2021 2:58:10 AM	
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: mb	
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	7/1/2021 6:00:00 PM	
Surr: BFB	94.9	70-130	%Rec	1	7/1/2021 6:00:00 PM	
EPA METHOD 8021B: VOLATILES					Analyst: mb	
Benzene	ND	0.024	mg/Kg	1	7/1/2021 6:00:00 PM	
Toluene	ND	0.047	mg/Kg	1	7/1/2021 6:00:00 PM	
Ethylbenzene	ND	0.047	mg/Kg	1	7/1/2021 6:00:00 PM	
Xylenes, Total	ND	0.095	mg/Kg	1	7/1/2021 6:00:00 PM	
Surr: 4-Bromofluorobenzene	88.2	70-130	%Rec	1	7/1/2021 6:00:00 PM	
EPA METHOD 300.0: ANIONS					Analyst: VP	
Chloride	ND	60	mg/Kg	20	7/1/2021 5:09:16 PM	

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Lab ID:

CLIENT: Vertex Resources Services, Inc.

2106D66-011

Helios 6 Fed Com 1H

Analytical Report Lab Order 2106D66

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/6/2021 Client Sample ID: BH21-09 Collection Date: 6/23/2021 10:15:00 AM Received Date: 6/25/2021 7:30:00 AM

2100200011						
Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS					Analyst: BRM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	6/30/2021 3:22:25 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	6/30/2021 3:22:25 AM
Surr: DNOP	60.2	70-130	S	%Rec	1	6/30/2021 3:22:25 AM
EPA METHOD 8015D: GASOLINE RANG	GE					Analyst: mb
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/1/2021 6:20:00 PM
Surr: BFB	96.3	70-130		%Rec	1	7/1/2021 6:20:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: mb
Benzene	ND	0.024		mg/Kg	1	7/1/2021 6:20:00 PM
Toluene	ND	0.048		mg/Kg	1	7/1/2021 6:20:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	7/1/2021 6:20:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	7/1/2021 6:20:00 PM
Surr: 4-Bromofluorobenzene	88.9	70-130		%Rec	1	7/1/2021 6:20:00 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	120	60		mg/Kg	20	7/1/2021 6:11:19 PM

Matrix: SOIL

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Lab ID:

CLIENT: Vertex Resources Services, Inc.

2106D66-012

Helios 6 Fed Com 1H

Analytical Report Lab Order 2106D66

Date Reported: 7/6/2021

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BH21-11 Collection Date: 6/23/2021 10:30:00 AM Received Date: 6/25/2021 7:30:00 AM

Eub ID: 2100D00 012						
Analyses	Result	RL Q	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS					Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	6/30/2021 3:46:40 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/30/2021 3:46:40 AM
Surr: DNOP	60.7	70-130	S	%Rec	1	6/30/2021 3:46:40 AM
EPA METHOD 8015D: GASOLINE RANG	E					Analyst: mb
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/1/2021 6:40:00 PM
Surr: BFB	96.1	70-130		%Rec	1	7/1/2021 6:40:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: mb
Benzene	ND	0.024		mg/Kg	1	7/1/2021 6:40:00 PM
Toluene	ND	0.048		mg/Kg	1	7/1/2021 6:40:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	7/1/2021 6:40:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	7/1/2021 6:40:00 PM
Surr: 4-Bromofluorobenzene	91.3	70-130		%Rec	1	7/1/2021 6:40:00 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	ND	60		mg/Kg	20	7/1/2021 6:23:43 PM

Matrix: SOIL

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D
- Sample Diluted Due to Matrix н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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CLIENT: Vertex Resources Services, Inc.

Helios 6 Fed Com 1H

Analytical Report Lab Order 2106D66

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/6/2021 Client Sample ID: BH21-12 Collection Date: 6/23/2021 11:00:00 AM **Received Date:** 6/25/2021 7:30:00 AM

Lab ID: 2106D66-013	Matrix: SOIL	Received Date: 6/25/2021 7:30:00 AM				
Analyses	Result	RL Q	ual Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: BRM	
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	6/30/2021 4:10:52 AM	
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	6/30/2021 4:10:52 AM	
Surr: DNOP	68.0	70-130	S %Rec	1	6/30/2021 4:10:52 AM	
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: mb	
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	7/1/2021 7:00:00 PM	
Surr: BFB	93.8	70-130	%Rec	1	7/1/2021 7:00:00 PM	
EPA METHOD 8021B: VOLATILES					Analyst: mb	
Benzene	ND	0.024	mg/Kg	1	7/1/2021 7:00:00 PM	
Toluene	ND	0.049	mg/Kg	1	7/1/2021 7:00:00 PM	
Ethylbenzene	ND	0.049	mg/Kg	1	7/1/2021 7:00:00 PM	
Xylenes, Total	ND	0.098	mg/Kg	1	7/1/2021 7:00:00 PM	
Surr: 4-Bromofluorobenzene	90.8	70-130	%Rec	1	7/1/2021 7:00:00 PM	
EPA METHOD 300.0: ANIONS					Analyst: VP	
Chloride	ND	60	mg/Kg	20	7/1/2021 6:36:08 PM	

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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CLIENT: Vertex Resources Services, Inc.

Helios 6 Fed Com 1H

Analytical Report Lab Order 2106D66

Date Reported: 7/6/2021

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BH21-13 Collection Date: 6/23/2021 11:30:00 AM **Received Date:** 6/25/2021 7:30:00 AM

Lab ID: 2106D66-014	Matrix: SOIL	Received Date: 6/25/2021 7:30:00 AM									
Analyses	Result	RL Qu	ual Units	DF	Date Analyzed						
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: BRM						
Diesel Range Organics (DRO)	ND	8.4	mg/Kg	1	6/30/2021 4:35:15 AM						
Motor Oil Range Organics (MRO)	ND	42	mg/Kg	1	6/30/2021 4:35:15 AM						
Surr: DNOP	58.9	70-130	S %Rec	1	6/30/2021 4:35:15 AM						
EPA METHOD 8015D: GASOLINE RANGE	E				Analyst: mb						
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	7/1/2021 7:20:00 PM						
Surr: BFB	95.8	70-130	%Rec	1	7/1/2021 7:20:00 PM						
EPA METHOD 8021B: VOLATILES					Analyst: mb						
Benzene	ND	0.024	mg/Kg	1	7/1/2021 7:20:00 PM						
Toluene	ND	0.048	mg/Kg	1	7/1/2021 7:20:00 PM						
Ethylbenzene	ND	0.048	mg/Kg	1	7/1/2021 7:20:00 PM						
Xylenes, Total	ND	0.095	mg/Kg	1	7/1/2021 7:20:00 PM						
Surr: 4-Bromofluorobenzene	90.3	70-130	%Rec	1	7/1/2021 7:20:00 PM						
EPA METHOD 300.0: ANIONS					Analyst: VP						
Chloride	ND	60	mg/Kg	20	7/1/2021 6:48:33 PM						

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Lab ID:

CLIENT: Vertex Resources Services, Inc.

2106D66-015

Helios 6 Fed Com 1H

Analytical Report Lab Order 2106D66

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/6/2021 Client Sample ID: BH21-14 Collection Date: 6/23/2021 11:45:00 AM

Received Date: 6/25/2021 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORG					Analyst: BRM	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	6/30/2021 4:59:21 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/30/2021 4:59:21 AM
Surr: DNOP	61.5	70-130	S	%Rec	1	6/30/2021 4:59:21 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: mb
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/1/2021 7:40:00 PM
Surr: BFB	98.2	70-130		%Rec	1	7/1/2021 7:40:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: mb
Benzene	ND	0.024		mg/Kg	1	7/1/2021 7:40:00 PM
Toluene	ND	0.048		mg/Kg	1	7/1/2021 7:40:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	7/1/2021 7:40:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	7/1/2021 7:40:00 PM
Surr: 4-Bromofluorobenzene	90.9	70-130		%Rec	1	7/1/2021 7:40:00 PM
EPA METHOD 300.0: ANIONS						Analyst: VP
Chloride	330	60		mg/Kg	20	7/1/2021 7:00:58 PM

Matrix: SOIL

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

	Vertex Resources Services, Inc. Helios 6 Fed Com 1H	
Sample ID: MB-6103	5 SampType: MBLK Tes	stCode: EPA Method 300.0: Anions
Client ID: PBS	Batch ID: 61035	RunNo: 79492
Prep Date: 6/30/202	21 Analysis Date: 6/30/2021	SeqNo: 2794639 Units: mg/Kg
Analyte Chloride	Result PQL SPK value SPK Ref Val ND 1.5	%REC LowLimit HighLimit %RPD RPDLimit Qual
Sample ID: LCS-610	35 SampType: LCS Tes	stCode: EPA Method 300.0: Anions
Client ID: LCSS	Batch ID: 61035	RunNo: 79492
Prep Date: 6/30/202	21 Analysis Date: 6/30/2021	SeqNo: 2794640 Units: mg/Kg
Analyte	Result PQL SPK value SPK Ref Val	%REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	14 1.5 15.00 0	96.6 90 110
Sample ID: MB-6104	0 SampType: MBLK Tes	stCode: EPA Method 300.0: Anions
Client ID: PBS	Batch ID: 61040	RunNo: 79497
Prep Date: 6/30/202	21 Analysis Date: 7/1/2021	SeqNo: 2796246 Units: mg/Kg
Analyte	Result PQL SPK value SPK Ref Val	%REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	ND 1.5	
Sample ID: LCS-610	40 SampType: LCS Te:	stCode: EPA Method 300.0: Anions
Client ID: LCSS	Batch ID: 61040	RunNo: 79497
Prep Date: 6/30/202	21 Analysis Date: 7/1/2021	SeqNo: 2796247 Units: mg/Kg
Analyte	Result PQL SPK value SPK Ref Val	%REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	14 1.5 15.00 0	95.8 90 110

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2106D66

06-Jul-21

	Resources S 5 Fed Com		, Inc.							
Sample ID: LCS-60965		ype: LC	s	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: LCSS	Batc	h ID: 60	965	F	RunNo: 7	9472				
Prep Date: 6/28/2021	Analysis E	Date: 6/	/29/2021	S	SeqNo: 2	793936	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.9	68.9	141			
Surr: DNOP	3.6		5.000		72.5	70	130			
Sample ID: MB-60965	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: PBS	Batc	h ID: 60	965	F	RunNo: 7	9472				
Prep Date: 6/28/2021	Analysis E	Date: 6/	/29/2021	S	SeqNo: 2	793938	Units: mg/k	٢g		
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	7.7		10.00		77.0	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2106D66

06-Jul-21

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

	Resources Services, Inc. 5 Fed Com 1H	
Sample ID: mb-60961	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range
Client ID: PBS	Batch ID: 60961	RunNo: 79532
Prep Date: 6/28/2021	Analysis Date: 7/1/2021	SeqNo: 2796799 Units: mg/Kg
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Gasoline Range Organics (GRO) Surr: BFB	ND 5.0 920 1000	92.3 70 130
Sample ID: Ics-60961	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range
Client ID: LCSS	Batch ID: 60961	RunNo: 79532
Prep Date: 6/28/2021	Analysis Date: 7/1/2021	SeqNo: 2796801 Units: mg/Kg
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Gasoline Range Organics (GRO)	26 5.0 25.00	0 104 78.6 131
Surr: BFB	1100 1000	108 70 130
Sample ID: mb-60981	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range
Client ID: PBS	Batch ID: 60981	RunNo: 79563
Prep Date: 6/28/2021	Analysis Date: 7/2/2021	SeqNo: 2798482 Units: %Rec
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Surr: BFB	970 1000	96.7 70 130
Sample ID: Ics-60981	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range
Client ID: LCSS	Batch ID: 60981	RunNo: 79563
Prep Date: 6/28/2021	Analysis Date: 7/2/2021	SeqNo: 2798484 Units: %Rec
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Surr: BFB	1100 1000	114 70 130

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2106D66

06-Jul-21

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

	Resources Services, Inc. 6 Fed Com 1H		
Sample ID: mb-60961	SampType: MBLK	TestCode: EPA Method 8021B: Volatile	S
Client ID: PBS	Batch ID: 60961	RunNo: 79532	
Prep Date: 6/28/2021	Analysis Date: 7/1/2021	SeqNo: 2796853 Units: mg/Kg	
Analyte	Result PQL SPK v	ue SPK Ref Val %REC LowLimit HighLimit	%RPD RPDLimit Qual
Benzene	ND 0.025		
Toluene	ND 0.050		
Ethylbenzene	ND 0.050		
Xylenes, Total	ND 0.10		
Surr: 4-Bromofluorobenzene	0.90 1	00 90.1 70 130	
Sample ID: Ics-60961	SampType: LCS	TestCode: EPA Method 8021B: Volatile	S
Client ID: LCSS	Batch ID: 60961	RunNo: 79532	
Prep Date: 6/28/2021	Analysis Date: 7/1/2021	SeqNo: 2796855 Units: mg/Kg	
Analyte	Result PQL SPK v	ue SPK Ref Val %REC LowLimit HighLimit	%RPD RPDLimit Qual
Benzene	0.98 0.025 1	00 0 97.5 80 120	
Toluene	0.99 0.050 1	00 0 98.6 80 120	
Ethylbenzene	1.0 0.050 1	00 0 101 80 120	
Xylenes, Total	3.1 0.10 3	00 0 102 80 120	
Surr: 4-Bromofluorobenzene	0.93 1	00 93.2 70 130	
Sample ID: mb-60981	SampType: MBLK	TestCode: EPA Method 8021B: Volatile	S
Client ID: PBS	Batch ID: 60981	RunNo: 79563	
Prep Date: 6/28/2021	Analysis Date: 7/2/2021	SeqNo: 2798540 Units: %Rec	
Analyte	Result PQL SPK v	ue SPK Ref Val %REC LowLimit HighLimit	%RPD RPDLimit Qual
Surr: 4-Bromofluorobenzene	0.93 1	00 92.6 70 130	
Sample ID: Ics-60981	SampType: LCS	TestCode: EPA Method 8021B: Volatile	s
Client ID: LCSS	Batch ID: 60981	RunNo: 79563	
Prep Date: 6/28/2021	Analysis Date: 7/2/2021	SeqNo: 2798542 Units: %Rec	
Analyte	Result PQL SPK v	ue SPK Ref Val %REC LowLimit HighLimit	%RPD RPDLimit Qual
Surr: 4-Bromofluorobenzene	0.93 1	00 92.5 70 130	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range

RL Reporting Limit

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2106D66

06-Jul-21

ANAL	RONMENTAL YSIS Ratory	Hall Environme TEL: 505-345- Website: clien	49 Albuquer 3975 FAX	01 Hawk que, NM 505-345	ins NE 87109 5-4107	Sample Log-In Check List					
Client Name:	Vertex Resources Services, Inc.	Work Order Num	ber: 210	6D66			RcptNo: 1				
Received By:	Juan Rojas	6/25/2021 7:30:00	АМ		qua	nay.					
Completed By:	Cheyenne Cason	6/25/2021 9:37:57	AM		Ches	L					
Reviewed By:	DAD 6.25-2	-1									
Chain of Cus	stody										
1. Is Chain of C	ustody complete?		Yes	~	No		Not Present				
2. How was the	sample delivered?		Cou	rier							
Log In											
3. Was an atten	npt made to cool the sample	s?	Yes		No						
4. Were all sam	ples received at a temperatu	re of >0° C to 6.0°C	Yes	Not Fro							
5. Sample(s) in	proper container(s)?		Yes								
6. Sufficient sam	ple volume for indicated tes	t(s)?	Yes	~	No						
7. Are samples (except VOA and ONG) prop	erly preserved?	Yes	~	No						
8. Was preserva	tive added to bottles?		Yes		No	~	NA 🗌				
9. Received at le	ast 1 vial with headspace <1	/4" for AQ VOA?	Yes		No		NA 🔽				
0. Were any san	nple containers received bro	ken?	Yes		No		1				
1 Does nanenwo	ork match bottle labels?		1000	5			# of preserved bottles checked				
	ancies on chain of custody)		Yes	V	No	1	for pH: (<2 or >12 unless noted)				
2. Are matrices c	correctly identified on Chain of	of Custody?	Yes		No		Adjusted?				
3. Is it clear what	analyses were requested?		Yes	V	No						
	ng times able to be met? Istomer for authorization.)		Yes	~	No		Checked by: T.C. 6.25.21				
pecial Handl	ing (if applicable)										
5. Was client no	tified of all discrepancies wit	h this order?	Yes		No		NA 🗹				
Person	Notified:	Date:	-		_	-					
By Who	m:	Via:	eMa	ail 🗔 F	hone	Fax	In Person				
Regardi Client In	ng: structions:										
6. Additional rer											
7. Cooler Inform											

Page 1 of 1

HALL ENVIRONMENTAL	ental.com	erque, NW 07 109 505-345-4107 Rodulosf	(the	9sdA\t		1.1		00 (Sc 00 lsto 00 lsto										Jhurt @ Vertet.ca	@ verter.cg
	Www.hallenvironmental.com		[⊅] OS	SMIS BAD	8082 8270 (1.1)	8/294 1 504 0 or als 1 , 50	sticic ethoc / 831 Meti /, N(//	2081 Pe 2081 Pe 2081 Pe 2081 Pe 8081 Pe										Remarks: CC: Jhurte	aharris
Turn-Around Time: こ ひんソ Z Standard D Rush	Project Name: Helios 6 Fed Con 214	Project #: 2/E - 00580-003	Project Manager: John Hort		. AUSTIN HARRIES	On Ice: 🛛 Yes 🗆 No 🕂 🐺	duding CF): -0.1 -0 = -0.1 (°C)	Container Preservative HEAL No.	sellester our mix	1 124 1291	Cole Or Colo	Creteste UI	647 012	Cucliusia Co13	1 1 Success Old	V V V		Received by: Via: Date Time Rem	i Via: Date
Chain-of-Custody Record ::	S: ON FILL		Permina a Vertet. Ca	 Level 4 (Full Validation) 	1.0.0	□ Other		Matrix Sample Name	Soul	1 BH21-06	8421-08	131721-09	131421-11		51-12AEI/	V BH21-14		Relinquished by:	Relinquished by:
Client:	Mailing Address:	6/9/202	Email or Fax#:		Accreditation:	EDD (Tvpe)		Date Time	6-23-21 0900	1 0930	0001	1015	1030	0011	1130	V II45		Date: Time:	Date: Time:



July 08, 2021

Wesley Mathews Devon Energy 6488 Seven Rivers Highway Artesia, NM 88210 TEL: (505) 350-1336 FAX Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: clients.hallenvironmental.com

RE: Helios 6

OrderNo.: 2107069

Dear Wesley Mathews:

Hall Environmental Analysis Laboratory received 4 sample(s) on 7/2/2021 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 or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

CLIENT: Devon Energy

Project: Helios 6

Analytical Report Lab Order 2107069

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/8/2021

Client Sample ID: BH21-01 11' Collection Date: 6/30/2021 9:00:00 AM Received Date: 7/2/2021 7:30:00 AM

Lab ID: 2107069-001	Matrix: SOIL	Received Date: 7/2/2021 7:30:00 AM							
Analyses	Result	RL Qua	al Units	DF	Date Analyzed				
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: SB				
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	7/6/2021 1:10:04 PM				
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	7/6/2021 1:10:04 PM				
Surr: DNOP	102	70-130	%Rec	1	7/6/2021 1:10:04 PM				
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: mb				
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	7/6/2021 9:56:00 PM				
Surr: BFB	98.1	70-130	%Rec	1	7/6/2021 9:56:00 PM				
EPA METHOD 8021B: VOLATILES					Analyst: mb				
Benzene	ND	0.024	mg/Kg	1	7/6/2021 9:56:00 PM				
Toluene	ND	0.049	mg/Kg	1	7/6/2021 9:56:00 PM				
Ethylbenzene	ND	0.049	mg/Kg	1	7/6/2021 9:56:00 PM				
Xylenes, Total	ND	0.097	mg/Kg	1	7/6/2021 9:56:00 PM				
Surr: 4-Bromofluorobenzene	90.3	70-130	%Rec	1	7/6/2021 9:56:00 PM				
EPA METHOD 300.0: ANIONS					Analyst: VP				
Chloride	11000	600	mg/Kg	200	7/7/2021 2:22:37 PM				

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 1 of 8

CLIENT: Devon Energy

Project: Helios 6

Analytical Report Lab Order 2107069

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/8/2021

Client Sample ID: BH21-02 12' Collection Date: 6/30/2021 10:00:00 AM Received Date: 7/2/2021 7:30:00 AM

Lab ID: 2107069-002	Matrix: SOIL	Rece	Received Date: 7/2/2021 7:30:00 AM						
Analyses	Result	RL Qua	al Units	DF	Date Analyzed				
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: SB				
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	7/6/2021 1:22:22 PM				
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	7/6/2021 1:22:22 PM				
Surr: DNOP	97.7	70-130	%Rec	1	7/6/2021 1:22:22 PM				
EPA METHOD 8015D: GASOLINE RANGI	E				Analyst: mb				
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	7/6/2021 10:56:00 PM				
Surr: BFB	99.3	70-130	%Rec	1	7/6/2021 10:56:00 PM				
EPA METHOD 8021B: VOLATILES					Analyst: mb				
Benzene	ND	0.024	mg/Kg	1	7/6/2021 10:56:00 PM				
Toluene	ND	0.049	mg/Kg	1	7/6/2021 10:56:00 PM				
Ethylbenzene	ND	0.049	mg/Kg	1	7/6/2021 10:56:00 PM				
Xylenes, Total	ND	0.097	mg/Kg	1	7/6/2021 10:56:00 PM				
Surr: 4-Bromofluorobenzene	93.5	70-130	%Rec	1	7/6/2021 10:56:00 PM				
EPA METHOD 300.0: ANIONS					Analyst: VP				
Chloride	150	60	mg/Kg	20	7/7/2021 2:22:52 AM				

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 2 of 8

CLIENT: Devon Energy

Project: Helios 6

Analytical Report Lab Order 2107069

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/8/2021

Client Sample ID: BH21-03 12' Collection Date: 6/30/2021 11:00:00 AM Received Date: 7/2/2021 7:30:00 AM

Lab ID: 2107069-003	Matrix: SOIL	Rece	eived Date:	7/2/20	21 7:30:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RAI	NGE ORGANICS				Analyst: SB
Diesel Range Organics (DRO)	ND	8.9	mg/Kg	1	7/6/2021 1:34:32 PM
Motor Oil Range Organics (MRO)	ND	44	mg/Kg	1	7/6/2021 1:34:32 PM
Surr: DNOP	101	70-130	%Rec	1	7/6/2021 1:34:32 PM
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst: mb
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	7/6/2021 11:16:00 PM
Surr: BFB	100	70-130	%Rec	1	7/6/2021 11:16:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: mb
Benzene	ND	0.024	mg/Kg	1	7/6/2021 11:16:00 PM
Toluene	ND	0.048	mg/Kg	1	7/6/2021 11:16:00 PM
Ethylbenzene	ND	0.048	mg/Kg	1	7/6/2021 11:16:00 PM
Xylenes, Total	ND	0.097	mg/Kg	1	7/6/2021 11:16:00 PM
Surr: 4-Bromofluorobenzene	95.9	70-130	%Rec	1	7/6/2021 11:16:00 PM
EPA METHOD 300.0: ANIONS					Analyst: VP
Chloride	170	61	mg/Kg	20	7/7/2021 2:35:16 AM

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

Qualifiers:

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 3 of 8

CLIENT: Devon Energy

Project: Helios 6

Analytical Report Lab Order 2107069

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/8/2021

Client Sample ID: BH21-04 15' Collection Date: 6/30/2021 12:00:00 PM Received Date: 7/2/2021 7:30:00 AM

			Received Date: 7/2/2021 7:30:00 AM							
Analyses		Result	RL Qu	al Units	DF	Date Analyzed				
EPA METHOD 8015	M/D: DIESEL RANGE	ORGANICS				Analyst: SB				
Diesel Range Organic	s (DRO)	ND	9.0	mg/Kg	1	7/6/2021 1:46:37 PM				
Motor Oil Range Orga	nics (MRO)	ND	45	mg/Kg	1	7/6/2021 1:46:37 PM				
Surr: DNOP		101	70-130	%Rec	1	7/6/2021 1:46:37 PM				
EPA METHOD 8015	: GASOLINE RANGE					Analyst: mb				
Gasoline Range Orga	nics (GRO)	ND	5.0	mg/Kg	1	7/6/2021 11:36:00 PM				
Surr: BFB		104	70-130	%Rec	1	7/6/2021 11:36:00 PM				
EPA METHOD 8021	3: VOLATILES					Analyst: mb				
Benzene		ND	0.025	mg/Kg	1	7/6/2021 11:36:00 PM				
Toluene		ND	0.050	mg/Kg	1	7/6/2021 11:36:00 PM				
Ethylbenzene		ND	0.050	mg/Kg	1	7/6/2021 11:36:00 PM				
Xylenes, Total		ND	0.099	mg/Kg	1	7/6/2021 11:36:00 PM				
Surr: 4-Bromofluoro	benzene	98.2	70-130	%Rec	1	7/6/2021 11:36:00 PM				
EPA METHOD 300.0	: ANIONS					Analyst: VP				
Chloride		6700	300	mg/Kg	100	7/7/2021 2:35:01 PM				

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 4 of 8

Client: Project:	Devon Energy Helios 6							
Sample ID: MB-61	148 SampType:	MBLK	Tes	tCode: EPA Method	300.0: Anions	6		
Client ID: PBS	Batch ID:	61148	F	unNo: 79587				
Prep Date: 7/6/2	Analysis Date:	7/6/2021	S	eqNo: 2799455	Units: mg/K	g		
Analyte	Result PC	L SPK value	SPK Ref Val	%REC LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND ²	1.5						
Sample ID: LCS-6	1148 SampType:	LCS	Tes	tCode: EPA Method	300.0: Anions	6		
Client ID: LCSS	Batch ID:	61148	F	unNo: 79587				
Prep Date: 7/6/2	Analysis Date:	7/6/2021	S	eqNo: 2799456	Units: mg/K	9		
Analyte	Result PC	L SPK value	SPK Ref Val	%REC LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15 <i>´</i>	1.5 15.00	0	97.8 90	110			

Qualifiers:

- Value exceeds Maximum Contaminant Level. *
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- Analyte detected in the associated Method Blank в
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

2107069

WO#:

08-Jul-21

Client:	Devon Er	nergy									
Project:	Helios 6										
Sample ID: MB-6	61118	SampT	ype: ME	BLK	Tes	tCode: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: PBS		Batch	n ID: 61	118	F	RunNo: 79	9594				
Prep Date: 7/3/	/2021	Analysis D	Date: 7/	6/2021	S	SeqNo: 2	799172	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organic	cs (DRO)	ND	10								
Motor Oil Range Orga	anics (MRO)	ND	50								
Surr: DNOP		10		10.00		101	70	130			
Sample ID: LCS-	-61118	SampT	ype: LC	S	Tes	tCode: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: LCS	S	Batch	n ID: 61	118	F	RunNo: 7 9	9594				
Prep Date: 7/3/	/2021	Analysis D	Date: 7/	6/2021	S	SeqNo: 2	799173	Units: mg/K	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organic	cs (DRO)	47	10	50.00	0	94.7	68.9	141			
Surr: DNOP		5.2		5.000		104	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2107069

08-Jul-21

Client:	Devon Er	nergy									
Project:	Helios 6										
Sample ID: mb-61	115	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e	
Client ID: PBS		Batch	n ID: 61	115	F	RunNo: 7	9580				
Prep Date: 7/2/2	021	Analysis D	ate: 7/	6/2021	S	SeqNo: 2	799569	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organi	ics (GRO)	ND	5.0								
Surr: BFB		1000		1000		100	70	130			
Sample ID: Ics-61	115	SampT	ype: LC	S	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e	
Client ID: LCSS		Batch	n ID: 61	115	F	RunNo: 7	9580				
Prep Date: 7/2/2	021	Analysis D	ate: 7/	6/2021	S	SeqNo: 2	799571	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organi	ics (GRO)	24	5.0	25.00	0	95.5	78.6	131			
Surr: BFB		1100		1000		107	70	130			

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

WO#: 2107069 08-Jul-21

	WO#:	2107069
ratory, Inc.		08-Jul-21

Client: Project:	Devon Energy Helios 6										
Sample ID: mb-61	115 Sam	npType: M	BLK	Tes	tCode: El	PA Method	8021B: Volat	iles			
Client ID: PBS	Ba	atch ID: 61	115	F	RunNo: 7						
Prep Date: 7/2/2	021 Analysi	s Date: 7	/6/2021	S	SeqNo: 2						
Analyte	Resul	t PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	NC	0.025									
Toluene	ND	0.050									
Ethylbenzene	ND	0.050									
Xylenes, Total	ND	0.10									
Surr: 4-Bromofluorob	enzene 0.95	5	1.000		94.5	70	130				
Sample ID: Ics-61	115 Sam	npType: LC	s	Tes	tCode: El	PA Method	8021B: Volat	iles			
Client ID: LCSS	Ba	atch ID: 61	115	F	RunNo: 7	9580					
Prep Date: 7/2/2	021 Analysi	s Date: 7	/6/2021	S	SeqNo: 2	799584	Units: mg/K	g			
Analyte	Resul	t PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.99	0.025	1.000	0	99.3	80	120				
Toluene	0.99	0.050	1.000	0	99.0	80	120				
Ethylbenzene	1.0	0.050	1.000	0	100	80	120				
Xylenes, Total	3.0	0.10	3.000	0	100	80	120				
Surr: 4-Bromofluorob	enzene 0.92	2	1.000		92.2	70	130				
Sample ID: 21070	69-001ams Sam	npType: M	S	Tes	tCode: El	PA Method	8021B: Volat	iles			
Client ID: BH21-	•01 11' Ba	atch ID: 61	115	F	RunNo: 7	9580					
Prep Date: 7/2/2	021 Analysi	s Date: 7	/6/2021	5	SeqNo: 2	799586	Units: mg/Kg				
Analyte	Resul	t PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.92	0.024	0.9497	0	97.4	80	120				
Toluene	0.93		0.9497	0	97.9	80	120				
Ethylbenzene	0.95		0.9497	0	100	80	120				
Xylenes, Total	2.9		2.849	0	101	80	120				
Surr: 4-Bromofluorob	enzene 0.89		0.9497		93.5	70	130				
Sample ID: 21070	69-001amsd Sam	npType: M	SD	Tes	tCode: El	PA Method	8021B: Volat	iles			
Client ID: BH21-	• 01 11' Ba	atch ID: 61	115	F	RunNo: 7	9580					
Prep Date: 7/2/2	021 Analysi	s Date: 7	/6/2021	S	SeqNo: 2	799588	Units: mg/K	(g			
Analyte	Resul			SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.98		0.9921	0	98.6	80	120	5.62	20		
Toluene	0.98		0.9921	0	98.4	80	120	4.81	20		
Ethylbenzene	1.0		0.9921	0	102	80	120	6.46	20		
Xylenes, Total	3.1		2.976	0	104	80	120	6.56	20		
Surr: 4-Bromofluorob	enzene 0.95	5	0.9921		96.2	70	130	0	0		

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Daga	152	of 414	
ruge	134	01414	

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ANAL	7/2023 1:52:13 PM Ronmental Ysis Ratory	Hall Environmenta Alt TEL: 505-345-397. Website: clients.ha	490 uquerq 5 FAX:	1 Hawki ue. NM 505-345	ins NE 87109 5-4107	Page 15 Sample Log-In Check List					
Client Name:	Devon Energy	Work Order Number	: 210	7069			RcptNo: 1				
Received By:	Juan Rojas	7/2/2021 7:30:00 AM			Juan	rendy					
Completed By:	Cheyenne Cason	7/2/2021 8:21:01 AM			C les	ing l					
Reviewed By:	JR712/21										
Chain of Cus	tody										
1. Is Chain of C	ustody complete?		Yes	~	No		Not Present				
2. How was the	sample delivered?		Cou	ier							
Log In											
3. Was an atten	npt made to cool the samp	les?	Yes	~	No		NA 🗌				
4. Were all sam	oles received at a tempera	ture of >0° C to 6.0°C	Yes		No						
5. Sample(s) in	proper container(s)?		Yes		No						
6. Sufficient sam	ple volume for indicated te	est(s)?	Yes	~	No						
7. Are samples (except VOA and ONG) pro	operly preserved?	Yes	~	No						
8. Was preserva	tive added to bottles?		Yes		No		NA 🗌				
9. Received at le	ast 1 vial with headspace	<1/4" for AQ VOA?	Yes		No						
10. Were any sar	nple containers received b	roken?	Yes		No		# of preserved				
	ork match bottle labels? ancies on chain of custody)	Yes		No		bottles checked for pH: (<2 or >12 unless noted)				
	correctly identified on Chai		Yes	~	No		Adjusted?				
	t analyses were requested			V	No		1 -				
	ng times able to be met? ustomer for authorization.)		Yes		No		Checked by: T. C 7-2				
Special Handl	ing (if applicable)										
and the second second second	tified of all discrepancies v	with this order?	Yes		No		NA 🔽				
Person	Notified:	Date:				_					
By Who	om:	Via:	eMa		Phone [Fax	In Person				
Regard	ing:										
Client In	nstructions:										
16. Additional rel	marks:										
17. Cooler Infor	mation										
Cooler No	Temp °C Condition 1.6 Good	Seal Intact Seal No S	Seal D	ate	Signed	Ву					

Page 1 of 1

Turn-Around Time: 5- Day	A Standard Bush Anal VETS I ABOBATODY A	87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis Request	()u	John HUrt PO4, S PO4, S PO4, S PO4, S	Sampler: CQ	05 202 200 20 20 20 20 20 20 20 20 20 20 2	(GF 310 310 310 310 310 310 310 310 310 310	0315D estic Metho 28 We 3r, 1 3r, 1 (AO)	Container Preservative HEAL No. C 4 BT PH: 80 1 B 250 (5 12 12 12 12 12 12 12 12 12 12 12 12 12	1 402 ICC OCI NN	1-02 12' 1 1 0002 1 1	21-0312' @3	1-04 15' 1 0004 11 0004				Via: Date Time Remarks:	By Via: Date Time Remarks: CC, Chance DiXOD, MUSTIN Harr	By Via: Date Time Remarks: CC Chance NuStin Ha Mi 7/1/21 2804 Mi Date Time Remarks: CC Chance SDhn Hur
Chain-of-Custody Record	Client:	Mailing Address: On Film	6/9/2	Phone #:	Email or Fax#:	OA/QC Package: OA/QC Package: I Standard Level 4 (Full Validation)	on: 🗆 Åz Compliance	Other	EDD (Type) H		Date Time Matrix Sample Name T	1	6/30 10:00 BH21-02 12'	6/30 11:00 BHZ1-03 12'	6/30/2500 BHZ1-04 15'					Time: Relinquished by: 21 0904 MM POLOUL	Time: Relinquished by: 0904 MM POLOUE



November 17, 2022

Chance Dixon Vertex Resources Services, Inc. 3101 Boyd Drive Carlsbad, NM 88220 TEL: (505) 506-0040 FAX: Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

RE: Hackberry 6 Fed 1 Well Pad

OrderNo.: 2211297

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 18 sample(s) on 11/5/2022 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 or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BH22-01 0' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 11/3/2022 9:00:00 AM Lab ID: 2211297-001 Matrix: SOIL Received Date: 11/5/2022 2:10:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 15 mg/Kg 1 11/9/2022 10:07:03 PM Motor Oil Range Organics (MRO) ND 50 mg/Kg 1 11/9/2022 10:07:03 PM Surr: DNOP 96.4 21-129 %Rec 1 11/9/2022 10:07:03 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 11/9/2022 11:20:44 PM 4.9 mg/Kg 1 Surr: BFB 88.6 37.7-212 %Rec 1 11/9/2022 11:20:44 PM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 0.024 11/9/2022 11:20:44 PM mg/Kg 1 Toluene ND 0.049 mg/Kg 1 11/9/2022 11:20:44 PM Ethylbenzene ND 0.049 mg/Kg 1 11/9/2022 11:20:44 PM Xylenes, Total ND 0.098 mg/Kg 11/9/2022 11:20:44 PM 1 Surr: 4-Bromofluorobenzene 93.7 70-130 %Rec 1 11/9/2022 11:20:44 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 11/11/2022 10:01:21 PM ND 60 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range RL Reporting Limit

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Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BH22-01 2' Hackberry 6 Fed 1 Well Pad **Project:** Collection Date: 11/3/2022 9:05:00 AM Lab ID: 2211297-002 Matrix: SOIL Received Date: 11/5/2022 2:10:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Diesel Range Organics (DRO) ND 14 mg/Kg 1 11/9/2022 10:17:35 PM Motor Oil Range Organics (MRO) ND 47 mg/Kg 1 11/9/2022 10:17:35 PM Surr: DNOP 59.7 21-129 %Rec 1 11/9/2022 10:17:35 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 11/9/2022 11:44:15 PM 4.8 mg/Kg 1 Surr: BFB 90.1 37.7-212 %Rec 1 11/9/2022 11:44:15 PM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 11/9/2022 11:44:15 PM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 11/9/2022 11:44:15 PM Ethylbenzene ND 0.048 mg/Kg 1 11/9/2022 11:44:15 PM Xylenes, Total ND 0.095 mg/Kg 11/9/2022 11:44:15 PM 1 Surr: 4-Bromofluorobenzene 94.5 70-130 %Rec 1 11/9/2022 11:44:15 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 11/11/2022 10:13:46 PM ND 60 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 2 of 25

Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BH22-02 0' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 11/3/2022 9:10:00 AM Lab ID: 2211297-003 Matrix: SOIL Received Date: 11/5/2022 2:10:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Diesel Range Organics (DRO) ND 15 mg/Kg 1 11/9/2022 10:28:06 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 11/9/2022 10:28:06 PM Surr: DNOP 71.5 21-129 %Rec 1 11/9/2022 10:28:06 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 11/10/2022 12:07:40 AM 4.9 mg/Kg 1 Surr: BFB 88.9 37.7-212 %Rec 1 11/10/2022 12:07:40 AM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 11/10/2022 12:07:40 AM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 11/10/2022 12:07:40 AM Ethylbenzene ND 0.049 mg/Kg 1 11/10/2022 12:07:40 AM Xylenes, Total ND 0.098 mg/Kg 11/10/2022 12:07:40 AM 1 Surr: 4-Bromofluorobenzene 93.1 70-130 %Rec 1 11/10/2022 12:07:40 AM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 11/11/2022 10:26:10 PM ND 60 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range RL Reporting Limit

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Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BH22-02 2' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 11/3/2022 9:15:00 AM Lab ID: 2211297-004 Matrix: SOIL Received Date: 11/5/2022 2:10:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) ND 15 mg/Kg 1 11/9/2022 10:38:36 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 11/9/2022 10:38:36 PM Surr: DNOP 68.3 21-129 %Rec 1 11/9/2022 10:38:36 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 11/10/2022 12:31:09 AM 5.0 mg/Kg 1 Surr: BFB 86.6 37.7-212 %Rec 1 11/10/2022 12:31:09 AM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 11/10/2022 12:31:09 AM 0.025 mg/Kg 1 Toluene ND 0.050 mg/Kg 1 11/10/2022 12:31:09 AM Ethylbenzene ND 0.050 mg/Kg 1 11/10/2022 12:31:09 AM Xylenes, Total ND mg/Kg 11/10/2022 12:31:09 AM 0.099 1 Surr: 4-Bromofluorobenzene 91.5 70-130 %Rec 1 11/10/2022 12:31:09 AM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 11/14/2022 12:29:49 PM ND 60 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 4 of 25

Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BH22-03 0' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 11/3/2022 9:20:00 AM Lab ID: 2211297-005 Matrix: SOIL Received Date: 11/5/2022 2:10:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Diesel Range Organics (DRO) ND 14 mg/Kg 1 11/9/2022 10:49:06 PM Motor Oil Range Organics (MRO) ND 48 mg/Kg 1 11/9/2022 10:49:06 PM Surr: DNOP 75.6 21-129 %Rec 1 11/9/2022 10:49:06 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 11/10/2022 12:54:34 AM 4.8 mg/Kg 1 Surr: BFB 88.4 37.7-212 %Rec 1 11/10/2022 12:54:34 AM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 11/10/2022 12:54:34 AM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 11/10/2022 12:54:34 AM Ethylbenzene ND 0.048 mg/Kg 1 11/10/2022 12:54:34 AM Xylenes, Total ND 0.097 mg/Kg 11/10/2022 12:54:34 AM 1 Surr: 4-Bromofluorobenzene 92.7 70-130 %Rec 1 11/10/2022 12:54:34 AM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 11/14/2022 1:07:04 PM ND 60 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 5 of 25

Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BH22-03 2' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 11/3/2022 9:25:00 AM Lab ID: 2211297-006 Matrix: SOIL Received Date: 11/5/2022 2:10:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Diesel Range Organics (DRO) ND 15 mg/Kg 1 11/9/2022 10:59:36 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 11/9/2022 10:59:36 PM Surr: DNOP 72.6 21-129 %Rec 1 11/9/2022 10:59:36 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 11/10/2022 1:18:03 AM 5.0 mg/Kg 1 Surr: BFB 87.0 37.7-212 %Rec 1 11/10/2022 1:18:03 AM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 11/10/2022 1:18:03 AM 0.025 mg/Kg 1 Toluene ND 0.050 mg/Kg 1 11/10/2022 1:18:03 AM Ethylbenzene ND 0.050 mg/Kg 1 11/10/2022 1:18:03 AM Xylenes, Total ND mg/Kg 11/10/2022 1:18:03 AM 0.10 1 Surr: 4-Bromofluorobenzene 92.2 70-130 %Rec 1 11/10/2022 1:18:03 AM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 11/14/2022 1:19:29 PM ND 60 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 6 of 25

Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BH22-04 0' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 11/3/2022 9:30:00 AM Lab ID: 2211297-007 Matrix: SOIL Received Date: 11/5/2022 2:10:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Diesel Range Organics (DRO) ND 15 mg/Kg 1 11/9/2022 11:10:08 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 11/9/2022 11:10:08 PM Surr: DNOP 66.0 21-129 %Rec 1 11/9/2022 11:10:08 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 11/10/2022 1:41:29 AM 5.0 mg/Kg 1 Surr: BFB 86.3 37.7-212 %Rec 1 11/10/2022 1:41:29 AM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 11/10/2022 1:41:29 AM 0.025 mg/Kg 1 Toluene ND 0.050 mg/Kg 1 11/10/2022 1:41:29 AM Ethylbenzene ND 0.050 mg/Kg 1 11/10/2022 1:41:29 AM Xylenes, Total ND mg/Kg 11/10/2022 1:41:29 AM 0.099 1 Surr: 4-Bromofluorobenzene 91.2 70-130 %Rec 1 11/10/2022 1:41:29 AM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 11/14/2022 1:31:53 PM ND 60 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 7 of 25

Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BH22-04 2' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 11/3/2022 9:35:00 AM Lab ID: 2211297-008 Matrix: SOIL Received Date: 11/5/2022 2:10:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Diesel Range Organics (DRO) ND 14 mg/Kg 1 11/9/2022 11:20:40 PM Motor Oil Range Organics (MRO) ND 46 mg/Kg 1 11/9/2022 11:20:40 PM Surr: DNOP 71.5 21-129 %Rec 1 11/9/2022 11:20:40 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 11/10/2022 2:04:56 AM 5.0 mg/Kg 1 Surr: BFB 86.9 37.7-212 %Rec 1 11/10/2022 2:04:56 AM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 11/10/2022 2:04:56 AM 0.025 mg/Kg 1 Toluene ND 0.050 mg/Kg 1 11/10/2022 2:04:56 AM Ethylbenzene ND 0.050 mg/Kg 1 11/10/2022 2:04:56 AM Xylenes, Total ND mg/Kg 1 11/10/2022 2:04:56 AM 0.10 Surr: 4-Bromofluorobenzene 91.3 70-130 %Rec 1 11/10/2022 2:04:56 AM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 11/14/2022 1:44:18 PM 130 60 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 8 of 25

Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BH22-05 0' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 11/3/2022 9:40:00 AM Lab ID: 2211297-009 Matrix: SOIL Received Date: 11/5/2022 2:10:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Diesel Range Organics (DRO) ND 14 mg/Kg 1 11/9/2022 11:31:11 PM Motor Oil Range Organics (MRO) ND 46 mg/Kg 1 11/9/2022 11:31:11 PM Surr: DNOP 67.8 21-129 %Rec 1 11/9/2022 11:31:11 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 11/10/2022 2:28:22 AM 5.0 mg/Kg 1 Surr: BFB 86.9 37.7-212 %Rec 1 11/10/2022 2:28:22 AM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 11/10/2022 2:28:22 AM 0.025 mg/Kg 1 Toluene ND 0.050 mg/Kg 1 11/10/2022 2:28:22 AM Ethylbenzene ND 0.050 mg/Kg 1 11/10/2022 2:28:22 AM Xylenes, Total ND mg/Kg 11/10/2022 2:28:22 AM 0.099 1 Surr: 4-Bromofluorobenzene 91.3 70-130 %Rec 1 11/10/2022 2:28:22 AM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 11/14/2022 2:46:23 PM ND 60 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 9 of 25

Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BH22-05 2' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 11/3/2022 9:45:00 AM Lab ID: 2211297-010 Matrix: SOIL Received Date: 11/5/2022 2:10:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Diesel Range Organics (DRO) ND 15 mg/Kg 1 11/9/2022 11:41:44 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 11/9/2022 11:41:44 PM Surr: DNOP 75.0 21-129 %Rec 1 11/9/2022 11:41:44 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 11/10/2022 3:15:12 AM 5.0 mg/Kg 1 Surr: BFB 87.0 37.7-212 %Rec 1 11/10/2022 3:15:12 AM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 11/10/2022 3:15:12 AM 0.025 mg/Kg 1 Toluene ND 0.050 mg/Kg 1 11/10/2022 3:15:12 AM Ethylbenzene ND 0.050 mg/Kg 1 11/10/2022 3:15:12 AM Xylenes, Total ND mg/Kg 11/10/2022 3:15:12 AM 0.099 1 Surr: 4-Bromofluorobenzene 92.2 70-130 %Rec 1 11/10/2022 3:15:12 AM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 11/14/2022 2:58:48 PM ND 59 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 10 of 25

Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BH22-06 0' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 11/3/2022 9:50:00 AM Lab ID: 2211297-011 Matrix: SOIL Received Date: 11/5/2022 2:10:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Diesel Range Organics (DRO) ND 15 mg/Kg 1 11/11/2022 11:40:04 AM Motor Oil Range Organics (MRO) ND 48 mg/Kg 1 11/11/2022 11:40:04 AM Surr: DNOP 21-129 %Rec 1 11/11/2022 11:40:04 AM 112 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 11/10/2022 3:51:48 PM 4.8 mg/Kg 1 Surr: BFB 90.3 37.7-212 %Rec 1 11/10/2022 3:51:48 PM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 11/10/2022 3:51:48 PM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 11/10/2022 3:51:48 PM Ethylbenzene ND 0.048 mg/Kg 1 11/10/2022 3:51:48 PM Xylenes, Total ND 0.097 mg/Kg 11/10/2022 3:51:48 PM 1 Surr: 4-Bromofluorobenzene 93.6 70-130 %Rec 1 11/10/2022 3:51:48 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 11/14/2022 3:11:13 PM ND 59 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

- D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BH22-06 2' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 11/3/2022 9:55:00 AM Lab ID: 2211297-012 Matrix: SOIL Received Date: 11/5/2022 2:10:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Diesel Range Organics (DRO) ND 15 mg/Kg 1 11/14/2022 3:01:53 PM Motor Oil Range Organics (MRO) ND 50 mg/Kg 1 11/14/2022 3:01:53 PM 21-129 Surr: DNOP %Rec 1 11/14/2022 3:01:53 PM 111 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 4.7 11/10/2022 5:02:03 PM mg/Kg 1 Surr: BFB 86.1 37.7-212 %Rec 1 11/10/2022 5:02:03 PM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 11/10/2022 5:02:03 PM 0.023 mg/Kg 1 Toluene ND 0.047 mg/Kg 1 11/10/2022 5:02:03 PM Ethylbenzene ND 0.047 mg/Kg 1 11/10/2022 5:02:03 PM Xylenes, Total ND 0.093 mg/Kg 11/10/2022 5:02:03 PM 1 Surr: 4-Bromofluorobenzene 90.8 70-130 %Rec 1 11/10/2022 5:02:03 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 11/14/2022 3:23:38 PM ND 60 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 12 of 25

Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BH22-07 0' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 11/3/2022 10:00:00 AM Lab ID: 2211297-013 Matrix: SOIL Received Date: 11/5/2022 2:10:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Diesel Range Organics (DRO)** ND 15 mg/Kg 1 11/11/2022 1:07:37 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 11/11/2022 1:07:37 PM Surr: DNOP 100 21-129 %Rec 1 11/11/2022 1:07:37 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 11/10/2022 6:12:51 PM 4.8 mg/Kg 1 Surr: BFB 89.8 37.7-212 %Rec 1 11/10/2022 6:12:51 PM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 11/10/2022 6:12:51 PM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 11/10/2022 6:12:51 PM Ethylbenzene ND 0.048 mg/Kg 1 11/10/2022 6:12:51 PM Xylenes, Total ND 0.097 mg/Kg 1 11/10/2022 6:12:51 PM Surr: 4-Bromofluorobenzene 93.7 70-130 %Rec 1 11/10/2022 6:12:51 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 11/14/2022 3:36:02 PM 9000 300 100

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range Reporting Limit

RL

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Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BH22-07 2' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 11/3/2022 10:05:00 AM Lab ID: 2211297-014 Matrix: SOIL Received Date: 11/5/2022 2:10:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 14 mg/Kg 1 11/11/2022 1:18:12 PM Motor Oil Range Organics (MRO) ND 47 mg/Kg 1 11/11/2022 1:18:12 PM Surr: DNOP 132 21-129 S %Rec 1 11/11/2022 1:18:12 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 4.7 11/10/2022 6:36:23 PM mg/Kg 1 Surr: BFB 87.8 37.7-212 %Rec 1 11/10/2022 6:36:23 PM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 11/10/2022 6:36:23 PM 0.024 mg/Kg 1 Toluene ND 0.047 mg/Kg 1 11/10/2022 6:36:23 PM Ethylbenzene ND 0.047 mg/Kg 1 11/10/2022 6:36:23 PM Xylenes, Total ND 0.095 mg/Kg 1 11/10/2022 6:36:23 PM Surr: 4-Bromofluorobenzene 93.1 70-130 %Rec 1 11/10/2022 6:36:23 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 11/14/2022 3:48:26 PM 7000 300 100

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 14 of 25

Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BH22-07 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 11/3/2022 10:10:00 AM Lab ID: 2211297-015 Matrix: SOIL Received Date: 11/5/2022 2:10:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Diesel Range Organics (DRO)** 14 14 mg/Kg 1 11/14/2022 4:40:12 PM Motor Oil Range Organics (MRO) ND 46 mg/Kg 1 11/14/2022 4:40:12 PM Surr: DNOP 116 21-129 %Rec 1 11/14/2022 4:40:12 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 11/10/2022 6:59:54 PM 4.6 mg/Kg 1 Surr: BFB 88.7 37.7-212 %Rec 1 11/10/2022 6:59:54 PM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 11/10/2022 6:59:54 PM 0.023 mg/Kg 1 Toluene ND 0.046 mg/Kg 1 11/10/2022 6:59:54 PM Ethylbenzene ND 0.046 mg/Kg 1 11/10/2022 6:59:54 PM Xylenes, Total ND 0.092 mg/Kg 1 11/10/2022 6:59:54 PM Surr: 4-Bromofluorobenzene 92.2 70-130 %Rec 1 11/10/2022 6:59:54 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 11/14/2022 4:00:51 PM 6600 300 100

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 15 of 25

Project:

CLIENT: Vertex Resources Services, Inc.

Hackberry 6 Fed 1 Well Pad

Analytical Report Lab Order 2211297

Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BH22-08 0' Collection Date: 11/3/2022 10:15:00 AM Received Date: 11/5/2022 2:10:00 PM

Lab ID: 2211297-016	Matrix: SOIL	Received Date: 11/5/2022 2:10:00 PM							
Analyses	Result	RL Qu	al Units	DF	Date Analyzed				
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH				
Diesel Range Organics (DRO)	ND	15	mg/Kg	1	11/11/2022 1:39:24 PM				
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	11/11/2022 1:39:24 PM				
Surr: DNOP	107	21-129	%Rec	1	11/11/2022 1:39:24 PM				
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: NSB				
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	11/10/2022 7:23:14 PM				
Surr: BFB	92.7	37.7-212	%Rec	1	11/10/2022 7:23:14 PM				
EPA METHOD 8021B: VOLATILES					Analyst: NSB				
Benzene	ND	0.024	mg/Kg	1	11/10/2022 7:23:14 PM				
Toluene	ND	0.048	mg/Kg	1	11/10/2022 7:23:14 PM				
Ethylbenzene	ND	0.048	mg/Kg	1	11/10/2022 7:23:14 PM				
Xylenes, Total	ND	0.097	mg/Kg	1	11/10/2022 7:23:14 PM				
Surr: 4-Bromofluorobenzene	97.3	70-130	%Rec	1	11/10/2022 7:23:14 PM				
EPA METHOD 300.0: ANIONS					Analyst: NAI				
Chloride	7100	300	mg/Kg	100	11/14/2022 4:13:15 PM				

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

Qualifiers:

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 16 of 25

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Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BH22-08 2' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 11/3/2022 10:20:00 AM Lab ID: 2211297-017 Matrix: SOIL Received Date: 11/5/2022 2:10:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Diesel Range Organics (DRO)** ND 15 mg/Kg 1 11/11/2022 1:50:01 PM Motor Oil Range Organics (MRO) ND 50 mg/Kg 1 11/11/2022 1:50:01 PM Surr: DNOP 105 21-129 %Rec 1 11/11/2022 1:50:01 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 11/10/2022 7:46:49 PM 4.8 mg/Kg 1 Surr: BFB 89.0 37.7-212 %Rec 1 11/10/2022 7:46:49 PM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 11/10/2022 7:46:49 PM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 11/10/2022 7:46:49 PM Ethylbenzene ND 0.048 mg/Kg 1 11/10/2022 7:46:49 PM Xylenes, Total ND 0.095 mg/Kg 1 11/10/2022 7:46:49 PM Surr: 4-Bromofluorobenzene 92.6 70-130 %Rec 1 11/10/2022 7:46:49 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 11/14/2022 4:50:29 PM 5600 300 100

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 17 of 25

Date Reported: 11/17/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BH22-08 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 11/3/2022 10:25:00 AM Lab ID: 2211297-018 Matrix: SOIL Received Date: 11/5/2022 2:10:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Diesel Range Organics (DRO)** 41 15 mg/Kg 1 11/14/2022 5:12:12 PM Motor Oil Range Organics (MRO) 110 49 mg/Kg 1 11/14/2022 5:12:12 PM Surr: DNOP 121 21-129 %Rec 1 11/14/2022 5:12:12 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: NSB Gasoline Range Organics (GRO) ND 11/10/2022 8:10:22 PM 4.8 mg/Kg 1 Surr: BFB 88.4 37.7-212 %Rec 1 11/10/2022 8:10:22 PM **EPA METHOD 8021B: VOLATILES** Analyst: NSB Benzene ND 11/10/2022 8:10:22 PM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 11/10/2022 8:10:22 PM Ethylbenzene ND 0.048 mg/Kg 1 11/10/2022 8:10:22 PM Xylenes, Total ND 0.097 mg/Kg 1 11/10/2022 8:10:22 PM Surr: 4-Bromofluorobenzene 92.7 70-130 %Rec 1 11/10/2022 8:10:22 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 11/14/2022 5:02:54 PM 7300 300 100

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 18 of 25

Released to Imaging: 6/9/2023 11:32:08 AM

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

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2211297

WO#:

Hall Er	ivironmen	ntal Analysis Labora	tory, Inc.	17-Nov-2					
Client: Project:	Vertex Resources Services, Inc. Hackberry 6 Fed 1 Well Pad								
Sample ID:	MB-71445	SampType: mblk	TestCode: EPA Method 300.0: Anions						
Client ID:	PBS	Batch ID: 71445	RunNo: 92527						
Prep Date:	11/11/2022	Analysis Date: 11/11/2022	SeqNo: 3328186 Units: mg/Kg						
Analyte		Result PQL SPK val	ue SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual					
Chloride		ND 1.5							
Sample ID:	LCS-71445	SampType: Ics	TestCode: EPA Method 300.0: Anions						
Client ID:	LCSS	Batch ID: 71445	RunNo: 92527						
Prep Date:	11/11/2022	Analysis Date: 11/11/2022	SeqNo: 3328187 Units: mg/Kg						
Analyte		Result PQL SPK val	ue SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual					
Chloride		14 1.5 15.0	00 0 95.6 90 110						
Sample ID:	MB-71469	SampType: mblk	TestCode: EPA Method 300.0: Anions						
Client ID:	PBS	Batch ID: 71469	RunNo: 92581						
Prep Date:	11/14/2022	Analysis Date: 11/14/2022	SeqNo: 3329299 Units: mg/Kg						
Analyte		Result PQL SPK val	ue SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual					
Chloride		ND 1.5							
Sample ID:	LCS-71469	SampType: Ics	TestCode: EPA Method 300.0: Anions						
Client ID:	LCSS	Batch ID: 71469	RunNo: 92581						
Prep Date:	11/14/2022	Analysis Date: 11/14/2022	SeqNo: 3329300 Units: mg/Kg						
Analyte		Result PQL SPK val	ue SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual					
Chloride		15 1.5 15.0	00 0 96.7 90 110						

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- 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.

	Resources Se ry 6 Fed 1 V									
Sample ID: LCS-71362	SampT	ype: LC	S	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID: LCSS	Batch	ID: 71	362	F	unNo: 92	2430				
Prep Date: 11/8/2022	Analysis D	ate: 11	/9/2022	5	SeqNo: 33	324031	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	15	50.00	0	90.7	64.4	127			
Surr: DNOP	5.3		5.000		106	21	129			
Sample ID: MB-71362	SampT	ype: ME	BLK	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID: PBS	Batch	ID: 71 :	362	F	lunNo: 92	2430				
Prep Date: 11/8/2022	Analysis D	ate: 11	/9/2022	5	SeqNo: 33	324033	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		95.2	21	129			
Sample ID: LCS-71411	SampT	ype: LC	S	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID: LCSS	Batch	ID: 71	411	F	unNo: 92	2519				
Prep Date: 11/10/2022	Analysis D	ate: 11	/11/2022	5	SeqNo: 33	325799	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	15	50.00	0	90.1	64.4	127			
Surr: DNOP	5.6		5.000		111	21	129			
Sample ID: MB-71411	SampT	ype: ME	BLK	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID: PBS	Batch	ID: 71	411	F	anNo: 92	2519				
Prep Date: 11/10/2022	Analysis D	ate: 11	/11/2022	5	SeqNo: 33	825801	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		108	21	129			

Sample ID: LCS-71413	I413 SampType: LCS TestCode: EPA Method 8015M/D: Dies					TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID: LCSS	Batch ID: 714	Batch ID: 71413 RunNo: 92519									
Prep Date: 11/10/202	2 Analysis Date: 11	/11/2022	SeqNo: 3327399	Units: %Rec							
Analyte	Result PQL	SPK value SPK Ref Val	%REC LowLir	mit HighLimit	%RPD	RPDLimit	Qual				
Surr: DNOP	6.1	5.000	121	21 129							

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

2211297

17-Nov-22

11/10/2022

Prep Date:

QC SUMMARY REPORT Ha _

Analysis Date: 11/11/2022

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L.	Hall Environmental Analysis Laboratory, Inc.						
Client: Project:		Resources Services, Inc. rry 6 Fed 1 Well Pad					
Sample ID: Client ID:	MB-71413 PBS	SampType: MBLK Batch ID: 71413	TestCode: EPA Method 8015M/D: Diesel Range Organics RunNo: 92519				

SeqNo: 3327400

Units: %Rec

Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		12		10.00		117	21	129			
Sample ID:	LCS-71461	SampT	Гуре: LC	S	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID:	LCSS	Batch	h ID: 714	461	F	RunNo: 92557					
Prep Date:	11/14/2022	Analysis D	Date: 11	/14/2022	S	SeqNo: 33	827869	Units: %Rec	;		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		5.0		5.000		101	21	129			
Sample ID:	MB-71461	SampT	Type: ME	BLK	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID:	PBS	Batch	h ID: 714	461	F	RunNo: 9 2	2557				
Prep Date:	11/14/2022	Analysis D	Date: 11	/14/2022	S	SeqNo: 33	827870	Units: %Rec	;		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		9.3		10.00		92.6	21	129			
	2211297-012AMS		Гуре: МS		Tes		PA Method	8015M/D: Die	sel Range	Organics	
	2211297-012AMS BH22-06 2'	SampT	「ype: MS h ID: 71 4	5					sel Range	Organics	
Sample ID:		SampT	h ID: 714	5 411	F	tCode: EF	2557		0	Organics	
Sample ID: Client ID:	BH22-06 2'	SampT Batch	h ID: 714	\$ 411 /14/2022	F	tCode: EF	2557	8015M/D: Die	0	Organics RPDLimit	Qual
Sample ID: Client ID: Prep Date: Analyte Diesel Range (BH22-06 2' 11/10/2022 Drganics (DRO)	SampT Batch Analysis D Result 66	h ID: 71 4 Date: 11	5 411 /14/2022 SPK value 49.60	F	tCode: EF RunNo: 92 SeqNo: 33 %REC 133	2557 329449 LowLimit 36.1	8015M/D: Die Units: mg/K HighLimit 154	g	J	
Sample ID: Client ID: Prep Date: Analyte	BH22-06 2' 11/10/2022 Drganics (DRO)	SampT Batch Analysis D Result	h ID: 71 4 Date: 11 PQL	5 411 /14/2022 SPK value	F S SPK Ref Val	tCode: EF RunNo: 92 SeqNo: 33 %REC	2557 329449 LowLimit	8015M/D: Die Units: mg/K HighLimit	g	J	Qual
Sample ID: Client ID: Prep Date: Analyte Diesel Range (Surr: DNOP	BH22-06 2' 11/10/2022 Drganics (DRO)	SampT Batch Analysis D Result 66 7.4	h ID: 71 4 Date: 11 PQL	5 411 /14/2022 SPK value 49.60 4.960	F SPK Ref Val 0	tCode: EF RunNo: 92 SeqNo: 33 %REC 133 148	2557 329449 LowLimit 36.1 21	8015M/D: Die Units: mg/K HighLimit 154	g %RPD	RPDLimit	
Sample ID: Client ID: Prep Date: Analyte Diesel Range (Surr: DNOP	BH22-06 2' 11/10/2022 Drganics (DRO)	SampT Batch Analysis D Result 66 7.4 SampT	h ID: 71 4 Date: 11 <u>PQL</u> 15	5 411 /14/2022 SPK value 49.60 4.960	F SPK Ref Val 0 Tes	tCode: EF RunNo: 92 SeqNo: 33 %REC 133 148	2557 329449 LowLimit 36.1 21 PA Method	8015M/D: Die Units: mg/K HighLimit 154 129	g %RPD	RPDLimit	
Sample ID: Client ID: Prep Date: Analyte Diesel Range (Surr: DNOP Sample ID:	BH22-06 2' 11/10/2022 Drganics (DRO) 2211297-012AMSD	SampT Batch Analysis D Result 66 7.4 SampT	h ID: 71 4 Date: 11 PQL 15 Type: MS h ID: 71 4	5 411 /14/2022 SPK value 49.60 4.960 5D 411	F SPK Ref Val 0 Tes F	tCode: EF RunNo: 92 SeqNo: 33 %REC 133 148 tCode: EF	2557 329449 LowLimit 36.1 21 PA Method 2557	8015M/D: Die Units: mg/K HighLimit 154 129	g %RPD sel Range	RPDLimit	
Sample ID: Client ID: Prep Date: Analyte Diesel Range (Surr: DNOP Sample ID: Client ID:	BH22-06 2' 11/10/2022 Drganics (DRO) 2211297-012AMSD BH22-06 2'	SampT Batch Analysis D Result 66 7.4 SampT Batch	h ID: 71 4 Date: 11 PQL 15 Type: MS h ID: 71 4	5 411 /14/2022 SPK value 49.60 4.960 4.960 5D 411 /14/2022	F SPK Ref Val 0 Tes F	tCode: EF RunNo: 92 SeqNo: 33 %REC 133 148 tCode: EF RunNo: 92 SeqNo: 33	2557 329449 LowLimit 36.1 21 PA Method 2557	8015M/D: Die Units: mg/K HighLimit 154 129 8015M/D: Die	g %RPD sel Range	RPDLimit	
Sample ID: Client ID: Prep Date: Analyte Diesel Range (Surr: DNOP Sample ID: Client ID: Prep Date: Analyte	BH22-06 2' 11/10/2022 Drganics (DRO) 2211297-012AMSD BH22-06 2' 11/10/2022 Drganics (DRO)	SampT Batch Analysis D Result 66 7.4 SampT Batch Analysis D	h ID: 71 Date: 11 PQL 15 Type: MS h ID: 71 Date: 11	5 411 /14/2022 SPK value 49.60 4.960 4.960 5D 411 /14/2022	F SPK Ref Val 0 Tes F	tCode: EF RunNo: 92 SeqNo: 33 %REC 133 148 tCode: EF RunNo: 92 SeqNo: 33	2557 329449 LowLimit 36.1 21 24 24 Method 2557 329450	8015M/D: Die Units: mg/K HighLimit 154 129 8015M/D: Die Units: mg/K	g %RPD sel Range g	RPDLimit Organics	S

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND

PQL Practical Quanitative Limit

- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank В
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

Reporting Limit RL

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Client:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Vertex Resources Services, Inc.

Project:	Hackberry		,								
Sample ID:	mb-71353	SampT	уре: МВ	LK	Tes	tCode: EF	PA Method	8015D: Gaso	line Range		
Client ID:	PBS	Batch	n ID: 713	53	F	RunNo: 92	2451				
Prep Date:	11/7/2022	Analysis D)ate: 11	/9/2022	S	SeqNo: 33	322711	Units: mg/Kg			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang Surr: BFB	e Organics (GRO)	ND 930	5.0	1000		93.0	37.7	212			
Sample ID:	lcs-71353	SampT	ype: LC	s	Tes	tCode: EF	PA Method	8015D: Gaso	line Range		
Client ID:	LCSS	Batch	n ID: 713	53	F	RunNo: 92	2451				
Prep Date:	11/7/2022	Analysis D	Date: 11	/9/2022	S	SeqNo: 33	322712	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang Surr: BFB	e Organics (GRO)	24 1900	5.0	25.00 1000	0	94.8 190	72.3 37.7	137 212			
Sample ID:	mb-71393	SampT	уре: МВ	LK	Tes	tCode: EF	A Method	8015D: Gaso	line Range		
Client ID:	PBS	Batch	n ID: 713	93	F	RunNo: 92	2479				
Prep Date:	11/9/2022	Analysis D	Date: 11	/10/2022	S	SeqNo: 33	327238	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang Surr: BFB	e Organics (GRO)	ND 900	5.0	1000		90.0	37.7	212			
Sample ID:	LCS-71393	SampT	ype: LC	S	Tes	tCode: EF	A Method	8015D: Gaso	line Range		
Client ID:	LCSS	Batch	n ID: 713	93	F	RunNo: 92	2479				
Prep Date:	11/9/2022	Analysis D	Date: 11	/10/2022	S	SeqNo: 33	327239	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
-	e Organics (GRO)	22	5.0	25.00	0	89.7	72.3	137			
Surr: BFB		1800		1000		184	37.7	212			
Sample ID:	2211297-011ams	SampT	ype: MS	;				8015D: Gaso	line Range		
Client ID:	BH22-06 0'		n ID: 713			RunNo: 92					
Prep Date:	11/9/2022	Analysis D	Date: 11	/10/2022	S	SeqNo: 33	327241	Units: mg/K	g		
Analyte		Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang Surr: BFB	e Organics (GRO)	24 1900	4.9	24.49 979.4	0	97.3 195	70 37.7	130 212			
	2211297-011amsd		ype: MS					8015D: Gaso	line Range		
Client ID:	BH22-06 0'		n ID: 713			RunNo: 92		11.5			
Prep Date:	11/9/2022	Analysis D				SeqNo: 33		Units: mg/K	•		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit 2211297

17-Nov-22

WO#:

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Client: Project:	Vertex Re Hackberry										
Sample ID:	2211297-011amsd	SampT	Гуре: МS	D	Tes	tCode: EF	PA Method	8015D: Gaso	ine Range		
Client ID:	BH22-06 0'	Batcl	h ID: 713	393	RunNo: 92479						
Prep Date:	11/9/2022	Analysis [Date: 11	/10/2022	S	SeqNo: 33	327242	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	25	5.0	24.83	0	101	70	130	5.05	20	
Surr: BFB		2000		993.0		200	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 Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 23 of 25

2211297

17-Nov-22

Client:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Vertex Resources Services, Inc.

	rry 6 Fed 1									
Sample ID: mb-71353	Samp	Туре: МЕ	BLK	Tes	tCode: EF	PA Method	8021B: Volati	les		
Client ID: PBS	Batc	h ID: 713	353	F	RunNo: 92	2451				
Prep Date: 11/7/2022	Analysis I	Date: 11	/9/2022	S	SeqNo: 3	322823	Units: mg/K	g		
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		95.9	70	130			
Sample ID: LCS-71353	Samp	Type: LC	S	Tes						
Client ID: LCSS	Batc	h ID: 713	353	F	RunNo: 9 2	2451				
Prep Date: 11/7/2022	Analysis I	Date: 11	/9/2022	S	SeqNo: 3	322837	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	94.4	80	120			
Toluene	0.96	0.050	1.000	0	96.4	80	120			
Ethylbenzene	0.97	0.050	1.000	0	96.7	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.4	80	120			
Surr: 4-Bromofluorobenzene	0.96		1.000		95.8	70	130			
Sample ID: mb-71393	Samp	Туре: МЕ	BLK	TestCode: EPA Method 8021B: Volatiles						
Client ID: PBS	Batc	h ID: 713	393	F	RunNo: 9 2	2479				
Prep Date: 11/9/2022	Analysis I	Date: 11	/10/2022	S	SeqNo: 3	327270	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		94.8	70	130			
	SampType: LCS TestCode: EPA Method 8021B: Volatiles									
Sample ID: Ics-71393	Samp	iype: LC	3	RunNo: 92479						
Client ID: LCSS		h ID: 71 3				2479				
		h ID: 713	393	F			Units: mg/K	g		
Client ID: LCSS	Batc Analysis I Result	h ID: 713 Date: 11 PQL	893 /10/2022 SPK value	F SPK Ref Val	RunNo: 92 SeqNo: 33 %REC		HighLimit	g %RPD	RPDLimit	Qual
Client ID: LCSS Prep Date: 11/9/2022 Analyte	Batc Analysis I Result 0.93	h ID: 713 Date: 11 PQL 0.025	893 /10/2022 SPK value 1.000	F	RunNo: 92 SeqNo: 3 %REC 92.9	327271 LowLimit 80	HighLimit 120	-	RPDLimit	Qual
Client ID: LCSS Prep Date: 11/9/2022 Analyte Benzene	Batc Analysis I Result	h ID: 713 Date: 11 PQL	893 /10/2022 SPK value	F SPK Ref Val	RunNo: 92 SeqNo: 33 %REC	327271 LowLimit	HighLimit	-	RPDLimit	Qual
Client ID: LCSS Prep Date: 11/9/2022 Analyte Benzene Toluene	Batc Analysis I Result 0.93	h ID: 713 Date: 11 PQL 0.025	893 /10/2022 SPK value 1.000	F SPK Ref Val 0	RunNo: 92 SeqNo: 3 %REC 92.9	327271 LowLimit 80	HighLimit 120	-	RPDLimit	Qual
Client ID: LCSS Prep Date: 11/9/2022	Batc Analysis I Result 0.93 0.95	h ID: 713 Date: 11 PQL 0.025 0.050	893 /10/2022 SPK value 1.000 1.000	F SPK Ref Val 0 0	RunNo: 92 SeqNo: 33 <u>%REC</u> 92.9 95.4	327271 LowLimit 80 80	HighLimit 120 120	-	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2211297

17-Nov-22

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

	Vertex Resources Services, Inc. Hackberry 6 Fed 1 Well Pad										
Sample ID: 2211297-012an	n s Samp ⁻	Туре: МS	5	Tes	tCode: EF	PA Method	8021B: Volati	les			
Client ID: BH22-06 2'	Batc	h ID: 713	393	F	RunNo: 92	2479					
Prep Date: 11/9/2022	Analysis I	Date: 11	/10/2022	S	SeqNo: 3	327274	Units: mg/K	g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.97	0.025	0.9843	0	98.4	68.8	120				
Toluene	1.0	0.049	0.9843	0	103	73.6	124				
Ethylbenzene	1.0	0.049	0.9843	0	104	72.7	129				
Xylenes, Total	3.1	0.098	2.953	0.01740	104	75.7	126				
Surr: 4-Bromofluorobenzene	0.92		0.9843		93.2	70	130				
Sample ID: 2211297-012an	n sd Samp ⁻	Туре: МS	SD	Tes	tCode: EF	PA Method	8021B: Volati	les			
Client ID: BH22-06 2'	Batc	h ID: 713	393	F	RunNo: 9 2	2479					
Prep Date: 11/9/2022	Analysis I	Date: 11	/10/2022	S	SeqNo: 3	327278	Units: mg/K	g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.99	0.025	0.9960	0	99.7	68.8	120	2.48	20		
Toluene	1.0	0.050	0.9960	0	104	73.6	124	2.76	20		
Ethylbenzene	1.1	1.1 0.050 0.9960 0 106 72.7 129 3.26 20									
Kylenes, Total	3.2	0.10	2.988	0.01740	107	75.7	126	3.76	20		
Surr: 4-Bromofluorobenzene	0.95	0.10 2.988 0.01740 107 75.7 126 3.76 20 0.9960 95.2 70 130 0 0									

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 25 of 25

2211297

17-Nov-22

HALL ENVIRG ANALY LABOR		IL.	TEL	l Environmental Albu 2: 505-345-3975 Vebsite: www.ha	4901 Hav iquerque, N FAX: 505-3	wkins NE M 87109 845-4107	Sample Log-In Check List				
	Vertex Reso Services, In		Work	Order Number:	2211297			RcptNo: 1			
Received By:	Andy Free	man	11/5/202	22 2:10:00 PM		a	de la	-			
Completed By:	Juan Roja	5	11/7/202	22 7:09:44 AM		44	and g				
Reviewed By:	Koc	11.7	22			,					
Chain of Cust	<u>ody</u>										
1. Is Chain of Cu	stody compl	ete?			Yes 🔽	1	No 🗌	Not Present			
2. How was the s	ample delive	ered?			<u>Courier</u>						
Log In 3. Was an attemp	ot made to c	ool the sample	es?		Yes 🗹	1	No 🗌				
4. Were all sampl	les received	at a temperat	ure of >0° C t	o 6.0°C	Yes 🗹	١	No 🗆	NA 🗌			
5. Sample(s) in p	roper contai	ner(s)?			Yes 🗹	٢	No 🗌				
6. Sufficient samp	ole volume fo	or indicated te	st(s)?		Yes 🔽	Ν	lo 🗌				
7. Are samples (e	except VOA a	and ONG) pro	perly preserve	ed?	Yes 🗹	N	lo 🗌				
8. Was preservati	ive added to	bottles?			Yes 🗌	Ν	lo 🔽	NA 🗌			
9. Received at lea	ast 1 vial with	headspace <	<1/4" for AQ V	'OA?	Yes 🗌	Ν	lo 🗌				
10. Were any sam	ple containe	rs received br	oken?		Yes	1	No 🗹	# of preserved bottles checked			
11. Does paperwor (Note discrepa					Yes 🗹	N	lo 🗌	for pH: (<2 or >12 un	less noted)		
12. Are matrices co	orrectly iden	ified on Chair	of Custody?		Yes 🗹	Ν	lo 🗌	Adjusted?			
13. Is it clear what	analyses we	re requested?	?		Yes 🗹		lo 🗌	Nut	1-1		
14. Were all holdin (If no, notify cu	-				Yes 🗹	N	10 🗌	Checked by: Jui	17122		
Special Handli	na (if app	licable)									
15. Was client not			ith this order?	,	Yes 🗌	I	No 🗌	NA 🗹			
Person I	Notified:			Date							
By Who	m: J			Via:	eMail	Phone	🗌 Fax	In Person			
Regardi	ng:)										
Client In	structions:	_									
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January 12, 2023

Chance Dixon Vertex Resources Services, Inc. 3101 Boyd Drive Carlsbad, NM 88220 TEL: (505) 506-0040 FAX:

RE: Hackberry 6 Federal 1

OrderNo.: 2301225

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 4 sample(s) on 1/6/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Lab ID:

CLIENT: Vertex Resources Services, Inc.

2301225-001

Hackberry 6 Federal 1

Analytical Report Lab Order 2301225

Date Reported: 1/12/2023

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: WS23-01 0-4' Collection Date: 1/4/2023 11:30:00 AM Received Date: 1/6/2023 7:45:00 AM

Analyses	Result	RL (Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS					Analyst: DGH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	1/10/2023 2:51:55 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	1/10/2023 2:51:55 AM
Surr: DNOP	111	21-129		%Rec	1	1/10/2023 2:51:55 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/9/2023 12:20:00 PM
Surr: BFB	111	37.7-212		%Rec	1	1/9/2023 12:20:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	1/9/2023 12:20:00 PM
Toluene	ND	0.049		mg/Kg	1	1/9/2023 12:20:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	1/9/2023 12:20:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	1/9/2023 12:20:00 PM
Surr: 4-Bromofluorobenzene	130	70-130	S	%Rec	1	1/9/2023 12:20:00 PM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	ND	60		mg/Kg	20	1/9/2023 6:40:35 PM

Matrix: SOIL

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL

Practical Quanitative Limit % Recovery outside of standard limits. If undiluted results may be estimated. S

Analyte detected in the associated Method Blank в

- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 1 of 8

Lab ID:

CLIENT: Vertex Resources Services, Inc.

2301225-002

Hackberry 6 Federal 1

Analytical Report Lab Order 2301225

Date Reported: 1/12/2023

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: WS23-02 0-4' Collection Date: 1/4/2023 11:35:00 AM Received Date: 1/6/2023 7:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE C	RGANICS					Analyst: DGH
Diesel Range Organics (DRO)	9.6	9.2		mg/Kg	1	1/10/2023 10:29:41 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	1/10/2023 10:29:41 AM
Surr: DNOP	130	21-129	S	%Rec	1	1/10/2023 10:29:41 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/9/2023 1:19:00 PM
Surr: BFB	110	37.7-212		%Rec	1	1/9/2023 1:19:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	ND	0.025		mg/Kg	1	1/9/2023 1:19:00 PM
Toluene	ND	0.049		mg/Kg	1	1/9/2023 1:19:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	1/9/2023 1:19:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	1/9/2023 1:19:00 PM
Surr: 4-Bromofluorobenzene	127	70-130		%Rec	1	1/9/2023 1:19:00 PM
EPA METHOD 300.0: ANIONS						Analyst: NAI
Chloride	110	60		mg/Kg	20	1/9/2023 6:52:55 PM

Matrix: SOIL

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 2 of 8

Lab ID:

CLIENT: Vertex Resources Services, Inc.

2301225-003

Hackberry 6 Federal 1

Analytical Report Lab Order 2301225

Date Reported: 1/12/2023

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: WS23-03 0-4' Collection Date: 1/4/2023 11:40:00 AM Received Date: 1/6/2023 7:45:00 AM

Analyses	Result	RL Q	Qual Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OF	RGANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	1/10/2023 3:13:13 AM
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	1/10/2023 3:13:13 AM
Surr: DNOP	112	21-129	%Rec	1	1/10/2023 3:13:13 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	1/9/2023 2:18:00 PM
Surr: BFB	105	37.7-212	%Rec	1	1/9/2023 2:18:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.025	mg/Kg	1	1/9/2023 2:18:00 PM
Toluene	ND	0.050	mg/Kg	1	1/9/2023 2:18:00 PM
Ethylbenzene	ND	0.050	mg/Kg	1	1/9/2023 2:18:00 PM
Xylenes, Total	ND	0.10	mg/Kg	1	1/9/2023 2:18:00 PM
Surr: 4-Bromofluorobenzene	122	70-130	%Rec	1	1/9/2023 2:18:00 PM
EPA METHOD 300.0: ANIONS					Analyst: NAI
Chloride	140	61	mg/Kg	20	1/9/2023 7:05:16 PM

Matrix: SOIL

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

Qualifiers:

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 3 of 8

CLIENT: Vertex Resources Services, Inc.

Project: Hackberry 6 Federal 1

Analytical Report Lab Order 2301225

Date Reported: 1/12/2023

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: WS23-07 0-4' Collection Date: 1/4/2023 3:20:00 PM **Dessived Dete:** 1/6/2022 7:45:00 AM

Lab ID: 2301225-004	Matrix: SOIL	Rece	ived Date:	1/6/20	23 7:45:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	1/10/2023 3:23:53 AM
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	1/10/2023 3:23:53 AM
Surr: DNOP	114	21-129	%Rec	1	1/10/2023 3:23:53 AM
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	1/9/2023 2:38:00 PM
Surr: BFB	104	37.7-212	%Rec	1	1/9/2023 2:38:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.025	mg/Kg	1	1/9/2023 2:38:00 PM
Toluene	ND	0.050	mg/Kg	1	1/9/2023 2:38:00 PM
Ethylbenzene	ND	0.050	mg/Kg	1	1/9/2023 2:38:00 PM
Xylenes, Total	ND	0.10	mg/Kg	1	1/9/2023 2:38:00 PM
Surr: 4-Bromofluorobenzene	121	70-130	%Rec	1	1/9/2023 2:38:00 PM
EPA METHOD 300.0: ANIONS					Analyst: NAI
Chloride	860	60	mg/Kg	20	1/9/2023 7:17:35 PM

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

Qualifiers:

* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range Reporting Limit

RL

Page 4 of 8

Client: Project:		Resources S rry 6 Federa	,	Inc.							
Sample ID: L	CS-72511	SampT	ype: Ics		Tes	tCode: EF	PA Method	300.0: Anions	5		
Client ID: L	CSS	Batch	n ID: 725	511	F	RunNo: 9 3	8837				
Prep Date:	1/9/2023	Analysis D	ate: 1/9	9/2023	5	SeqNo: 33	87328	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	93.3	90	110			

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 5 of 8

2301225

12-Jan-23

	Resources Se rry 6 Federa	,	Inc.							
Sample ID: LCS-72502	SampT	ype: LC	s	Tes	tCode: EF	A Method	8015M/D: Die	sel Range	Organics	
Client ID: LCSS	Batch	n ID: 725	502	F	RunNo: 9 3	8818				
Prep Date: 1/6/2023	Analysis D	ate: 1/9	9/2023	S	SeqNo: 33	86799	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	83.4	64.4	127			
Surr: DNOP	5.5		5.000		111	21	129			
Sample ID: MB-72502				-						
Sample ID: MB-72502	SampT	ype: ME	BLK	les	tCode: EF	A Method	8015M/D: Die	sel Range	Organics	
Client ID: PBS		ype: ME 1D: 725			RunNo: 93		8015M/D: Die	sel Range	Organics	
		n ID: 725		F		8818	8015M/D: Die Units: mg/K	U	Organics	
Client ID: PBS	Batch	n ID: 725	502	F	RunNo: 9 3	8818		U	Organics RPDLimit	Qual
Client ID: PBS Prep Date: 1/6/2023	Batch Analysis D	n ID: 725 Date: 1/9	502 9/2023	F	RunNo: 93 SeqNo: 33	818 86803	Units: mg/K	g	J	Qual
Client ID: PBS Prep Date: 1/6/2023 Analyte	Batch Analysis D Result	Di ID: 725 Date: 1/5 PQL	502 9/2023	F	RunNo: 93 SeqNo: 33	818 86803	Units: mg/K	g	J	Qual

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2301225

12-Jan-23

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Project:		sources Ser 6 Federal	,	Inc.							
Sample ID:	lcs-72494	SampTy	pe: LC	s	Tes	tCode: EF	PA Method	8015D: Gasol	line Range		
Client ID:	LCSS	Batch	ID: 724	194	F	RunNo: 9 :	3823				
Prep Date:	1/6/2023	Analysis Da	ate: 1/9	9/2023	S	SeqNo: 3	386844	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	26	5.0	25.00	0	102	72.3	137			
Surr: BFB		2300		1000		230	37.7	212			S
Sample ID:	mb-72494	SampTy	pe: ME	BLK	Tes	tCode: EF	PA Method	8015D: Gasol	line Range		
Client ID:	PBS	Batch ID: 72494 RunNo: 93823									
Prep Date:	1/6/2023	Analysis Da	ate: 1/9	9/2023	S	SeqNo: 3	386845	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	ND	5.0								
Surr: BFB		1100		1000		108	37.7	212			
Sample ID:	2301225-001AMS	SampTy	pe: MS	;	Tes	tCode: EF	PA Method	8015D: Gasol	line Range		
Client ID:	WS23-01 0-4'	Batch	ID: 724	194	F	RunNo: 9 :	3823				
Prep Date:	1/6/2023	Analysis Da	ate: 1/9	9/2023	S	SeqNo: 3	386847	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	27	4.9	24.65	0	108	70	130			
Surr: BFB		2500		986.2		256	37.7	212			S
Sample ID:	2301225-001AMSD	SampTy	pe: MS	D	Tes	tCode: EF	PA Method	8015D: Gasol	line Range		
Client ID:	WS23-01 0-4'	Batch	ID: 724	194	F	RunNo: 9 :	3823				
Prep Date:	1/6/2023	Analysis Da	ate: 1/9	9/2023	5	SeqNo: 3	386848	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	25	5.0	24.95	0	100	70	130	6.24	20	
Surr: BFB		2300		998.0		234	37.7	212	0	0	S

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2301225

12-Jan-23

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Project:	Vertex Re Hackberry			Inc.									
Sample ID:	lcs-72494	Samp	Гуре: LC	S	Tes	tCode: EF	PA Method	8021B: Volat	iles				
Client ID:	LCSS	Batc	h ID: 724	494	F	RunNo: 9 :	3823						
Prep Date:	1/6/2023	Analysis [Date: 1/	9/2023	SeqNo: 3386882 Units: mg/Kg								
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Benzene		1.1	0.025	1.000	0	109	80	120					
Toluene		1.1	0.050	1.000	0	113	80	120					
Ethylbenzene		1.1	0.050	1.000	0	113	80	120					
Xylenes, Total		3.4	0.10	3.000	0	113	80	120					
Surr: 4-Bron	nofluorobenzene	1.3		1.000		128	70	130					
Sample ID:	mb-72494	Samp	Гуре: МЕ	BLK	Tes	tCode: EF	PA Method	8021B: Volat	iles				
Client ID:	PBS	Batc	h ID: 724	194	F	RunNo: 9 :	3823						
Prep Date:	1/6/2023	Analysis [Date: 1/	9/2023	S	SeqNo: 3	386883	Units: mg/K	(g				
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-Bron	nofluorobenzene	1.3		1.000		128	70	130					
Sample ID:	2301225-002AMS	Samp	Гуре: МS	3	Tes	tCode: EF	PA Method	8021B: Volat	iles				
Client ID:	WS23-02 0-4'	Batc	h ID: 72 4	494	F	RunNo: 9 :	3823						
Prep Date:	1/6/2023	Analysis [Date: 1/	9/2023	Ş	SeqNo: 3	386886	Units: mg/K	(g				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Benzene		1.0	0.025	0.9950	0	104	68.8	120					
Toluene		1.1	0.050	0.9950	0	110	73.6	124					
Ethylbenzene		1.1	0.050	0.9950	0	111	72.7	129					
Xylenes, Total		3.3	0.10	2.985	0	112	75.7	126					
Surr: 4-Bron	nofluorobenzene	1.2		0.9950		121	70	130					
Sample ID:	2301225-002AMSD	Samp	Гуре: МS	SD	Tes	tCode: EF	PA Method	8021B: Volat	iles				
Client ID:	WS23-02 0-4'	Batc	h ID: 724	194	F	RunNo: 9 :	3823						
Prep Date:	1/6/2023	Analysis [Date: 1/	9/2023		SeqNo: 3	386887	Units: mg/K	(g				
Analyte		Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Benzene		1.0	0.025	0.9901	0	105	68.8	120	0.839	20			
Toluene		1.1	0.050	0.9901	0	110	73.6	124	0.0478	20			
Ethylbenzene		1.1	0.050	0.9901	0	112	72.7	129	0.115	20			
Xylenes, Total		3.3	0.099	2.970	0	113	75.7	126	0.407	20			
Surr: 4-Bron	nofluorobenzene	1.2		0.9901		123	70	130	0	0			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2301225

12-Jan-23

Ň	HALL ENVIR ANALY LABOR	l Environmen A L: 505-345-39 Vebsite: www	490 Albuquerq 275 FAX:	l Hawk ue, NM 505-34	tins NE 87109 5-4107	Sample Log-In Check List							
Client	Name:	Devon Ene	rgy	Work	Order Numb	oer: 2301	225		RcptNo: 1				
Receiv	ved By:	Juan Roja	s	1/6/202	3 7:45:00 AN	vi		Hun	nay	not			
Comp	leted By:	Sean Livi	ngston	1/6/202	3 8:01:42 AM	M		<		nat			
Review	wed By:	The		1/6/23)			_	~~~~,				
<u>Chair</u>	n of Cust	ody											
1. Is (Chain of Cu	stody comp	lete?			Yes	\checkmark	Ν	o 🗆	Not Present			
2. Hov	w was the s	ample deliv	ered?			Cour	rier						
Log		nt made to c	ool the sample	252		Yes		N	•				
0. Wa	s an attem		oor the sample	53 !		165							
4. We	re all samp	les received	at a temperat	ure of >0° C i	to 6.0°C	Yes		N	o 🗌				
5. Sar	nple(s) in p	roper conta	iner(s)?			Yes	\checkmark	N	•				
6. Suff	ficient samj	ole volume f	or indicated te	st(s)?		Yes							
7. Are	samples (e	except VOA	and ONG) pro	perly preserve	ed?					_			
8. Was	s preservat	ive added to	bottles?			Yes		No		NA 🗌			
9. Rec	eived at lea	ast 1 vial wit	h headspace <	<1/4" for AQ V	OA?					NA 🗹			
10. We	re any sam	ple containe	ers received br	oken?		Yes		N	• 🗹	# of preserved bottles checked			
		rk match boi ncies on cha	itle labels? ain of custody)			Yes	✓	No		for pH:	unless noted)		
12. Are	matrices c	orrectly iden	tified on Chair	of Custody?		Yes	\checkmark	No		Adjusted?			
3. Is it	clear what	analyses w	ere requested?	?		Yes		No			11-		
		-	e to be met? uthorization.)			Yes		No	• 🗆 -	Checked by: Jin	623		
Specia	al Handli	ng (if app	licable)										
15.Wa	is client not	ified of all d	iscrepancies w	ith this order?	2	Yes		N	•	NA 🗹			
	Person I	Notified:			Date:	J							
	By Who	m:			Via:	🗌 eMa	ail 🗌	Phone [Fax	In Person			
	Regardi												
16 • •		structions:											
ID. Ad	lditional ren	narks:											
	oler Infor									1			
1	Cooler No	Temp °C 0.2	Condition Good	Seal Intact	Seal No	Seal Da	ate	Signed	і Ву				
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the facto Sur	HALL ENVIRONMENTAL	www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109		Analysis Request	⁺OS	S, t, pOq ,	(1,10) or 827 , NO ₂ , A()		letho 3 Mc 3 Mc 3 Mc AO AO AO	8081 PG EDB (W PPHs b RCRA 8 8270 (5 20131 C Total C)								Direct bill Deven Barnes	Any sub-contracted data will be clearly notated on the analytical report.
			4901	Tel.		(0)	AM \ OS		สอ)	٩٤٢	08:H9T	7				141				Remarks:	tsibility. A
Turn-Around Time:	C Standard Rush 48 hv		Hackbury le Federal 1		126-02537	Project Manager:	Chemic Dixon	Sampler: Michael Dorres M	olers:) Jog.	(including CF): C. 1+6. 1 - C. 2 (°C)	Container Preservative HEAL No. Type and # Type 2301225	402jar Ice 001 ~	402 pr Ice ar	TLT	HUZ DU ICT DOY					a .	1519 190 MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM
Chain of Custody Borord	Client: Device IN etter	とうこううう	Mailing Address:		Phone #:	email or Fax#:	QA/QC Package:	Accreditation:			Date Time Matrix Sample Name	61/04 11:30 Soil [2523-01 0-41	61/04 11:35 Soil W523-02 8-41	01/04 11:40 Soil W523-03 0-41	0104 1520 Soil LUSS -07 0-41						15/13 1900 DULULULU



January 13, 2023

Chance Dixon Vertex Resources Services, Inc. 3101 Boyd Drive Carlsbad, NM 88220 TEL: (505) 506-0040 FAX:

OrderNo.: 2301270

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

RE: Huckberry 6 Fed 1

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 1 sample(s) on 1/7/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

CLIENT: Vertex Resources Services, Inc.

Huckberry 6 Fed 1

Analytical Report Lab Order 2301270

Date Reported: 1/13/2023

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: WS23-12 0-4' Collection Date: 1/5/2023 11:30:00 AM Received Date: 1/7/2023 8:00:00 AM

Lab ID: 2301270-001	Matrix: SOIL	Rece	eived Date:	1/7/20	23 8:00:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANG	EORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	1/11/2023 11:13:47 AM
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	1/11/2023 11:13:47 AM
Surr: DNOP	126	21-129	%Rec	1	1/11/2023 11:13:47 AM
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: JR
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	1/11/2023 1:06:00 PM
Surr: BFB	105	37.7-212	%Rec	1	1/11/2023 1:06:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: JR
Benzene	ND	0.025	mg/Kg	1	1/11/2023 1:06:00 PM
Toluene	ND	0.050	mg/Kg	1	1/11/2023 1:06:00 PM
Ethylbenzene	ND	0.050	mg/Kg	1	1/11/2023 1:06:00 PM
Xylenes, Total	ND	0.10	mg/Kg	1	1/11/2023 1:06:00 PM
Surr: 4-Bromofluorobenzene	117	70-130	%Rec	1	1/11/2023 1:06:00 PM
EPA METHOD 300.0: ANIONS					Analyst: NAI
Chloride	1000	60	mg/Kg	20	1/10/2023 5:39:45 PM

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

Qualifiers:

* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits

Р Sample pH Not In Range Reporting Limit

RL

Page 1 of 5

Client: Project:		ex Resources Sex kberry 6 Fed 1	rvices,	Inc.								
Sample ID:	MB-72561	SampTy	pe: mb	lk	Tes	tCode: EP	A Method	300.0: Anions	5			
Client ID:	PBS	Batch	ID: 725	561	F	RunNo: 9 3	8840					
Prep Date:	1/10/2023	Analysis Da	ite: 1/	10/2023	S	SeqNo: 33	88440	Units: mg/Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride		ND	1.5									
Sample ID:	LCS-72561	SampTy	pe: Ics		Tes	tCode: EF	A Method	300.0: Anions	;			
Client ID:	LCSS	Batch	ID: 725	561	F	RunNo: 93	8840					
Prep Date:	1/10/2023	Analysis Da	ite: 1/	10/2023	S	SeqNo: 33	88441	Units: mg/K	g			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride		14	1.5	15.00	0	92.6	90	110				

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 2 of 5

2301270

13-Jan-23

	Resources S rry 6 Fed 1	ervices,	Inc.							
Sample ID: LCS-72541	SampT	Гуре: LC	S	Tes	stCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID: LCSS	Batc	h ID: 72	541	F	RunNo: 9 :	3869				
Prep Date: 1/10/2023	Analysis [Date: 1/	11/2023	Ś	SeqNo: 3	388577	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	85.0	64.4	127			
Surr: DNOP	5.7		5.000		113	21	129			
Sample ID: MB-72541	Samp	Гуре: МЕ	BLK	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID: PBS	Batc	h ID: 72	541	F	RunNo: 93	3869				
Prep Date: 1/10/2023	Analysis [Date: 1/	11/2023	Ş	SeqNo: 3	388580	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Notor Oil Range Organics (MRO)	ND	50								

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

WO#: 2301270 13-Jan-23

	ertex Resources luckberry 6 Fed 1	,	Inc.									
Sample ID: Ics-72532	Samp	Type: LC	S	Tes	tCode: EF	PA Method	8015D: Gaso	line Range				
Client ID: LCSS	Bat	ch ID: 72	532	RunNo: 93873								
Prep Date: 1/10/202	3 Analysis	Date: 1/	11/2023	Ş	SeqNo: 3	389575	Units: mg/K	g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Gasoline Range Organics (GRO) 24	5.0	25.00	0	94.8	72.3	137					
Surr: BFB	2200		1000		222	37.7	212			S		
Sample ID: mb-72532	Samp	туре: МЕ	BLK	Tes	tCode: EF	PA Method	8015D: Gaso	line Range				
Client ID: PBS	Bat	ch ID: 72	532	F	RunNo: 9 :	3873						
Prep Date: 1/10/202	3 Analysis	Date: 1/	11/2023	S	SeqNo: 3	389576	Units: mg/K	(g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Gasoline Range Organics (GRO) ND	5.0										
Surr: BFB	1100		1000		110	37.7	212					

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 4 of 5

WO#: 2301270 13-Jan-23

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

	x Resources S berry 6 Fed 1	ervices,	Inc.							
Sample ID: Ics-72532	Samp	Гуре: LC	s	Tes	tCode: EF	PA Method	8021B: Volati	les		
Client ID: LCSS	Batc	h ID: 725	532	F	RunNo: 93	3873				
Prep Date: 1/10/2023	Analysis [Date: 1/1	11/2023	S	SeqNo: 33	889628	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.025	1.000	0	116	80	120			
Toluene	1.2	0.050	1.000	0	116	80	120			
Ethylbenzene	1.2	0.050	1.000	0	116	80	120			
Xylenes, Total	3.5	0.10	3.000	0	116	80	120			
Surr: 4-Bromofluorobenzene	1.3		1.000		125	70	130			
Sample ID: mb-72532	Samp	Гуре: МВ	BLK	Tes	tCode: EF	PA Method	8021B: Volati	les		
Client ID: PBS	Batc	h ID: 725	532	F	RunNo: 9 3	3873				
Prep Date: 1/10/2023	Analysis [Date: 1/1	11/2023	S	SeqNo: 33	889629	Units: mg/K	g		
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	1.3		1.000		126	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 5 of 5

WO#: 2301270 13-Jan-23

HALL ENVIRONMENTAL ANALYSIS LABORATORY	TEL:		01 Hawkins NE que, NM 87109 505-345-4107	San	Sample Log-In Check List				
Client Name: Vertex Resourd Services, Inc.	ces Work O	rder Number: 230			RcptNo: 1				
Received By: Cheyenne Ca	son 1/7/2023	3:30:00 AM	C	hul					
Completed By: Cheyenne Ca	son 1/7/2023	3:51:52 AM	C	hul					
Reviewed By:									
Chain of Custody									
1. Is Chain of Custody complete	?	Yes	• 🗆	No 🗹	Not Present				
2. How was the sample delivered	1?	<u>Cοι</u>	ırier						
Log In 3. Was an attempt made to cool	the samples?	Yes		No 🗌	NA 🗀				
4. Were all samples received at a	a temperature of >0° C to	6.0°C Yes		No 🗌	na 🗀				
5. Sample(s) in proper container	(s)?	Yes		No 🗌					
6. Sufficient sample volume for in	idicated test(s)?	Yes		No 🗌					
7. Are samples (except VOA and	ONG) properly preserved	? Yes		No 🗌					
8. Was preservative added to bot	tles?	Yes		No 🗹	NA 🗌				
9. Received at least 1 vial with he	adspace <1/4" for AQ VO	A? Yes		No 🗌	NA 🗹				
10. Were any sample containers r	eceived broken?	Yes		No 🗹	# of preserved				
11.Does paperwork match bottle I (Note discrepancies on chain c		Yes		No 🗌	bottles checked for pH: (<2.er >12 unless noted)				
12. Are matrices correctly identified		Yes		No 🗌	Adjusted?				
13. Is it clear what analyses were r	-	Yes		No 🗌					
14. Were all holding times able to (If no, notify customer for author		Yes		No 🗆	Checked by: (mc 1/7/23				
Special Handling (if applic									
15. Was client notified of all discre	epancies with this order?	Yes	;	No 🗌	NA 🗹				
Person Notified:		Date:							
By Whom:		Via: 🔲 eN	lail 📋 Phon	e 🗌 Fax	In Person				
Regarding:									
Client Instructions:									
16. Additional remarks:									
17. Cooler Information									
A stream contract the first of the local sectors and the	Condition Seal Intact	Seal No Seal D	Date Sig	ned By	Ab second se				
1 3.0 Go	ood Not Present Y	ogi							

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HALL ENVIRONMENTAL ANALYSIS LABORATORY www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107 Analysis Request	EDB (Method 504.1) RAHs by 8310 or 8270SIMS RCRA 8 Metals BSE60 (VOA) 8260 (VOA) 8270 (Semi-VOA) Total Coliform (Present/Absent)	γ · · · · · · · · · · · · · · · · · · ·	4 Dill Devon, CL: Michael Barnes
4901 H Tel. 50	TPH:8015D(GRO / DRO / MRO) 8081 Pesticides/8082 PCB's		Remarks: Direct
	(1208) s'BMT \ 787MB's (8021)	2	Rem
Turn-Around Time: Standard Z Rush 48hr Project Name: Haukberry 6 Fed 1 Project #: 22E-02537	Project Manager: Chan with and Sarnes Sampler: Mithan Barnes On Ice: D Yes D No # of Coolers: [700 Cooler Temp(Inducting cF): 3.0-0.3.0 (°C) Container Preservative HEAL No. Type and # Type 2.3012.70	Tue Ol	Date: Time: Relinquished by: Received by: Via: Date Time Remarks: 01/06 0.0 0.0 0.0 0.0 0.0 0.0 0.0 Date: Time: Relinquished by: Via: Date Time 0.0 0.0 Date: Time: Relinquished by: Via: Date Time 0.0 0.0 NMMMMLWA Chmc Chmc Chmc Chmc Chmc Chmc 0.0
of-Custody Record	::	1 20:1 Jusza-12 0-4.	Relinquished by: Relinquished by: MMMM L W
Client: Devov Mailing Address:	email or Fax#: QA/QC Package: Candard Accreditation: NELAC Date Time	1130	Time: A3D 7 (100)
Client: Client	email or Fa QA/QC Pacl C Standar Accreditati C NELAC C DEDD (T)	50 10	Date: 0100 Date: 1000



January 13, 2023

Chance Dixon Vertex Resources Services, Inc. 3101 Boyd Drive Carlsbad, NM 88220 TEL: (505) 506-0040 FAX:

RE: Hackberry 6 Fed 1

OrderNo.: 2301321

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 2 sample(s) on 1/10/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

CLIENT: Vertex Resources Services, Inc.

Hackberry 6 Fed 1

Analytical Report Lab Order 2301321

Date Reported: 1/13/2023

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: WS23-14 0-4' Collection Date: 1/6/2023 9:15:00 AM Received Date: 1/10/2023 7:30:00 AM

Lab ID: 2301321-001	Matrix: SOIL	Rece	vived Date:	1/10/2	2023 7:30:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	1/11/2023 7:46:30 PM
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	1/11/2023 7:46:30 PM
Surr: DNOP	109	21-129	%Rec	1	1/11/2023 7:46:30 PM
EPA METHOD 8015D: GASOLINE RANGI	E				Analyst: JR
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	1/11/2023 1:25:00 PM
Surr: BFB	104	37.7-212	%Rec	1	1/11/2023 1:25:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: JR
Benzene	ND	0.024	mg/Kg	1	1/11/2023 1:25:00 PM
Toluene	ND	0.047	mg/Kg	1	1/11/2023 1:25:00 PM
Ethylbenzene	ND	0.047	mg/Kg	1	1/11/2023 1:25:00 PM
Xylenes, Total	ND	0.095	mg/Kg	1	1/11/2023 1:25:00 PM
Surr: 4-Bromofluorobenzene	118	70-130	%Rec	1	1/11/2023 1:25:00 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	320	60	mg/Kg	20	1/11/2023 12:40:54 PM

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

Qualifiers:

* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range Reporting Limit

RL

Page 1 of 6

CLIENT: Vertex Resources Services, Inc.

Hackberry 6 Fed 1

Analytical Report Lab Order 2301321

Date Reported: 1/13/2023

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: WS23-15 0-4' Collection Date: 1/6/2023 9:20:00 AM Received Date: 1/10/2023 7:30:00 AM

Lab ID: 2301321-002	Matrix: SOIL	Rece	eived Date:	1/10/2	023 7:30:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	1/11/2023 7:56:56 PM
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	1/11/2023 7:56:56 PM
Surr: DNOP	103	21-129	%Rec	1	1/11/2023 7:56:56 PM
EPA METHOD 8015D: GASOLINE RANG	θE				Analyst: JR
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/11/2023 1:45:00 PM
Surr: BFB	103	37.7-212	%Rec	1	1/11/2023 1:45:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: JR
Benzene	ND	0.025	mg/Kg	1	1/11/2023 1:45:00 PM
Toluene	ND	0.049	mg/Kg	1	1/11/2023 1:45:00 PM
Ethylbenzene	ND	0.049	mg/Kg	1	1/11/2023 1:45:00 PM
Xylenes, Total	ND	0.099	mg/Kg	1	1/11/2023 1:45:00 PM
Surr: 4-Bromofluorobenzene	118	70-130	%Rec	1	1/11/2023 1:45:00 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	820	60	mg/Kg	20	1/11/2023 12:53:19 PM

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 2 of 6

Client: Project:		ex Resources Se kberry 6 Fed 1	rvices,	Inc.							
Sample ID:	MB-72561 SampType: mblk			TestCode: EPA Method 300.0: Anions				5			
Client ID:	PBS	Batch ID: 72561			F	RunNo: 9 3	3840				
Prep Date:	1/10/2023	Analysis Da	ate: 1/'	10/2023	S	SeqNo: 33	388440	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID:	LCS-72561	SampTy	/pe: Ics		Tes	tCode: EF	PA Method	300.0: Anions	5		
Client ID:	LCSS	Batch	ID: 725	61	F	RunNo: 93	3840				
Prep Date:	1/10/2023	Analysis Da	ate: 1/	10/2023	S	SeqNo: 33	388441	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	92.6	90	110			

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2301321

13-Jan-23

	Resources S rry 6 Fed 1	ervices,	Inc.							
Sample ID: LCS-72541	Tes	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batch ID: 72541			F	RunNo: 93869					
Prep Date: 1/10/2023	Analysis E	Date: 1/	11/2023	S	SeqNo: 3	388577	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	85.0	64.4	127			
Surr: DNOP	5.7		5.000		113	21	129			
Sample ID: MB-72541	SampT	Гуре: МЕ	BLK	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID: PBS	Batcl	h ID: 72	541	F	RunNo: 9 :	3869				
Prep Date: 1/10/2023	Analysis E	Date: 1/	11/2023	Ş	SeqNo: 3	388580	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Notor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		117	21	129			

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 4 of 6

WO#: 2301321 13-Jan-23

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

	Resources Se rry 6 Fed 1	rvices,	Inc.							
Sample ID: Ics-72532	ple ID: Ics-72532 SampType: LCS				TestCode: EPA Method 8015D: Gasoline Range					
Client ID: LCSS	Batch ID: 72532			F	RunNo: 93873					
Prep Date: 1/10/2023	Analysis Da	ate: 1/ 1	11/2023	S	SeqNo: 33	89575	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.8	72.3	137			
Surr: BFB	2200		1000		222	37.7	212			S
Sample ID: mb-72532	SampTy	/pe: MB	BLK	Tes	tCode: EF	A Method	8015D: Gasol	ine Range		
Client ID: PBS	Batch	ID: 725	532	F	RunNo: 9 3	873				
Prep Date: 1/10/2023	Analysis Da	ate: 1/1	11/2023	S	SeqNo: 33	89576	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		110	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 Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 5 of 6

WO#: 2301321 13-Jan-23

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

	ex Resources S berry 6 Fed 1	Services,	Inc.							
Sample ID: Ics-72532	Samp	Type: LC	s	Tes	TestCode: EPA Method 8021B: Volatiles					
Client ID: LCSS	Batc	h ID: 725	532	F	RunNo: 93873					
Prep Date: 1/10/2023	Analysis I	Date: 1/1	11/2023	S	SeqNo: 33	89628	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.025	1.000	0	116	80	120			
Foluene	1.2	0.050	1.000	0	116	80	120			
Ethylbenzene	1.2	0.050	1.000	0	116	80	120			
Kylenes, Total	3.5	0.10	3.000	0	116	80	120			
Surr: 4-Bromofluorobenzene	1.3		1.000		125	70	130			
Sample ID: mb-72532	Samp	Туре: МВ	BLK	Tes	tCode: EF	A Method	8021B: Volati	les		
Client ID: PBS	Batc	h ID: 725	532	F	RunNo: 9 3	873				
Prep Date: 1/10/2023	Analysis I	Date: 1/1	11/2023	S	SeqNo: 33	89629	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Foluene	ND	0.050								
Ethylbenzene	ND	0.050								
(ylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.3		1.000		126	70	130			

Qualifiers:

- Value exceeds Maximum Contaminant Level. *
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank В
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 6 of 6

2301321

13-Jan-23

ANAL	RONMENTAL YSIS RATORY	TEL: 505-345-3	ntal Analysis Labon 4901 Hawkis Albuquerque, NM & 975 FAX: 505-345 v.hallenvironmenta	ns NE 87109 Sam -4107	Sample Log-In Check List				
Client Name:	Vertex Resources Services, Inc.	Work Order Num	ber: 2301321		RcptNo: 1				
Received By:	Juan Rojas	1/10/2023 7:30:00	AM	Guand B					
Completed By:	Sean Livingston	1/10/2023 7:50:01	AM	≤ 1	n-L				
Reviewed By:	JO	1 10 23), U	30				
Chain of Cus	stody								
1. Is Chain of C	Sustody complete?		Yes 🗹	No 🗌	Not Present				
2. How was the	sample delivered?		Courier						
<u>Log In</u> 3. Was an atter	npt made to cool the sampl	es?	Yes 🗹	No 🗌	na 🗔				
4. Were all sam	ples received at a temperat	ure of >0° C to 6.0°C	Yes 🗹	No 🗌	na 🗌				
5. Sample(s) in	proper container(s)?		Yes 🗹	No 🗌					
6. Sufficient san	nple volume for indicated te	st(s)?	Yes 🗹	No 🗔					
7. Are samples	(except VOA and ONG) pro	perly preserved?	Yes 🗹	No 🗌					
8. Was preserva	ative added to bottles?		Yes 🗌	No 🗹					
9. Received at le	east 1 vial with headspace ·	<1/4" for AQ VOA?	Yes 🗌	No 🗌	NA 🗹				
10. Were any sa	mple containers received bi	oken?	Yes	No 🗹 🛛	# of preserved				
	ork match bottle labels? ancies on chain of custody)		Yes 🔽	No 🗌	bottles checked for pH: (<2 or >12 unless not	ted)			
12. Are matrices	correctly identified on Chair	of Custody?	Yes 🗹	No 🗌	Adjusted?				
	t analyses were requested?	?	Yes 🗹	No 🗌	1. 1.	to ?			
14. Were all hold	ing times able to be met?		Yes 🗹	No 🗌 🛛	Checked by: JN-110	113			

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Special Handling (if applicable)

14. Were all holding times able to be met? (If no, notify customer for authorization.)

15. Was client notified of all discrepancies with this order?				Yes 🗌]	No 🗌	NA 🗄	
	Person Notified:	J	Date:	J				
	By Whom:		Via:	🗌 eMail	Phone	e 🔲 Fax	In Person	
	Regarding:		State and the New York, New Yor					
	Client Instructions:							< [

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.0	Good				

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	Standard & Rush 484	On File Haukins NE - Alburgins NE -	Analysis	(O)	PO4, S MS PCB's O / MR	Sampler: Michael Barnes 10, DR 20, 106, 11, 10, 108, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10	# of Coolers:	(including CF): 0.0-0) 0.0-000 0.0-0) 0.0-000 0.0-	Container Preservative HEAL No. Container Preservative HEAL No. Container Type and # Type Z 3 \ 3 \ 3 \ 3 \ 3 \ 3 \ 3 \ 3 \ 3 \ 3	WS23-14 O-41 WS23-14 WS23-14 WS23-14 O-41 WS23-14	W528-15 0-4 452 Jan 2.2					ished by: Received by: Via: Date Time Remarks: MMMMMM 1913 1045	Received by:
Chain-of-Custody Record	Client: Drum / Yertex	Mailing Address: On file	 Phone #:	email or Fax#:	QA/QC Package:	Accreditation:	EDD (Type)		Date Time Matrix Sample Nar	01/06 0915 Soil W523-14	01/20 09/20 Soil WS23-15					Pl INF	Pate: Time: Relinquished by:



January 17, 2023

Chance Dixon Devon Energy 6488 Seven Rivers Highway Artesia, NM 88210 TEL: (575) 748-0176 FAX:

RE: Hackberry 6 Fed 1 Well Pad

OrderNo.: 2301376

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 2 sample(s) on 1/11/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

CLIENT: Devon Energy

Project:

Analytical Report Lab Order 2301376

Date Reported: 1/17/2023

Hall Environmental Analysis Laboratory, Inc.

Hackberry 6 Fed 1 Well Pad

Client Sample ID: BS23-01 4' Collection Date: 1/9/2023 10:45:00 AM Received Date: 1/11/2023 7:35:00 AM

Lab ID: 2301376-001	Matrix: SOIL	Rece	eived Date:	1/11/20	023 7:35:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	1/13/2023 12:41:59 AM
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	1/13/2023 12:41:59 AM
Surr: DNOP	106	69-147	%Rec	1	1/13/2023 12:41:59 AM
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/12/2023 6:07:39 PM
Surr: BFB	101	37.7-212	%Rec	1	1/12/2023 6:07:39 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.024	mg/Kg	1	1/12/2023 6:07:39 PM
Toluene	ND	0.049	mg/Kg	1	1/12/2023 6:07:39 PM
Ethylbenzene	ND	0.049	mg/Kg	1	1/12/2023 6:07:39 PM
Xylenes, Total	ND	0.098	mg/Kg	1	1/12/2023 6:07:39 PM
Surr: 4-Bromofluorobenzene	98.2	70-130	%Rec	1	1/12/2023 6:07:39 PM
EPA METHOD 300.0: ANIONS					Analyst: JTT
Chloride	7800	300	mg/Kg	100	1/13/2023 11:30:59 AM

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

Qualifiers:

* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL

Practical Quanitative Limit % Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 1 of 6

Lab ID:

Analyses

Surr: DNOP

Surr: BFB

Benzene

Toluene

Chloride

Ethylbenzene

Xylenes, Total

Gasoline Range Organics (GRO)

Surr: 4-Bromofluorobenzene

EPA METHOD 300.0: ANIONS

EPA METHOD 8021B: VOLATILES

Analytical Report Lab Order 2301376

1/12/2023 6:54:28 PM

1/12/2023 6:54:28 PM

1/12/2023 6:54:00 PM

1/13/2023 11:43:24 AM

Analyst: JJP

Analyst: JTT

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/17/2023 **CLIENT:** Devon Energy Client Sample ID: BS23-02 4' Hackberry 6 Fed 1 Well Pad Collection Date: 1/9/2023 10:50:00 AM 2301376-002 Matrix: SOIL Received Date: 1/11/2023 7:35:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 8.8 mg/Kg 1 1/13/2023 12:52:35 AM Motor Oil Range Organics (MRO) ND 44 mg/Kg 1 1/13/2023 12:52:35 AM 107 69-147 %Rec 1 1/13/2023 12:52:35 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP

5.0

37.7-212

0.025

0.050

0.050

0.099

70-130

300

mg/Kg

%Rec

mg/Kg

mg/Kg

mg/Kg

mg/Kg

%Rec

mg/Kg

1

1

1

1

1

1

1

100

ND

103

ND

ND

ND

ND

101

8100

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 2 of 6

Client: Project:		n Energy berry 6 Fed 1 W	ell Pa	d								
Sample ID:	MB-72586	SampTy	pe: mb	lk	Tes	tCode: EF	PA Method	300.0: Anions	;			
Client ID:	Client ID: PBS Batch ID: 72586				RunNo: 93916							
Prep Date:	1/12/2023	Analysis Da	te: 1/	12/2023	S	SeqNo: 33	390974	Units: mg/K	g			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride		ND	1.5									
Sample ID:	LCS-72586	SampTy	pe: Ics		Tes	tCode: EF	PA Method	300.0: Anions	;			
Client ID:	LCSS	Batch I	D: 725	586	F	RunNo: 9 3	8916					
Prep Date:	1/12/2023	Analysis Da	te: 1/	12/2023	S	SeqNo: 33	390975	Units: mg/K	g			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride		14	1.5	15.00	0	94.4	90	110				

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2301376

17-Jan-23

QC SUMMARY REPORT Hall

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	WO#:	2301376	
l Environmental Analysis Laboratory, Inc.		17-Jan-23	

Client: Project:	Devon Hackber	Energy rry 6 Fed 1 V	Vell Pa	d								
Sample ID:	LCS-72585	SampTy	/pe: LC	S	Tes	tCode: EF	A Method	8015M/D: Dies	sel Range	Organics		
Client ID:	LCSS	Batch	ID: 72	585	F	RunNo: 9 3	8911					
Prep Date:	1/12/2023	Analysis Da	ate: 1/	12/2023	5	SeqNo: 33	90353	Units: %Rec				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP)	5.6		5.000		111	69	147				
Sample ID:	MB-72585	SampTy	/pe: ME	BLK	Tes	tCode: EF	A Method	8015M/D: Dies	sel Range	Organics		
Client ID:	PBS	Batch	ID: 72	585	F	RunNo: 93	8911					
Prep Date:	1/12/2023	Analysis Da	ate: 1/	12/2023	S	SeqNo: 33	90355	Units: %Rec				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP)	11		10.00		106	69	147				
Sample ID:	LCS-72584	SampTy	/pe: LC	S	Tes	tCode: EF	PA Method	8015M/D: Dies	sel Range	Organics		
Client ID:					RunNo: 93911							
Client ID:	LUSS	Batch	ID: 72	584	F	RunNo: 93	8911					
Prep Date:	1/11/2023	Batch Analysis Da				RunNo: 93 SeqNo: 33	-	Units: mg/K g	g			
					S		-	Units: mg/K g HighLimit	g %RPD	RPDLimit	Qual	
Prep Date: Analyte Diesel Range (1/11/2023 Organics (DRO)	Analysis Da Result 41	ate: 1/	12/2023 SPK value 50.00	ę	SeqNo: 33 %REC 82.0	391719 LowLimit 61.9	HighLimit 130	-	RPDLimit	Qual	
Prep Date: Analyte	1/11/2023 Organics (DRO)	Analysis Da Result	ate: 1/ PQL	12/2023 SPK value	SPK Ref Val	SeqNo: 33 %REC	391719 LowLimit	HighLimit	-	RPDLimit	Qual	
Prep Date: Analyte Diesel Range (Surr: DNOP	1/11/2023 Organics (DRO)	Analysis Da Result 41	ate: 1/ PQL 10	12/2023 SPK value 50.00 5.000	SPK Ref Val 0	SeqNo: 33 %REC 82.0 106	391719 LowLimit 61.9 69	HighLimit 130	%RPD		Qual	
Prep Date: Analyte Diesel Range (Surr: DNOP	1/11/2023 Organics (DRO)	Analysis Da Result 41 5.3 SampTy	ate: 1/ PQL 10	12/2023 SPK value 50.00 5.000	SPK Ref Val 0 Tes	SeqNo: 33 %REC 82.0 106	291719 LowLimit 61.9 69 PA Method	HighLimit 130 147	%RPD		Qual	
Prep Date: Analyte Diesel Range (Surr: DNOP Sample ID:	1/11/2023 Organics (DRO) MB-72584	Analysis Da Result 41 5.3 SampTy	ate: 1 / PQL 10 /pe: ME ID: 72	12/2023 SPK value 50.00 5.000 SLK 584	SPK Ref Val 0 Tes F	SeqNo: 33 %REC 82.0 106 tCode: EF	291719 LowLimit 61.9 69 24 Method 8911	HighLimit 130 147	%RPD		Qual	
Prep Date: Analyte Diesel Range (Surr: DNOP Sample ID: Client ID:	1/11/2023 Organics (DRO) MB-72584 PBS	Analysis Da Result 41 5.3 SampTy Batch	ate: 1 / PQL 10 /pe: ME ID: 72	12/2023 SPK value 50.00 5.000 SLK 584 12/2023	SPK Ref Val 0 Tes F	SeqNo: 33 %REC 82.0 106 tCode: EF RunNo: 93 SeqNo: 33	291719 LowLimit 61.9 69 24 Method 8911	HighLimit 130 147 8015M/D: Dies	%RPD		Qual	
Prep Date: Analyte Diesel Range (Surr: DNOP Sample ID: Client ID: Prep Date: Analyte Diesel Range (1/11/2023 Organics (DRO) MB-72584 PBS	Analysis Da Result 41 5.3 SampTy Batch Analysis Da	ate: 1/ PQL 10 /pe: ME ID: 72: ate: 1/	12/2023 SPK value 50.00 5.000 SLK 584 12/2023	SPK Ref Val 0 Tes F	SeqNo: 33 %REC 82.0 106 tCode: EF RunNo: 93 SeqNo: 33	291719 LowLimit 61.9 69 24 Method 2911 291724	HighLimit 130 147 8015M/D: Dies Units: mg/Kg	%RPD sel Range	Organics		

Qualifiers:

- Value exceeds Maximum Contaminant Level. *
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- В Analyte detected in the associated Method Blank
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Devon Energy

Client:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Project:	Hackberry	6 Fed 1	Well Pa	d							
Sample ID:	lcs-72577	Samp	Гуре: LC	s	Tes	tCode: EF	PA Method	8015D: Gaso	line Range	!	
Client ID:	LCSS	Batcl	h ID: 72	577	F	RunNo: 93	3928				
Prep Date:	1/11/2023	Analysis [Date: 1/	12/2023	5	SeqNo: 33	391322	Units: mg/k	٤g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	24	5.0	25.00	0	95.6	72.3	137			
Surr: BFB		2000		1000		195	37.7	212			
Sample ID:	mb-72577	SampT	Гуре: МЕ	BLK	Tes	tCode: EF	PA Method	8015D: Gaso	line Range	1	
Client ID:	PBS	Batcl	h ID: 72	577	F	RunNo: 9 3	3928				
Prep Date:	1/11/2023	Analysis [Date: 1/	12/2023	S	SeqNo: 33	391323	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	ND	5.0								
Surr: BFB		1000		1000		102	37.7	212			
Sample ID:	2301376-001ams	Samp	Гуре: МS	;	Tes	tCode: EF	PA Method	8015D: Gaso	line Range	1	
Client ID:	BS23-01 4'	Batcl	h ID: 72	577	F	RunNo: 9 3	3928				
Prep Date:	1/11/2023	Analysis I	Date: 1/	12/2023	S	SeqNo: 33	391462	Units: mg/#	٤g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	23	4.8	24.22	0	94.7	70	130			
Surr: BFB		1900		969.0		195	37.7	212			
Sample ID:	2301376-001AMSD	SampT	Гуре: МS	D	Tes	tCode: EF	PA Method	8015D: Gaso	line Range	!	
Client ID:	BS23-01 4'	Batcl	h ID: 72	577	F	RunNo: 93	3928				
Prep Date:	1/11/2023	Analysis I	Date: 1/	12/2023	S	SeqNo: 33	391464	Units: mg/k	٤g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
-	e Organics (GRO)	19	5.0	24.78	0	78.1	70	130	16.9	20	
Surr: BFB		1800		991.1		181	37.7	212	0	0	

Qualifiers:

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- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
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- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2301376

17-Jan-23

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

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WO#:	2301376

17-Jan-23

Client:	Devon En	nergy										
Project:	Hackberry	y 6 Fed 1	Well Pa	d								
Sample ID:	2301376-002ams	Samp	Type: MS		Tes	tCode: FF	PA Method	8021B: Volati	iles			
Client ID:	BS23-02 4'	, 577		TestCode: EPA Method 8021B: Volatiles RunNo: 93928								
Prep Date:	1/11/2023	Analysis [SeqNo: 33	a					
Analyte		Result	PQL		SPK Ref Val	%REC	LowLimit	Units: mg/K HighLimit	%RPD	RPDLimit	Qual	
Benzene		0.83	0.024	0.9756	0	85.5	68.8	120	701 CT D		Quu	
Toluene		0.85	0.049	0.9756	0	86.6	73.6	124				
Ethylbenzene		0.84	0.049	0.9756	0	85.8	72.7	129				
Xylenes, Total		2.5	0.098	2.927	0	86.2	75.7	126				
•	nofluorobenzene	0.96		0.9756		98.8	70	130				
Sample ID:	2301376-002amsd	Samp	Туре: МS	D	Tes	tCode: EF	PA Method	8021B: Volati	iles			
Client ID:	BS23-02 4'	Batc	h ID: 72	577	F	RunNo: 9 3						
Prep Date:	1/11/2023	Analysis Date: 1/12/2023			S	SeqNo: 33	891516	Units: mg/K	ſg			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene		0.83	0.025	0.9814	0	84.4	68.8	120	0.720	20		
Toluene		0.84	0.049	0.9814	0	85.2	73.6	124	1.04	20		
Ethylbenzene		0.84	0.049	0.9814	0	85.1	72.7	129	0.197	20		
Xylenes, Total		2.5	0.098	2.944	0	84.7	75.7	126	1.24	20		
Surr: 4-Brom	nofluorobenzene	0.98		0.9814		99.4	70	130	0	0		
Sample ID:	LCS-72577	Samp	Туре: LC	S	TestCode: EPA Method 8021B: Volatiles							
Client ID:	LCSS	Batc	h ID: 72	577	F							
Prep Date:	1/11/2023	Analysis [Date: 1/	12/2023	S	SeqNo: 33	891519	Units: mg/K	(g			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene		0.95	0.025	1.000	0	95.2	80	120				
Toluene		0.97	0.050	1.000	0	96.9	80	120				
Ethylbenzene		0.96	0.050	1.000	0	96.1	80	120				
Xylenes, Total		2.9	0.10	3.000	0	96.7	80	120				
Surr: 4-Brom	nofluorobenzene	1.0		1.000		99.9	70	130				
Sample ID:	mb-72577	Samp	Туре: МЕ	BLK	Tes	tCode: EF	PA Method	8021B: Volati	iles			
Client ID:	PBS	Batc	h ID: 72	577	F	RunNo: 9 3	3928					
Prep Date:	1/11/2023	Analysis [Date: 1/	12/2023	S	SeqNo: 33	391520	Units: mg/K	(g			
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									
		ND	0.10									
Xylenes, Total												
•	nofluorobenzene	1.0		1.000		99.5	70	130				

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

- J Analyte detected below quantitation limits
- P Sample pH Not In Range

RL Reporting Limit

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HALL ENVIRONMENT ANALYSIS LABORATORY	AL	TE	L: 505-345-3	ntal Analysis Lo 4901 Ha Albuquerque, N 975 FAX: 505- y.hallenvironmo	wkins NE IM 87109 345-4107	Sar	nple Log-In (Check List
Client Name: Devon Ene	rgy	Work	Order Num	per: 2301376		_	RcptNo	p: 1
Received By: Tracy Cas	arrubias	1/11/20	23 7:35:00 /	AM				
Completed By: Tracy Cas	arrubias	1/11/20	23 7:52:52	۹M				
Reviewed By: Sec 1/1	123							
Chain of Custody								
1. Is Chain of Custody comp	lete?			Yes 🗌	1	No 🗹	Not Present	
2. How was the sample deliv	ered?			<u>Courier</u>				
Log In 3. Was an attempt made to o	cool the samp	les?		Yes 🗹	٢	1o 🗌	na 🗌	
4. Were all samples received	at a tempera	ture of >0° C	to 6.0°C	Yes 🗹	Ν	10 🗌		
5. Sample(s) in proper conta	iner(s)?			Yes 🗹	٢	lo 🗌		
6. Sufficient sample volume f	or indicated te	est(s)?		Yes 🗹	N	o 🗌		
7. Are samples (except VOA	and ONG) pro	operly preserve	ed?	Yes 🗹	Ν	•		
8. Was preservative added to	bottles?			Yes 🗌	N	o 🗹	NA 🗌	
9. Received at least 1 vial wit			'OA?	Yes		•	NA 🗹	
10. Were any sample containe	ers received b	roken?		Yes	Ν	lo 🗹	# of preserved	
11.Does paperwork match bo (Note discrepancies on cha)		Yes 🗹	N	•	bottles checked for pH: (<2 c	or >12 unless poted)
2. Are matrices correctly iden				Yes 🗹	N	• 🗆	Adjusted?	
3. Is it clear what analyses w	ere requested	?		Yes 🗹	N	• 🗆		
4. Were all holding times able (If no, notify customer for a				Yes 🗹	N	•	Checked by:	Jn1/11/2
Special Handling (if app				_			-	
15. Was client notified of all d	iscrepancies v	with this order?		Yes 🗌	Ν	lo 🗌		7
Person Notified:			Date:	1			_	
By Whom: Regarding:			Via:	🗌 eMail [Phone	Fax	In Person	
Client Instructions:					and the second second			
16. Additional remarks:								
17. Cooler Information			Seal No	Seal Date	Signe	d By	1	
17. <u>Cooler Information</u> Cooler No Temp °C 1 5.8	Condition	Seal Intact	Searino	oour Duto				

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Statement of the local division of the local
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	HALL ENVIRONMENTAL ANALYSIS LABORATORY	ent	4901 Hawkins NE - Albuquerque, NM 87109	505-345-3975 Fax 505-345-4107	Analysis Request		5 ԠOd	10 ⁵ ,	or 8 , <i>N</i>	-7C (310 ³ 519 510	y 83 8 Mé 11, 1 10 10 10 20	EDB (M) RCRA 5 RCRA 6 (V) 8260 (V 8270 (S Total Co	>	Ś						cc Kent Stulings	Bill Dayna W0# 1007101301			This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.
			4901 H	Tel. 50								08:H9T ∋9 1808	2	>						Leillaiks.	11cort	3		ility. Any su
						(1	208) e'	8M	L /	BE.	TM	1 (18	2	>							4	7		s possib
Turn-Around Time:	□ Standard ¥ Rush	Project Name:	Hackberry le Fed I Well Pad	Project #:	224-02537	Project Manager:	Chance Dixon	Sampler: SPC		olers:	Cooler Temp(including CF): 5.8 - 0 - 5.8 (°C)	Container Preservative HEAL No. Type and # Type 220/ひえし	403 jar ice 001				 		Deseited but Visi Dete Time	1 A - A - 1 A - A - A - A - A - A - A -		VIG. COULT		id contracted to other accredited laboratories . This serves as notice of this
Chain-of-Custody Record	Client: DeVON		Mailing Address: DN kill		Phone #:	email or Fax#:	QA/QC Package:	n: 🗆 Az Con		EDD (Type)		Date Time Matrix Sample Name	1/9/23 10:45 Soil BS23-01 4'	11 10:50 11 BS 23-02 4'						1/9/22 1750 Call Call Call	and amon		1942 Value Warner	Released De maaginggrop 999900 19:159:508 in Any antal may be subcontened to other accredited laboratories.



January 17, 2023

Chance Dixon Devon Energy 6488 Seven Rivers Highway Artesia, NM 88210 TEL: (575) 748-0176 FAX:

RE: Hackberry 6 Fed 1 Well Pad

OrderNo.: 2301461

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 5 sample(s) on 1/12/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Project:

Analytical Report Lab Order 2301461

Date Reported: 1/17/2023

Hall Environmental Analysis Laboratory, Inc.

Hackberry 6 Fed 1 Well Pad

Client Sample ID: WS23-27 0-4' Collection Date: 1/10/2023 7:50:00 AM Received Date: 1/12/2023 7:35:00 AM

Lab ID: 2301461-001	Matrix: SOIL	Rece	eived Date:	1/12/2	023 7:35:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	1/13/2023 1:39:17 PM
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	1/13/2023 1:39:17 PM
Surr: DNOP	105	69-147	%Rec	1	1/13/2023 1:39:17 PM
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/13/2023 12:56:00 PM
Surr: BFB	101	37.7-212	%Rec	1	1/13/2023 12:56:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.024	mg/Kg	1	1/13/2023 12:56:00 PM
Toluene	ND	0.049	mg/Kg	1	1/13/2023 12:56:00 PM
Ethylbenzene	ND	0.049	mg/Kg	1	1/13/2023 12:56:00 PM
Xylenes, Total	ND	0.097	mg/Kg	1	1/13/2023 12:56:00 PM
Surr: 4-Bromofluorobenzene	123	70-130	%Rec	1	1/13/2023 12:56:00 PM
EPA METHOD 300.0: ANIONS					Analyst: JTT
Chloride	120	60	mg/Kg	20	1/13/2023 12:45:25 PM

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

Qualifiers:

- Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix
- D н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 1 of 9

*

EPA METHOD 300.0: ANIONS

Chloride

Project:

Analytical Report Lab Order 2301461

Date Reported: 1/17/2023

Hall Environmental Analysis Laboratory, Inc.

Hackberry 6 Fed 1 Well Pad

Client Sample ID: BS23-03 4' Collection Date: 1/10/2023 7:55:00 AM Received Date: 1/12/2023 7:35:00 AM

Lab ID: 2301461-002 Matrix: SOIL Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** ND 9.0 mg/Kg 1 1/13/2023 1:50:05 PM Motor Oil Range Organics (MRO) ND 45 mg/Kg 1 1/13/2023 1:50:05 PM Surr: DNOP 106 69-147 %Rec 1 1/13/2023 1:50:05 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/13/2023 1:16:00 PM 5.0 mg/Kg 1 Surr: BFB 105 37.7-212 %Rec 1 1/13/2023 1:16:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/13/2023 1:16:00 PM 0.025 mg/Kg 1 Toluene ND 0.050 mg/Kg 1 1/13/2023 1:16:00 PM Ethylbenzene ND 0.050 mg/Kg 1 1/13/2023 1:16:00 PM Xylenes, Total ND mg/Kg 1 1/13/2023 1:16:00 PM 0.10 Surr: 4-Bromofluorobenzene 124 70-130 %Rec 1 1/13/2023 1:16:00 PM

150

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

Qualifiers:

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

mg/Kg

20

60

Р Sample pH Not In Range

RL Reporting Limit Page 2 of 9

Analyst: JTT

1/13/2023 12:57:49 PM

Project: Hackberry 6 Fed 1 Well Pad

Analytical Report Lab Order 2301461

Date Reported: 1/17/2023

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BS23-04 4' Collection Date: 1/10/2023 8:00:00 AM • ID 4 1/10/0000 7 05 00 AM

Lab ID: 2301461-003	Matrix: SOIL	Rece	eived Date:	1/12/2	023 7:35:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	13	9.0	mg/Kg	1	1/13/2023 2:00:57 PM
Motor Oil Range Organics (MRO)	ND	45	mg/Kg	1	1/13/2023 2:00:57 PM
Surr: DNOP	108	69-147	%Rec	1	1/13/2023 2:00:57 PM
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/13/2023 1:35:00 PM
Surr: BFB	99.3	37.7-212	%Rec	1	1/13/2023 1:35:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.025	mg/Kg	1	1/13/2023 1:35:00 PM
Toluene	ND	0.049	mg/Kg	1	1/13/2023 1:35:00 PM
Ethylbenzene	ND	0.049	mg/Kg	1	1/13/2023 1:35:00 PM
Xylenes, Total	ND	0.098	mg/Kg	1	1/13/2023 1:35:00 PM
Surr: 4-Bromofluorobenzene	121	70-130	%Rec	1	1/13/2023 1:35:00 PM
EPA METHOD 300.0: ANIONS					Analyst: JTT
Chloride	790	60	mg/Kg	20	1/13/2023 1:10:13 PM

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

Qualifiers:

* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL

Practical Quanitative Limit % Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 3 of 9

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Project:

Analytical Report Lab Order 2301461

Date Reported: 1/17/2023

Hall Environmental Analysis Laboratory, Inc.

Hackberry 6 Fed 1 Well Pad

Client Sample ID: BS23-05 4' Collection Date: 1/10/2023 8:05:00 AM **Dessived Deter** 1/12/2022 7:25:00 AM

Lab ID: 2301461-004	Matrix: SOIL	Rece	eived Date:	1/12/2	023 7:35:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	24	8.9	mg/Kg	1	1/13/2023 2:22:22 PM
Motor Oil Range Organics (MRO)	ND	45	mg/Kg	1	1/13/2023 2:22:22 PM
Surr: DNOP	104	69-147	%Rec	1	1/13/2023 2:22:22 PM
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/13/2023 1:55:00 PM
Surr: BFB	102	37.7-212	%Rec	1	1/13/2023 1:55:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.025	mg/Kg	1	1/13/2023 1:55:00 PM
Toluene	ND	0.049	mg/Kg	1	1/13/2023 1:55:00 PM
Ethylbenzene	ND	0.049	mg/Kg	1	1/13/2023 1:55:00 PM
Xylenes, Total	ND	0.099	mg/Kg	1	1/13/2023 1:55:00 PM
Surr: 4-Bromofluorobenzene	122	70-130	%Rec	1	1/13/2023 1:55:00 PM
EPA METHOD 300.0: ANIONS					Analyst: JTT
Chloride	1700	61	mg/Kg	20	1/13/2023 1:22:38 PM

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

Qualifiers:

* Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 4 of 9

Project:

Analytical Report Lab Order 2301461

Date Reported: 1/17/2023

Hall Environmental Analysis Laboratory, Inc.

Hackberry 6 Fed 1 Well Pad

Client Sample ID: WS23-29 0-4' Collection Date: 1/10/2023 1:30:00 PM **Dessived Deter** 1/12/2022 7:25:00 AM

Lab ID: 2301461-005	Matrix: SOIL	Rece	ived Date:	1/12/2	023 7:35:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	9.0	mg/Kg	1	1/13/2023 2:54:22 PM
Motor Oil Range Organics (MRO)	ND	45	mg/Kg	1	1/13/2023 2:54:22 PM
Surr: DNOP	103	69-147	%Rec	1	1/13/2023 2:54:22 PM
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/13/2023 2:15:00 PM
Surr: BFB	104	37.7-212	%Rec	1	1/13/2023 2:15:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.024	mg/Kg	1	1/13/2023 2:15:00 PM
Toluene	ND	0.049	mg/Kg	1	1/13/2023 2:15:00 PM
Ethylbenzene	ND	0.049	mg/Kg	1	1/13/2023 2:15:00 PM
Xylenes, Total	ND	0.097	mg/Kg	1	1/13/2023 2:15:00 PM
Surr: 4-Bromofluorobenzene	120	70-130	%Rec	1	1/13/2023 2:15:00 PM
EPA METHOD 300.0: ANIONS					Analyst: JTT
Chloride	140	61	mg/Kg	20	1/13/2023 1:59:51 PM

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

Qualifiers:

* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 5 of 9

Client: Project:		on Energy kberry 6 Fed 1 V	Well Pa	d								
Sample ID: N	/IB-72612	SampT	уре: МЕ	LK	Tes	tCode: EF	A Method	300.0: Anions				
Client ID: P	PBS Batch ID: 72612				F	RunNo: 93	8954					
Prep Date:	1/13/2023	2023 Analysis Date: 1/13/2023				SeqNo: 33	92167	Units: mg/Kg				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride		ND	1.5									
Sample ID: L	CS-72612	SampT	ype: LC	s	Tes	tCode: EF	A Method	300.0: Anions				
Client ID: L	CSS	Batcl	n ID: 726	612	F	RunNo: 93						
Prep Date:	1/13/2023	Analysis E	S	SeqNo: 33	92168	Units: mg/K	g					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride		14	1.5	15.00	0	96.1	90	110				

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

WO#: 2301461 17-Jan-23

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Devon I Project: Hackber	Energy rry 6 Fed 1	Well Pa	d							
Sample ID: LCS-72610	SampT	SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: LCSS	Batcl	h ID: 726	610	RunNo: 93948						
Prep Date: 1/13/2023	Analysis I	Date: 1/	13/2023	S	SeqNo: 3	392044	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	79.8	61.9	130			
Surr: DNOP	5.3		5.000		107	69	147			
Sample ID: MB-72610	SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics									
Client ID: PBS	Batc	h ID: 726	610	F	RunNo: 9 3	3948				
Prep Date: 1/13/2023	Analysis [Date: 1/	13/2023	SeqNo: 3392046 Units: mg/Kg				g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Notor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		107	69	147			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2301461

17-Jan-23

WO#:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

	Energy erry 6 Fed 1 We	ell Pa	d							
Sample ID: Ics-72605	SampTyp	SampType: LCS TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch II	D: 72	605	RunNo: 93931						
Prep Date: 1/12/2023	Analysis Date	e: 1/	13/2023	S	SeqNo: 33	891419	Units: mg/K	g		
Analyte	Result I	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	104	72.3	137			
Surr: BFB	2300		1000		228	37.7	212			S
Sample ID: mb-72605	SampTyp	SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch II): 72	605	F	RunNo: 9 3	931				
Prep Date: 1/12/2023	Analysis Date	e: 1/	13/2023	S	SeqNo: 33	891577	Units: mg/K	g		
Analyte	Result I	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			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2301461

17-Jan-23

WO#:

Devon Energy

Client:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Project: Hackbe	erry 6 Fed 1	Well Pa	d							
Sample ID: Ics-72605	SampT	SampType: LCS TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batcl	h ID: 726	605	RunNo: 93931						
Prep Date: 1/12/2023	Analysis E	Date: 1/1	13/2023	S	SeqNo: 3	391420	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	114	80	120			
Toluene	1.2	0.050	1.000	0	116	80	120			
Ethylbenzene	1.2	0.050	1.000	0	115	80	120			
Xylenes, Total	3.5	0.10	3.000	0	115	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		122	70	130			
Sample ID: mb-72605	Samp⊺	SampType: MBLK TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batcl	h ID: 726	605	RunNo: 93931						
Prep Date: 1/12/2023	Analysis D	Date: 1/	13/2023	S	SeqNo: 33	391578	Units: mg/K	a		
1 10p Date. 1/12/2023	/ thatyoid L		0/2020				3	•		
Analyte	Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
							-	-	RPDLimit	Qual
Analyte Benzene	Result	PQL					-	-	RPDLimit	Qual
Analyte Benzene Toluene	Result ND	PQL 0.025					-	-	RPDLimit	Qual
Analyte	Result ND ND	PQL 0.025 0.050					-	-	RPDLimit	Qual

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 9 of 9

WO#: 2301461 17-Jan-23

HALL ENVIRONMENTAL ANALYSIS LABORATORY	All TEL: 505-345-397	ironmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 5-345-3975 FAX: 505-345-4107 te: www.hallenvironmental.com				Sample Log-In Check List				
Client Name: Devon Energy	Work Order Numbe	r: 230 1	1461			RcptNo: 1				
Received By: Tracy Casarrubias Completed By: Tracy Casarrubias Reviewed By: JAN 12223	1/12/2023 7:35:00 AN 1/12/2023 8:03:35 AN									
500012/23										
Chain of Custody										
1. Is Chain of Custody complete?		Yes		No	\checkmark	Not Present				
2. How was the sample delivered?		<u>Cour</u>	ier							
<u>Log In</u>										
3. Was an attempt made to cool the samples?		Yes		No		NA 🗌				
4. Were all samples received at a temperature of	f >0° C to 6.0°C	Yes		No						
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 b						
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes		No []	# of preserved bottles checked for pH: (<2.or >12 unless noted)				
12. Are matrices correctly identified on Chain of C	ustody?	Yes		No [ן כ	Adjusted?				
13. Is it clear what analyses were requested?	-		_	No []					
14. Were all holding times able to be met? (If no, notify customer for authorization.)		Yes [Νο [ם	Checked by: KP4 1-12-2	3			
Special Handling (if applicable)					l					
15. Was client notified of all discrepancies with the	s order?	Yes		No [٦					
Person Notified:	Date:				_					
By Whom: Regarding:	Via:] eMai	il 🗌 Phone	9 🗋 F	ax	In Person				
Client Instructions:										
16. Additional remarks:										
17. <u>Cooler Information</u>										
	Intact Seal No S	eal Dat	te Sign	ed By						
1 4.4 Good Yes										

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Image: Standard Total Decision ABM Image: Standard Total Decision ABM Project Name: Haukburg Lo Fed 1 Decision ABM Project Manager: 4301 Haukins NE - 100 Metals Project Manager: Container Project Manager: 4340.1 × 4.4 × 5.6 × 5.8 × 5.345-3375 Diffect Manager: Container Project Name (Reinod 504.1) Diffect Manager: APB Metals Diffect (Reinod 504.1) Diffect Manager: APB Container Project Manager: APB Project Name (Reinod 504.1) Diffect Manager: APB Container Project Manager: APB Project Name (Reinod 504.1) Container Project Name (Reinod 504.1) Project Manager: APB Container Project Manager: APB Project Name (Reinod 504.1) Mutuut Name Rampler: APB Project Name Mutuut Name Mutuut Name Ramer Preservative Name Mutuut Name Ramer Preservative Name Mutuut Name Name Name Ramer Preservative Name Name Name <th>Chain-of-Custody Record</th> <th>Turn-Around Time:</th> <th></th>	Chain-of-Custody Record	Turn-Around Time:	
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Simple from bit in the from the f			www.hallenvironmental.com
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	Relinquis	Via:COLLOC Date T	# 0X



January 19, 2023

Chance Dixon Vertex Resources Services, Inc. 3101 Boyd Drive Carlsbad, NM 88220 TEL: (505) 506-0040 FAX:

RE: Hackberry 6 Fed 1 Well Pad

OrderNo.: 2301522

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 20 sample(s) on 1/13/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-06 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/11/2023 9:10:00 AM Lab ID: 2301522-001 Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 9.9 mg/Kg 1 1/17/2023 9:29:03 AM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 1/17/2023 9:29:03 AM Surr: DNOP 109 69-147 %Rec 1 1/17/2023 9:29:03 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/16/2023 2:22:00 PM 4.8 mg/Kg 1 Surr: BFB 99.0 37.7-212 %Rec 1 1/16/2023 2:22:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/16/2023 2:22:00 PM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/16/2023 2:22:00 PM Ethylbenzene ND 0.048 mg/Kg 1 1/16/2023 2:22:00 PM Xylenes, Total ND 0.096 mg/Kg 1 1/16/2023 2:22:00 PM Surr: 4-Bromofluorobenzene 117 70-130 %Rec 1 1/16/2023 2:22:00 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride mg/Kg 1/17/2023 10:06:31 AM 7100 300 100

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 1 of 24

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-07 4' Hackberry 6 Fed 1 Well Pad **Project:** Collection Date: 1/11/2023 9:15:00 AM Lab ID: 2301522-002 Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 9.7 mg/Kg 1 1/17/2023 9:55:44 AM Motor Oil Range Organics (MRO) ND 48 mg/Kg 1 1/17/2023 9:55:44 AM Surr: DNOP 99.9 69-147 %Rec 1 1/17/2023 9:55:44 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/16/2023 3:21:00 PM 4.9 mg/Kg 1 Surr: BFB 106 37.7-212 %Rec 1 1/16/2023 3:21:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/16/2023 3:21:00 PM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/16/2023 3:21:00 PM Ethylbenzene ND 0.049 mg/Kg 1 1/16/2023 3:21:00 PM Xylenes, Total ND 0.099 mg/Kg 1 1/16/2023 3:21:00 PM Surr: 4-Bromofluorobenzene 116 70-130 %Rec 1 1/16/2023 3:21:00 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 1/16/2023 8:58:46 PM 1900 60 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 2 of 24

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-08 4' Hackberry 6 Fed 1 Well Pad **Project:** Collection Date: 1/11/2023 9:20:00 AM Lab ID: 2301522-003 Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** 11 9.1 mg/Kg 1 1/17/2023 10:06:16 AM Motor Oil Range Organics (MRO) ND 46 mg/Kg 1 1/17/2023 10:06:16 AM Surr: DNOP 101 69-147 %Rec 1 1/17/2023 10:06:16 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/16/2023 4:20:00 PM 4.9 mg/Kg 1 Surr: BFB 93.1 37.7-212 %Rec 1 1/16/2023 4:20:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/16/2023 4:20:00 PM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/16/2023 4:20:00 PM Ethylbenzene ND 0.049 mg/Kg 1 1/16/2023 4:20:00 PM Xylenes, Total ND 0.099 mg/Kg 1 1/16/2023 4:20:00 PM Surr: 4-Bromofluorobenzene 110 70-130 %Rec 1 1/16/2023 4:20:00 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride mg/Kg 1/17/2023 10:18:51 AM 4200 150 50

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Sample Diluted Due to Matrix
 H Holding times for preparation or analysis exceed.

H Holding times for preparation or analysis exceeded

NDNot Detected at the Reporting LimitPQLPractical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range RL Reporting Limit

RL Re

Page 3 of 24

Project:

CLIENT: Vertex Resources Services, Inc.

Hackberry 6 Fed 1 Well Pad

Analytical Report Lab Order 2301522

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BS23-09 4' Collection Date: 1/11/2023 9:25:00 AM Received Date: 1/13/2023 7:40:00 AM

Lab ID: 2301522-004	Matrix: SOIL	Received Date: 1/13/2023 7:40:00 AM					
Analyses	Result	RL Qu	al Units	DF	Date Analyzed		
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH		
Diesel Range Organics (DRO)	9.6	9.3	mg/Kg	1	1/17/2023 10:16:50 AM		
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	1/17/2023 10:16:50 AM		
Surr: DNOP	76.6	69-147	%Rec	1	1/17/2023 10:16:50 AM		
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM		
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/16/2023 4:40:00 PM		
Surr: BFB	109	37.7-212	%Rec	1	1/16/2023 4:40:00 PM		
EPA METHOD 8021B: VOLATILES					Analyst: CCM		
Benzene	ND	0.024	mg/Kg	1	1/16/2023 4:40:00 PM		
Toluene	ND	0.048	mg/Kg	1	1/16/2023 4:40:00 PM		
Ethylbenzene	ND	0.048	mg/Kg	1	1/16/2023 4:40:00 PM		
Xylenes, Total	ND	0.096	mg/Kg	1	1/16/2023 4:40:00 PM		
Surr: 4-Bromofluorobenzene	114	70-130	%Rec	1	1/16/2023 4:40:00 PM		
EPA METHOD 300.0: ANIONS					Analyst: JMT		
Chloride	3000	150	mg/Kg	50	1/17/2023 10:31:11 AM		

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

Qualifiers:

* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL

Practical Quanitative Limit % Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 4 of 24

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-10 4' Hackberry 6 Fed 1 Well Pad **Project:** Collection Date: 1/11/2023 9:30:00 AM Lab ID: 2301522-005 Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** 15 9.8 mg/Kg 1 1/17/2023 10:27:22 AM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 1/17/2023 10:27:22 AM Surr: DNOP 91.0 69-147 %Rec 1 1/17/2023 10:27:22 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/16/2023 4:59:00 PM 4.9 mg/Kg 1 Surr: BFB 97.4 37.7-212 %Rec 1 1/16/2023 4:59:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/16/2023 4:59:00 PM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/16/2023 4:59:00 PM Ethylbenzene ND 0.049 mg/Kg 1 1/16/2023 4:59:00 PM Xylenes, Total ND 0.098 mg/Kg 1 1/16/2023 4:59:00 PM Surr: 4-Bromofluorobenzene 111 70-130 %Rec 1 1/16/2023 4:59:00 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride mg/Kg 1/17/2023 10:43:31 AM 6100 300 100

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 5 of 24

2301522-006

Project:

Lab ID:

Analyses

Analytical Report Lab Order 2301522

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-11 4' Hackberry 6 Fed 1 Well Pad Collection Date: 1/11/2023 9:35:00 AM Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: **DGH**

Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	1/17/2023 10:37:57 AM
			0 0	-	
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	1/17/2023 10:37:57 AM
Surr: DNOP	107	69-147	%Rec	1	1/17/2023 10:37:57 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/16/2023 5:19:00 PM
Surr: BFB	102	37.7-212	%Rec	1	1/16/2023 5:19:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.025	mg/Kg	1	1/16/2023 5:19:00 PM
Toluene	ND	0.049	mg/Kg	1	1/16/2023 5:19:00 PM
Ethylbenzene	ND	0.049	mg/Kg	1	1/16/2023 5:19:00 PM
Xylenes, Total	ND	0.098	mg/Kg	1	1/16/2023 5:19:00 PM
Surr: 4-Bromofluorobenzene	116	70-130	%Rec	1	1/16/2023 5:19:00 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	7800	300	mg/Kg	100	1/17/2023 10:55:52 AM

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

Qualifiers:

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range RL Reporting Limit

Page 6 of 24

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Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-12 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/11/2023 9:40:00 AM Lab ID: 2301522-007 Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** ND 9.7 mg/Kg 1 1/17/2023 10:48:50 AM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 1/17/2023 10:48:50 AM Surr: DNOP 75.8 69-147 %Rec 1 1/17/2023 10:48:50 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/16/2023 5:39:00 PM 4.8 mg/Kg 1 Surr: BFB 99.9 37.7-212 %Rec 1 1/16/2023 5:39:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/16/2023 5:39:00 PM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/16/2023 5:39:00 PM Ethylbenzene ND 0.048 mg/Kg 1 1/16/2023 5:39:00 PM Xylenes, Total ND 0.096 mg/Kg 1 1/16/2023 5:39:00 PM Surr: 4-Bromofluorobenzene 117 70-130 %Rec 1 1/16/2023 5:39:00 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride mg/Kg 1/17/2023 11:08:12 AM 7000 300 100

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

- D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 7 of 24

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-13 4' Hackberry 6 Fed 1 Well Pad **Project:** Collection Date: 1/11/2023 9:45:00 AM Lab ID: 2301522-008 Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 9.7 mg/Kg 1 1/17/2023 11:10:02 AM Motor Oil Range Organics (MRO) ND 48 mg/Kg 1 1/17/2023 11:10:02 AM Surr: DNOP 109 69-147 %Rec 1 1/17/2023 11:10:02 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/16/2023 5:59:00 PM 4.9 mg/Kg 1 Surr: BFB 98.0 37.7-212 %Rec 1 1/16/2023 5:59:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/16/2023 5:59:00 PM 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/16/2023 5:59:00 PM Ethylbenzene ND 0.049 mg/Kg 1 1/16/2023 5:59:00 PM Xylenes, Total ND 0.097 mg/Kg 1 1/16/2023 5:59:00 PM Surr: 4-Bromofluorobenzene 114 70-130 %Rec 1 1/16/2023 5:59:00 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride mg/Kg 1/17/2023 11:20:32 AM 5600 300 100

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 8 of 24

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-14 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/11/2023 9:50:00 AM Lab ID: 2301522-009 Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 9.2 mg/Kg 1 1/17/2023 11:20:39 AM Motor Oil Range Organics (MRO) ND 46 mg/Kg 1 1/17/2023 11:20:39 AM Surr: DNOP 71.9 69-147 %Rec 1 1/17/2023 11:20:39 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/16/2023 6:18:00 PM 4.9 mg/Kg 1 Surr: BFB 105 37.7-212 %Rec 1 1/16/2023 6:18:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/16/2023 6:18:00 PM 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/16/2023 6:18:00 PM Ethylbenzene ND 0.049 mg/Kg 1 1/16/2023 6:18:00 PM Xylenes, Total ND 0.098 mg/Kg 1 1/16/2023 6:18:00 PM Surr: 4-Bromofluorobenzene 117 70-130 %Rec 1 1/16/2023 6:18:00 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride mg/Kg 1/17/2023 11:32:53 AM 6500 300 100

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 9 of 24

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-15 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/11/2023 9:55:00 AM Lab ID: 2301522-010 Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 9.5 mg/Kg 1 1/17/2023 11:41:48 AM Motor Oil Range Organics (MRO) ND 48 mg/Kg 1 1/17/2023 11:41:48 AM Surr: DNOP 85.2 69-147 %Rec 1 1/17/2023 11:41:48 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/16/2023 7:17:00 PM 4.8 mg/Kg 1 Surr: BFB 96.9 37.7-212 %Rec 1 1/16/2023 7:17:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/16/2023 7:17:00 PM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/16/2023 7:17:00 PM Ethylbenzene ND 0.048 mg/Kg 1 1/16/2023 7:17:00 PM Xylenes, Total ND 0.097 mg/Kg 1 1/16/2023 7:17:00 PM Surr: 4-Bromofluorobenzene 113 70-130 %Rec 1 1/16/2023 7:17:00 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride mg/Kg 1/17/2023 11:45:13 AM 12000 600 200

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 10 of 24

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-16 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/11/2023 10:00:00 AM Lab ID: 2301522-011 Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Diesel Range Organics (DRO) ND 9.9 mg/Kg 1 1/17/2023 11:52:27 AM Motor Oil Range Organics (MRO) ND 50 mg/Kg 1 1/17/2023 11:52:27 AM Surr: DNOP 69.4 69-147 %Rec 1 1/17/2023 11:52:27 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/16/2023 7:37:00 PM 4.9 mg/Kg 1 Surr: BFB 100 37.7-212 %Rec 1 1/16/2023 7:37:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/16/2023 7:37:00 PM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/16/2023 7:37:00 PM Ethylbenzene ND 0.049 mg/Kg 1 1/16/2023 7:37:00 PM Xylenes, Total ND 0.098 mg/Kg 1 1/16/2023 7:37:00 PM Surr: 4-Bromofluorobenzene 115 70-130 %Rec 1 1/16/2023 7:37:00 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride mg/Kg 8300 300 100 1/17/2023 11:57:34 AM

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 11 of 24

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-17 4' Hackberry 6 Fed 1 Well Pad **Project:** Collection Date: 1/11/2023 10:05:00 AM Lab ID: 2301522-012 Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) ND 9.8 mg/Kg 1 1/17/2023 1:09:48 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 1/17/2023 1:09:48 PM Surr: DNOP 129 69-147 %Rec 1 1/17/2023 1:09:48 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/16/2023 7:57:00 PM 4.8 mg/Kg 1 Surr: BFB 99.3 37.7-212 %Rec 1 1/16/2023 7:57:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/16/2023 7:57:00 PM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/16/2023 7:57:00 PM Ethylbenzene ND 0.048 mg/Kg 1 1/16/2023 7:57:00 PM Xylenes, Total ND 0.096 mg/Kg 1 1/16/2023 7:57:00 PM Surr: 4-Bromofluorobenzene 114 70-130 %Rec 1 1/16/2023 7:57:00 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride mg/Kg 1/17/2023 12:34:36 PM 4600 150 50

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 12 of 24

Project:

CLIENT: Vertex Resources Services, Inc.

Hackberry 6 Fed 1 Well Pad

Analytical Report Lab Order 2301522

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BS23-18 4' Collection Date: 1/11/2023 11:00:00 AM Received Date: 1/13/2023 7:40:00 AM

Lab ID: 2301522-013	Matrix: SOIL	Rece	ived Date:	1/13/2	023 7:40:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	1/17/2023 1:20:27 PM
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	1/17/2023 1:20:27 PM
Surr: DNOP	125	69-147	%Rec	1	1/17/2023 1:20:27 PM
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/16/2023 8:16:00 PM
Surr: BFB	100	37.7-212	%Rec	1	1/16/2023 8:16:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.024	mg/Kg	1	1/16/2023 8:16:00 PM
Toluene	ND	0.049	mg/Kg	1	1/16/2023 8:16:00 PM
Ethylbenzene	ND	0.049	mg/Kg	1	1/16/2023 8:16:00 PM
Xylenes, Total	ND	0.098	mg/Kg	1	1/16/2023 8:16:00 PM
Surr: 4-Bromofluorobenzene	117	70-130	%Rec	1	1/16/2023 8:16:00 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	8500	300	mg/Kg	100	1/17/2023 12:46:57 PM

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

Qualifiers:

* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S

Analyte detected in the associated Method Blank в

- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 13 of 24

Released to Imaging: 6/9/2023 11:32:08 AM

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-19 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/11/2023 11:05:00 AM Lab ID: 2301522-014 Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) 26 9.3 mg/Kg 1 1/17/2023 1:31:06 PM Motor Oil Range Organics (MRO) 67 46 mg/Kg 1 1/17/2023 1:31:06 PM 69-147 Surr: DNOP 113 %Rec 1 1/17/2023 1:31:06 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/16/2023 8:36:00 PM 4.8 mg/Kg 1 Surr: BFB 101 37.7-212 %Rec 1 1/16/2023 8:36:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/16/2023 8:36:00 PM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/16/2023 8:36:00 PM Ethylbenzene ND 0.048 mg/Kg 1 1/16/2023 8:36:00 PM Xylenes, Total ND 0.097 mg/Kg 1 1/16/2023 8:36:00 PM Surr: 4-Bromofluorobenzene 114 70-130 %Rec 1 1/16/2023 8:36:00 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride mg/Kg 1/17/2023 12:59:17 PM 6700 300 100

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 14 of 24

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-20 4' Hackberry 6 Fed 1 Well Pad **Project:** Collection Date: 1/11/2023 11:10:00 AM Lab ID: 2301522-015 Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) 31 10 mg/Kg 1 1/17/2023 1:41:47 PM Motor Oil Range Organics (MRO) 71 50 mg/Kg 1 1/17/2023 1:41:47 PM Surr: DNOP 99.2 69-147 %Rec 1 1/17/2023 1:41:47 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/16/2023 8:56:00 PM 4.8 mg/Kg 1 Surr: BFB 103 37.7-212 %Rec 1 1/16/2023 8:56:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/16/2023 8:56:00 PM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/16/2023 8:56:00 PM Ethylbenzene ND 0.048 mg/Kg 1 1/16/2023 8:56:00 PM Xylenes, Total ND 0.096 mg/Kg 1 1/16/2023 8:56:00 PM Surr: 4-Bromofluorobenzene 116 70-130 %Rec 1 1/16/2023 8:56:00 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride mg/Kg 1/17/2023 1:11:38 PM 9100 600 200

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 15 of 24

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-21 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/11/2023 11:15:00 AM Lab ID: 2301522-016 Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) 11 10 mg/Kg 1 1/17/2023 1:52:31 PM Motor Oil Range Organics (MRO) ND 50 mg/Kg 1 1/17/2023 1:52:31 PM Surr: DNOP 107 69-147 %Rec 1 1/17/2023 1:52:31 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/16/2023 9:15:00 PM 4.8 mg/Kg 1 Surr: BFB 97.9 37.7-212 %Rec 1 1/16/2023 9:15:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/16/2023 9:15:00 PM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/16/2023 9:15:00 PM Ethylbenzene ND 0.048 mg/Kg 1 1/16/2023 9:15:00 PM Xylenes, Total ND 0.095 mg/Kg 1 1/16/2023 9:15:00 PM Surr: 4-Bromofluorobenzene 116 70-130 %Rec 1 1/16/2023 9:15:00 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride mg/Kg 1/17/2023 1:23:58 PM 9200 300 100

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 16 of 24

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-22 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/11/2023 11:20:00 AM Lab ID: 2301522-017 Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) ND 9.1 mg/Kg 1 1/17/2023 2:03:13 PM Motor Oil Range Organics (MRO) ND 45 mg/Kg 1 1/17/2023 2:03:13 PM Surr: DNOP 109 69-147 %Rec 1 1/17/2023 2:03:13 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/16/2023 9:35:00 PM 4.9 mg/Kg 1 Surr: BFB 100 37.7-212 %Rec 1 1/16/2023 9:35:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/16/2023 9:35:00 PM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/16/2023 9:35:00 PM Ethylbenzene ND 0.049 mg/Kg 1 1/16/2023 9:35:00 PM Xylenes, Total ND 0.099 mg/Kg 1 1/16/2023 9:35:00 PM Surr: 4-Bromofluorobenzene 118 70-130 %Rec 1 1/16/2023 9:35:00 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride mg/Kg 1/17/2023 1:36:19 PM 6800 300 100

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 17 of 24

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-23 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/11/2023 11:25:00 AM Lab ID: 2301522-018 Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) ND 9.9 mg/Kg 1 1/17/2023 2:13:56 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 1/17/2023 2:13:56 PM Surr: DNOP 69-147 %Rec 1 1/17/2023 2:13:56 PM 116 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/16/2023 9:55:00 PM 4.8 mg/Kg 1 Surr: BFB 97.7 37.7-212 %Rec 1 1/16/2023 9:55:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/16/2023 9:55:00 PM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/16/2023 9:55:00 PM Ethylbenzene ND 0.048 mg/Kg 1 1/16/2023 9:55:00 PM Xylenes, Total ND 0.097 mg/Kg 1 1/16/2023 9:55:00 PM Surr: 4-Bromofluorobenzene 115 70-130 %Rec 1 1/16/2023 9:55:00 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride mg/Kg 1/17/2023 1:48:40 PM 9000 300 100

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 18 of 24

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-24 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/11/2023 11:30:00 AM Lab ID: 2301522-019 Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) ND 8.6 mg/Kg 1 1/17/2023 2:24:48 PM Motor Oil Range Organics (MRO) ND 43 mg/Kg 1 1/17/2023 2:24:48 PM Surr: DNOP 69-147 %Rec 1 1/17/2023 2:24:48 PM 119 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/16/2023 10:15:00 PM 4.9 mg/Kg 1 Surr: BFB 98.7 37.7-212 %Rec 1 1/16/2023 10:15:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/16/2023 10:15:00 PM 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/16/2023 10:15:00 PM Ethylbenzene ND 0.049 mg/Kg 1 1/16/2023 10:15:00 PM Xylenes, Total ND 0.098 mg/Kg 1 1/16/2023 10:15:00 PM Surr: 4-Bromofluorobenzene 114 70-130 %Rec 1 1/16/2023 10:15:00 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride mg/Kg 1/17/2023 2:01:01 PM 7400 300 100

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 19 of 24

Released to Imaging: 6/9/2023 11:32:08 AM

Date Reported: 1/19/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-25 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/11/2023 11:35:00 AM Lab ID: 2301522-020 Matrix: SOIL Received Date: 1/13/2023 7:40:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) 28 8.6 mg/Kg 1 1/17/2023 2:35:42 PM Motor Oil Range Organics (MRO) 51 43 mg/Kg 1 1/17/2023 2:35:42 PM Surr: DNOP 116 69-147 %Rec 1 1/17/2023 2:35:42 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/16/2023 10:54:00 PM 4.8 mg/Kg 1 Surr: BFB 102 37.7-212 %Rec 1 1/16/2023 10:54:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/16/2023 10:54:00 PM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/16/2023 10:54:00 PM Ethylbenzene ND 0.048 mg/Kg 1 1/16/2023 10:54:00 PM Xylenes, Total ND 0.096 mg/Kg 1 1/16/2023 10:54:00 PM Surr: 4-Bromofluorobenzene 117 70-130 %Rec 1 1/16/2023 10:54:00 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride mg/Kg 1/17/2023 2:13:21 PM 10000 590 200

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 20 of 24

Released to Imaging: 6/9/2023 11:32:08 AM

Client: Project:		ex Resources Se kberry 6 Fed 1 V	,								
Sample ID:	MB-72640	SampT	ype: mb	lk	Tes	tCode: EP	PA Method	300.0: Anions	5		
Client ID:	PBS	Batch	ID: 726	640	F	RunNo: 9 3	8996				
Prep Date:	1/16/2023	Analysis D	ate: 1/	16/2023	S	SeqNo: 33	93481	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID:	LCS-72640	SampT	ype: Ics		Tes	tCode: EP	A Method	300.0: Anions	;		
Client ID:	LCSS	Batch	ID: 726	640	F	RunNo: 9 3	8996				
Prep Date:	1/16/2023	Analysis D	ate: 1/	16/2023	S	SeqNo: 33	93482	Units: mg/K	g		
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 Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2301522

19-Jan-23

Client: Project:	Vertex Re Hackberry		· · · · ·								
Sample ID:	2301522-001AMS	SampT	уре: МS	3	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID:	BS23-06 4'	Batch	n ID: 726	638	F	RunNo: 9 4	4003				
Prep Date:	1/16/2023	Analysis D	Date: 1/	17/2023	S	SeqNo: 33	393666	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range	Organics (DRO)	50	10	50.10	0	99.5	54.2	135			
Surr: DNOP		5.6		5.010		112	69	147			
Sample ID:	LCS-72638	SampT	ype: LC	S	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID:	LCSS	Batch	n ID: 726	638	F	RunNo: 9 4	4003				
Prep Date:	1/16/2023	Analysis D)ate: 1/	17/2023	S	SeqNo: 33	893687	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (Organics (DRO)	47	10	50.00	0	94.8	61.9	130			
Surr: DNOP		6.0		5.000		119	69	147			
Sample ID:	MB-72638	SampT	уре: МЕ	BLK	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID:	PBS	Batch	n ID: 726	638	F	RunNo: 9 4	1003				
Prep Date:	1/16/2023	Analysis D)ate: 1/	17/2023	S	SeqNo: 33	393688	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
-	Organics (DRO)	ND	10								
-	je Organics (MRO)	ND	50								
Surr: DNOP		12		10.00		117	69	147			
Sample ID:	2301522-001AMSD	SampT	ype: MS	SD	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID:	BS23-06 4'	Batch	n ID: 726	638	F	RunNo: 9 4	1003				
Prep Date:	1/16/2023	Analysis D)ate: 1/	17/2023	S	SeqNo: 33	394250	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diagol Dango (Organics (DRO)	52	9.6	48.17	0	108	54.2	135	3.98	29.2	
Diesei Ralige (organics (Drto)	52	0.0	40.17	0	100	J4.Z	100	0.00	20.2	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 22 of 24

2301522

19-Jan-23

Client: Project:	Vertex Re Hackberry										
Sample ID:	lcs-72620	SampT	ype: LC	S	Tes	tCode: EF	A Method	8015D: Gasol	line Range		
Client ID:	LCSS	Batch	n ID: 726	620	F	RunNo: 93	975				
Prep Date:	1/13/2023	Analysis D	ate: 1/	16/2023	S	SeqNo: 33	93260	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	23	5.0	25.00	0	90.4	72.3	137			
Surr: BFB		2200		1000		222	37.7	212			S
Sample ID:	mb-72620	SampT	ype: ME	BLK	Tes	tCode: EF	A Method	8015D: Gasol	line Range		
Client ID:	PBS	Batch	n ID: 726	620	F	RunNo: 93	8975				
Prep Date:	1/13/2023	Analysis D	ate: 1/	16/2023	S	SeqNo: 33	93261	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	ND	5.0								
Surr: BFB		1100		1000		108	37.7	212			
Sample ID:	2301522-001ams	SampT	ype: MS	;	Tes	tCode: EF	PA Method	8015D: Gasol	line Range		
Client ID:	BS23-06 4'	Batch	n ID: 726	620	F	RunNo: 93	975				
Prep Date:	1/13/2023	Analysis D	ate: 1/	16/2023	S	SeqNo: 33	93263	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	22	4.8	23.79	0	93.6	70	130			
		~~~	4.0	23.79	0	93.0	70	130			
Surr: BFB		2200	4.0	951.5	0	93.6 226	70 37.7	212			S
	2301522-001amsd	2200	4.0 ype: <b>MS</b>	951.5		226	37.7		line Range		S
	2301522-001amsd BS23-06 4'	2200 SampT	-	951.5	Tes	226	37.7 PA Method	212	line Range		S
Sample ID:		2200 SampT	ype: <b>MS</b> 1D: <b>726</b>	951.5 5D 520	Tes	226 tCode: EF	37.7 PA Method 8975	212	U		S
Sample ID: Client ID:	BS23-06 4'	2200 SampT Batch	ype: <b>MS</b> 1D: <b>726</b>	951.5 5D 520 16/2023	Tes	226 tCode: EF RunNo: 93	37.7 PA Method 8975	212 8015D: Gasol	U	RPDLimit	S Qual
Sample ID: Client ID: Prep Date: Analyte	BS23-06 4'	2200 SampT Batch Analysis D	ype: MS 1D: 726 Pate: 1/1	951.5 5D 520 16/2023	Tes F S	226 tCode: EF RunNo: 93 SeqNo: 33	37.7 PA Method 8975 893264	212 8015D: Gasol Units: mg/K	íg		

#### Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2301522

19-Jan-23

Client: Project:	Vertex Rea Hackberry										
Sample ID: Ic:	s-72620	SampT	Гуре: <b>LC</b>	S	Tes	tCode: EF	PA Method	8021B: Volat	iles		
Client ID: LC	CSS	Batcl	h ID: 726	620	F	RunNo: 93	8975				
Prep Date: 1	1/13/2023	Analysis E	Date: 1/	16/2023	S	SeqNo: 3	393292	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		1.1	0.025	1.000	0	112	80	120			
Toluene		1.1	0.050	1.000	0	114	80	120			
Ethylbenzene		1.1	0.050	1.000	0	114	80	120			
Xylenes, Total		3.4	0.10	3.000	0	114	80	120			
Surr: 4-Bromoflu	uorobenzene	1.2		1.000		119	70	130			
Sample ID: m	b-72620	SampT	Гуре: <b>МЕ</b>	BLK	Tes	tCode: EF	PA Method	8021B: Volat	iles		
Client ID: PE	BS	Batc	h ID: 726	620	F	RunNo: <b>9</b> 3	8975				
Prep Date: 1	1/13/2023	Analysis E	Date: 1/	16/2023	S	SeqNo: 3	393293	Units: mg/K	g		
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-Bromoflu	uorobenzene	1.2		1.000		119	70	130			
Sample ID: 23	801522-002ams	SampT	Гуре: <b>МS</b>	6	Tes	tCode: EF	PA Method	8021B: Volat	iles		
Client ID: B	S23-07 4'	Batcl	h ID: 726	620	F	RunNo: <b>9</b> :	8975				
Prep Date: 1	1/13/2023	Analysis E	Date: 1/	16/2023	S	SeqNo: 3	393298	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		1.1	0.024	0.9643	0	109	68.8	120			
Toluene		1.1	0.048	0.9643	0	111	73.6	124			
Ethylbenzene		1.1	0.048	0.9643	0	112	72.7	129			
Xylenes, Total		3.2	0.096	2.893	0	112	75.7	126			
Surr: 4-Bromoflu	uorobenzene	1.1		0.9643		114	70	130			
Sample ID: 23	801522-002amsd	SampT	Гуре: <b>МS</b>	SD	Tes	tCode: EF	PA Method	8021B: Volat	iles		
Client ID: B	S23-07 4'	Batcl	h ID: 726	620	F	RunNo: <b>9</b> 3	8975				
Prep Date: 1	1/13/2023	Analysis E	Date: 1/	16/2023	S	SeqNo: 3	393299	Units: mg/K	g		
Analyte		Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		1.0	0.024	0.9785	0	105	68.8	120	1.95	20	
Toluene		1.1	0.049	0.9785	0	109	73.6	124	0.775	20	
Ethylbenzene		1.1	0.049	0.9785	0	110	72.7	129	0.662	20	
Xylenes, Total		3.2	0.098	2.935	0	110	75.7	126	0.462	20	
		1.1		0.9785	-	117	70		01.102		

#### Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2301522

19-Jan-23

WO#:

### Released to Imaging: 6/9/2023 11:32:08 AM

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmenta Alb TEL: 505-345-397 Website: www.ha	49( uquero 5 FAX:	01 Hawkins N que, NM 8710 • 505-345-410	VE 09 <b>S</b> 07	San	nple Log-In Ch	neck List
Client Name: Vertex Resources Services, Inc.	Work Order Number	: 230	1522			RcptNo:	1
Received By: Juan Rojas	1/13/2023 7:40:00 AM	I		Heave	3G	not	
Completed By: Sean Livingston	1/13/2023 8:03:38 AM	I		5~	_L	nat	
Reviewed By: Jn 113/23						<i></i>	
Chain of Custody							
1. Is Chain of Custody complete?		Yes		No		Not Present	
2. How was the sample delivered?		Cou	irier				
Log In 3. Was an attempt made to cool the samples?		Yes		No			
4. Were all samples received at a temperature of	of >0° C to 6.0°C	Yes		No		NA 🗌	
5. Sample(s) in proper container(s)?		Yes		No			
6. Sufficient sample volume for indicated test(s)		Yes		No			
7. Are samples (except VOA and ONG) properly	/ preserved?	Yes		No [		_	
8. Was preservative added to bottles?		Yes		No		NA 🗌	
9. Received at least 1 vial with headspace <1/4	for AQ VOA?	Yes		No		NA 🗹	
10. Were any sample containers received broker	1?	Yes		No		# of preserved bottles checked	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes		No		for pH: (<2 or >	12 unless noted)
12. Are matrices correctly identified on Chain of C	Custody?	Yes		No [		Adjusted?	
13. Is it clear what analyses were requested?		Yes	$\checkmark$	No			
14. Were all holding times able to be met? (If no, notify customer for authorization.)		Yes		No l	1	Checked by:	1.13.23
<u>Special Handling (if applicable)</u>							
15. Was client notified of all discrepancies with the	his order?	Yes		No		NA 🗹	
Person Notified: By Whom: Regarding: Client Instructions:	Date: Via: [	] eM	lail 🗌 Pho	ine 🗍	Fax	In Person	
16. Additional remarks:							
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	AALL ENVIRONMEN AL ANALYSIS LABORATORY	www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	el. 505-345-3975 Fax 505-345-4107	Analysis	¢Oŝ	SMIS(	0 ^{5;} 252(	. 406 9 10 8 8 8 8 8 8 9 9 0 4 0	-VC ( 310 310 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 54312 5431	etho y 83 3 Me 3 Me 3 Me	081 Pe MHs b MHs b 250 (V 250 (S 0tal Co														s: page 1/2			# [007101301	Any sub-contracted data will be clearly notated on the analytical report.
			49(	Tel.								PH:80		>	-	-		-				_			-	Remarks:	- anich		# nM	ssibility.
Turn-Around Time:	□ Standard ✓Rush 48 hr	Project Name:	Hackberry le Fed I WW Pad	Project #:	NE-02537	Project Manager:	Chance Dixon	Samular: CDV,	D'tes D No	olers: 1 Logi	(including CF): 0.3-0 こ0. マ (°C)	Preservative HEAL No.	1 ype 2 301 > 50	4m jar 100 001 V	200	5	POU	SCO	000	+00	, Sol	500	30	ou ou	25	Time	unio "1123	by: Via: Date T	1-1/ rowise 1/13/23 7140	ubcontracted to ottler accredited laboratories. This serves as notice of this po
Chain-of-Custody Record	Client: Devon (Vertex)		Mailing Address: On LU		Phone #:	email or Fax#:	QA/QC Package:						Time Matrix Sample Nam	1/11/23 9:10 Soll BS23-010 4'	1 9:15 1 BS23-07 4'	9:20 BS23-08 4'	9:25 8523-09 4'	9:30 3523-10 4'	9:35 BS23-11 4'	2	RS23-13	9:50 8523-14 4'	BS23-15	91-6258	F1-529	Relinquished by:	1/11/23 17:34 Salley Carton	Date: Time: Relinquish by:	(10/13/1900 Crowner	Reference of this possibility. Any sub-contracted to the subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

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Chain-of-Custody Record	Turn-Around Time:	
Client: Devon (Verter)	Distandard Dickush 48 hv	
Mailing Address: On KU	Hackberry & Fed I Well Pad	4901 Hawkins NE - Albuquerque, NM 87109
N	Project #:	
Phone #:	226-02537	Analysis
email or Fax#:	Project Manager:	0º
QA/QC Package:	Chance Dixon	s (802 ⁻ PCB's PCB's SMISC PO4, S
Accreditation:	Sampler: SPC	д) / DК 10 ^{2,} 14.1) 14.1)
EDD (Type)	blers: (	CGR( 10 ³ , 10 c 10 c 10 c 10 c
	Cooler Temp(Including cr): 0,3.070.3 (°C)	astic (OA) 3 Me 3 Me 3 Me 3 Me 3 Me
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1/11/23 11:00 Soil 85.23-18 4'	400 jor in lon or	С
8523-19	>	
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11:15 BS23-21 4'	0	
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Date: Time: Relinquished by: 1/11/23 17:35 Sully Contran Date: Time: Relinquished by: 1/23 1/10 CLOULING	Received by: Via: Date Time U.V.V.V.V.V. 193 245 Received by: Via: Date Time Accur.Lev 113 23 7.40	Remarks: pooge 2/2 Direct Will Devon W0 # 1007101301
Released to Imaging: 6,9)20029 71:312:000070701al may be sub	bcontracted to other accredited laboratories. This serves as notice of this	Released to Imaging: 6,9920123 12,20802014 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.



January 25, 2023

Chance Dixon Vertex Resources Services, Inc. 3101 Boyd Drive Carlsbad, NM 88220 TEL: (505) 506-0040 FAX

OrderNo.: 2301574

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

RE: Hackberry 6 Fed 1 Well Pad

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 10 sample(s) on 1/17/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

**CLIENT:** Vertex Resources Services, Inc.

Hackberry 6 Fed 1 Well Pad

Analytical Report Lab Order 2301574

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: WS23-30 0-4' Collection Date: 1/12/2023 8:05:00 AM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301574-001	Matrix: SOIL	Rece	eived Date:	1/17/2	023 7:45:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	1/18/2023 11:54:48 AM
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	1/18/2023 11:54:48 AM
Surr: DNOP	89.8	69-147	%Rec	1	1/18/2023 11:54:48 AM
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	1/18/2023 11:19:00 AM
Surr: BFB	96.4	37.7-212	%Rec	1	1/18/2023 11:19:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.025	mg/Kg	1	1/18/2023 11:19:00 AM
Toluene	ND	0.050	mg/Kg	1	1/18/2023 11:19:00 AM
Ethylbenzene	ND	0.050	mg/Kg	1	1/18/2023 11:19:00 AM
Xylenes, Total	ND	0.099	mg/Kg	1	1/18/2023 11:19:00 AM
Surr: 4-Bromofluorobenzene	94.2	70-130	%Rec	1	1/18/2023 11:19:00 AM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	740	60	mg/Kg	20	1/17/2023 3:40:16 PM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range RL Reporting Limit

RL Rep

Page 1 of 14

**CLIENT:** Vertex Resources Services, Inc.

Hackberry 6 Fed 1 Well Pad

Analytical Report Lab Order 2301574

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: WS23-34 0-4' Collection Date: 1/12/2023 10:15:00 AM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301574-002	Matrix: SOIL	Rece	<b>Received Date:</b> 1/17/2023 7:45:00 AM						
Analyses	Result	RL Qua	al Units	DF	Date Analyzed				
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH				
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	1/18/2023 12:05:21 PM				
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	1/18/2023 12:05:21 PM				
Surr: DNOP	136	69-147	%Rec	1	1/18/2023 12:05:21 PM				
EPA METHOD 8015D: GASOLINE RANGE	E				Analyst: CCM				
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/18/2023 12:18:00 PM				
Surr: BFB	99.4	37.7-212	%Rec	1	1/18/2023 12:18:00 PM				
EPA METHOD 8021B: VOLATILES					Analyst: CCM				
Benzene	ND	0.024	mg/Kg	1	1/18/2023 12:18:00 PM				
Toluene	ND	0.048	mg/Kg	1	1/18/2023 12:18:00 PM				
Ethylbenzene	ND	0.048	mg/Kg	1	1/18/2023 12:18:00 PM				
Xylenes, Total	ND	0.096	mg/Kg	1	1/18/2023 12:18:00 PM				
Surr: 4-Bromofluorobenzene	95.2	70-130	%Rec	1	1/18/2023 12:18:00 PM				
EPA METHOD 300.0: ANIONS					Analyst: JMT				
Chloride	540	60	mg/Kg	20	1/17/2023 4:17:19 PM				

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 2 of 14

**CLIENT:** Vertex Resources Services, Inc.

Hackberry 6 Fed 1 Well Pad

**Analytical Report** Lab Order 2301574

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: WS23-37 0-4' Collection Date: 1/12/2023 1:30:00 PM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301574-003	Matrix: SOIL	Rece	<b>Received Date:</b> 1/17/2023 7:45:00 AM						
Analyses	Result	RL Qu	al Units	DF	Date Analyzed				
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH				
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	1/18/2023 12:15:58 PM				
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	1/18/2023 12:15:58 PM				
Surr: DNOP	117	69-147	%Rec	1	1/18/2023 12:15:58 PM				
EPA METHOD 8015D: GASOLINE RANGE					Analyst: CCM				
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/18/2023 1:16:00 PM				
Surr: BFB	93.0	37.7-212	%Rec	1	1/18/2023 1:16:00 PM				
EPA METHOD 8021B: VOLATILES					Analyst: CCM				
Benzene	ND	0.024	mg/Kg	1	1/18/2023 1:16:00 PM				
Toluene	ND	0.048	mg/Kg	1	1/18/2023 1:16:00 PM				
Ethylbenzene	ND	0.048	mg/Kg	1	1/18/2023 1:16:00 PM				
Xylenes, Total	ND	0.097	mg/Kg	1	1/18/2023 1:16:00 PM				
Surr: 4-Bromofluorobenzene	88.7	70-130	%Rec	1	1/18/2023 1:16:00 PM				
EPA METHOD 300.0: ANIONS					Analyst: JMT				
Chloride	730	60	mg/Kg	20	1/17/2023 5:19:03 PM				

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

**Qualifiers:** 

* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL

Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 3 of 14

**CLIENT:** Vertex Resources Services, Inc.

Hackberry 6 Fed 1 Well Pad

**Analytical Report** Lab Order 2301574

Date Reported: 1/25/2023

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: WS23-38 0-4' Collection Date: 1/12/2023 1:40:00 PM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301574-004	Matrix: SOIL	Rece	<b>Received Date:</b> 1/17/2023 7:45:00 AM						
Analyses	Result	RL Qu	al Units	DF	Date Analyzed				
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH				
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	1/18/2023 12:26:36 PM				
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	1/18/2023 12:26:36 PM				
Surr: DNOP	114	69-147	%Rec	1	1/18/2023 12:26:36 PM				
EPA METHOD 8015D: GASOLINE RANGE	E				Analyst: CCM				
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/18/2023 1:36:00 PM				
Surr: BFB	89.1	37.7-212	%Rec	1	1/18/2023 1:36:00 PM				
EPA METHOD 8021B: VOLATILES					Analyst: CCM				
Benzene	ND	0.024	mg/Kg	1	1/18/2023 1:36:00 PM				
Toluene	ND	0.049	mg/Kg	1	1/18/2023 1:36:00 PM				
Ethylbenzene	ND	0.049	mg/Kg	1	1/18/2023 1:36:00 PM				
Xylenes, Total	ND	0.098	mg/Kg	1	1/18/2023 1:36:00 PM				
Surr: 4-Bromofluorobenzene	89.0	70-130	%Rec	1	1/18/2023 1:36:00 PM				
EPA METHOD 300.0: ANIONS					Analyst: JMT				
Chloride	780	60	mg/Kg	20	1/17/2023 5:31:23 PM				

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

**Qualifiers:** 

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range Reporting Limit

RL

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**CLIENT:** Vertex Resources Services, Inc.

Hackberry 6 Fed 1 Well Pad

Analytical Report Lab Order 2301574

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: WS23-39 0-4' Collection Date: 1/12/2023 1:55:00 PM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301574-005	Matrix: SOIL	Rece	<b>Received Date:</b> 1/17/2023 7:45:00 AM						
Analyses	Result	RL Qua	al Units	DF	Date Analyzed				
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH				
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	1/18/2023 12:47:51 PM				
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	1/18/2023 12:47:51 PM				
Surr: DNOP	106	69-147	%Rec	1	1/18/2023 12:47:51 PM				
EPA METHOD 8015D: GASOLINE RANGI	E				Analyst: CCM				
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/18/2023 1:56:00 PM				
Surr: BFB	93.8	37.7-212	%Rec	1	1/18/2023 1:56:00 PM				
EPA METHOD 8021B: VOLATILES					Analyst: CCM				
Benzene	ND	0.024	mg/Kg	1	1/18/2023 1:56:00 PM				
Toluene	ND	0.048	mg/Kg	1	1/18/2023 1:56:00 PM				
Ethylbenzene	ND	0.048	mg/Kg	1	1/18/2023 1:56:00 PM				
Xylenes, Total	ND	0.096	mg/Kg	1	1/18/2023 1:56:00 PM				
Surr: 4-Bromofluorobenzene	90.3	70-130	%Rec	1	1/18/2023 1:56:00 PM				
EPA METHOD 300.0: ANIONS					Analyst: JMT				
Chloride	100	61	mg/Kg	20	1/17/2023 5:43:44 PM				

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Lab ID:

**CLIENT:** Vertex Resources Services, Inc.

2301574-006

Hackberry 6 Fed 1 Well Pad

Analytical Report Lab Order 2301574

Date Reported: 1/25/2023

## Hall Environmental Analysis Laboratory, Inc.

 Client Sample ID: WS23-40 0-4'

 Collection Date: 1/12/2023 2:00:00 PM

 Matrix: SOIL
 Received Date: 1/17/2023 7:45:00 AM

EPA METHOD 8015M/D: DIESEL RANGE OR	JANICS				•
					Analyst: DGH
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	1/18/2023 12:58:28 PM
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	1/18/2023 12:58:28 PM
Surr: DNOP	121	69-147	%Rec	1	1/18/2023 12:58:28 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/18/2023 2:15:00 PM
Surr: BFB	93.1	37.7-212	%Rec	1	1/18/2023 2:15:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.024	mg/Kg	1	1/18/2023 2:15:00 PM
Toluene	ND	0.048	mg/Kg	1	1/18/2023 2:15:00 PM
Ethylbenzene	ND	0.048	mg/Kg	1	1/18/2023 2:15:00 PM
Xylenes, Total	ND	0.096	mg/Kg	1	1/18/2023 2:15:00 PM
Surr: 4-Bromofluorobenzene	91.4	70-130	%Rec	1	1/18/2023 2:15:00 PM
EPA METHOD 300.0: ANIONS					Analyst: <b>JMT</b>
Chloride	ND	61	mg/Kg	20	1/17/2023 5:56:04 PM

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

**Qualifiers:** 

- Value exceeds Maximum Contaminant Level.
   D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- In Holding times for preparation of analysis exceeded
- NDNot Detected at the Reporting LimitPQLPractical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Lab ID:

**CLIENT:** Vertex Resources Services, Inc.

2301574-007

Hackberry 6 Fed 1 Well Pad

Analytical Report Lab Order 2301574

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: WS23-41 0-4'Collection Date: 1/13/2023 9:25:00 AMMatrix: SOILReceived Date: 1/17/2023 7:45:00 AMResultRL Qual UnitsDFDate Analyzed

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	1/18/2023 1:09:06 PM
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	1/18/2023 1:09:06 PM
Surr: DNOP	101	69-147	%Rec	1	1/18/2023 1:09:06 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/18/2023 2:35:00 PM
Surr: BFB	90.4	37.7-212	%Rec	1	1/18/2023 2:35:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.024	mg/Kg	1	1/18/2023 2:35:00 PM
Toluene	ND	0.049	mg/Kg	1	1/18/2023 2:35:00 PM
Ethylbenzene	ND	0.049	mg/Kg	1	1/18/2023 2:35:00 PM
Xylenes, Total	ND	0.098	mg/Kg	1	1/18/2023 2:35:00 PM
Surr: 4-Bromofluorobenzene	92.8	70-130	%Rec	1	1/18/2023 2:35:00 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	79	60	mg/Kg	20	1/17/2023 6:08:25 PM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix

- H Holding times for preparation or analysis exceeded
- Not Detected at the Department Limit
- NDNot Detected at the Reporting LimitPQLPractical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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**CLIENT:** Vertex Resources Services, Inc.

Hackberry 6 Fed 1 Well Pad

**Analytical Report** Lab Order 2301574

Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: WS23-42 0-4' Collection Date: 1/13/2023 11:15:00 AM Received Date: 1/17/2023 7:45:00 AM

Lab ID: 2301574-008	Matrix: SOIL	Rece	<b>Received Date:</b> 1/17/2023 7:45:00 AM						
Analyses	Result	RL Qu	al Units	DF	Date Analyzed				
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH				
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	1/18/2023 1:19:48 PM				
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	1/18/2023 1:19:48 PM				
Surr: DNOP	82.6	69-147	%Rec	1	1/18/2023 1:19:48 PM				
EPA METHOD 8015D: GASOLINE RANGE	E				Analyst: CCM				
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/18/2023 2:55:00 PM				
Surr: BFB	97.4	37.7-212	%Rec	1	1/18/2023 2:55:00 PM				
EPA METHOD 8021B: VOLATILES					Analyst: CCM				
Benzene	ND	0.024	mg/Kg	1	1/18/2023 2:55:00 PM				
Toluene	ND	0.048	mg/Kg	1	1/18/2023 2:55:00 PM				
Ethylbenzene	ND	0.048	mg/Kg	1	1/18/2023 2:55:00 PM				
Xylenes, Total	ND	0.097	mg/Kg	1	1/18/2023 2:55:00 PM				
Surr: 4-Bromofluorobenzene	92.2	70-130	%Rec	1	1/18/2023 2:55:00 PM				
EPA METHOD 300.0: ANIONS					Analyst: JMT				
Chloride	170	60	mg/Kg	20	1/17/2023 6:20:46 PM				

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

**Qualifiers:** 

* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-26 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/13/2023 1:25:00 PM Lab ID: 2301574-009 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: DGH Diesel Range Organics (DRO) 73 9.5 mg/Kg 1 1/18/2023 1:30:26 PM Motor Oil Range Organics (MRO) 100 47 mg/Kg 1 1/18/2023 1:30:26 PM 69-147 Surr: DNOP 72.0 %Rec 1 1/18/2023 1:30:26 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/18/2023 3:14:00 PM 4.7 mg/Kg 1 Surr: BFB 96.0 37.7-212 %Rec 1 1/18/2023 3:14:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 0.024 mg/Kg 1/18/2023 3:14:00 PM 1 Toluene ND 0.047 mg/Kg 1 1/18/2023 3:14:00 PM Ethylbenzene ND 0.047 mg/Kg 1 1/18/2023 3:14:00 PM Xylenes, Total ND 0.095 mg/Kg 1 1/18/2023 3:14:00 PM 1/18/2023 3:14:00 PM Surr: 4-Bromofluorobenzene 93.1 70-130 %Rec 1 Analyst: NAI **EPA METHOD 300.0: ANIONS** Chloride 3500 150 1/18/2023 9:01:33 AM ma/Ka 50

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit POL
  - Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- Reporting Limit RL

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Date Reported: 1/25/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-27 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/13/2023 1:30:00 PM Lab ID: 2301574-010 Matrix: SOIL Received Date: 1/17/2023 7:45:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: DGH Diesel Range Organics (DRO) 64 10 mg/Kg 1 1/18/2023 2:23:43 PM Motor Oil Range Organics (MRO) 90 50 mg/Kg 1 1/18/2023 2:23:43 PM 69-147 Surr: DNOP 84.2 %Rec 1 1/18/2023 2:23:43 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/18/2023 3:34:00 PM 4.8 mg/Kg 1 Surr: BFB 95.2 37.7-212 %Rec 1 1/18/2023 3:34:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 0.024 mg/Kg 1/18/2023 3:34:00 PM 1 Toluene ND 0.048 mg/Kg 1 1/18/2023 3:34:00 PM Ethylbenzene ND 0.048 mg/Kg 1 1/18/2023 3:34:00 PM Xylenes, Total ND 0.096 mg/Kg 1 1/18/2023 3:34:00 PM Surr: 4-Bromofluorobenzene 97.4 70-130 %Rec 1 1/18/2023 3:34:00 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride 5100 300 1/24/2023 4:40:20 AM ma/Ka 100

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit POL
- Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- Reporting Limit RL

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Client: Project:		x Resources So perry 6 Fed 1 V		,							
Sample ID: N	IB-72659	SampT	ype: <b>m</b> l	olk	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID: P	BS	Batch	n ID: 72	659	F	RunNo: <b>9</b> 4	1007				
Prep Date:	1/17/2023	Analysis D	ate: 1/	17/2023	S	SeqNo: 33	393988	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID: L	.CS-72659	SampT	ype: Ics	5	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID: L	CSS	Batch	ID: 72	659	F	RunNo: <b>9</b> 4	1007				
Prep Date:	1/17/2023	Analysis D	ate: 1/	17/2023	S	SeqNo: 33	393989	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	94.7	90	110			

#### Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2301574

25-Jan-23

	Resources S erry 6 Fed 1									
Sample ID: LCS-72651	TestCode: EPA Method 8015M/D: Diesel Range Organics									
Client ID: LCSS	Batch	n ID: 72	651	F	RunNo: 94	4027				
Prep Date: 1/17/2023	Analysis D	Analysis Date: 1/18/2023 SeqNo: 3394468					Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	88.9	61.9	130			
Surr: DNOP	5.6		5.000		112	69	147			
Sample ID: MB-72651	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: PBS	Batch	n ID: <b>72</b>	651	F	RunNo: <b>9</b> 4	4027				
Prep Date: 1/17/2023	Analysis D	)ate: 1/	18/2023	5	SeqNo: 3	394470	Units: mg/K	g		
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		108	69	147			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2301574

25-Jan-23

Client: Project:		esources Se y 6 Fed 1 V									
Sample ID:	lcs-72649	SampTy	ype: LC	S	TestCode: EPA Method 8015D: Gasoline Range						
Client ID:	LCSS	Batch	ID: 72	649	R	unNo: <b>9</b> 4	4040				
Prep Date:	1/17/2023	Analysis Da	ate: 1/	18/2023	S	eqNo: 3	394797	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	21	5.0	25.00	0	83.7	72.3	137			
Surr: BFB		2000		1000		200	37.7	212			
Sample ID:	mb-72649	SampTy	ype: ME	BLK	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e	
Client ID:	PBS	Batch	ID: 72	649	R	unNo: 94	4040				
Prep Date:	1/17/2023	Analysis Da	ate: 1/	18/2023	S	eqNo: 3	394799	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	ND	5.0								
Surr: BFB		960		1000		96.0	37.7	212			
Sample ID:	2301574-001ams	SampTy	ype: <b>MS</b>	6	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e	
	2301574-001ams WS23-30 0-4'		ype: <b>MS</b> ID: <b>72</b>			tCode: El		8015D: Gaso	line Rang	e	
	WS23-30 0-4'		ID: <b>72</b>	649	R		4040	8015D: Gaso Units: mg/K	U	e	
Client ID:	WS23-30 0-4'	Batch	ID: <b>72</b>	649 18/2023	R	unNo: 94	4040		U	e RPDLimit	Qual
Client ID: Prep Date: Analyte	WS23-30 0-4'	Batch Analysis Da	ID: <b>72</b> ate: <b>1</b> /	649 18/2023	R	tunNo: <b>9</b> SeqNo: <b>3</b>	4040 394801	Units: mg/K	g		Qual
Client ID: Prep Date: Analyte	WS23-30 0-4' 1/17/2023	Batch Analysis Da Result	ID: <b>72</b> ate: <b>1/</b> PQL	649 18/2023 SPK value	R S SPK Ref Val	2unNo: 9 6eqNo: 3 %REC	4040 394801 LowLimit	Units: <b>mg/K</b> HighLimit	g		Qual
Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB	WS23-30 0-4' 1/17/2023	Batch Analysis Da Result 22 2000	ID: <b>72</b> ate: <b>1/</b> PQL 4.8	649 18/2023 SPK value 24.22 969.0	R S SPK Ref Val 0	2unNo: <b>9</b> BeqNo: <b>3</b> %REC 89.7 209	4040 394801 LowLimit 70 37.7	Units: <b>mg/K</b> HighLimit 130	g %RPD	RPDLimit	Qual
Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB	WS23-30 0-4' 1/17/2023 ge Organics (GRO) 2301574-001amsd	Batch Analysis Da Result 22 2000	ID: <b>72</b> ate: <b>1/</b> PQL 4.8	649 18/2023 SPK value 24.22 969.0	R S SPK Ref Val 0 Test	2unNo: <b>9</b> BeqNo: <b>3</b> %REC 89.7 209	4040 394801 LowLimit 70 37.7 PA Method	Units: <b>mg/K</b> HighLimit 130 212	g %RPD	RPDLimit	Qual
Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID:	WS23-30 0-4' 1/17/2023 ge Organics (GRO) 2301574-001amsd	Batch Analysis Da Result 22 2000	ID: 72 ate: 1/ PQL 4.8 ype: MS ID: 72	649 18/2023 SPK value 24.22 969.0 5D 649	R S SPK Ref Val 0 Test R	2unNo: 9 6eqNo: 3 %REC 89.7 209 tCode: El	4040 394801 LowLimit 70 37.7 PA Method 4040	Units: <b>mg/K</b> HighLimit 130 212	g %RPD line Rang	RPDLimit	Qual
Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID:	WS23-30 0-4' 1/17/2023 ge Organics (GRO) 2301574-001amsd WS23-30 0-4'	Batch Analysis Da Result 22 2000 I SampTy Batch	ID: 72 ate: 1/ PQL 4.8 ype: MS ID: 72	649 18/2023 SPK value 24.22 969.0 649 18/2023	R S SPK Ref Val 0 Test R	RunNo: 9 GeqNo: 3: <u>%REC</u> 89.7 209 Code: El RunNo: 9	4040 394801 LowLimit 70 37.7 PA Method 4040	Units: mg/K HighLimit 130 212 8015D: Gaso	g %RPD line Rang	RPDLimit	Qual
Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte	WS23-30 0-4' 1/17/2023 ge Organics (GRO) 2301574-001amsd WS23-30 0-4'	Batch Analysis Da Result 22 2000 I SampTy Batch Analysis Da	ID: 72 ate: 1/ PQL 4.8 ype: MS ID: 72 ate: 1/	649 18/2023 SPK value 24.22 969.0 649 18/2023	R SPK Ref Val 0 Test R S	RunNo: 9 SeqNo: 3 %REC 89.7 209 Code: El RunNo: 9 SeqNo: 3	4040 394801 LowLimit 70 37.7 PA Method 4040 394802	Units: mg/K HighLimit 130 212 8015D: Gaso Units: mg/K	g %RPD line Rang	RPDLimit e	

#### Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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	Resources S erry 6 Fed 1									
Sample ID: Ics-72649	Samp	Гуре: <b>LC</b>	S	Tes	tCode: EF	PA Method	8021B: Volat	iles		
Client ID: LCSS	Batc	h ID: <b>72</b>	649	RunNo: <b>94040</b>						
Prep Date: 1/17/2023	Analysis [	Date: 1/	18/2023	5	SeqNo: 3	395112	Units: <b>mg/K</b>	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	96.0	80	120			
Toluene	0.96	0.050	1.000	0	96.1	80	120			
Ethylbenzene	0.95	0.050	1.000	0	94.9	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.5	80	120			
Surr: 4-Bromofluorobenzene	0.95		1.000		94.5	70	130			
Sample ID: mb-72649	Samp	Гуре: <b>МЕ</b>	BLK	Tes	tCode: EF	PA Method	8021B: Volat	iles		
Client ID: PBS	Batc	h ID: <b>72</b>	649	F	RunNo: <b>9</b> 4	4040				
Prep Date: 1/17/2023	Analysis [	Date: 1/	18/2023	S	SeqNo: 3	395113	Units: mg/K	(g		
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	0.93		1.000		93.3	70	130			
	0.55		1.000		00.0	10	100			
Sample ID: 2301574-002am		Гуре: <b>М</b>		Tes			8021B: Volat	iles		
	s Samp	Гуре: <b>М</b> h ID: <b>72</b>	3			PA Method		iles		
Sample ID: 2301574-002am	s Samp	h ID: 72	649	F	tCode: Ef	PA Method 4040				
Sample ID: 2301574-002am Client ID: WS23-34 0-4'	ns Samp Batc Analysis I Result	h ID: <b>72</b> Date: <b>1</b> / PQL	5 649 18/2023 SPK value	F S SPK Ref Val	tCode: EF RunNo: 94 GeqNo: 3: %REC	PA Method 4040 395116 LowLimit	8021B: Volat Units: mg/K HighLimit		RPDLimit	Qual
Sample ID: 2301574-002am Client ID: WS23-34 0-4 Prep Date: 1/17/2023 Analyte Benzene	s Samp Batc Analysis I Result 0.89	h ID: <b>72</b> Date: <b>1/</b> PQL 0.024	5 649 18/2023 SPK value 0.9634	F S SPK Ref Val 0	tCode: EF RunNo: 94 SeqNo: 3: %REC 92.8	PA Method 4040 395116 LowLimit 68.8	8021B: Volat Units: mg/K HighLimit 120	ſg	RPDLimit	Qual
Sample ID: 2301574-002am Client ID: WS23-34 0-4' Prep Date: 1/17/2023 Analyte Benzene Toluene	Is Samp Batc Analysis I Result 0.89 0.90	h ID: <b>72</b> Date: <b>1/</b> PQL 0.024 0.048	5 649 18/2023 SPK value 0.9634 0.9634	F S SPK Ref Val 0 0	tCode: <b>EF</b> RunNo: <b>9</b> SeqNo: <b>3</b> %REC 92.8 93.7	PA Method 4040 395116 LowLimit 68.8 73.6	8021B: Volat Units: mg/k HighLimit 120 124	ſg	RPDLimit	Qual
Sample ID: 2301574-002am Client ID: WS23-34 0-4' Prep Date: 1/17/2023 Analyte Benzene Toluene Ethylbenzene	s Samp Batc Analysis I Result 0.89 0.90 0.90	h ID: <b>72</b> Date: <b>1</b> <u>PQL</u> 0.024 0.048 0.048	5 649 18/2023 SPK value 0.9634 0.9634 0.9634	F S SPK Ref Val 0 0 0	tCode: <b>Ef</b> RunNo: <b>9</b> SeqNo: <b>3</b> %REC 92.8 93.7 93.3	PA Method 4040 395116 LowLimit 68.8 73.6 72.7	8021B: Volat Units: mg/K HighLimit 120 124 129	ſg	RPDLimit	Qual
Sample ID: 2301574-002am Client ID: WS23-34 0-4' Prep Date: 1/17/2023 Analyte Benzene Toluene Ethylbenzene Xylenes, Total	s Samp Batc Analysis I Result 0.89 0.90 0.90 0.90 2.7	h ID: <b>72</b> Date: <b>1/</b> PQL 0.024 0.048	5 649 18/2023 SPK value 0.9634 0.9634 0.9634 2.890	F S SPK Ref Val 0 0	tCode: Ef RunNo: 9 SeqNo: 3: %REC 92.8 93.7 93.3 92.7	PA Method 4040 395116 LowLimit 68.8 73.6 72.7 75.7	8021B: Volat Units: mg/K HighLimit 120 124 129 126	ſg	RPDLimit	Qual
Sample ID: 2301574-002am Client ID: WS23-34 0-4' Prep Date: 1/17/2023 Analyte Benzene Toluene Ethylbenzene	s Samp Batc Analysis I Result 0.89 0.90 0.90	h ID: <b>72</b> Date: <b>1</b> <u>PQL</u> 0.024 0.048 0.048	5 649 18/2023 SPK value 0.9634 0.9634 0.9634	F S SPK Ref Val 0 0 0	tCode: <b>Ef</b> RunNo: <b>9</b> SeqNo: <b>3</b> %REC 92.8 93.7 93.3	PA Method 4040 395116 LowLimit 68.8 73.6 72.7	8021B: Volat Units: mg/K HighLimit 120 124 129	ſg	RPDLimit	Qual
Sample ID: 2301574-002am Client ID: WS23-34 0-4' Prep Date: 1/17/2023 Analyte Benzene Toluene Ethylbenzene Xylenes, Total	IS Samp Batc Analysis I Result 0.89 0.90 0.90 2.7 0.89	h ID: <b>72</b> Date: <b>1</b> <u>PQL</u> 0.024 0.048 0.048	5 649 18/2023 SPK value 0.9634 0.9634 2.890 0.9634	F S SPK Ref Val 0 0 0 0	tCode: EF RunNo: 9/ SeqNo: 3: %REC 92.8 93.7 93.3 92.7 92.7	PA Method 4040 395116 LowLimit 68.8 73.6 72.7 75.7 70	8021B: Volat Units: mg/K HighLimit 120 124 129 126	<b>íg</b> %RPD	RPDLimit	Qual
Sample ID: 2301574-002am Client ID: WS23-34 0-4' Prep Date: 1/17/2023 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bromofluorobenzene	s Samp Batc Analysis I Result 0.89 0.90 0.90 0.90 2.7 0.89	h ID: <b>72</b> Date: <b>1</b> / <u>PQL</u> 0.024 0.048 0.048 0.096	649 18/2023 SPK value 0.9634 0.9634 0.9634 2.890 0.9634	F SPK Ref Val 0 0 0 0 0 Tes	tCode: EF RunNo: 9/ SeqNo: 3: %REC 92.8 93.7 93.3 92.7 92.7	PA Method 4040 395116 LowLimit 68.8 73.6 72.7 75.7 70 PA Method	8021B: Volat Units: mg/K HighLimit 120 124 129 126 130	<b>íg</b> %RPD	RPDLimit	Qual
Sample ID: 2301574-002am Client ID: WS23-34 0-4' Prep Date: 1/17/2023 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bromofluorobenzene Sample ID: 2301574-002am	s Samp Batc Analysis I Result 0.89 0.90 0.90 0.90 2.7 0.89	h ID: <b>72</b> Date: <b>1</b> / <u>PQL</u> 0.024 0.048 0.048 0.048 0.096 Type: <b>MS</b>	5 649 18/2023 SPK value 0.9634 0.9634 2.890 0.9634 5D 649	F SPK Ref Val 0 0 0 0 Tes F	tCode: EF RunNo: 94 SeqNo: 3: %REC 92.8 93.7 93.3 92.7 92.7 92.7 tCode: EF	PA Method 4040 395116 LowLimit 68.8 73.6 72.7 75.7 70 PA Method 4040	8021B: Volat Units: mg/K HighLimit 120 124 129 126 130	kg %RPD	RPDLimit	Qual
Sample ID: 2301574-002am Client ID: WS23-34 0-4' Prep Date: 1/17/2023 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bromofluorobenzene Sample ID: 2301574-002am Client ID: WS23-34 0-4'	IS Samp Batc Analysis I Result 0.89 0.90 0.90 2.7 0.89 IS Samp Batc Analysis I Result	h ID: <b>72</b> Date: <b>1</b> / PQL 0.024 0.048 0.048 0.048 0.096 Type: <b>MS</b> h ID: <b>72</b> Date: <b>1</b> /	5 649 18/2023 SPK value 0.9634 0.9634 2.890 0.9634 2.890 0.9634 5D 649 18/2023 SPK value	F SPK Ref Val 0 0 0 0 Tes F	tCode: Ef RunNo: 94 SeqNo: 3: %REC 92.8 93.7 93.3 92.7 92.7 92.7 tCode: Ef RunNo: 94 SeqNo: 3: %REC	PA Method 4040 395116 LowLimit 68.8 73.6 72.7 75.7 70 PA Method 4040 395117 LowLimit	8021B: Volat Units: mg/K HighLimit 120 124 129 126 130 8021B: Volat	Sg %RPD iiles Sg %RPD	RPDLimit	Qual
Sample ID: 2301574-002am Client ID: WS23-34 0-4' Prep Date: 1/17/2023 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bromofluorobenzene Sample ID: 2301574-002am Client ID: WS23-34 0-4' Prep Date: 1/17/2023	IS Samp Batc Analysis I Result 0.89 0.90 0.90 2.7 0.89 IS Samp Batc Analysis I Result 0.89	h ID: <b>72</b> Date: <b>1</b> / PQL 0.024 0.048 0.048 0.048 0.096 Type: <b>MS</b> h ID: <b>72</b> Date: <b>1</b> / PQL 0.024	5 649 18/2023 SPK value 0.9634 0.9634 2.890 0.9634 5D 649 18/2023 SPK value 0.9615	F SPK Ref Val 0 0 0 0 0 Tes F S	tCode: EF RunNo: 9/ SeqNo: 3: %REC 92.8 93.7 93.3 92.7 92.7 tCode: EF RunNo: 9/ SeqNo: 3: %REC 92.6	PA Method 4040 395116 LowLimit 68.8 73.6 72.7 75.7 70 PA Method 4040 395117 LowLimit 68.8	8021B: Volat Units: mg/K HighLimit 120 124 129 126 130 8021B: Volat Units: mg/K HighLimit 120	<b>5</b> %RPD iiles <b>5</b> %RPD 0.488	RPDLimit 20	
Sample ID: 2301574-002am Client ID: WS23-34 0-4' Prep Date: 1/17/2023 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bromofluorobenzene Sample ID: 2301574-002am Client ID: WS23-34 0-4' Prep Date: 1/17/2023 Analyte	IS Samp Batc Analysis I Result 0.89 0.90 0.90 2.7 0.89 IS Samp Batc Analysis I Result	h ID: <b>72</b> Date: <b>1</b> / PQL 0.024 0.048 0.048 0.048 0.096 Type: <b>MS</b> h ID: <b>72</b> Date: <b>1</b> /	5 649 18/2023 SPK value 0.9634 0.9634 2.890 0.9634 2.890 0.9634 5D 649 18/2023 SPK value	F SPK Ref Val 0 0 0 0 Tes F SPK Ref Val	tCode: Ef RunNo: 94 SeqNo: 3: %REC 92.8 93.7 93.3 92.7 92.7 92.7 tCode: Ef RunNo: 94 SeqNo: 3: %REC	PA Method 4040 395116 LowLimit 68.8 73.6 72.7 75.7 70 PA Method 4040 395117 LowLimit	8021B: Volat Units: mg/K HighLimit 120 124 129 126 130 8021B: Volat Units: mg/K HighLimit	Sg %RPD iiles Sg %RPD	RPDLimit	
Sample ID: 2301574-002am Client ID: WS23-34 0-4' Prep Date: 1/17/2023 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bromofluorobenzene Sample ID: 2301574-002am Client ID: WS23-34 0-4' Prep Date: 1/17/2023 Analyte Benzene Toluene Ethylbenzene	s Samp Batc Analysis I Result 0.89 0.90 0.90 2.7 0.89 asd Samp Batc Analysis I Result 0.89 0.90 0.90	h ID: 72 Date: 1/ PQL 0.024 0.048 0.048 0.048 0.096 Type: MS h ID: 72 Date: 1/ PQL 0.024 0.048 0.048	5 649 18/2023 SPK value 0.9634 0.9634 2.890 0.9634 5D 649 18/2023 SPK value 0.9615 0.9615 0.9615 0.9615	F SPK Ref Val 0 0 0 0 Tes F SPK Ref Val 0	tCode: EF RunNo: 9/ SeqNo: 3: %REC 92.8 93.7 93.3 92.7 92.7 tCode: EF RunNo: 9/ SeqNo: 3: %REC 92.6 94.0 94.0	2A Method 4040 395116 LowLimit 68.8 73.6 72.7 75.7 70 2A Method 4040 395117 LowLimit 68.8 73.6 72.7	8021B: Volat Units: mg/K HighLimit 120 124 129 126 130 8021B: Volat Units: mg/K HighLimit 120	5g %RPD tilles 5g %RPD 0.488 0.0526 0.529	RPDLimit 20 20 20	
Sample ID: 2301574-002am Client ID: WS23-34 0-4' Prep Date: 1/17/2023 Analyte Benzene Toluene Ethylbenzene Xylenes, Total Surr: 4-Bromofluorobenzene Sample ID: 2301574-002am Client ID: WS23-34 0-4' Prep Date: 1/17/2023 Analyte Benzene Toluene	IS Samp Batc Analysis I Result 0.89 0.90 0.90 2.7 0.89 IS Samp Batc Analysis I Result 0.89 0.90	h ID: 72 Date: 1/ PQL 0.024 0.048 0.048 0.048 0.096 Type: MS h ID: 72 Date: 1/ PQL 0.024 0.024	5 649 18/2023 SPK value 0.9634 0.9634 2.890 0.9634 5D 649 18/2023 SPK value 0.9615 0.9615 0.9615	F SPK Ref Val 0 0 0 0 Tes 5 SPK Ref Val 0 0	tCode: EF RunNo: 9/ SeqNo: 3: %REC 92.8 93.7 93.3 92.7 92.7 tCode: EF RunNo: 9/ SeqNo: 3: %REC 92.6 94.0	PA Method 4040 395116 LowLimit 68.8 73.6 72.7 75.7 70 PA Method 4040 395117 LowLimit 68.8 73.6	8021B: Volat Units: mg/K HighLimit 120 124 129 126 130 8021B: Volat Units: mg/K HighLimit 120 124	29 %RPD tiles 29 %RPD 0.488 0.0526	RPDLimit 20 20	

#### Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2301574

25-Jan-23

HALL ENVIRONMENT ANALYSIS LABORATORY	ENVIRONMENTAL ANALYSIS LABORATORY Website: v						nple Log-In Check Lis	t
Client Name: Vertex Res Services, Ir		Work Ord	er Number	r: 2301574			RcptNo: 1	
Received By: Juan Roja	IS	1/17/2023 7	:45:00 AN	1	4	and g	e.	
Completed By: Sean Livi	ngston	1/17/2023 7	:50:16 AN	1	<	5_1	not	
Reviewed By: KPC	197	23			-	,,	<i></i>	
Chain of Custody								
1. Is Chain of Custody comp	lete?			Yes 🗹	I	No 🗌	Not Present	
2. How was the sample deliv	ered?			<u>Courier</u>				
<u>Log In</u> 3. Was an attempt made to c	ool the samples	?		Yes 🗹	1	No 🗌	na 🗌	
4. Were all samples received	at a temperature	e of >0°C to 6.	0°C	Yes 🗹	ז	No 🗌		
5. Sample(s) in proper contain	ner(s)?			Yes 🗹	1	No 🗌		
6. Sufficient sample volume for	or indicated test(	s)?		Yes 🗹	Ν	10 🗌		
7. Are samples (except VOA	and ONG) prope	rly preserved?		Yes 🗹	Ν	lo 🗌		
8. Was preservative added to	bottles?			Yes 🗌	Ν	lo 🗹	NA 🗌	
9. Received at least 1 vial with	h headspace <1/	4" for AQ VOA	?	Yes 🗌	N	lo 🗌	NA 🗹	
10. Were any sample containe	ers received brok	en?		Yes└	١	No ☑ [	# of preserved	
11. Does paperwork match bot (Note discrepancies on cha				Yes 🗹	Ν	lo 🗌	for pH: (<2 or >12 unless not	red)
12. Are matrices correctly iden		f Custody?		Yes 🗹	N	lo 🗆	Adjusted?	_
13. Is it clear what analyses we	ere requested?			Yes 🗹	N	lo 🗌 🛛		
14. Were all holding times able (If no, notify customer for a				Yes 🗹	N	io 🗆	Checked by:	7123
Special Handling (if app	licable)							
15. Was client notified of all di	screpancies with	this order?		Yes 🗌	١	No 🗌	NA 🗹	
Person Notified:			Date:					
By Whom:			Via: [	_ eMail [	] Phone	🗌 Fax	In Person	AM
Regarding: Client Instructions:						at an <u>a</u> 1980		2:08
16. Additional remarks:								11:3
17. Cooler Information								023
Cooler No Temp °C	1	and the second second second second		Seal Date	Signe	ed By		(6/3
1 2.9	Good No	ot Present Mo	ty		l			6:0
Page 1 of 1			<u> </u>					ised to
								Relea

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	Chain-of-Custody Rec	
THURSDAY OF A CAN' A HAVEN THAT THE TANK	>	-
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WUM UNT UNTRU         Project Name         Project Nam	Chain-of-Custody Record	a L	HALL ENVIRONMENTAL	
ОЛ К.Ш.         Наскамина, и Рай I Wall Pad         4901 Намиля NE           12.6         22.6         0.5.34         4901 Hawkins NE           21.6         22.6         0.5.34         4901 Hawkins NE           11.6         12.6         0.5.34         4901 Hawkins NE           12.6         23.6         0.6         12.6         0.5.34           12.6         0.5.34         23.6         0.6         12.6         0.5.34           12.6         0.6         1.0         0.7         80081 Pesiticides/8082 PCB*         4001 Hawkins NE           10.0166         0.0166         20.01         2.0         2.0         1         10.6         2.0         1         10.6         2.0         1         10.6         2.0         1         1         10.6         2.0         1         1         10.6         2.0         1         1         10.6         2.0         1         1         10.6         2.0         1         1         10.6         2.5         1         1         10.6         2.5         1         1         10.6         2.5         1         1         10.6         2.5         1         1         10.6         2.5         1         1         10.6 <td>Devon Luertex)</td> <td>Project Name:</td> <td></td>	Devon Luertex)	Project Name:		
Project #:         Project #:           21E - 02537         21E - 02537           21E - 02537         21E - 02537           Project Manager:         21E - 02537           Drace         21E - 02537           Project Manager:         21E - 02537           Drace         21E - 02537           Project Manager:         21E - 02537           Drace         21E - 02537           Drace         2016           Sampler:         5PC           Matrix         Sample Name           Matrix         Satret No.				
CLE 015 34     CLE 015 34       Project Manager:     Az Compliance       Az Compliance     CACAMICC Dix OH       Project Manager:     CACAMICC Dix OH       Az Compliance     Container       Project Manager:     CACAMICC Dix OH       Matrix     Sampler:     CPC       Sampler:     COLD 34       Matrix     Sampler:     CPC       Sampler:     CONTICE     Divort       Matrix     Sampler:     CPC       Matrix     Sampler:     CONTICE       Matrix     Sampler:     CPC       Matrix     Sampler:     CPC       Matrix     Sampler:     COLOT STAN       Matrix     Sampler:     CONTINUE       MS 23 - 34     0-4'     100       MS 23 - 34     0-4'     0-4'       MS 23 - 33     0-4'     0-4'       MS 23 - 34     0-4'     0-4'       MS 23 - 34     0-4'     0-4'       MS 23 - 34     0-4'       MS 23 - 4'     0-4' <td></td> <td></td> <td>505-345-3975</td>			505-345-3975	
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January 24, 2023

Chance Dixon Vertex Resources Services, Inc. 3101 Boyd Drive Carlsbad, NM 88220 TEL: (505) 506-0040 FAX:

RE: Hackberry 6 Fed 1 Well Pad

OrderNo.: 2301631

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 20 sample(s) on 1/18/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Date Reported: 1/24/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-28 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 9:30:00 AM Lab ID: 2301631-001 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) 220 9.4 mg/Kg 1 1/19/2023 7:02:40 PM Motor Oil Range Organics (MRO) 260 47 mg/Kg 1 1/19/2023 7:02:40 PM Surr: DNOP 97.1 69-147 %Rec 1 1/19/2023 7:02:40 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/19/2023 10:21:45 PM 4.9 mg/Kg 1 Surr: BFB 99.8 37.7-212 %Rec 1 1/19/2023 10:21:45 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/19/2023 10:21:45 PM 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/19/2023 10:21:45 PM Ethylbenzene ND 0.049 mg/Kg 1 1/19/2023 10:21:45 PM Xylenes, Total ND 0.098 mg/Kg 1/19/2023 10:21:45 PM 1 Surr: 4-Bromofluorobenzene 92.9 70-130 %Rec 1 1/19/2023 10:21:45 PM **EPA METHOD 300.0: ANIONS** Analyst: JTT Chloride mg/Kg 2600 150 50 1/20/2023 11:24:42 AM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 1 of 24

Date Reported: 1/24/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-29 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 9:35:00 AM Lab ID: 2301631-002 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) 170 9.5 mg/Kg 1 1/19/2023 8:47:31 PM Motor Oil Range Organics (MRO) 210 47 mg/Kg 1 1/19/2023 8:47:31 PM Surr: DNOP 107 69-147 %Rec 1 1/19/2023 8:47:31 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/19/2023 11:31:10 PM 4.9 mg/Kg 1 Surr: BFB 99.6 37.7-212 %Rec 1 1/19/2023 11:31:10 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/19/2023 11:31:10 PM 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/19/2023 11:31:10 PM Ethylbenzene ND 0.049 mg/Kg 1 1/19/2023 11:31:10 PM Xylenes, Total ND 0.098 mg/Kg 1/19/2023 11:31:10 PM 1 Surr: 4-Bromofluorobenzene 94.4 70-130 %Rec 1 1/19/2023 11:31:10 PM **EPA METHOD 300.0: ANIONS** Analyst: JTT Chloride mg/Kg 1/20/2023 11:37:04 AM 3000 150 50

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 2 of 24

Date Reported: 1/24/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-30 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 9:40:00 AM Lab ID: 2301631-003 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) 310 98 mg/Kg 10 1/19/2023 12:58:00 PM Motor Oil Range Organics (MRO) 520 490 mg/Kg 10 1/19/2023 12:58:00 PM Surr: DNOP 0 69-147 S %Rec 10 1/19/2023 12:58:00 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/20/2023 12:40:35 AM 4.8 mg/Kg 1 Surr: BFB 100 37.7-212 %Rec 1 1/20/2023 12:40:35 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 12:40:35 AM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/20/2023 12:40:35 AM Ethylbenzene ND 0.048 mg/Kg 1 1/20/2023 12:40:35 AM Xylenes, Total ND 0.096 mg/Kg 1 1/20/2023 12:40:35 AM Surr: 4-Bromofluorobenzene 95.0 70-130 %Rec 1 1/20/2023 12:40:35 AM **EPA METHOD 300.0: ANIONS** Analyst: JTT Chloride mg/Kg 3100 150 50 1/20/2023 11:49:24 AM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 3 of 24

Date Reported: 1/24/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-31 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 9:45:00 AM Lab ID: 2301631-004 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) 12 9.8 mg/Kg 1 1/19/2023 5:39:19 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 1/19/2023 5:39:19 PM Surr: DNOP 97.6 69-147 %Rec 1 1/19/2023 5:39:19 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/20/2023 1:03:42 AM 4.9 mg/Kg 1 Surr: BFB 100 37.7-212 %Rec 1 1/20/2023 1:03:42 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 1:03:42 AM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/20/2023 1:03:42 AM Ethylbenzene ND 0.049 mg/Kg 1 1/20/2023 1:03:42 AM Xylenes, Total ND 0.099 mg/Kg 1 1/20/2023 1:03:42 AM Surr: 4-Bromofluorobenzene 95.7 70-130 %Rec 1 1/20/2023 1:03:42 AM **EPA METHOD 300.0: ANIONS** Analyst: JTT Chloride mg/Kg 1/20/2023 12:01:45 PM 2700 150 50

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 4 of 24

Date Reported: 1/24/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-32 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 9:50:00 AM Lab ID: 2301631-005 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) 25 9.5 mg/Kg 1 1/19/2023 9:29:29 PM Motor Oil Range Organics (MRO) 56 47 mg/Kg 1 1/19/2023 9:29:29 PM Surr: DNOP 143 69-147 %Rec 1 1/19/2023 9:29:29 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/20/2023 1:26:44 AM 4.9 mg/Kg 1 Surr: BFB 99.8 37.7-212 %Rec 1 1/20/2023 1:26:44 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 1:26:44 AM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/20/2023 1:26:44 AM Ethylbenzene ND 0.049 mg/Kg 1 1/20/2023 1:26:44 AM Xylenes, Total ND 0.098 mg/Kg 1 1/20/2023 1:26:44 AM Surr: 4-Bromofluorobenzene 95.5 70-130 %Rec 1 1/20/2023 1:26:44 AM **EPA METHOD 300.0: ANIONS** Analyst: JTT Chloride mg/Kg 1/20/2023 12:14:05 PM 3400 150 50

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 5 of 24

Date Reported: 1/24/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-33 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 9:55:00 AM Lab ID: 2301631-006 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH Diesel Range Organics (DRO) 30 8.7 mg/Kg 1 1/19/2023 5:49:52 PM Motor Oil Range Organics (MRO) 48 43 mg/Kg 1 1/19/2023 5:49:52 PM Surr: DNOP 129 69-147 %Rec 1 1/19/2023 5:49:52 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 4.7 1/20/2023 1:49:52 AM mg/Kg 1 Surr: BFB 100 37.7-212 %Rec 1 1/20/2023 1:49:52 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 1:49:52 AM 0.024 mg/Kg 1 Toluene ND 0.047 mg/Kg 1 1/20/2023 1:49:52 AM Ethylbenzene ND 0.047 mg/Kg 1 1/20/2023 1:49:52 AM Xylenes, Total ND 0.095 mg/Kg 1 1/20/2023 1:49:52 AM Surr: 4-Bromofluorobenzene 96.2 70-130 %Rec 1 1/20/2023 1:49:52 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 3:42:09 PM 2200 59 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S

% Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 6 of 24

Date Reported: 1/24/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-34 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 10:00:00 AM Lab ID: 2301631-007 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: DGH Diesel Range Organics (DRO) 26 9.7 mg/Kg 1 1/19/2023 6:21:07 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 1/19/2023 6:21:07 PM Surr: DNOP 108 69-147 %Rec 1 1/19/2023 6:21:07 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/20/2023 2:13:00 AM 4.9 mg/Kg 1 Surr: BFB 98.3 37.7-212 %Rec 1 1/20/2023 2:13:00 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 2:13:00 AM 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/20/2023 2:13:00 AM Ethylbenzene ND 0.049 mg/Kg 1 1/20/2023 2:13:00 AM Xylenes, Total ND 0.098 mg/Kg 1/20/2023 2:13:00 AM 1 Surr: 4-Bromofluorobenzene 93.6 70-130 %Rec 1 1/20/2023 2:13:00 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 3:54:30 PM 1200 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 7 of 24

Date Reported: 1/24/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-35 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 10:05:00 AM Lab ID: 2301631-008 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: DGH Diesel Range Organics (DRO) 13 9.8 mg/Kg 1 1/19/2023 6:41:54 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 1/19/2023 6:41:54 PM Surr: DNOP 104 69-147 %Rec 1 1/19/2023 6:41:54 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/20/2023 2:36:02 AM 4.9 mg/Kg 1 Surr: BFB 102 37.7-212 %Rec 1 1/20/2023 2:36:02 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 2:36:02 AM 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/20/2023 2:36:02 AM Ethylbenzene ND 0.049 mg/Kg 1 1/20/2023 2:36:02 AM Xylenes, Total ND 0.098 mg/Kg 1 1/20/2023 2:36:02 AM Surr: 4-Bromofluorobenzene 97.2 70-130 %Rec 1 1/20/2023 2:36:02 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 4:06:51 PM 730 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range RL Reporting Limit

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Date Reported: 1/24/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-36 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 10:10:00 AM Lab ID: 2301631-009 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Diesel Range Organics (DRO) ND 9.8 mg/Kg 1 1/19/2023 10:01:09 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 1/19/2023 10:01:09 PM Surr: DNOP 124 69-147 %Rec 1 1/19/2023 10:01:09 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/20/2023 2:59:05 AM 4.8 mg/Kg 1 Surr: BFB 101 37.7-212 %Rec 1 1/20/2023 2:59:05 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 2:59:05 AM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/20/2023 2:59:05 AM Ethylbenzene ND 0.048 mg/Kg 1 1/20/2023 2:59:05 AM Xylenes, Total ND 0.095 mg/Kg 1 1/20/2023 2:59:05 AM Surr: 4-Bromofluorobenzene 95.8 70-130 %Rec 1 1/20/2023 2:59:05 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 4:19:11 PM 1200 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL

Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 9 of 24

Date Reported: 1/24/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-37 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 10:15:00 AM Lab ID: 2301631-010 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Diesel Range Organics (DRO) ND 8.5 mg/Kg 1 1/19/2023 10:22:18 PM Motor Oil Range Organics (MRO) ND 43 mg/Kg 1 1/19/2023 10:22:18 PM Surr: DNOP 106 69-147 %Rec 1 1/19/2023 10:22:18 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/20/2023 3:22:10 AM 4.9 mg/Kg 1 Surr: BFB 101 37.7-212 %Rec 1 1/20/2023 3:22:10 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 3:22:10 AM 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/20/2023 3:22:10 AM Ethylbenzene ND 0.049 mg/Kg 1 1/20/2023 3:22:10 AM Xylenes, Total ND 0.097 mg/Kg 1 1/20/2023 3:22:10 AM Surr: 4-Bromofluorobenzene 96.8 70-130 %Rec 1 1/20/2023 3:22:10 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 4:31:32 PM 490 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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Released to Imaging: 6/9/2023 11:32:08 AM

Date Reported: 1/24/2023

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-38 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 11:35:00 AM Lab ID: 2301631-011 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** ND 10 mg/Kg 1 1/19/2023 10:33:00 PM Motor Oil Range Organics (MRO) ND 50 mg/Kg 1 1/19/2023 10:33:00 PM Surr: DNOP 69-147 %Rec 1 1/19/2023 10:33:00 PM 115 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/20/2023 4:08:24 AM 4.9 mg/Kg 1 Surr: BFB 99.7 37.7-212 %Rec 1 1/20/2023 4:08:24 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 4:08:24 AM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/20/2023 4:08:24 AM Ethylbenzene ND 0.049 mg/Kg 1 1/20/2023 4:08:24 AM Xylenes, Total ND 0.099 mg/Kg 1 1/20/2023 4:08:24 AM Surr: 4-Bromofluorobenzene 94.8 70-130 %Rec 1 1/20/2023 4:08:24 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 4:43:53 PM 1200 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 11 of 24

Date Reported: 1/24/2023

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-39 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 11:40:00 AM Lab ID: 2301631-012 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** ND 9.8 mg/Kg 1 1/19/2023 10:43:40 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 1/19/2023 10:43:40 PM Surr: DNOP 69-147 %Rec 1 1/19/2023 10:43:40 PM 119 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/20/2023 4:31:33 AM 4.9 mg/Kg 1 Surr: BFB 100 37.7-212 %Rec 1 1/20/2023 4:31:33 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 4:31:33 AM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/20/2023 4:31:33 AM Ethylbenzene ND 0.049 mg/Kg 1 1/20/2023 4:31:33 AM Xylenes, Total ND 0.099 mg/Kg 1 1/20/2023 4:31:33 AM Surr: 4-Bromofluorobenzene 94.7 70-130 %Rec 1 1/20/2023 4:31:33 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 4:56:14 PM 2100 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 12 of 24

Date Reported: 1/24/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-40 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 11:45:00 AM Lab ID: 2301631-013 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 9.5 mg/Kg 1 1/19/2023 10:54:20 PM Motor Oil Range Organics (MRO) ND 47 mg/Kg 1 1/19/2023 10:54:20 PM Surr: DNOP 102 69-147 %Rec 1 1/19/2023 10:54:20 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/20/2023 4:54:38 AM 4.9 mg/Kg 1 Surr: BFB 101 37.7-212 %Rec 1 1/20/2023 4:54:38 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 4:54:38 AM 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/20/2023 4:54:38 AM Ethylbenzene ND 0.049 mg/Kg 1 1/20/2023 4:54:38 AM Xylenes, Total ND 0.097 mg/Kg 1 1/20/2023 4:54:38 AM Surr: 4-Bromofluorobenzene 95.2 70-130 %Rec 1 1/20/2023 4:54:38 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 5:08:34 PM 1600 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 13 of 24

Date Reported: 1/24/2023

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-41 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 11:50:00 AM Lab ID: 2301631-014 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** ND 9.3 mg/Kg 1 1/19/2023 11:04:58 PM Motor Oil Range Organics (MRO) ND 47 mg/Kg 1 1/19/2023 11:04:58 PM Surr: DNOP 105 69-147 %Rec 1 1/19/2023 11:04:58 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/20/2023 5:17:45 AM 5.0 mg/Kg 1 Surr: BFB 99.6 37.7-212 %Rec 1 1/20/2023 5:17:45 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 5:17:45 AM 0.025 mg/Kg 1 Toluene ND 0.050 mg/Kg 1 1/20/2023 5:17:45 AM Ethylbenzene ND 0.050 mg/Kg 1 1/20/2023 5:17:45 AM Xylenes, Total ND mg/Kg 1 1/20/2023 5:17:45 AM 0.10 Surr: 4-Bromofluorobenzene 94.1 70-130 %Rec 1 1/20/2023 5:17:45 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 5:45:37 PM 1200 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 14 of 24

Date Reported: 1/24/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-42 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 11:55:00 AM Lab ID: 2301631-015 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 9.8 mg/Kg 1 1/19/2023 11:15:36 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 1/19/2023 11:15:36 PM Surr: DNOP 79.2 69-147 %Rec 1 1/19/2023 11:15:36 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/20/2023 5:40:53 AM 4.8 mg/Kg 1 Surr: BFB 99.7 37.7-212 %Rec 1 1/20/2023 5:40:53 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 5:40:53 AM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/20/2023 5:40:53 AM Ethylbenzene ND 0.048 mg/Kg 1 1/20/2023 5:40:53 AM Xylenes, Total ND 0.097 mg/Kg 1 1/20/2023 5:40:53 AM Surr: 4-Bromofluorobenzene 95.0 70-130 %Rec 1 1/20/2023 5:40:53 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 5:57:57 PM 230 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 15 of 24

Date Reported: 1/24/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-43 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 12:00:00 PM Lab ID: 2301631-016 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 9.4 mg/Kg 1 1/19/2023 11:26:12 PM Motor Oil Range Organics (MRO) ND 47 mg/Kg 1 1/19/2023 11:26:12 PM Surr: DNOP 96.8 69-147 %Rec 1 1/19/2023 11:26:12 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/20/2023 6:03:58 AM 4.8 mg/Kg 1 Surr: BFB 101 37.7-212 %Rec 1 1/20/2023 6:03:58 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 6:03:58 AM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/20/2023 6:03:58 AM Ethylbenzene ND 0.048 mg/Kg 1 1/20/2023 6:03:58 AM Xylenes, Total ND 0.096 mg/Kg 1 1/20/2023 6:03:58 AM Surr: 4-Bromofluorobenzene 96.0 70-130 %Rec 1 1/20/2023 6:03:58 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 6:10:18 PM 650 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 16 of 24

Date Reported: 1/24/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-44 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 12:05:00 PM Lab ID: 2301631-017 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 8.9 mg/Kg 1 1/19/2023 11:36:48 PM Motor Oil Range Organics (MRO) ND 45 mg/Kg 1 1/19/2023 11:36:48 PM Surr: DNOP 109 69-147 %Rec 1 1/19/2023 11:36:48 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/20/2023 6:27:05 AM 4.9 mg/Kg 1 Surr: BFB 99.4 37.7-212 %Rec 1 1/20/2023 6:27:05 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 6:27:05 AM 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/20/2023 6:27:05 AM Ethylbenzene ND 0.049 mg/Kg 1 1/20/2023 6:27:05 AM Xylenes, Total ND 0.098 mg/Kg 1 1/20/2023 6:27:05 AM Surr: 4-Bromofluorobenzene 93.8 70-130 %Rec 1 1/20/2023 6:27:05 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 6:22:39 PM 1600 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 17 of 24

Date Reported: 1/24/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-45 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 12:10:00 PM Lab ID: 2301631-018 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 9.2 mg/Kg 1 1/19/2023 11:47:23 PM Motor Oil Range Organics (MRO) ND 46 mg/Kg 1 1/19/2023 11:47:23 PM Surr: DNOP 69-147 %Rec 1 1/19/2023 11:47:23 PM 115 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/20/2023 6:50:10 AM 4.8 mg/Kg 1 Surr: BFB 99.4 37.7-212 %Rec 1 1/20/2023 6:50:10 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 6:50:10 AM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/20/2023 6:50:10 AM Ethylbenzene ND 0.048 mg/Kg 1 1/20/2023 6:50:10 AM Xylenes, Total ND 0.097 mg/Kg 1 1/20/2023 6:50:10 AM Surr: 4-Bromofluorobenzene 94.8 70-130 %Rec 1 1/20/2023 6:50:10 AM **EPA METHOD 300.0: ANIONS** Analyst: JTT Chloride mg/Kg 1/20/2023 12:26:26 PM 2300 150 50

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 18 of 24

Date Reported: 1/24/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-46 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 12:15:00 PM Lab ID: 2301631-019 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** 9.6 9.1 mg/Kg 1 1/19/2023 11:57:57 PM Motor Oil Range Organics (MRO) ND 46 mg/Kg 1 1/19/2023 11:57:57 PM Surr: DNOP 122 69-147 %Rec 1 1/19/2023 11:57:57 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/20/2023 7:13:14 AM 5.0 mg/Kg 1 Surr: BFB 100 37.7-212 %Rec 1 1/20/2023 7:13:14 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 7:13:14 AM 0.025 mg/Kg 1 Toluene ND 0.050 mg/Kg 1 1/20/2023 7:13:14 AM Ethylbenzene ND 0.050 mg/Kg 1 1/20/2023 7:13:14 AM Xylenes, Total ND mg/Kg 1/20/2023 7:13:14 AM 0.099 1 Surr: 4-Bromofluorobenzene 96.1 70-130 %Rec 1 1/20/2023 7:13:14 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 6:47:20 PM 910 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 19 of 24

Date Reported: 1/24/2023

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-47 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/16/2023 12:20:00 PM Lab ID: 2301631-020 Matrix: SOIL Received Date: 1/18/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses Analyst: DGH EPA METHOD 8015M/D: DIESEL RANGE ORGANICS **Diesel Range Organics (DRO)** ND 9.4 mg/Kg 1 1/20/2023 12:08:30 AM Motor Oil Range Organics (MRO) ND 47 mg/Kg 1 1/20/2023 12:08:30 AM Surr: DNOP 75.8 69-147 %Rec 1 1/20/2023 12:08:30 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/20/2023 7:36:19 AM 4.8 mg/Kg 1 Surr: BFB 98.7 37.7-212 %Rec 1 1/20/2023 7:36:19 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/20/2023 7:36:19 AM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/20/2023 7:36:19 AM Ethylbenzene ND 0.048 mg/Kg 1 1/20/2023 7:36:19 AM Xylenes, Total ND 0.095 mg/Kg 1 1/20/2023 7:36:19 AM Surr: 4-Bromofluorobenzene 93.9 70-130 %Rec 1 1/20/2023 7:36:19 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride mg/Kg 1/19/2023 6:59:40 PM 510 60 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 20 of 24

Client: Project:		ex Resources Ser kberry 6 Fed 1 W									
Sample ID:	MB-72699	SampTy	pe: mb	lk	Tes	tCode: EP	A Method	300.0: Anions	5		
Client ID:	PBS	Batch	ID: 726	i99	F	RunNo: <b>9</b> 4	1086				
Prep Date:	1/18/2023	Analysis Da	ite: 1/1	19/2023	S	SeqNo: 33	896794	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID:	LCS-72699	SampTy	pe: Ics		Tes	tCode: EP	A Method	300.0: Anions	;		
Client ID:	LCSS	Batch	ID: 726	i99	F	RunNo: <b>9</b> 4	1086				
Prep Date:	1/18/2023	Analysis Da	ite: 1/1	19/2023	S	SeqNo: 33	96795	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	96.1	90	110			

#### Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2301631

24-Jan-23

**Client:** 

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

Vertex Resources Services, Inc.

Project:	Hackberry	6 Fed 1	Well Pa	ıd							
Sample ID:	LCS-72696	SampT	ype: LC	S	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID:	LCSS	Batch	n ID: 72	696	F	RunNo: <b>9</b> 4	4064				
Prep Date:	1/18/2023	Analysis D	Date: 1/	19/2023	S	SeqNo: 33	395763	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (	Organics (DRO)	50	10	50.00	0	99.8	61.9	130			
Surr: DNOP		6.4		5.000		127	69	147			
Sample ID:	MB-72696	SampT	ype: ME	BLK	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID:	PBS	Batch	n ID: <b>72</b>	696	F	RunNo: <b>9</b> 4	1064				
Prep Date:	1/18/2023	Analysis D	Date: 1/	19/2023	S	SeqNo: 33	395767	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (	Organics (DRO)	ND	10								
Motor Oil Rang	ge Organics (MRO)	ND	50								
Surr: DNOP		12		10.00		123	69	147			
Sample ID:	2301631-001AMS	SampT	уре: М	6	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID:	BS23-28 4'	Batch	n ID: 72	696	F	RunNo: <b>9</b> 4	1064				
Prep Date:	1/18/2023	Analysis D	Date: 1/	19/2023	S	SeqNo: 33	396919	Units: <b>mg/K</b>	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (	Organics (DRO)	86	8.6	43.22	218.7	-308	54.2	135			S
Surr: DNOP		3.9		4.322		91.4	69	147			
Sample ID:	2301631-001AMSD	SampT	уре: М	SD	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID:	BS23-28 4'	Batch	n ID: 72	696	F	RunNo: <b>9</b> 4	4064				
			Data: 1/	19/2023	S	SeqNo: 33	396920	Units: mg/K	g		
Prep Date:	1/18/2023	Analysis L		10/2020		•			-		
Prep Date: Analyte	1/18/2023	Result	PQL		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Analyte	1/18/2023 Organics (DRO)	•				%REC -177	LowLimit 54.2	HighLimit 135	%RPD 42.4	RPDLimit 29.2	Qual RS

#### Qualifiers:

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- H Holding times for preparation or analysis exceeded
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- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2301631

24-Jan-23

**Client:** 

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

Vertex Resources Services, Inc.

Project:	Hackberry	6 Fed 1	,										
Sample ID:	2301631-001ams	Samo	ype: MS		TestCode: EPA Method 8015D: Gasoline Range								
		•						0015D. Gaso	ine Kange				
Client ID:	BS23-28 4'		n ID: 720			RunNo: <b>9</b> 4							
Prep Date:	1/18/2023	Analysis D	Date: 1/	19/2023	ę	SeqNo: 3	396115	Units: mg/K	g				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Gasoline Rang	e Organics (GRO)	22	4.9	24.53	0	87.8	70	130					
Surr: BFB		2000		981.4		205	37.7	212					
Sample ID:	2301631-001amsd	SampT	уре: М	D	Tes	tCode: EF	PA Method	8015D: Gaso	ine Range				
Client ID:	BS23-28 4'	Batch	n ID: 72	<b>592</b>	F	RunNo: <b>9</b> 4	4070						
Prep Date:	1/18/2023	Analysis D	Date: 1/	19/2023	S	SeqNo: 3	396117	Units: <b>mg/K</b>	g				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Gasoline Rang	e Organics (GRO)	23	4.9	24.34	0	92.5	70	130	4.50	20			
Surr: BFB		2000		973.7		207	37.7	212	0	0			
Sample ID:	lcs-72692	SampT	ype: LC	S	Tes	tCode: EF	PA Method	8015D: Gaso	ine Range	!			
Client ID:	LCSS	Batch	n ID: <b>72</b>	692	F	RunNo: <b>9</b> 4	4070						
Prep Date:	1/18/2023	Analysis D	Date: 1/	19/2023	S	SeqNo: 3	396143	Units: mg/K	g				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Gasoline Rang	e Organics (GRO)	21	5.0	25.00	0	84.1	72.3	137					
Surr: BFB		1900		1000		195	37.7	212					
Sample ID:	mb-72692	SampT	уре: МЕ	BLK	Tes	tCode: EF	PA Method	8015D: Gaso	ine Range				
Client ID:	PBS	Batch	n ID: 72	<b>592</b>	F	RunNo: <b>9</b> 4	4070						
Prep Date:	1/18/2023	Analysis D	Date: 1/	19/2023				Units: mg/K	g				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
	e Organics (GRO)	ND	5.0										
Surr: BFB		1000		1000		103	37.7	212					

#### Qualifiers:

- * Value exceeds Maximum Contaminant Level.
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- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2301631

24-Jan-23

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

Client: Vertex Re Project: Hackberry										
Sample ID: 2301631-002ams	Samp	Гуре: <b>МS</b>	;	Tes	tCode: EF	A Method	8021B: Volati	iles		
Client ID: BS23-29 4'	Batcl	h ID: 726	<b>592</b>	F	RunNo: <b>9</b> 4	1070				
Prep Date: 1/18/2023	Analysis [	Date: 1/1	19/2023	S	SeqNo: 33	96165	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.024	0.9785	0	92.1	68.8	120			
Toluene	0.94	0.049	0.9785	0.01681	94.2	73.6	124			
Ethylbenzene	0.95	0.049	0.9785	0	97.4	72.7	129			
Xylenes, Total	2.8	0.098	2.935	0.02825	95.6	75.7	126			
Surr: 4-Bromofluorobenzene	0.96		0.9785		97.8	70	130			
Sample ID: 2301631-002amsd	Samp	Гуре: MS	D	Tes	tCode: EF	A Method	8021B: Volati	iles		
Client ID: BS23-29 4'	Batc	h ID: 726	<b>692</b>	F	RunNo: <b>9</b> 4	4070				
Prep Date: 1/18/2023	Analysis [	Date: 1/2	20/2023	S	SeqNo: 33	96166	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	0.9823	0	93.3	68.8	120	1.75	20	
Toluene	0.97	0.049	0.9823	0.01681	97.4	73.6	124	3.67	20	
Ethylbenzene	0.99	0.049	0.9823	0	101	72.7	129	3.91	20	
Xylenes, Total	2.9	0.098	2.947	0.02825	99.0	75.7	126	3.81	20	
Surr: 4-Bromofluorobenzene	0.96		0.9823		97.4	70	130	0	0	
Sample ID: LCS-72692	SampT	Гуре: <b>LC</b>	S	Tes	tCode: EF	PA Method	8021B: Volati	iles		
Client ID: LCSS	Batcl	h ID: <b>726</b>	<b>592</b>	F	RunNo: <b>9</b> 4	1070				
Prep Date: 1/18/2023	Analysis [	Date: 1/1	19/2023	S	SeqNo: 33	896187	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	88.3	80	120			
Toluene	0.92	0.050	1.000	0	91.9	80	120			
Ethylbenzene	0.93	0.050	1.000	0	93.3	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.3	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	70	130			
Sample ID: mb-72692	SampT	Гуре: <b>МВ</b>	BLK	Tes	tCode: EF	A Method	8021B: Volati	iles		
Client ID: PBS	Batcl	h ID: <b>726</b>	<b>692</b>	F	RunNo: <b>9</b> 4	1070				
Prep Date: 1/18/2023	Analysis [	Date: 1/1	19/2023	S	SeqNo: 33	96188	Units: mg/K	g		
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	0.98		1.000		97.7	70	130			

#### Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

WO#: 2301631 24-Jan-23

ANAL	RONMENTAL	Hall Environmental Analysis 4901 F Albuquerque, TEL: 505-345-3975 FAX: 50: Website: www.hallenviron	lawkins NE NM 87109 5-345-4107
lient Name:	Vertex Resources Services, Inc.	Work Order Number: 230163	1
eceived By:	Juan Rojas	1/18/2023 7:20:00 AM	Gu

# Sample Log-In Check List

Released to Imaging: 6/9/2023 11:32:08 AM

Client Name:	Vertex Resources Services, Inc.	Work Order Nun	nber: 2301631		RcptNo:	1
Received By:	Juan Rojas	1/18/2023 7:20:00	АМ	Guarda g	e	
Completed By:	Cheyenne Cason	1/18/2023 7:50:31	АМ	Chent		
Reviewed By:	Jn1/18/23			Grade State		
Chain of Cu	<u>stody</u>					
1. Is Chain of C	Custody complete?		Yes 🗌	No 🗹	Not Present	
2. How was the	e sample delivered?		Courier			
Log In				_	_	
3. Was an atter	mpt made to cool the samp	les?	Yes 🗹	No 🗌	NA	
4. Were all sam	nples received at a tempera	ture of >0° C to 6.0°C	Yes 🗹	No 🗌	NA 🗌	
5. Sample(s) in	proper container(s)?		Yes 🗹	No 🗌		
6. Sufficient sar	mple volume for indicated te	est(s)?	Yes 🗹	No 🗌		
7. Are samples	(except VOA and ONG) pro	operly preserved?	Yes 🗹	No 🗌		
8. Was preserva	ative added to bottles?		Yes 🗌	No 🗹	NA 🗌	
9. Received at I	least 1 vial with headspace	<1/4" for AQ VOA?	Yes	No 🗌	NA 🗹	
10. Were any sa	ample containers received b	roken?	Yes	No 🗹	# of preserved	/
	vork match bottle labels? bancies on chain of custody	)	Yes 🗹	No 🗌	bottles checked for pH:	>12 unless note
	correctly identified on Chai		Yes 🗹	No 🗌	Adjusted?	
13. Is it clear what	at analyses were requested	?	Yes 🗹	No 🗌		
	ling times able to be met? customer for authorization.)		Yes 🔽	No 🗆	Checked by:	1-18-
	lling (if applicable)				5 0	
	notified of all discrepancies v	vith this order?	Yes	No 🗌	NA 🗹	
Persor	n Notified:	Date	e: ]			
By Wh	nom:	Via:	eMail 🗌 I	Phone 🗌 Fax	In Person	
Regard	ding:					
Client	Instructions:					
16. Additional re	emarks:					
Client	Information not complete.					
17. Cooler Info		(	8		1	
Cooler No	o Temp °C Condition	Seal Intact Seal No	Seal Date	Signed By		

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leceived by OCD: 2/7/2023 1:52:13 PM	23 1:52:13 PM				Г						Page 304 of	04 0)
Chain-of-C	Chain-of-Custody Record	p	Turn-Around Time:			HAI	l		C	HALL ENVIRONMENTAL	TN	-
Client: DRUNN (VARKX)	when (		□ Standard	arkush 48 hr		ANA	ΓXs	ISI	PA	ANALYSIS LABORATORY	10	2
			Project Name:			h.www.	allenvi	www.hallenvironmental.com	ital.co	E		
Mailing Address: ∧ <i>M</i>	1 lile		Hackbenn	Hackberry lo Fed 1 Well Pad	4901 He	4901 Hawkins NE - Albuquerque, NM 87109	- Alb	Idnerdi	ue, NI	A 87109		
			Project #:		Tel. 50	Tel. 505-345-3975	ш	Fax 505	505-345-4107	4107		
Phone #:			126-01537	37			Analy	Analysis Request	quest			
email or Fax#:			Project Manager:		(0)		*OS	_	(tue	_	1	
QA/QC Package:	Level 4 (Full Validation)	idation)	Chance	Diron	PCB's (802 / MF	SMIS0	'*Od '		edA\tn		<u>(1</u>	
;;	Az Compliance		Sampler: St	SPC	אם /		ron					
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ype)			# of Coolers: )	Morty	19) (GI	015	_	_				
			Cooler Temp(including CF):	or): 2 746 123.0 (°C	190	3 K		_	11.0		à.	
				ervative	08:Hc		), н СКА	s) 027 \) 097	22	8		
Date Time Matrix	Sample Name		Type and # Type	230631	Щ	Ъ	-					4
1/10/23 9:30 Soil	BS 13-28	4'	1402 Jar 100	6 00	>		>					_
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9:40	BS23-30	4'		603								_
0:45	BS22-31	4'		Coy							_	_
01:50	BS23-32	4'		500								_
9:55	BS23-33	4'		006			-		-			_
00:01	BS23-34	4		æ7								_
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10:10	BS13-36	4		600					_			_
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Released to Imaging: 6/9/2023 11:32:08 AM CC Sally Cartar 1211-2120 1200 1200

Remarks: Divect Bill Devon page 1/2 W0# www. 1007101301

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	HALL ENVIRONMENTAL ANALYSIS LABORATORY	nental.com	Albuquerque, NM 87109	Fax 505-345-4107	Request	()ut	əsdA\tr	_	_	_		0728 IstoT		A DOT DE DESTRUCTION A DE D		Control De la Talancia Carlo Carlo de C							1 Page 412		and the second sec
		www.hallenvironmental.com	4901 Hawkins NE - Albuque	Tel. 505-345-3975 Fax (Anal	(0)	ь0¢' 8 93IWS 8.804 8.80	л DR 1.1) 1.1) 1.28 270	05 504 01 01	NO Picide Picide Por Por Picide	80151 Pesti by 8 by 8 Br,	3:H9T 8081 8DB ((3) F. S. S. S. S. S. M. P. M. M. S.					Remarks:	Direct Bill Devon	021012001 #0(V)	9/23 7:29 cc saung cartar
Turn-Around Time:	□ Standard ZRush 48hr	- iii	Hackberry le Fed I Well Pad	Project #: 0	116-01537	Project Manager:	Chance Dixon		Lites D No	ers: 1 Marty	Cooler Temp(Including CF): / / / / / / / / / / / / / /	Container Preservative HEAL No. (U Type and # Type フマハ/G3/	r ice D13		510	016	017	018	019	1 920		Received by: Via: , Date Time Re	in 1/1/18 730		3
Chain-of-Custody Record	Client: Devon (Vertex)		Mailing Address: ON WILL	0	Phone #:	email or Fax#:	QAVQC Package:	Az Compliance	□ Other	EDD (Type)		Date Time Matrix Sample Name	110	1	11:55 8523-42 4'		12:05 BS23-44 4'		12:15 BS 23-410 4'	1 [12:20] 1 [5523- 47 41		Date: Time: Relinquished by:	1/14/23/16:33 Sally Cartan	Relimented by:	THIN AND CAMMANAND I TOURIE



January 26, 2023

Chance Dixon Vertex Resources Services, Inc. 3101 Boyd Drive Carlsbad, NM 88220 TEL: (505) 506-0040 FAX:

RE: Hackberry 6 Feb 1 Well Pad

OrderNo.: 2301711

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 10 sample(s) on 1/19/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Date Reported: 1/26/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-48 4' **Project:** Hackberry 6 Feb 1 Well Pad Collection Date: 1/17/2023 9:37:00 AM Lab ID: 2301711-001 Matrix: SOIL Received Date: 1/19/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** 33 9.9 mg/Kg 1 1/23/2023 3:31:33 PM Motor Oil Range Organics (MRO) 64 50 mg/Kg 1 1/23/2023 3:31:33 PM Surr: DNOP 90.2 69-147 %Rec 1 1/23/2023 3:31:33 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/21/2023 6:28:27 AM 4.9 mg/Kg 1 Surr: BFB 99.1 37.7-212 %Rec 1 1/21/2023 6:28:27 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/21/2023 6:28:27 AM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/21/2023 6:28:27 AM Ethylbenzene ND 0.049 mg/Kg 1 1/21/2023 6:28:27 AM Xylenes, Total ND 0.099 mg/Kg 1/21/2023 6:28:27 AM 1 Surr: 4-Bromofluorobenzene 94.1 70-130 %Rec 1 1/21/2023 6:28:27 AM **EPA METHOD 300.0: ANIONS** Analyst: JTT Chloride mg/Kg 1/20/2023 9:17:21 PM 1100 60 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 1 of 17

Date Reported: 1/26/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-49 4' Hackberry 6 Feb 1 Well Pad **Project:** Collection Date: 1/17/2023 9:37:00 AM Lab ID: 2301711-002 Matrix: SOIL Received Date: 1/19/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** 65 9.8 mg/Kg 1 1/23/2023 5:46:17 PM Motor Oil Range Organics (MRO) 100 49 mg/Kg 1 1/23/2023 5:46:17 PM Surr: DNOP 105 69-147 %Rec 1 1/23/2023 5:46:17 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/21/2023 7:37:51 AM 4.9 mg/Kg 1 Surr: BFB 99.2 37.7-212 %Rec 1 1/21/2023 7:37:51 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/21/2023 7:37:51 AM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/21/2023 7:37:51 AM Ethylbenzene ND 0.049 mg/Kg 1 1/21/2023 7:37:51 AM Xylenes, Total ND 0.099 mg/Kg 1/21/2023 7:37:51 AM 1 Surr: 4-Bromofluorobenzene 94.4 70-130 %Rec 1 1/21/2023 7:37:51 AM **EPA METHOD 300.0: ANIONS** Analyst: JTT Chloride mg/Kg 1/20/2023 9:54:22 PM 1400 60 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

- D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 2 of 17

Date Reported: 1/26/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-50 4' Hackberry 6 Feb 1 Well Pad **Project:** Collection Date: 1/17/2023 9:40:00 AM Lab ID: 2301711-003 Matrix: SOIL Received Date: 1/19/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** 52 9.8 mg/Kg 1 1/23/2023 6:17:35 PM Motor Oil Range Organics (MRO) 96 49 mg/Kg 1 1/23/2023 6:17:35 PM Surr: DNOP 99.8 69-147 %Rec 1 1/23/2023 6:17:35 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/21/2023 8:00:56 AM 4.9 mg/Kg 1 Surr: BFB 98.7 37.7-212 %Rec 1 1/21/2023 8:00:56 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/21/2023 8:00:56 AM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/21/2023 8:00:56 AM Ethylbenzene ND 0.049 mg/Kg 1 1/21/2023 8:00:56 AM Xylenes, Total ND 0.098 mg/Kg 1 1/21/2023 8:00:56 AM Surr: 4-Bromofluorobenzene 94.5 70-130 %Rec 1 1/21/2023 8:00:56 AM **EPA METHOD 300.0: ANIONS** Analyst: JTT Chloride mg/Kg 1/20/2023 10:06:43 PM 1600 60 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 3 of 17

Date Reported: 1/26/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-51 4' **Project:** Hackberry 6 Feb 1 Well Pad Collection Date: 1/17/2023 9:40:00 AM Lab ID: 2301711-004 Matrix: SOIL Received Date: 1/19/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** 39 9.8 mg/Kg 1 1/23/2023 6:48:45 PM Motor Oil Range Organics (MRO) 85 49 mg/Kg 1 1/23/2023 6:48:45 PM Surr: DNOP 91.0 69-147 %Rec 1 1/23/2023 6:48:45 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/21/2023 8:24:01 AM 5.0 mg/Kg 1 Surr: BFB 98.0 37.7-212 %Rec 1 1/21/2023 8:24:01 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/21/2023 8:24:01 AM 0.025 mg/Kg 1 Toluene ND 0.050 mg/Kg 1 1/21/2023 8:24:01 AM Ethylbenzene ND 0.050 mg/Kg 1 1/21/2023 8:24:01 AM Xylenes, Total ND mg/Kg 1/21/2023 8:24:01 AM 0.099 1 Surr: 4-Bromofluorobenzene 94.4 70-130 %Rec 1 1/21/2023 8:24:01 AM **EPA METHOD 300.0: ANIONS** Analyst: JTT Chloride mg/Kg 1/20/2023 10:19:04 PM 1600 60 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 4 of 17

Date Reported: 1/26/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-52 4' **Project:** Hackberry 6 Feb 1 Well Pad Collection Date: 1/17/2023 9:45:00 AM Lab ID: 2301711-005 Matrix: SOIL Received Date: 1/19/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** 76 9.4 mg/Kg 1 1/23/2023 7:20:04 PM Motor Oil Range Organics (MRO) 160 47 mg/Kg 1 1/23/2023 7:20:04 PM Surr: DNOP 94.4 69-147 %Rec 1 1/23/2023 7:20:04 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/21/2023 8:47:04 AM 4.9 mg/Kg 1 Surr: BFB 97.7 37.7-212 %Rec 1 1/21/2023 8:47:04 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/21/2023 8:47:04 AM 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/21/2023 8:47:04 AM Ethylbenzene ND 0.049 mg/Kg 1 1/21/2023 8:47:04 AM Xylenes, Total ND 0.098 mg/Kg 1 1/21/2023 8:47:04 AM Surr: 4-Bromofluorobenzene 93.0 70-130 %Rec 1 1/21/2023 8:47:04 AM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 1/21/2023 11:27:28 PM 3100 150 50

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 5 of 17

Date Reported: 1/26/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-53 4' **Project:** Hackberry 6 Feb 1 Well Pad Collection Date: 1/17/2023 9:45:00 AM Lab ID: 2301711-006 Matrix: SOIL Received Date: 1/19/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** 88 9.5 mg/Kg 1 1/23/2023 4:26:49 PM Motor Oil Range Organics (MRO) 160 47 mg/Kg 1 1/23/2023 4:26:49 PM Surr: DNOP 91.5 69-147 %Rec 1 1/23/2023 4:26:49 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/21/2023 9:10:08 AM 5.0 mg/Kg 1 Surr: BFB 99.9 37.7-212 %Rec 1 1/21/2023 9:10:08 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/21/2023 9:10:08 AM 0.025 mg/Kg 1 Toluene ND 0.050 mg/Kg 1 1/21/2023 9:10:08 AM Ethylbenzene ND 0.050 mg/Kg 1 1/21/2023 9:10:08 AM Xylenes, Total ND mg/Kg 1 1/21/2023 9:10:08 AM 0.099 Surr: 4-Bromofluorobenzene 95.9 70-130 %Rec 1 1/21/2023 9:10:08 AM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 1/21/2023 11:39:49 PM 2600 150 50

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 6 of 17

Date Reported: 1/26/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-54 4' **Project:** Hackberry 6 Feb 1 Well Pad Collection Date: 1/17/2023 9:50:00 AM Lab ID: 2301711-007 Matrix: SOIL Received Date: 1/19/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: SB **Diesel Range Organics (DRO)** 32 9.8 mg/Kg 1 1/23/2023 3:33:44 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 1/23/2023 3:33:44 PM Surr: DNOP 102 69-147 %Rec 1 1/23/2023 3:33:44 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/21/2023 10:42:34 AM 4.9 mg/Kg 1 Surr: BFB 99.0 37.7-212 %Rec 1 1/21/2023 10:42:34 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/21/2023 10:42:34 AM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/21/2023 10:42:34 AM Ethylbenzene ND 0.049 mg/Kg 1 1/21/2023 10:42:34 AM Xylenes, Total ND 0.098 mg/Kg 1/21/2023 10:42:34 AM 1 Surr: 4-Bromofluorobenzene 95.6 70-130 %Rec 1 1/21/2023 10:42:34 AM **EPA METHOD 300.0: ANIONS** Analyst: JTT Chloride mg/Kg 1/20/2023 10:56:06 PM 2200 60 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

- D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Date Reported: 1/26/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-55 4' **Project:** Hackberry 6 Feb 1 Well Pad Collection Date: 1/17/2023 9:50:00 AM Lab ID: 2301711-008 Matrix: SOIL Received Date: 1/19/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: SB **Diesel Range Organics (DRO)** ND 9.7 mg/Kg 1 1/23/2023 3:57:16 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 1/23/2023 3:57:16 PM Surr: DNOP 98.8 69-147 %Rec 1 1/23/2023 3:57:16 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/21/2023 11:51:55 AM 4.9 mg/Kg 1 Surr: BFB 101 37.7-212 %Rec 1 1/21/2023 11:51:55 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/21/2023 11:51:55 AM 0.025 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/21/2023 11:51:55 AM Ethylbenzene ND 0.049 mg/Kg 1 1/21/2023 11:51:55 AM Xylenes, Total ND 0.098 mg/Kg 1/21/2023 11:51:55 AM 1 Surr: 4-Bromofluorobenzene 97.7 70-130 %Rec 1 1/21/2023 11:51:55 AM **EPA METHOD 300.0: ANIONS** Analyst: JTT Chloride mg/Kg 1/20/2023 11:33:08 PM 1100 60 20

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

- D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Date Reported: 1/26/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-56 4' **Project:** Hackberry 6 Feb 1 Well Pad Collection Date: 1/17/2023 9:54:00 AM Lab ID: 2301711-009 Matrix: SOIL Received Date: 1/19/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: SB **Diesel Range Organics (DRO)** 230 9.9 mg/Kg 1 1/23/2023 7:52:46 PM Motor Oil Range Organics (MRO) 310 50 mg/Kg 1 1/23/2023 7:52:46 PM 69-147 Surr: DNOP %Rec 1 1/23/2023 7:52:46 PM 116 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/21/2023 1:01:34 PM 4.9 mg/Kg 1 Surr: BFB 101 37.7-212 %Rec 1 1/21/2023 1:01:34 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/21/2023 1:01:34 PM 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/21/2023 1:01:34 PM Ethylbenzene ND 0.049 mg/Kg 1 1/21/2023 1:01:34 PM Xylenes, Total ND 0.098 mg/Kg 1 1/21/2023 1:01:34 PM Surr: 4-Bromofluorobenzene 96.0 70-130 %Rec 1 1/21/2023 1:01:34 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI mg/Kg Chloride 1/21/2023 11:52:10 PM 3700 150 50

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

Qualifiers:

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 9 of 17

Date Reported: 1/26/2023

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. Client Sample ID: BS23-57 4' **Project:** Hackberry 6 Feb 1 Well Pad Collection Date: 1/17/2023 9:55:00 AM Lab ID: 2301711-010 Matrix: SOIL Received Date: 1/19/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses EPA METHOD 8015M/D: DIESEL RANGE ORGANICS Analyst: DGH **Diesel Range Organics (DRO)** 290 9.6 mg/Kg 1 1/24/2023 5:08:10 PM Motor Oil Range Organics (MRO) 440 48 mg/Kg 1 1/24/2023 5:08:10 PM Surr: DNOP 124 69-147 %Rec 1 1/24/2023 5:08:10 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/21/2023 1:24:47 PM 4.9 mg/Kg 1 Surr: BFB 101 37.7-212 %Rec 1 1/21/2023 1:24:47 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/21/2023 1:24:47 PM 0.024 mg/Kg 1 Toluene ND 0.049 mg/Kg 1 1/21/2023 1:24:47 PM Ethylbenzene ND 0.049 mg/Kg 1 1/21/2023 1:24:47 PM Xylenes, Total ND 0.098 mg/Kg 1 1/21/2023 1:24:47 PM Surr: 4-Bromofluorobenzene 96.3 70-130 %Rec 1 1/21/2023 1:24:47 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride mg/Kg 1/22/2023 12:04:31 AM 7100 300 100

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

Qualifiers:

Value exceeds Maximum Contaminant Level Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 10 of 17

Client: Project:		tex Resources Se kberry 6 Feb 1 V	,								
Sample ID:	MB-72729	SampT	уре: МЕ	BLK	Tes	tCode: EF	PA Method	300.0: Anions	;		
Client ID:	PBS	Batch	ID: 727	729	F	RunNo: 9 4	1097				
Prep Date:	1/20/2023	Analysis D	ate: 1/2	20/2023	S	SeqNo: 33	397311	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID:	LCS-72729	SampT	ype: LC	s	Tes	tCode: EF	PA Method	300.0: Anions	;		
Client ID:	LCSS	Batch	ID: 727	/29	F	RunNo: 9 4	1097				
Prep Date:	1/20/2023	Analysis D	ate: 1/2	20/2023	S	SeqNo: 33	397312	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	94.2	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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26-Jan-23

QC SUMMARY REPORT Hall Enviro

QC SUMIVIAI Hall Environme			aborato	ry, Inc.					WO#:	2301711 26-Jan-23
	ex Resources S berry 6 Feb 1		, ,							
Sample ID: LCS-72738	Samp	Туре: LC	s	Tes	stCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID: LCSS	Batc	h ID: 72	738	F	RunNo: 94	4119				
Prep Date: 1/20/2023	Analysis I	Date: 1/	23/2023	Ś	SeqNo: 3	398450	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	85.9	61.9	130			
Surr: DNOP	5.6		5.000		111	69	147			
Sample ID: MB-72738	Samp	Туре: МЕ	BLK	Tes	stCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID: PBS	Batc	h ID: 72	738	F	RunNo: 94	4119				
Prep Date: 1/20/2023	Analysis I	Date: 1/	23/2023	:	SeqNo: 3	398451	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRC	,	50								
Surr: DNOP	9.8		10.00		97.6	69	147			
Sample ID: 2301711-007	AMS Samp	Туре: М	6	Tes	stCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID: BS23-54 4'	Batc	h ID: 72	726	F	RunNo: 9 4	4119				
Prep Date: 1/20/2023	Analysis I	Date: 1/	23/2023	:	SeqNo: 3	399089	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	55	9.7	48.45	31.80	47.0	54.2	135			S
Surr: DNOP	5.2		4.845		107	69	147			
Sample ID: 2301711-007	AMSD Samp	Type: MS	SD	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID: BS23-54 4'	Batc	h ID: 72	726	F	RunNo: 94	4119				

Sample ID: 2301711-007AMSD	SampType: MSD TestCode: EPA Method 8015M/D: Diesel Range Organics									
Client ID: BS23-54 4'	Batch I	D: 727	26	RunNo: 94119						
Prep Date: 1/20/2023	Analysis Dat	te: 1/2	3/2023	SeqNo: 3399090 Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	9.7	48.45	31.80	49.4	54.2	135	2.13	29.2	S
Surr: DNOP	4.7		4.845		96.8	69	147	0	0	
Sample ID: LCS-72726	SampTyp	pe: LCS	3	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID: LCSS	Batch I	D: 727	26	F	RunNo: 9 4	4119				
Prep Date: 1/20/2023	Analysis Dat	te: 1/2	3/2023	S	SeqNo: 3	399135	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

0

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit ND
- PQL Practical Quanitative Limit

Diesel Range Organics (DRO)

Surr: DNOP

% Recovery outside of standard limits. If undiluted results may be estimated. S

41

5.4

10

50.00

5.000

в Analyte detected in the associated Method Blank

83.0

107

61.9

69

130

147

- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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	Resources S ry 6 Feb 1 '	,										
Sample ID: MB-72726	SampT	уре: МВ	LK	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID: PBS	Batcl	n ID: 727	26	RunNo: 94119								
Prep Date: 1/20/2023	Analysis E	Date: 1/2	23/2023	S	SeqNo: 33	99139	Units: mg/K	g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Diesel Range Organics (DRO)	ND	10										
Iotor Oil Range Organics (MRO)	ND	50										
Surr: DNOP	9.9		10.00		98.5	69	147					

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2301711

26-Jan-23

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

	esources Ser y 6 Feb 1 We											
Sample ID: Ics-72715	SampTyp	e: LCS	S	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch II	D: 727	15	F	RunNo: 94108							
Prep Date: 1/19/2023	Analysis Date	e: 1/2	20/2023	S	SeqNo: 3	397800	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Gasoline Range Organics (GRO) Surr: BFB	22 2000	5.0	25.00 1000	0	86.9 200	72.3 37.7	137 212					
Sample ID: Ics-72717	SampTyp	e: LCS	S	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch II	D: 727	17	F	RunNo: 9 4	4108						
Prep Date: 1/19/2023	Analysis Date	e: 1/2	21/2023	S	SeqNo: 3	397801	Units: mg/K	g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Gasoline Range Organics (GRO)	20	5.0	25.00	0	80.0	72.3	137					
Surr: BFB	1900		1000		191	37.7	212					
Sample ID: mb-72715	SampTyp	e: MB	LK	Tes	tCode: EF	PA Method	8015D: Gasol	ine Range				
Client ID: PBS	ID: PBS Batch ID: 72715				RunNo: 94108							
Prep Date: 1/19/2023	Analysis Date	e: 1/2	20/2023	S	SeqNo: 3	397803	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Gasoline Range Organics (GRO)	ND	5.0										
Surr: BFB	1000		1000		102	37.7	212					
Sample ID: mb-72717	SampTyp	e: MB	LK	Tes	tCode: EF	PA Method	8015D: Gaso	ine Range				
Client ID: PBS	Batch II	D: 727	17	RunNo: 94108								
Prep Date: 1/19/2023	Analysis Date	e: 1/2	21/2023	S	SeqNo: 3	897804	Units: mg/K	g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Gasoline Range Organics (GRO) Surr: BFB	ND 1000	5.0	1000		100	37.7	212					
Sample ID: 2301711-007ams	SampTyp	e: MS		Tes	tCode: EF	PA Method	8015D: Gaso	ine Range				
Client ID: BS23-54 4'	Batch II	D: 727	17	F	RunNo: 94	4108						
Prep Date: 1/19/2023	Analysis Date	e: 1/2	21/2023	S	SeqNo: 3	397850	Units: mg/K	g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Gasoline Range Organics (GRO)	21	4.9	24.32	0	86.0	70	130					
Surr: BFB	2000		972.8		202	37.7	212					
Sample ID: 2301711-007amsd	SampTyp	e: MS	D	Tes	tCode: EF	PA Method	8015D: Gaso	ine Range				
Client ID: BS23-54 4'	Batch II	D: 727	17	F	RunNo: 9 4	4108						
Prep Date: 1/19/2023	Analysis Date	e: 1/2	21/2023	S	SeqNo: 3	897851	Units: mg/K	g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Sample pH Not In Range
- P Sample pH Not In RL Reporting Limit

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26-Jan-23

Client:	Vertex Re	sources Se	ervices,	Inc.							
Project:	Hackberry	7 6 Feb 1 V	Vell Pa	d							
Sample ID:	2301711-007amsd	SampT	ype: MS	D	Tes	tCode: EF	A Method	8015D: Gaso	line Range	9	
Client ID:	BS23-54 4'	Batch	ID: 727	717	F	RunNo: 9 4	108				
Prep Date:	1/19/2023	Analysis D	ate: 1/2	21/2023	S	SeqNo: 33	897851	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	23	5.0	24.80	0	92.1	70	130	8.84	20	
Surr: BFB 2000 992.1					205	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 Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2301711

26-Jan-23

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Vertex	Resources Ser	vices,	Inc.									
Project: Hackbe	Hackberry 6 Feb 1 Well Pad											
Sample ID: LCS-72715	SampTyp	De: LC	S	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch II	D: 727	'15	F	RunNo: 94108							
Prep Date: 1/19/2023	Analysis Dat	te: 1/2	20/2023	S	SeqNo: 33	397872	Units: mg/K	g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Benzene	0.88	0.025	1.000	0	88.4	80	120					
Toluene	0.93	0.050	1.000	0	92.7	80	120					
Ethylbenzene	0.93	0.050	1.000	0	92.9	80	120					
Xylenes, Total	2.8	0.10	3.000	0	93.2	80	120					
Surr: 4-Bromofluorobenzene	0.99		1.000		99.2	70	130					
Sample ID: LCS-72717	SampTyp	be: LCS	S	Tes	TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch II	D: 727	'17	F	RunNo: 9 4	108						
Prep Date: 1/19/2023	Analysis Date: 1/21/2023				SeqNo: 33	897873	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Benzene	0.89	0.025	1.000	0	89.1	80	120					
Toluene	0.93	0.050	1.000	0	92.9	80	120					
Ethylbenzene	0.93	0.050	1.000	0	93.1	80	120					
Xylenes, Total	2.8	0.10	3.000	0	92.2	80	120					
Surr: 4-Bromofluorobenzene	0.99		1.000		99.2	70	130					
Sample ID: mb-72715	SampTyp	be: MB	LK	Tes	tCode: EF	PA Method	8021B: Volati	les				
Client ID: PBS	Batch II	D: 727	'15	RunNo: 94108								
Prep Date: 1/19/2023	Analysis Dat	te: 1/2	20/2023	S	SeqNo: 3397875			g				
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		96.4	70	130					
Sample ID: mb-72717	SampTyp	be: MB	LK	Tes	tCode: EF	PA Method	8021B: Volati	les				
Client ID: PBS	Batch II	D: 727	'17	F	RunNo: 9 4	108						
Prep Date: 1/19/2023	Analysis Dat	te: 1/2	21/2023	S	SeqNo: 33	897876	Units: mg/K	g				
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	0.97		1.000		96.7	70	130					

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank

- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2301711

26-Jan-23

Client:

Project:

QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Vertex Resources Services, Inc.

Hackberry 6 Feb 1 Well Pad

Sample ID: 2301711-008ams	Samp	Гуре: МS	;	TestCode: EPA Method 8021B: Volatiles							
Client ID: BS23-55 4'	Batc	h ID: 727	717	RunNo: 94108							
Prep Date: 1/19/2023	Analysis [Date: 1/2	21/2023	:	SeqNo: 3	397918	Units: mg/K	g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.99	0.025	0.9950	0	99.7	68.8	120				
Toluene	1.1	0.050	0.9950	0.01657	105	73.6	124				
Ethylbenzene	1.1	0.050	0.9950	0	108	72.7	129				
Xylenes, Total	3.2	0.10	2.985	0.02814	106	75.7	126				
Surr: 4-Bromofluorobenzene	0.99		0.9950		99.4	70	130				
Sample ID: 2301711-008amsd	Samp	Гуре: МS	D	Tes	TestCode: EPA Method 8021B: Volatiles						
Client ID: BS23-55 4'	Batc	h ID: 727	717	F							
Prep Date: 1/19/2023	Analysis [Date: 1/2	21/2023	SeqNo: 3397919			Units: mg/K	g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.95	0.025	0.9823	0	97.2	68.8	120	3.86	20		
Toluene	1.0	0.049	0.9823	0.01657	102	73.6	124	3.49	20		
Ethylbenzene	1.0	0.049	0.9823	0	105	72.7	129	3.86	20		
Xylenes, Total	3.1	0.098	2.947	0.02814	104	75.7	126	3.40	20		
Surr: 4-Bromofluorobenzene	0.95		0.9823		96.6	70	130	0	0		

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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	ANAL	RONMENTA YSIS RATORY	L.	TE	ll Environme L: 505-345-3 Website: ww	490 Albuquerq 3975 FAX:	Hawkins ue, NM 87 505-345-4	NE 109 Sa 1 107	Sample Log-In Check List				
Cli	ent Name:	Vertex Reso Services, In		Work	Order Num	nber: 2301	711		RcptNo:	1			
Red	ceived By:	Juan Roja	S	1/19/20	23 7:20:00	АМ		Gunnang S-6					
	mpleted By: viewed By:	Sean Livir JA 1-19	-	1/19/20	23 8:11:30	АМ		S-L	not				
<u>Cha</u>	ain of Cus	stody											
1. 1	ls Chain of C	ustody compl	ete?			Yes	\checkmark	No 🗌	Not Present				
2.	How was the	sample delive	ered?			Cour	ier						
	o g In Was an atter	npt made to c	ool the samp	les?		Yes		No 🗌					
4. v	Vere all sam	ples received	at a tempera	ture of >0° C	to 6.0°C	Yes		No 🗌					
5. s	Sample(s) in	proper contai	ner(s)?			Yes		No 🗌					
6. 5	Sufficient san	nple volume fo	or indicated te	est(s)?		Yes		No 🗌					
7. A	re samples	(except VOA a	and ONG) pro	perly preserve	ed?	Yes		No 🗌					
8. v	Vas preserva	ative added to	bottles?			Yes		No 🗹	NA 🗆				
9. f	Received at l	east 1 vial with	n headspace	<1/4" for AQ V	/OA?	Yes		No 🗌	NA 🗹	$\overline{i}()$			
10.\	Were any sa	mple containe	rs received b	roken?		Yes		No 🗹	# of preserved	120/22			
		ork match bot ancies on cha)		Yes		No 🗌	for pH:	<pre>>12 unless noted)</pre>			
12. A	vre matrices	correctly iden	ified on Chai	n of Custody?		Yes	\checkmark	No 🗌	Adjusted?				
13. l	s it clear wha	at analyses we	re requested	?		Yes	\checkmark	No 🗌					
		ing times able sustomer for a				Yes		No 🗌	Checked by:				
		ling (if app											
317 X	and and			with this order?	?	Yes		No 🗌	NA 🗹				
	Persor	Notified:			Date	»: [•	-			
	By Wh	om:			Via:	eMa	iil 🗌 Pt	none 🗌 Fax	In Person				
	Regard												
	Client	nstructions:											
16.	Additional re	emarks:											
17.	Cooler Info	rmation											
	Cooler No		Condition	Seal Intact	Seal No	Seal Da	ate	Signed By	_				
	1 2	1.2	Good	Not Present	Morty Morty								

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Chain-of-Custody Record	Turn-Around Time:	
Client: Devon (Vertex)	D Standard E Rush US hour	
ſ		www.hallenvironmental.com
Mailing Address: On File	Hackberry & Feb I Wellpad	4901 Hawkins NE - Albuquerque, NM 87109
	Project #:	Tel. 505-345-3975 Fax 505-345-4107
Phone #:	22E-02537	Analysis Request
email or Fax#:	Project Manager:	*OS
QA/QC Package:	Poore Direo	siws siws scb, ^s
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11/18/13 AD CUMMUNN	There was a 21 20	
ary samples submitted to Hall Environme	ries.	This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

) Released to Imaging: 6/9/2023 11:32:08 AM



January 30, 2023

Chance Dixon Vertex Resources Services, Inc. 3101 Boyd Drive Carlsbad, NM 88220 TEL: (505) 506-0040 FAX

OrderNo.: 2301764

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

RE: Hackberry 6 Fed 1 Well Pad

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 18 sample(s) on 1/20/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Date Reported: 1/30/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-58 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/18/2023 8:25:00 AM Lab ID: 2301764-001 Matrix: SOIL Received Date: 1/20/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: SB Diesel Range Organics (DRO) 180 19 mg/Kg 2 1/24/2023 3:20:43 PM Motor Oil Range Organics (MRO) 2 340 97 mg/Kg 1/24/2023 3:20:43 PM 69-147 Surr: DNOP %Rec 2 1/24/2023 3:20:43 PM 117 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/23/2023 11:41:57 AM 4.7 mg/Kg 1 Surr: BFB 104 37.7-212 %Rec 1 1/23/2023 11:41:57 AM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 0.024 mg/Kg 1/23/2023 11:41:57 AM 1 Toluene ND 0.047 mg/Kg 1 1/23/2023 11:41:57 AM Ethylbenzene ND 0.047 mg/Kg 1 1/23/2023 11:41:57 AM Xylenes, Total ND 0.095 mg/Kg 1 1/23/2023 11:41:57 AM Surr: 4-Bromofluorobenzene 96.5 70-130 %Rec 1 1/23/2023 11:41:57 AM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride 9700 300 1/23/2023 10:38:35 AM ma/Ka 100

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit POL
  - Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range Reporting Limit

RL

Page 1 of 23

Date Reported: 1/30/2023

1/23/2023 10:51:27 AM

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-59 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/18/2023 8:29:00 AM Lab ID: 2301764-002 Matrix: SOIL Received Date: 1/20/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: SB Diesel Range Organics (DRO) 170 10 mg/Kg 1 1/24/2023 1:58:37 PM Motor Oil Range Organics (MRO) 240 50 mg/Kg 1 1/24/2023 1:58:37 PM Surr: DNOP 109 69-147 %Rec 1 1/24/2023 1:58:37 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/23/2023 12:52:17 PM 4.8 mg/Kg 1 Surr: BFB 107 37.7-212 %Rec 1 1/23/2023 12:52:17 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/23/2023 12:52:17 PM 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/23/2023 12:52:17 PM Ethylbenzene ND 0.048 mg/Kg 1 1/23/2023 12:52:17 PM Xylenes, Total ND 0.097 mg/Kg 1 1/23/2023 12:52:17 PM Surr: 4-Bromofluorobenzene 99.6 70-130 %Rec 1 1/23/2023 12:52:17 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS

4500

150

ma/Ka

50

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

**Qualifiers:** 

Chloride

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

Е Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

Reporting Limit RL

Page 2 of 23

Date Reported: 1/30/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-60 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/18/2023 8:30:00 AM Lab ID: 2301764-003 Matrix: SOIL Received Date: 1/20/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: SB Diesel Range Organics (DRO) 150 9.7 mg/Kg 1 1/24/2023 2:12:38 PM Motor Oil Range Organics (MRO) 240 49 mg/Kg 1 1/24/2023 2:12:38 PM 69-147 Surr: DNOP 106 %Rec 1 1/24/2023 2:12:38 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/23/2023 2:02:42 PM 4.6 mg/Kg 1 Surr: BFB 105 37.7-212 %Rec 1 1/23/2023 2:02:42 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/23/2023 2:02:42 PM 0.023 mg/Kg 1 Toluene ND 0.046 mg/Kg 1 1/23/2023 2:02:42 PM Ethylbenzene ND 0.046 mg/Kg 1 1/23/2023 2:02:42 PM Xylenes, Total ND 0.092 mg/Kg 1 1/23/2023 2:02:42 PM Surr: 4-Bromofluorobenzene 96.9 70-130 %Rec 1 1/23/2023 2:02:42 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride 2200 60 1/21/2023 1:12:53 PM ma/Ka 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

Е Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

Reporting Limit RL

Page 3 of 23

Date Reported: 1/30/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-61 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/18/2023 8:33:00 AM Lab ID: 2301764-004 Matrix: SOIL Received Date: 1/20/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: SB Diesel Range Organics (DRO) 1/24/2023 5:00:11 PM 70 10 mg/Kg 1 Motor Oil Range Organics (MRO) 100 50 mg/Kg 1 1/24/2023 5:00:11 PM Surr: DNOP 121 69-147 %Rec 1 1/24/2023 5:00:11 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/23/2023 2:26:11 PM 5.0 mg/Kg 1 Surr: BFB 106 37.7-212 %Rec 1 1/23/2023 2:26:11 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 0.025 mg/Kg 1/23/2023 2:26:11 PM 1 Toluene ND 0.050 mg/Kg 1 1/23/2023 2:26:11 PM Ethylbenzene ND 0.050 mg/Kg 1 1/23/2023 2:26:11 PM Xylenes, Total ND 0.099 mg/Kg 1 1/23/2023 2:26:11 PM Surr: 4-Bromofluorobenzene 98.2 70-130 %Rec 1 1/23/2023 2:26:11 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride 8100 300 1/23/2023 11:04:18 AM ma/Ka 100

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

Е Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

Reporting Limit RL

Page 4 of 23

Date Reported: 1/30/2023

1/23/2023 11:17:10 AM

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-62 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/18/2023 8:35:00 AM Lab ID: 2301764-005 Matrix: SOIL Received Date: 1/20/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: SB Diesel Range Organics (DRO) 310 50 mg/Kg 5 1/24/2023 5:27:55 PM Motor Oil Range Organics (MRO) 5 460 250 mg/Kg 1/24/2023 5:27:55 PM Surr: DNOP 107 69-147 %Rec 5 1/24/2023 5:27:55 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/23/2023 2:49:43 PM 4.7 mg/Kg 1 Surr: BFB 104 37.7-212 %Rec 1 1/23/2023 2:49:43 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 0.024 mg/Kg 1/23/2023 2:49:43 PM 1 Toluene ND 0.047 mg/Kg 1 1/23/2023 2:49:43 PM Ethylbenzene ND 0.047 mg/Kg 1 1/23/2023 2:49:43 PM Xylenes, Total ND 0.095 mg/Kg 1 1/23/2023 2:49:43 PM Surr: 4-Bromofluorobenzene 95.7 70-130 %Rec 1 1/23/2023 2:49:43 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS

4200

150

ma/Ka

50

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

**Qualifiers:** 

Chloride

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit POL
  - Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- Reporting Limit RL

Page 5 of 23

**CLIENT:** Vertex Resources Services, Inc.

Project: Hackberry 6 Fed 1 Well Pad

**Analytical Report** Lab Order 2301764

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023 Client Sample ID: BS23-63 4' Collection Date: 1/18/2023 8:36:00 AM

Lab ID: 2301764-006	Matrix: SOIL	Rece	eived Date:	1/20/2	023 7:20:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RAI	NGE ORGANICS				Analyst: SB
Diesel Range Organics (DRO)	190	17	mg/Kg	2	1/24/2023 3:06:43 PM
Motor Oil Range Organics (MRO)	300	86	mg/Kg	2	1/24/2023 3:06:43 PM
Surr: DNOP	121	69-147	%Rec	2	1/24/2023 3:06:43 PM
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	1/23/2023 3:13:14 PM
Surr: BFB	105	37.7-212	%Rec	1	1/23/2023 3:13:14 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.024	mg/Kg	1	1/23/2023 3:13:14 PM
Toluene	ND	0.047	mg/Kg	1	1/23/2023 3:13:14 PM
Ethylbenzene	ND	0.047	mg/Kg	1	1/23/2023 3:13:14 PM
Xylenes, Total	ND	0.094	mg/Kg	1	1/23/2023 3:13:14 PM
Surr: 4-Bromofluorobenzene	96.6	70-130	%Rec	1	1/23/2023 3:13:14 PM
EPA METHOD 300.0: ANIONS					Analyst: CAS
Chloride	8700	600	mg/Kg	200	1/23/2023 11:30:02 AM

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

**Qualifiers:** 

* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

- Not Detected at the Reporting Limit
- ND PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 6 of 23

**EPA METHOD 300.0: ANIONS** 

Chloride

**Analytical Report** Lab Order 2301764

Date Reported: 1/30/2023

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-64 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/18/2023 8:39:00 AM Lab ID: 2301764-007 Matrix: SOIL Received Date: 1/20/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: SB Diesel Range Organics (DRO) 56 9.7 mg/Kg 1 1/24/2023 1:44:45 PM Motor Oil Range Organics (MRO) 81 48 mg/Kg 1 1/24/2023 1:44:45 PM 69-147 Surr: DNOP 110 %Rec 1 1/24/2023 1:44:45 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/23/2023 3:36:42 PM 5.0 mg/Kg 1 Surr: BFB 106 37.7-212 %Rec 1 1/23/2023 3:36:42 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 0.025 mg/Kg 1/23/2023 3:36:42 PM 1 Toluene ND 0.050 mg/Kg 1 1/23/2023 3:36:42 PM Ethylbenzene ND 0.050 mg/Kg 1 1/23/2023 3:36:42 PM Xylenes, Total ND 0.10 mg/Kg 1 1/23/2023 3:36:42 PM Surr: 4-Bromofluorobenzene 98.6 70-130 %Rec 1 1/23/2023 3:36:42 PM

17000

600

ma/Ka

200

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit POL
- Practical Quanitative Limit S

% Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range Reporting Limit

RL

Page 7 of 23

Analyst: CAS

1/23/2023 11:42:53 AM

Date Reported: 1/30/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-65 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/18/2023 8:39:00 AM Lab ID: 2301764-008 Matrix: SOIL Received Date: 1/20/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: DGH Diesel Range Organics (DRO) 120 9.8 mg/Kg 1 1/24/2023 1:50:54 PM Motor Oil Range Organics (MRO) 150 49 mg/Kg 1 1/24/2023 1:50:54 PM 69-147 Surr: DNOP 120 %Rec 1 1/24/2023 1:50:54 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/23/2023 4:00:09 PM 4.6 mg/Kg 1 Surr: BFB 108 37.7-212 %Rec 1 1/23/2023 4:00:09 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/23/2023 4:00:09 PM 0.023 mg/Kg 1 Toluene ND 0.046 mg/Kg 1 1/23/2023 4:00:09 PM Ethylbenzene ND 0.046 mg/Kg 1 1/23/2023 4:00:09 PM Xylenes, Total ND 0.092 mg/Kg 1 1/23/2023 4:00:09 PM 1/23/2023 4:00:09 PM Surr: 4-Bromofluorobenzene 99.3 70-130 %Rec 1 **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride 12000 600 1/23/2023 11:55:45 AM ma/Ka 200

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 8 of 23

Date Reported: 1/30/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-66 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/18/2023 8:45:00 AM Lab ID: 2301764-009 Matrix: SOIL Received Date: 1/20/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: DGH Diesel Range Organics (DRO) 160 9.6 mg/Kg 1 1/24/2023 2:01:37 PM Motor Oil Range Organics (MRO) 220 48 mg/Kg 1 1/24/2023 2:01:37 PM 69-147 Surr: DNOP 108 %Rec 1 1/24/2023 2:01:37 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/23/2023 4:23:37 PM 4.8 mg/Kg 1 Surr: BFB 104 37.7-212 %Rec 1 1/23/2023 4:23:37 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 0.024 mg/Kg 1/23/2023 4:23:37 PM 1 Toluene ND 0.048 mg/Kg 1 1/23/2023 4:23:37 PM Ethylbenzene ND 0.048 mg/Kg 1 1/23/2023 4:23:37 PM Xylenes, Total ND 0.095 mg/Kg 1 1/23/2023 4:23:37 PM Surr: 4-Bromofluorobenzene 95.2 70-130 %Rec 1 1/23/2023 4:23:37 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride 6800 300 1/23/2023 12:08:36 PM ma/Ka 100

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

Е Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

Reporting Limit RL

Page 9 of 23

Date Reported: 1/30/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-67 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/18/2023 8:43:00 AM Lab ID: 2301764-010 Matrix: SOIL Received Date: 1/20/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: DGH Diesel Range Organics (DRO) 390 48 mg/Kg 5 1/24/2023 2:33:27 PM Motor Oil Range Organics (MRO) 5 670 240 mg/Kg 1/24/2023 2:33:27 PM Surr: DNOP 143 69-147 %Rec 5 1/24/2023 2:33:27 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/23/2023 4:47:08 PM 4.7 mg/Kg 1 Surr: BFB 106 37.7-212 %Rec 1 1/23/2023 4:47:08 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 0.023 mg/Kg 1/23/2023 4:47:08 PM 1 Toluene ND 0.047 mg/Kg 1 1/23/2023 4:47:08 PM Ethylbenzene ND 0.047 mg/Kg 1 1/23/2023 4:47:08 PM Xylenes, Total ND 0.094 mg/Kg 1 1/23/2023 4:47:08 PM Surr: 4-Bromofluorobenzene 97.8 70-130 %Rec 1 1/23/2023 4:47:08 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride 5900 300 1/23/2023 12:21:27 PM ma/Ka 100

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

Е Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

Reporting Limit RL

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Date Reported: 1/30/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-68 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/18/2023 8:50:00 AM Lab ID: 2301764-011 Matrix: SOIL Received Date: 1/20/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: DGH Diesel Range Organics (DRO) 330 47 mg/Kg 5 1/24/2023 2:44:10 PM Motor Oil Range Organics (MRO) 5 590 240 mg/Kg 1/24/2023 2:44:10 PM 69-147 Surr: DNOP 144 %Rec 5 1/24/2023 2:44:10 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/23/2023 5:34:01 PM 4.9 mg/Kg 1 Surr: BFB 102 37.7-212 %Rec 1 1/23/2023 5:34:01 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 0.025 mg/Kg 1/23/2023 5:34:01 PM 1 Toluene ND 0.049 mg/Kg 1 1/23/2023 5:34:01 PM Ethylbenzene ND 0.049 mg/Kg 1 1/23/2023 5:34:01 PM Xylenes, Total ND 0.099 mg/Kg 1 1/23/2023 5:34:01 PM Surr: 4-Bromofluorobenzene 94.3 70-130 %Rec 1 1/23/2023 5:34:01 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride 5200 300 1/23/2023 12:34:18 PM ma/Ka 100

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

Е Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

Reporting Limit RL

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Released to Imaging: 6/9/2023 11:32:08 AM

Date Reported: 1/30/2023

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-69 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/18/2023 8:51:00 AM Lab ID: 2301764-012 Matrix: SOIL Received Date: 1/20/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: DGH Diesel Range Organics (DRO) 440 49 mg/Kg 5 1/25/2023 4:00:20 PM Motor Oil Range Organics (MRO) 5 510 240 mg/Kg 1/25/2023 4:00:20 PM 69-147 Surr: DNOP %Rec 5 1/25/2023 4:00:20 PM 118 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/23/2023 5:57:27 PM 4.8 mg/Kg 1 Surr: BFB 104 37.7-212 %Rec 1 1/23/2023 5:57:27 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 0.024 mg/Kg 1/23/2023 5:57:27 PM 1 Toluene ND 0.048 mg/Kg 1 1/23/2023 5:57:27 PM Ethylbenzene ND 0.048 mg/Kg 1 1/23/2023 5:57:27 PM Xylenes, Total ND 0.097 mg/Kg 1 1/23/2023 5:57:27 PM Surr: 4-Bromofluorobenzene 96.7 70-130 %Rec 1 1/23/2023 5:57:27 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride 4900 150 1/23/2023 1:12:53 PM ma/Ka 50

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

Qualifiers:

Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Date Reported: 1/30/2023

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-70 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/18/2023 8:54:00 AM Lab ID: 2301764-013 Matrix: SOIL Received Date: 1/20/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: DGH Diesel Range Organics (DRO) mg/Kg 540 98 10 1/24/2023 4:04:54 PM Motor Oil Range Organics (MRO) 890 490 mg/Kg 10 1/24/2023 4:04:54 PM 69-147 Surr: DNOP 0 S %Rec 10 1/24/2023 4:04:54 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/23/2023 6:20:48 PM 4.6 mg/Kg 1 Surr: BFB 105 37.7-212 %Rec 1 1/23/2023 6:20:48 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 0.023 mg/Kg 1/23/2023 6:20:48 PM 1 Toluene ND 0.046 mg/Kg 1 1/23/2023 6:20:48 PM Ethylbenzene ND 0.046 mg/Kg 1 1/23/2023 6:20:48 PM Xylenes, Total ND 0.091 mg/Kg 1 1/23/2023 6:20:48 PM Surr: 4-Bromofluorobenzene 97.1 70-130 %Rec 1 1/23/2023 6:20:48 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride 3300 150 1/23/2023 1:25:46 PM ma/Ka 50

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit POL
  - Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- Reporting Limit RL

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Date Reported: 1/30/2023

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-71 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/18/2023 8:54:00 AM Lab ID: 2301764-014 Matrix: SOIL Received Date: 1/20/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: DGH Diesel Range Organics (DRO) mg/Kg 390 97 10 1/24/2023 3:54:16 PM Motor Oil Range Organics (MRO) 690 480 mg/Kg 10 1/24/2023 3:54:16 PM 69-147 Surr: DNOP 0 S %Rec 10 1/24/2023 3:54:16 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/23/2023 6:44:10 PM 4.9 mg/Kg 1 Surr: BFB 102 37.7-212 %Rec 1 1/23/2023 6:44:10 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 0.025 mg/Kg 1/23/2023 6:44:10 PM 1 Toluene ND 0.049 mg/Kg 1 1/23/2023 6:44:10 PM Ethylbenzene ND 0.049 mg/Kg 1 1/23/2023 6:44:10 PM Xylenes, Total ND 0.099 mg/Kg 1 1/23/2023 6:44:10 PM 1/23/2023 6:44:10 PM Surr: 4-Bromofluorobenzene 96.4 70-130 %Rec 1 **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride 2400 150 1/23/2023 1:38:38 PM ma/Ka 50

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

Е Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

Reporting Limit RL

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Date Reported: 1/30/2023

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-72 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/18/2023 8:50:00 AM Lab ID: 2301764-015 Matrix: SOIL Received Date: 1/20/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: DGH Diesel Range Organics (DRO) 410 49 mg/Kg 5 1/24/2023 2:43:06 PM Motor Oil Range Organics (MRO) 5 610 250 mg/Kg 1/24/2023 2:43:06 PM Surr: DNOP 104 69-147 %Rec 5 1/24/2023 2:43:06 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/23/2023 7:07:36 PM 4.7 mg/Kg 1 Surr: BFB 100 37.7-212 %Rec 1 1/23/2023 7:07:36 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/23/2023 7:07:36 PM 0.024 mg/Kg 1 Toluene ND 0.047 mg/Kg 1 1/23/2023 7:07:36 PM Ethylbenzene ND 0.047 mg/Kg 1 1/23/2023 7:07:36 PM Xylenes, Total ND 0.094 mg/Kg 1 1/23/2023 7:07:36 PM Surr: 4-Bromofluorobenzene 94.5 70-130 %Rec 1 1/23/2023 7:07:36 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride 2700 150 1/23/2023 1:51:29 PM ma/Ka 50

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

Reporting Limit RL

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Date Reported: 1/30/2023

1/23/2023 2:04:20 PM

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-73 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/18/2023 9:00:00 AM Lab ID: 2301764-016 Matrix: SOIL Received Date: 1/20/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: SB Diesel Range Organics (DRO) 1/24/2023 6:07:16 PM 150 19 mg/Kg 2 Motor Oil Range Organics (MRO) 2 240 93 mg/Kg 1/24/2023 6:07:16 PM Surr: DNOP 69-147 %Rec 2 1/24/2023 6:07:16 PM 118 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/23/2023 7:30:55 PM 4.9 mg/Kg 1 Surr: BFB 101 37.7-212 %Rec 1 1/23/2023 7:30:55 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 0.024 mg/Kg 1/23/2023 7:30:55 PM 1 Toluene ND 0.049 mg/Kg 1 1/23/2023 7:30:55 PM Ethylbenzene ND 0.049 mg/Kg 1 1/23/2023 7:30:55 PM Xylenes, Total ND 0.098 mg/Kg 1 1/23/2023 7:30:55 PM Surr: 4-Bromofluorobenzene 93.9 70-130 %Rec 1 1/23/2023 7:30:55 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS

7800

300

ma/Ka

100

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

**Qualifiers:** 

Chloride

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit POL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

Reporting Limit RL

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Date Reported: 1/30/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-74 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/18/2023 9:03:00 AM Lab ID: 2301764-017 Matrix: SOIL Received Date: 1/20/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: DGH Diesel Range Organics (DRO) 160 9.5 mg/Kg 1 1/24/2023 2:19:11 PM Motor Oil Range Organics (MRO) 220 48 mg/Kg 1 1/24/2023 2:19:11 PM 69-147 Surr: DNOP 126 %Rec 1 1/24/2023 2:19:11 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/23/2023 7:54:13 PM 4.7 mg/Kg 1 Surr: BFB 103 37.7-212 %Rec 1 1/23/2023 7:54:13 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP Benzene ND 1/23/2023 7:54:13 PM 0.024 mg/Kg 1 Toluene ND 0.047 mg/Kg 1 1/23/2023 7:54:13 PM Ethylbenzene ND 0.047 mg/Kg 1 1/23/2023 7:54:13 PM Xylenes, Total ND 0.095 mg/Kg 1 1/23/2023 7:54:13 PM Surr: 4-Bromofluorobenzene 96.2 70-130 %Rec 1 1/23/2023 7:54:13 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride 11000 600 1/23/2023 2:17:11 PM ma/Ka 200

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit POL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

Reporting Limit RL

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Date Reported: 1/30/2023

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BS23-75 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/18/2023 9:03:00 AM Lab ID: 2301764-018 Matrix: SOIL Received Date: 1/20/2023 7:20:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: DGH Diesel Range Organics (DRO) 66 9.6 mg/Kg 1 1/24/2023 2:22:49 PM Motor Oil Range Organics (MRO) 140 48 mg/Kg 1 1/24/2023 2:22:49 PM 69-147 Surr: DNOP 118 %Rec 1 1/24/2023 2:22:49 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: JJP Gasoline Range Organics (GRO) ND 1/23/2023 8:17:29 PM 4.8 mg/Kg 1 Surr: BFB 103 37.7-212 %Rec 1 1/23/2023 8:17:29 PM **EPA METHOD 8021B: VOLATILES** Analyst: JJP 1/23/2023 8:17:29 PM Benzene ND 0.024 mg/Kg 1 Toluene ND 0.048 mg/Kg 1 1/23/2023 8:17:29 PM Ethylbenzene ND 0.048 mg/Kg 1 1/23/2023 8:17:29 PM Xylenes, Total ND 0.096 mg/Kg 1 1/23/2023 8:17:29 PM Surr: 4-Bromofluorobenzene 96.3 70-130 %Rec 1 1/23/2023 8:17:29 PM **EPA METHOD 300.0: ANIONS** Analyst: CAS Chloride 7700 300 1/23/2023 2:30:03 PM ma/Ka 100

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range Reporting Limit

RL

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2301764

WO#:

Hall Environmer	ntal Analysis Laborat	ory, Inc.	30-Jan-2
	x Resources Services, Inc. Derry 6 Fed 1 Well Pad		
Sample ID: MB-72743	SampType: <b>mblk</b>	TestCode: EPA Method 300.0: Anions	
Client ID: PBS	Batch ID: 72743	RunNo: 94110	
Prep Date: 1/21/2023	Analysis Date: 1/21/2023	SeqNo: 3398042 Units: mg/Kg	
Analyte Chloride	ResultPQLSPK valueND1.5	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Sample ID: LCS-72743	SampType: Ics	TestCode: EPA Method 300.0: Anions	
Client ID: LCSS	Batch ID: 72743	RunNo: 94110	
Prep Date: 1/21/2023	Analysis Date: 1/21/2023	SeqNo: 3398043 Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Chloride	15 1.5 15.00	0 97.1 90 110	
Sample ID: MB-72744	SampType: mblk	TestCode: EPA Method 300.0: Anions	
Client ID: PBS	Batch ID: 72744	RunNo: 94110	
Prep Date: 1/21/2023	Analysis Date: 1/21/2023	SeqNo: 3398072 Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Chloride	ND 1.5		
Sample ID: LCS-72744	SampType: Ics	TestCode: EPA Method 300.0: Anions	
Client ID: LCSS	Batch ID: 72744	RunNo: <b>94110</b>	
Prep Date: 1/21/2023	Analysis Date: 1/21/2023	SeqNo: 3398073 Units: mg/Kg	
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit	Qual
Chloride	14 1.5 15.00	0 95.7 90 110	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- 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.

	Resources Services, Inc. ry 6 Fed 1 Well Pad		
Sample ID: LCS-72740	SampType: LCS	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: LCSS	Batch ID: 72740	RunNo: 94119	
Prep Date: 1/20/2023	Analysis Date: 1/23/2023	SeqNo: 3399136	Units: mg/Kg
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	43 10 50.00	0 86.7 61.9	130
Surr: DNOP	5.4 5.000	108 69	147
Sample ID: MB-72740	SampType: MBLK	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: PBS	Batch ID: 72740	RunNo: 94119	
Prep Date: 1/20/2023	Analysis Date: 1/23/2023	SeqNo: 3399140	Units: mg/Kg
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	ND 10		
Motor Oil Range Organics (MRO) Surr: DNOP	ND 50 12 10.00	116 60	4.47
	12 10.00	116 69	147
Sample ID: LCS-72755	SampType: LCS	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: LCSS	Batch ID: 72755	RunNo: 94153	
Prep Date: 1/23/2023	Analysis Date: 1/24/2023	SeqNo: 3399719	Units: %Rec
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Surr: DNOP	6.5 5.000	129 69	147
Sample ID: LCS-72769	SampType: LCS	TestCode: EPA Method	8015M/D: Diesel Range Organics
Client ID: LCSS	Batch ID: 72769	RunNo: 94153	
Prep Date: 1/23/2023	Analysis Date: 1/24/2023	SeqNo: 3399720	Units: %Rec
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Surr: DNOP	5.5 5.000	109 69	147
Sample ID: MB-72755	SampType: <b>MBLK</b>	TestCode: <b>FPA Method</b>	8015M/D: Diesel Range Organics
Client ID: PBS	Batch ID: 72755	RunNo: <b>94153</b>	oo romino. Dieser Kange organies
Prep Date: 1/23/2023	Analysis Date: 1/24/2023	SeqNo: 3399722	Units: %Rec
		SPK Ref Val %REC LowLimit	
Analyte Surr: DNOP	ResultPQLSPK value1310.00	126 69	HighLimit %RPD RPDLimit Qual 147
Sample ID: MP 72760	SomeType: MDLK	TootCodo: EDA Mathad	2015M/Di Diagol Bongo Organico
Sample ID: MB-72769 Client ID: PBS	SampType: MBLK Batch ID: 72769	RunNo: 94153	8015M/D: Diesel Range Organics
			Units: %Rec
	Analysis Date: 1/24/2023	SeqNo: 3399723	
Analyte Surr: DNOP		SPK Ref Val %REC LowLimit	HighLimit %RPD RPDLimit Qual
Sull. DINUP	11 10.00	106 69	147

#### Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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30-Jan-23

	esources Se y 6 Fed 1 V									
Sample ID: 2301764-001AMS	SampT	ype: <b>MS</b>	6	Tes	tCode: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: BS23-58 4'	Batch	ID: 72	740	R	lunNo: <b>9</b> 4	4153				
Prep Date: 1/20/2023	Analysis Da	ate: 1/	24/2023	S	eqNo: 34	400095	Units: mg/k	٤g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	180	19	48.26	182.6	-9.97	54.2	135			S
Surr: DNOP	6.9		4.826		144	69	147			
Sample ID: 2301764-001AMS	D SampT	ype: <b>MS</b>	SD	Test	tCode: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: BS23-58 4'	Batch	ID: 72	740	R	unNo: 94	4153				
Prep Date: 1/20/2023	Analysis Da	ate: 1/	24/2023	S	eqNo: 34	400096	Units: mg/k	٤g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	240	19	48.73	182.6	125	54.2	135	31.3	29.2	R
Surr: DNOP	6.8		4.873		140	69	147	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2301764

30-Jan-23

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client: Project:		esources Se y 6 Fed 1 W									
Sample ID:	lcs-72733	SampTy	pe: <b>LC</b>	S	Tes	tCode: El	PA Method	8015D: Gasc	line Rang	e	
Client ID:	LCSS	Batch	ID: 72	733	F	RunNo: 9	4128				
Prep Date:	1/20/2023	Analysis Da	ate: 1/	23/2023	S	SeqNo: 3	398776	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	21	5.0	25.00	0	83.0	72.3	137			
Surr: BFB		2000		1000		197	37.7	212			
Sample ID:	mb-72733	SampTy	pe: <b>ME</b>	BLK	Tes	tCode: El	PA Method	8015D: Gasc	line Rang	e	
Client ID:	PBS	Batch	ID: 72	733	F	RunNo: <b>9</b>	4128				
Prep Date:	1/20/2023	Analysis Da	ate: 1/	23/2023	S	SeqNo: 3	398778	Units: mg/k	۲g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	ND	5.0								
Surr: BFB		1100		1000		107	37.7	212			
Sample ID:	2301764-001ams	SampTy	pe: <b>MS</b>	3	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e	
Client ID:	BS23-58 4'	Batch	ID: 72	733	F	RunNo: <b>9</b>	4128				
Prep Date:	1/20/2023	Analysis Da	ate: 1/	23/2023	5	SeqNo: 3	398802	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	27	4.8	23.81	0	115	70	130			
Surr: BFB		1100		952.4		120	37.7	212			
Sample ID:	2301764-001amsd	SampTy	pe: <b>MS</b>	SD	Tes	tCode: El	PA Method	8015D: Gasc	line Rang	e	
Client ID:	BS23-58 4'	Batch	ID: 72	733	F	RunNo: <b>9</b>	4128				
Prep Date:	1/20/2023	Analysis Da	ate: 1/	23/2023	5	SeqNo: 3	398803	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	ge Organics (GRO)	28	4.7	23.56	0	117	70	130	0.823	20	
Surr: BFB		1100		942.5		121	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 Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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30-Jan-23

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

	Resources S ry 6 Fed 1									
Sample ID: LCS-72733	Samp	Туре: <b>LC</b>	s	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batc	h ID: 72	733	F	RunNo: <b>9</b> 4	4128				
Prep Date: 1/20/2023	Analysis [	Date: 1/	23/2023	S	SeqNo: 3	398826	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.025	1.000	0	83.1	80	120			
Toluene	0.88	0.050	1.000	0	88.2	80	120			
Ethylbenzene	0.90	0.050	1.000	0	89.6	80	120			
Xylenes, Total	2.7	0.10	3.000	0	89.7	80	120			
Surr: 4-Bromofluorobenzene	0.98		1.000		97.8	70	130			
Sample ID: mb-72733	Samp	Туре: <b>МЕ</b>	BLK	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: PBS	Batc	:h ID: 72	733	F	RunNo: <b>9</b> 4	4128				
Prep Date: 1/20/2023	Analysis [	Date: 1/	23/2023	S	SeqNo: 3	398828	Units: mg/k	٢g		
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	0.99		1.000		99.2	70	130			
Sample ID: 2301764-002ams	Samp	Туре: <b>МS</b>	6	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: BS23-59 4'	Batc	:h ID: 72	733	F	RunNo: <b>9</b> 4	4128				
Prep Date: 1/20/2023	Analysis [	Date: 1/	23/2023	S	SeqNo: 3	398853	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.023	0.9328	0	88.4	68.8	120			
Toluene	0.88	0.047	0.9328	0.01844	92.9	73.6	124			
Ethylbenzene	0.91	0.047	0.9328	0	97.0	72.7	129			
Xylenes, Total	2.7	0.093	2.799	0.02886	95.2	75.7	126			
Surr: 4-Bromofluorobenzene	0.94		0.9328		101	70	130			
Sample ID: 2301764-002ams	d Samp	Туре: <b>М</b>	SD	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: BS23-59 4'	Batc	:h ID: 72	733	F	RunNo: <b>9</b> 4	4128				
Prep Date: 1/20/2023	Analysis [	Date: 1/	23/2023	5	SeqNo: 3	398854	Units: mg/k	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.024	0.9560	0	86.8	68.8	120	0.582	20	
Toluene	0.89	0.048	0.9560	0.01844	90.7	73.6	124	0.0653	20	
Ethylbenzene	0.91	0.048	0.9560	0	95.0	72.7	129	0.331	20	
Xylenes, Total	2.7	0.096	2.868	0.02886	93.8	75.7	126	0.961	20	
Surr: 4-Bromofluorobenzene	0.96		0.9560		101	70	130	0	0	

#### **Qualifiers:**

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- Reporting Limit RL

2301764

30-Jan-23

ANAL	RONMENTA YSIS RATORY	NL.	TEL: 505-345	iental Analysis I 4901 H Albuquerque, -3975 FAX: 505 ww.hallenvironn	awkins NE NM 87109 -345-4107	San	nple Log-In C	heck List
Client Name:	Vertex Reso Services, In		Work Order Nu	mber: 230176	4		RcptNo:	1
Received By:	Juan Roja	S	1/20/2023 7:20:0	0 AM	44	andy	not	
Completed By: Reviewed By:	Sean Livin	igston ⊳-73	1/20/2023 7:55:3	7 AM	<	S-L	ngat-	
Chain of Cus	stody							
1. Is Chain of C	ustody compl	ete?		Yes 🗸	1 [	No 🗌	Not Present	
2. How was the	sample delive	ered?		<u>Courier</u>				
Log In 3. Was an atten	npt made to c	ool the sample	s?	Yes 🗹	N	₩ 🗆	NA 🗌	
4. Were all sam	ples received	at a temperati	ire of >0° C to 6.0°C	Yes 🔽	N	•□		
5. Sample(s) in	proper contai	ner(s)?		Yes 🗹	N	10 🗆		
6. Sufficient san	npie volume fo	or indicated tes	it(s)?	Yes 🗹	N	lo 🗌		
7. Are samples	(except VOA a	and ONG) proj	erly preserved?	Yes 🗹	N	o 🗌		
8. Was preserva	ative added to	bottles?		Yes 🗌	Ν	lo 🗹	NA 🗌	
9. Received at le	east 1 vial with	headspace <	1/4" for AQ VOA?	Yes	N	o 🗌	NA 🗹	
10. Were any sa	mple containe	rs received br	oken?	Yes 🗌	Ν	10 🗹	# of preserved bottles checked	
11. Does paperwo (Note discrep		tie labels? in of custody)		Yes 🗹	N	lo 🗌	for pH: (<2 or	>12 unless noted)
12. Are matrices	correctly ident	ified on Chain	of Custody?	Yes 🗹	N	o 🗌	Adjusted?	
13. Is it clear what	it analyses we	re requested?		Yes 🗹	N	lo 🗌		5 deals
14. Were all holdi (If no, notify c	ing times able sustomer for a			Yes 🗹	N	lo 🗆 <	Checked by:	111/20/23
Special Hand	ling (if app	licable)						
15. Was client no			th this order?	Yes 🗌	א [	10 🗆	NA 🔽	
Person	Notified:		Dat	te:				
By Whe	om: 🛛		Via	:: 🗌 eMail	Phone	🗌 Fax	In Person	
Regard	ling:							
	nstructions:							
16. Additional re	emarks:							
17. Cooler Info				1			i.	
Cooler No	• Temp ⁰C 1.1	Condition Good	Seal Intact Seal No Not Present YOGI	Seal Date	Signe	ed By		
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ain-of-(	Chain-of-Custody Record	Turn-Around Time:	fo rec agn.
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		Project Name:	www.hallenvironmental.com
	on Lile	Hackberry lo fed I well Pad	4901 Hawkins NE - Albuquerque, NM 87109
1	0	Project #:	Tel. 505-345-3975 Fax 505-345-4107
		22E-02537	Analysis Request
		Project Manager:	*Os
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۱ <u>۳</u>	Relinquished by:	Via:	
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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.

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Page 352 of 41		AALL ENVIRONMENTAL ANALYSTS LABORATORY		www.inalieftyliofitherital.com	Fax 505-345-4107			I92dA\t	(A	ο <b>Λ</b> -	(AO\ im96	s) 0728 V) 0928									(1) A. C. C. M.	page 212		This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.
				4901 Hawkins NF - Al			(0	PCB's O / MR	О / DR 8/8082 04.1) 728 70	RD) Sebi 70 70 8 10 8 10 8	estic by 83 by 83 83 8	тен:808 8081 Р Рень (N Рень И ВСВА										Remarks: Direct bill Devon	WO # 100710130 CC Sally Cartar	ibility. Any sub-contracted data will t
	Turn-Around Time:	Standard ty Rush 40 MC	Project Name:	Hackberry le fed I well fad	Project #: 0	<i>DLE-</i> 02537	Project Manager:	Chance Dixon	Sampler: SPC On Ice: D Yes D No	olers: 1 yay	Cooler Temp(Including cr): 1.3.6.2.2.1. (°C)	Container Preservative HEAL No.	ice ors		5.0	210	ц О					Via: Date Time Re VVVVD \ 9 73 0100	Via: Date Time TOURS 120	
Received by OCD: 2/7/2023 1:52:13 PM	hain-of-Custody Record	Client: Devon (Vertex)		Mailing Address: $\delta N \ I_A ? P$		Phone #:	email or Fax#:	QA/QC Package:	□ Az Compliance			Date Time Matrix Sample Name	4'	1 BS23-71 4'		9:00 8523-73 4'	1 9:03   BS23-74 4'	1 9:03 1 8523-75 21'				13 14:22 Sully Cartan		If necessary, samples submitted to Hall Environmental may be subcontracted to etper accredited laboratories. $Released$ to Imaging: $6/9/2023$ 11:32:08 AM



January 30, 2023

Chance Dixon Devon Energy 6488 Seven Rivers Highway Artesia, NM 88210 TEL: (575) 748-0176 FAX:

OrderNo.: 2301754

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

RE: Hackberry 6 Fed 1

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 24 sample(s) on 1/21/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Hackberry 6 Fed 1

Project:

**Analytical Report** Lab Order 2301754

# Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023

Client Sample ID: BS23-76 4' Collection Date: 1/19/2023 8:41:00 AM Received Date: 1/21/2023 10:30:00 AM

Lab ID: 2301754-001	Matrix: SOIL	Rece	eived Date:	1/21/2	023 10:30:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: SB
Diesel Range Organics (DRO)	49	9.6	mg/Kg	1	1/25/2023 10:30:09 AM
Motor Oil Range Organics (MRO)	79	48	mg/Kg	1	1/25/2023 10:30:09 AM
Surr: DNOP	114	69-147	%Rec	1	1/25/2023 10:30:09 AM
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	1/24/2023 1:13:31 PM
Surr: BFB	108	37.7-212	%Rec	1	1/24/2023 1:13:31 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.025	mg/Kg	1	1/24/2023 1:13:31 PM
Toluene	ND	0.050	mg/Kg	1	1/24/2023 1:13:31 PM
Ethylbenzene	ND	0.050	mg/Kg	1	1/24/2023 1:13:31 PM
Xylenes, Total	ND	0.099	mg/Kg	1	1/24/2023 1:13:31 PM
Surr: 4-Bromofluorobenzene	98.6	70-130	%Rec	1	1/24/2023 1:13:31 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	9800	300	mg/Kg	100	1/25/2023 10:08:32 AM

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

**Qualifiers:** 

- Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range Reporting Limit
- RL

Page 1 of 32

**Project:** 

Lab ID:

Hackberry 6 Fed 1

2301754-002

**Analytical Report** Lab Order 2301754

# Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023 Client Sample ID: BS23-77 4' Collection Date: 1/19/2023 8:40:00 AM

Received Date: 1/21/2023 10:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE C	RGANICS				Analyst: SB
Diesel Range Organics (DRO)	27	9.5	mg/Kg	1	1/25/2023 4:00:52 AM
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	1/25/2023 4:00:52 AM
Surr: DNOP	119	69-147	%Rec	1	1/25/2023 4:00:52 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	1/24/2023 2:24:14 PM
Surr: BFB	105	37.7-212	%Rec	1	1/24/2023 2:24:14 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.023	mg/Kg	1	1/24/2023 2:24:14 PM
Toluene	ND	0.047	mg/Kg	1	1/24/2023 2:24:14 PM
Ethylbenzene	ND	0.047	mg/Kg	1	1/24/2023 2:24:14 PM
Xylenes, Total	ND	0.094	mg/Kg	1	1/24/2023 2:24:14 PM
Surr: 4-Bromofluorobenzene	97.2	70-130	%Rec	1	1/24/2023 2:24:14 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	8200	300	mg/Kg	100	1/25/2023 10:20:52 AM

Matrix: SOIL

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 2 of 32

Hackberry 6 Fed 1

Project:

Analytical Report Lab Order 2301754

# Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023

Client Sample ID: BS23-78 4' Collection Date: 1/19/2023 8:50:00 AM Received Date: 1/21/2023 10:30:00 AM

Lab ID: 2301754-003	Matrix: SOIL	Rece	eived Date:	1/21/2	023 10:30:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	96	9.4	mg/Kg	1	1/24/2023 11:08:39 AM
Motor Oil Range Organics (MRO)	140	47	mg/Kg	1	1/24/2023 11:08:39 AM
Surr: DNOP	131	69-147	%Rec	1	1/24/2023 11:08:39 AM
EPA METHOD 8015D: GASOLINE F	RANGE				Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	1/24/2023 3:34:38 PM
Surr: BFB	106	37.7-212	%Rec	1	1/24/2023 3:34:38 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.025	mg/Kg	1	1/24/2023 3:34:38 PM
Toluene	ND	0.050	mg/Kg	1	1/24/2023 3:34:38 PM
Ethylbenzene	ND	0.050	mg/Kg	1	1/24/2023 3:34:38 PM
Xylenes, Total	ND	0.099	mg/Kg	1	1/24/2023 3:34:38 PM
Surr: 4-Bromofluorobenzene	98.3	70-130	%Rec	1	1/24/2023 3:34:38 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	6000	300	mg/Kg	100	1/25/2023 10:33:13 AM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range RL Reporting Limit

RL R

Page 3 of 32

**Project:** Hackberry 6 Fed 1

**Analytical Report** Lab Order 2301754

# Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023

Client Sample ID: BS23-79 4' Collection Date: 1/19/2023 8:50:00 AM Bassived Data: 1/21/2022 10:20:00 AM

Lab ID: 2301754-004	Matrix: SOIL	Rece	eived Date:	1/21/2	023 10:30:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	76	9.6	mg/Kg	1	1/24/2023 12:44:00 PM
Motor Oil Range Organics (MRO)	120	48	mg/Kg	1	1/24/2023 12:44:00 PM
Surr: DNOP	114	69-147	%Rec	1	1/24/2023 12:44:00 PM
EPA METHOD 8015D: GASOLINE RANG	θE				Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/24/2023 3:58:04 PM
Surr: BFB	107	37.7-212	%Rec	1	1/24/2023 3:58:04 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.024	mg/Kg	1	1/24/2023 3:58:04 PM
Toluene	ND	0.048	mg/Kg	1	1/24/2023 3:58:04 PM
Ethylbenzene	ND	0.048	mg/Kg	1	1/24/2023 3:58:04 PM
Xylenes, Total	ND	0.096	mg/Kg	1	1/24/2023 3:58:04 PM
Surr: 4-Bromofluorobenzene	99.3	70-130	%Rec	1	1/24/2023 3:58:04 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	4200	150	mg/Kg	50	1/25/2023 10:45:34 AM

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

**Qualifiers:** 

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- ND PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 4 of 32

**Project:** 

Lab ID:

Hackberry 6 Fed 1

2301754-005

**Analytical Report** Lab Order 2301754

# Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023 Client Sample ID: BS23-80 4' Collection Date: 1/19/2023 8:55:00 AM

Received Date: 1/21/2023 10:30:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst: DGH
Diesel Range Organics (DRO)	380	48	mg/Kg	5	1/24/2023 9:49:00 PM
Motor Oil Range Organics (MRO)	600	240	mg/Kg	5	1/24/2023 9:49:00 PM
Surr: DNOP	114	69-147	%Rec	5	1/24/2023 9:49:00 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	1/24/2023 4:21:36 PM
Surr: BFB	106	37.7-212	%Rec	1	1/24/2023 4:21:36 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.023	mg/Kg	1	1/24/2023 4:21:36 PM
Toluene	ND	0.046	mg/Kg	1	1/24/2023 4:21:36 PM
Ethylbenzene	ND	0.046	mg/Kg	1	1/24/2023 4:21:36 PM
Xylenes, Total	ND	0.092	mg/Kg	1	1/24/2023 4:21:36 PM
Surr: 4-Bromofluorobenzene	97.7	70-130	%Rec	1	1/24/2023 4:21:36 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	2400	150	mg/Kg	50	1/25/2023 10:57:54 AM

Matrix: SOIL

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL

Practical Quanitative Limit % Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 5 of 32

Project: Hackberry 6 Fed 1

**Analytical Report** Lab Order 2301754

# Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023 Client Sample ID: BS23-81 4' Collection Date: 1/19/2023 8:56:00 AM

= =					
Lab ID: 2301754-006	Matrix: SOIL	Rece	eived Date:	1/21/2	023 10:30:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RAM	IGE ORGANICS				Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	170	48	mg/Kg	5	1/24/2023 10:36:21 PM
Motor Oil Range Organics (MRO)	320	240	mg/Kg	5	1/24/2023 10:36:21 PM
Surr: DNOP	122	69-147	%Rec	5	1/24/2023 10:36:21 PM
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	1/24/2023 4:45:05 PM
Surr: BFB	108	37.7-212	%Rec	1	1/24/2023 4:45:05 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.023	mg/Kg	1	1/24/2023 4:45:05 PM
Toluene	ND	0.047	mg/Kg	1	1/24/2023 4:45:05 PM
Ethylbenzene	ND	0.047	mg/Kg	1	1/24/2023 4:45:05 PM
Xylenes, Total	ND	0.093	mg/Kg	1	1/24/2023 4:45:05 PM
Surr: 4-Bromofluorobenzene	98.8	70-130	%Rec	1	1/24/2023 4:45:05 PM
EPA METHOD 300.0: ANIONS					Analyst: <b>JMT</b>
Chloride	2100	60	mg/Kg	20	1/24/2023 2:22:54 PM

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

**Qualifiers:** 

- Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit
- ND PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Project: Hackberry 6 Fed 1

**Analytical Report** Lab Order 2301754

# Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023

Client Sample ID: BS23-82 4' Collection Date: 1/19/2023 8:59:00 AM

Lab ID: 2301754-007	Matrix: SOIL	Rece	eived Date:	1/21/2	2023 10:30:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	200	9.6	mg/Kg	1	1/24/2023 1:31:35 PM
Motor Oil Range Organics (MRO)	220	48	mg/Kg	1	1/24/2023 1:31:35 PM
Surr: DNOP	122	69-147	%Rec	1	1/24/2023 1:31:35 PM
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: JJP
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	1/24/2023 5:08:35 PM
Surr: BFB	105	37.7-212	%Rec	1	1/24/2023 5:08:35 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.025	mg/Kg	1	1/24/2023 5:08:35 PM
Toluene	ND	0.050	mg/Kg	1	1/24/2023 5:08:35 PM
Ethylbenzene	ND	0.050	mg/Kg	1	1/24/2023 5:08:35 PM
Xylenes, Total	ND	0.10	mg/Kg	1	1/24/2023 5:08:35 PM
Surr: 4-Bromofluorobenzene	97.6	70-130	%Rec	1	1/24/2023 5:08:35 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	1900	60	mg/Kg	20	1/24/2023 2:35:14 PM

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

**Qualifiers:** 

- Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range Reporting Limit

RL

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Hackberry 6 Fed 1

Project:

Analytical Report Lab Order 2301754

## Hall Environmental Analysis Laboratory, Inc.

Lab Order 2301754 Date Reported: 1/30/2023

Client Sample ID: BS23-83 4' Collection Date: 1/19/2023 9:00:00 AM Received Date: 1/21/2023 10:30:00 AM

Lab ID: 2301754-008	Matrix: SOIL	023 10:30:00 AM			
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	310	9.5	mg/Kg	1	1/24/2023 3:30:37 PM
Motor Oil Range Organics (MRO)	370	48	mg/Kg	1	1/24/2023 3:30:37 PM
Surr: DNOP	122	69-147	%Rec	1	1/24/2023 3:30:37 PM
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	1/24/2023 5:32:03 PM
Surr: BFB	104	37.7-212	%Rec	1	1/24/2023 5:32:03 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.023	mg/Kg	1	1/24/2023 5:32:03 PM
Toluene	ND	0.046	mg/Kg	1	1/24/2023 5:32:03 PM
Ethylbenzene	ND	0.046	mg/Kg	1	1/24/2023 5:32:03 PM
Xylenes, Total	ND	0.092	mg/Kg	1	1/24/2023 5:32:03 PM
Surr: 4-Bromofluorobenzene	96.0	70-130	%Rec	1	1/24/2023 5:32:03 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	1300	60	mg/Kg	20	1/24/2023 2:47:34 PM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range

RL Reporting Limit

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Hackberry 6 Fed 1

Project:

**Analytical Report** 

## Hall Environmental Analysis Laboratory, Inc.

Lab Order 2301754 Date Reported: 1/30/2023

Client Sample ID: BS23-84 4' Collection Date: 1/19/2023 9:04:00 AM **Received Date:** 1/21/2023 10:30:00 AM

Lab ID: 2301754-009	Matrix: SOIL	Matrix: SOIL Received Date: 1/21/20				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RA	ANGE ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	540	48	mg/Kg	5	1/24/2023 11:23:40 PM	
Motor Oil Range Organics (MRO)	890	240	mg/Kg	5	1/24/2023 11:23:40 PM	
Surr: DNOP	118	69-147	%Rec	5	1/24/2023 11:23:40 PM	
EPA METHOD 8015D: GASOLINE F	RANGE				Analyst: JJP	
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/24/2023 5:55:31 PM	
Surr: BFB	105	37.7-212	%Rec	1	1/24/2023 5:55:31 PM	
EPA METHOD 8021B: VOLATILES					Analyst: JJP	
Benzene	ND	0.025	mg/Kg	1	1/24/2023 5:55:31 PM	
Toluene	ND	0.049	mg/Kg	1	1/24/2023 5:55:31 PM	
Ethylbenzene	ND	0.049	mg/Kg	1	1/24/2023 5:55:31 PM	
Xylenes, Total	ND	0.098	mg/Kg	1	1/24/2023 5:55:31 PM	
Surr: 4-Bromofluorobenzene	98.9	70-130	%Rec	1	1/24/2023 5:55:31 PM	
EPA METHOD 300.0: ANIONS					Analyst: JMT	
Chloride	2400	150	mg/Kg	50	1/25/2023 11:10:14 AM	

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

**Qualifiers:** 

* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit

ND PQL Practical Quanitative Limit

- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 9 of 32

**Analytical Report** Lab Order 2301754

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023 Client Sample ID: BS23-85 4'

Project:	Hackberry 6 Fed 1	Collection Date: 1/19/2023 9:05:00 AM					
Lab ID:	2301754-010	Matrix: SOIL	Received Date: 1/21/2023 10:30:00 AM				
Analyses		Result	RL Qua	al Units	DF	Date Analyzed	
EPA ME	THOD 8015M/D: DIESEL RA	ANGE ORGANICS				Analyst: DGH	
Diesel R	ange Organics (DRO)	140	49	mg/Kg	5	1/25/2023 12:10:55 AM	
Motor Oi	l Range Organics (MRO)	ND	240	mg/Kg	5	1/25/2023 12:10:55 AM	
Surr: I	DNOP	116	69-147	%Rec	5	1/25/2023 12:10:55 AM	
EPA ME	THOD 8015D: GASOLINE R	ANGE				Analyst: <b>JJP</b>	
Gasoline	Range Organics (GRO)	ND	4.6	mg/Kg	1	1/24/2023 6:19:00 PM	
Surr: E	BFB	106	37.7-212	%Rec	1	1/24/2023 6:19:00 PM	
EPA ME	THOD 8021B: VOLATILES					Analyst: JJP	
Benzene		ND	0.023	mg/Kg	1	1/24/2023 6:19:00 PM	
Toluene		ND	0.046	mg/Kg	1	1/24/2023 6:19:00 PM	
Ethylben	zene	ND	0.046	mg/Kg	1	1/24/2023 6:19:00 PM	
Xylenes,	Total	ND	0.093	mg/Kg	1	1/24/2023 6:19:00 PM	
Surr: 4	1-Bromofluorobenzene	98.0	70-130	%Rec	1	1/24/2023 6:19:00 PM	
EPA ME	THOD 300.0: ANIONS					Analyst: <b>JMT</b>	
Chloride		3200	150	mg/Kg	50	1/25/2023 11:22:35 AM	

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL

Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 10 of 32

Project: Hackberry 6 Fed 1

**Analytical Report** Lab Order 2301754

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023 Client Sample ID: BS23-86 4' Collection Date: 1/19/2023 9:08:00 AM

Lab ID: 2301754-011	Matrix: SOIL	Rece	023 10:30:00 AM		
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	21	9.5	mg/Kg	1	1/24/2023 4:18:10 PM
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	1/24/2023 4:18:10 PM
Surr: DNOP	108	69-147	%Rec	1	1/24/2023 4:18:10 PM
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	1/24/2023 7:05:53 PM
Surr: BFB	107	37.7-212	%Rec	1	1/24/2023 7:05:53 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.023	mg/Kg	1	1/24/2023 7:05:53 PM
Toluene	ND	0.046	mg/Kg	1	1/24/2023 7:05:53 PM
Ethylbenzene	ND	0.046	mg/Kg	1	1/24/2023 7:05:53 PM
Xylenes, Total	ND	0.092	mg/Kg	1	1/24/2023 7:05:53 PM
Surr: 4-Bromofluorobenzene	98.8	70-130	%Rec	1	1/24/2023 7:05:53 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	1400	60	mg/Kg	20	1/24/2023 3:24:35 PM

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

**Qualifiers:** 

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Project: Hackberry 6 Fed 1

Analytical Report Lab Order 2301754

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023 Client Sample ID: BS23-87 4' Collection Date: 1/19/2023 9:08:00 AM

-J						
Lab ID: 2301754-012	Matrix: SOIL	Received Date: 1/21/2023 10:30:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RAI	NGE ORGANICS				Analyst: <b>DGH</b>	
Diesel Range Organics (DRO)	28	9.1	mg/Kg	1	1/24/2023 4:41:53 PM	
Motor Oil Range Organics (MRO)	ND	45	mg/Kg	1	1/24/2023 4:41:53 PM	
Surr: DNOP	84.9	69-147	%Rec	1	1/24/2023 4:41:53 PM	
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst: JJP	
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/24/2023 7:29:19 PM	
Surr: BFB	104	37.7-212	%Rec	1	1/24/2023 7:29:19 PM	
EPA METHOD 8021B: VOLATILES					Analyst: JJP	
Benzene	ND	0.024	mg/Kg	1	1/24/2023 7:29:19 PM	
Toluene	ND	0.048	mg/Kg	1	1/24/2023 7:29:19 PM	
Ethylbenzene	ND	0.048	mg/Kg	1	1/24/2023 7:29:19 PM	
Xylenes, Total	ND	0.097	mg/Kg	1	1/24/2023 7:29:19 PM	
Surr: 4-Bromofluorobenzene	96.7	70-130	%Rec	1	1/24/2023 7:29:19 PM	
EPA METHOD 300.0: ANIONS					Analyst: <b>JMT</b>	
Chloride	1400	60	mg/Kg	20	1/24/2023 3:36:56 PM	

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

**Qualifiers:** 

- Value exceeds Maximum Contaminant Level.
   D Sample Diluted Due to Matrix
- D Sample Diluted Due to Matrix
   H Holding times for preparation or analysis exceed
- H Holding times for preparation or analysis exceeded
- NDNot Detected at the Reporting LimitPQLPractical Quanitative Limit
- PQL Practical Quanitative Limit S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Released to Imaging: 6/9/2023 11:32:08 AM

Project:

Lab ID:

Hackberry 6 Fed 1

2301754-013

**Analytical Report** Lab Order 2301754

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023 Client Sample ID: BS23-88 4' Collection Date: 1/19/2023 9:12:00 AM

Received Date: 1/21/2023 10:30:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	Analyst: DGH				
Diesel Range Organics (DRO)	15	9.3	mg/Kg	1	1/24/2023 5:05:42 PM
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	1/24/2023 5:05:42 PM
Surr: DNOP	112	69-147	%Rec	1	1/24/2023 5:05:42 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	1/24/2023 7:52:44 PM
Surr: BFB	106	37.7-212	%Rec	1	1/24/2023 7:52:44 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.023	mg/Kg	1	1/24/2023 7:52:44 PM
Toluene	ND	0.047	mg/Kg	1	1/24/2023 7:52:44 PM
Ethylbenzene	ND	0.047	mg/Kg	1	1/24/2023 7:52:44 PM
Xylenes, Total	ND	0.093	mg/Kg	1	1/24/2023 7:52:44 PM
Surr: 4-Bromofluorobenzene	99.7	70-130	%Rec	1	1/24/2023 7:52:44 PM
EPA METHOD 300.0: ANIONS					Analyst: <b>JMT</b>
Chloride	3100	150	mg/Kg	50	1/25/2023 11:34:56 AM

Matrix: SOIL

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 13 of 32

**Project:** Hackberry 6 Fed 1

**Analytical Report** Lab Order 2301754

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023

Client Sample ID: BS23-89 4' Collection Date: 1/19/2023 9:12:00 AM Bassived Data: 1/21/2022 10:20:00 AM

Lab ID: 2301754-014	Matrix: SOIL	Rece	<b>Received Date:</b> 1/21/2023 10:30:00 AM			
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	10	9.7	mg/Kg	1	1/24/2023 5:29:32 PM	
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	1/24/2023 5:29:32 PM	
Surr: DNOP	112	69-147	%Rec	1	1/24/2023 5:29:32 PM	
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: JJP	
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/24/2023 8:16:09 PM	
Surr: BFB	105	37.7-212	%Rec	1	1/24/2023 8:16:09 PM	
EPA METHOD 8021B: VOLATILES					Analyst: JJP	
Benzene	ND	0.024	mg/Kg	1	1/24/2023 8:16:09 PM	
Toluene	ND	0.048	mg/Kg	1	1/24/2023 8:16:09 PM	
Ethylbenzene	ND	0.048	mg/Kg	1	1/24/2023 8:16:09 PM	
Xylenes, Total	ND	0.095	mg/Kg	1	1/24/2023 8:16:09 PM	
Surr: 4-Bromofluorobenzene	98.2	70-130	%Rec	1	1/24/2023 8:16:09 PM	
EPA METHOD 300.0: ANIONS					Analyst: JMT	
Chloride	5200	150	mg/Kg	50	1/25/2023 12:11:57 PM	

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

**Qualifiers:** 

* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit

ND PQL Practical Quanitative Limit

- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 14 of 32

Hackberry 6 Fed 1

Project:

**Analytical Report** Lab Order 2301754

Date Reported: 1/30/2023

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BS23-90 4' Collection Date: 1/19/2023 9:14:00 AM Dessived Data: 1/21/2022 10:20:00 AM

Lab ID: 2301754-015	Matrix: SOIL	023 10:30:00 AM			
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	ND	9.0	mg/Kg	1	1/24/2023 5:53:04 PM
Motor Oil Range Organics (MRO)	ND	45	mg/Kg	1	1/24/2023 5:53:04 PM
Surr: DNOP	117	69-147	%Rec	1	1/24/2023 5:53:04 PM
EPA METHOD 8015D: GASOLINE RA	NGE				Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	1/24/2023 8:39:34 PM
Surr: BFB	106	37.7-212	%Rec	1	1/24/2023 8:39:34 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.023	mg/Kg	1	1/24/2023 8:39:34 PM
Toluene	ND	0.047	mg/Kg	1	1/24/2023 8:39:34 PM
Ethylbenzene	ND	0.047	mg/Kg	1	1/24/2023 8:39:34 PM
Xylenes, Total	ND	0.094	mg/Kg	1	1/24/2023 8:39:34 PM
Surr: 4-Bromofluorobenzene	98.8	70-130	%Rec	1	1/24/2023 8:39:34 PM
EPA METHOD 300.0: ANIONS					Analyst: <b>JMT</b>
Chloride	1000	60	mg/Kg	20	1/24/2023 4:38:40 PM

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

**Qualifiers:** 

* Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 15 of 32

Hackberry 6 Fed 1

Project:

Analytical Report Lab Order 2301754

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023

Client Sample ID: BS23-91 4' Collection Date: 1/19/2023 9:14:00 AM Received Date: 1/21/2023 10:30:00 AM

Lab ID: 2301754-016	Matrix: SOIL	Received Date: 1/21/2023 10:30:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst: DGH	
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	1/24/2023 6:16:30 PM	
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	1/24/2023 6:16:30 PM	
Surr: DNOP	117	69-147	%Rec	1	1/24/2023 6:16:30 PM	
EPA METHOD 8015D: GASOLINE RANG	GE				Analyst: JJP	
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/24/2023 9:03:00 PM	
Surr: BFB	105	37.7-212	%Rec	1	1/24/2023 9:03:00 PM	
EPA METHOD 8021B: VOLATILES					Analyst: JJP	
Benzene	ND	0.025	mg/Kg	1	1/24/2023 9:03:00 PM	
Toluene	ND	0.049	mg/Kg	1	1/24/2023 9:03:00 PM	
Ethylbenzene	ND	0.049	mg/Kg	1	1/24/2023 9:03:00 PM	
Xylenes, Total	ND	0.098	mg/Kg	1	1/24/2023 9:03:00 PM	
Surr: 4-Bromofluorobenzene	97.7	70-130	%Rec	1	1/24/2023 9:03:00 PM	
EPA METHOD 300.0: ANIONS					Analyst: JMT	
Chloride	2400	60	mg/Kg	20	1/24/2023 4:51:00 PM	

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range

RL Reporting Limit

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CLIENT: Devon Energy Project: Hackberry 6 Fed 1 Analytical Report Lab Order 2301754

## Hall Environmental Analysis Laboratory, Inc.

Lab Order 2301754 Date Reported: 1/30/2023

Client Sample ID: BS23-92 4'
Collection Date: 1/19/2023 9:24:00 AM
Received Date: 1/21/2023 10:30:00 AM

Lab ID: 2301754-017	Matrix: SOIL	Rece	1/21/2	21/2023 10:30:00 AM	
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: DGH
Diesel Range Organics (DRO)	44	9.6	mg/Kg	1	1/24/2023 6:39:51 PM
Motor Oil Range Organics (MRO)	60	48	mg/Kg	1	1/24/2023 6:39:51 PM
Surr: DNOP	104	69-147	%Rec	1	1/24/2023 6:39:51 PM
EPA METHOD 8015D: GASOLINE RANGI	E				Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/24/2023 9:26:20 PM
Surr: BFB	104	37.7-212	%Rec	1	1/24/2023 9:26:20 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.025	mg/Kg	1	1/24/2023 9:26:20 PM
Toluene	ND	0.049	mg/Kg	1	1/24/2023 9:26:20 PM
Ethylbenzene	ND	0.049	mg/Kg	1	1/24/2023 9:26:20 PM
Xylenes, Total	ND	0.098	mg/Kg	1	1/24/2023 9:26:20 PM
Surr: 4-Bromofluorobenzene	96.4	70-130	%Rec	1	1/24/2023 9:26:20 PM
EPA METHOD 300.0: ANIONS					Analyst: <b>JMT</b>
Chloride	4300	150	mg/Kg	50	1/25/2023 12:24:17 PM

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

**Qualifiers:** 

- Value exceeds Maximum Contaminant Level.
   Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Project:

Lab ID:

Hackberry 6 Fed 1

2301754-018

**Analytical Report** Lab Order 2301754

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023 Client Sample ID: BS23-93 4' Collection Date: 1/19/2023 9:24:00 AM

Received Date: 1/21/2023 10:30:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	Analyst: DGH				
Diesel Range Organics (DRO)	13	9.6	mg/Kg	1	1/24/2023 7:27:00 PM
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	1/24/2023 7:27:00 PM
Surr: DNOP	128	69-147	%Rec	1	1/24/2023 7:27:00 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	1/24/2023 9:49:42 PM
Surr: BFB	104	37.7-212	%Rec	1	1/24/2023 9:49:42 PM
EPA METHOD 8021B: VOLATILES					Analyst: <b>JJP</b>
Benzene	ND	0.023	mg/Kg	1	1/24/2023 9:49:42 PM
Toluene	ND	0.046	mg/Kg	1	1/24/2023 9:49:42 PM
Ethylbenzene	ND	0.046	mg/Kg	1	1/24/2023 9:49:42 PM
Xylenes, Total	ND	0.091	mg/Kg	1	1/24/2023 9:49:42 PM
Surr: 4-Bromofluorobenzene	97.8	70-130	%Rec	1	1/24/2023 9:49:42 PM
EPA METHOD 300.0: ANIONS					Analyst: <b>JMT</b>
Chloride	4900	150	mg/Kg	50	1/25/2023 12:36:38 PM

Matrix: SOIL

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

Analyte detected in the associated Method Blank в

Above Quantitation Range/Estimated Value Е

J Analyte detected below quantitation limits Р

Sample pH Not In Range

RL Reporting Limit Page 18 of 32

**Project:** Hackberry 6 Fed 1

Analytical Report Lab Order 2301754

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023

Client Sample ID: BS23-94 4' Collection Date: 1/19/2023 1:27:00 PM Received Date: 1/21/2023 10:30:00 AM

Lab ID: 2	2301754-019	Matrix: SOIL	Rece	eived Date:	1/21/2	023 10:30:00 AM
Analyses		Result	RL Qu	al Units	DF	Date Analyzed
EPA METH	OD 8015M/D: DIESEL R	ANGE ORGANICS				Analyst: DGH
Diesel Rang	ge Organics (DRO)	80	9.3	mg/Kg	1	1/24/2023 7:50:39 PM
Motor Oil R	ange Organics (MRO)	130	47	mg/Kg	1	1/24/2023 7:50:39 PM
Surr: DN	OP	126	69-147	%Rec	1	1/24/2023 7:50:39 PM
EPA METH	OD 8015D: GASOLINE R	ANGE				Analyst: JJP
Gasoline R	ange Organics (GRO)	ND	4.7	mg/Kg	1	1/24/2023 10:13:07 PM
Surr: BF	В	101	37.7-212	%Rec	1	1/24/2023 10:13:07 PM
EPA METH	OD 8021B: VOLATILES					Analyst: JJP
Benzene		ND	0.023	mg/Kg	1	1/24/2023 10:13:07 PM
Toluene		ND	0.047	mg/Kg	1	1/24/2023 10:13:07 PM
Ethylbenzer	ne	ND	0.047	mg/Kg	1	1/24/2023 10:13:07 PM
Xylenes, To	otal	ND	0.094	mg/Kg	1	1/24/2023 10:13:07 PM
Surr: 4-B	romofluorobenzene	94.6	70-130	%Rec	1	1/24/2023 10:13:07 PM
EPA METH	OD 300.0: ANIONS					Analyst: JMT
Chloride		2600	150	mg/Kg	50	1/25/2023 12:48:58 PM

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

**Qualifiers:** 

- * Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range RL Reporting Limit
- RL Rep

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**Project:** Hackberry 6 Fed 1

Analytical Report Lab Order 2301754

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023

Client Sample ID: BS23-95 4' Collection Date: 1/19/2023 1:27:00 PM Received Date: 1/21/2023 10:30:00 AM

Matrix: SOIL	Rece	ived Date:	1/21/2	023 10:30:00 AM
Result	RL Qu	al Units	DF	Date Analyzed
ORGANICS				Analyst: DGH
33	10	mg/Kg	1	1/24/2023 8:37:58 PM
ND	50	mg/Kg	1	1/24/2023 8:37:58 PM
115	69-147	%Rec	1	1/24/2023 8:37:58 PM
E				Analyst: JJP
ND	4.9	mg/Kg	1	1/24/2023 10:36:28 PM
104	37.7-212	%Rec	1	1/24/2023 10:36:28 PM
				Analyst: JJP
ND	0.024	mg/Kg	1	1/24/2023 10:36:28 PM
ND	0.049	mg/Kg	1	1/24/2023 10:36:28 PM
ND	0.049	mg/Kg	1	1/24/2023 10:36:28 PM
ND	0.097	mg/Kg	1	1/24/2023 10:36:28 PM
96.9	70-130	%Rec	1	1/24/2023 10:36:28 PM
				Analyst: JMT
2100	60	mg/Kg	20	1/24/2023 5:40:22 PM
	Result           33           ND           115           SE           ND           104           ND           ND           ND           96.9	Result         RL Quant           E ORGANICS         33         10           ND         50         115         69-147           SE         ND         4.9         104         37.7-212           ND         0.024         ND         0.049           ND         0.049         ND         0.097           96.9         70-130         70-130	Result         RL         Qual         Units           33         10         mg/Kg           ND         50         mg/Kg           115         69-147         %Rec           SE         ND         4.9         mg/Kg           104         37.7-212         %Rec           ND         0.024         mg/Kg           ND         0.049         mg/Kg           ND         0.049         mg/Kg           ND         0.097         mg/Kg           96.9         70-130         %Rec	Result         RL Qual         Units         DF           33         10         mg/Kg         1           ND         50         mg/Kg         1           115         69-147         %Rec         1           5E         ND         4.9         mg/Kg         1           104         37.7-212         %Rec         1           ND         0.024         mg/Kg         1           ND         0.049         mg/Kg         1           ND         0.049         mg/Kg         1           ND         0.097         mg/Kg         1           ND         0.097         mg/Kg         1           96.9         70-130         %Rec         1

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

**Qualifiers:** 

- * Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Project:

Lab ID:

Hackberry 6 Fed 1

2301754-021

Analytical Report Lab Order 2301754

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023 Client Sample ID: BS23-96 4' Collection Date: 1/19/2023 1:32:00 PM

Received Date: 1/21/2023 10:30:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE C	RGANICS				Analyst: DGH
Diesel Range Organics (DRO)	470	49	mg/Kg	5	1/25/2023 12:58:06 AM
Motor Oil Range Organics (MRO)	610	250	mg/Kg	5	1/25/2023 12:58:06 AM
Surr: DNOP	114	69-147	%Rec	5	1/25/2023 12:58:06 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	1/24/2023 9:20:00 PM
Surr: BFB	93.1	37.7-212	%Rec	1	1/24/2023 9:20:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.023	mg/Kg	1	1/24/2023 9:20:00 PM
Toluene	ND	0.046	mg/Kg	1	1/24/2023 9:20:00 PM
Ethylbenzene	ND	0.046	mg/Kg	1	1/24/2023 9:20:00 PM
Xylenes, Total	ND	0.093	mg/Kg	1	1/24/2023 9:20:00 PM
Surr: 4-Bromofluorobenzene	92.8	70-130	%Rec	1	1/24/2023 9:20:00 PM
EPA METHOD 300.0: ANIONS					Analyst: <b>JMT</b>
Chloride	2700	150	mg/Kg	50	1/25/2023 1:01:19 PM

Matrix: SOIL

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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Hackberry 6 Fed 1

2301754-022

**Project:** 

Lab ID:

**Analytical Report** Lab Order 2301754

Date Reported: 1/30/2023

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BS23-97 4' Collection Date: 1/19/2023 1:32:00 PM

Received Date: 1/21/2023 10:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORG	SANICS				Analyst: DGH
Diesel Range Organics (DRO)	63	9.9	mg/Kg	1	1/24/2023 9:01:39 PM
Motor Oil Range Organics (MRO)	94	50	mg/Kg	1	1/24/2023 9:01:39 PM
Surr: DNOP	119	69-147	%Rec	1	1/24/2023 9:01:39 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	1/24/2023 10:19:00 PM
Surr: BFB	93.6	37.7-212	%Rec	1	1/24/2023 10:19:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.024	mg/Kg	1	1/24/2023 10:19:00 PM
Toluene	ND	0.047	mg/Kg	1	1/24/2023 10:19:00 PM
Ethylbenzene	ND	0.047	mg/Kg	1	1/24/2023 10:19:00 PM
Xylenes, Total	ND	0.095	mg/Kg	1	1/24/2023 10:19:00 PM
Surr: 4-Bromofluorobenzene	93.7	70-130	%Rec	1	1/24/2023 10:19:00 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	2200	150	mg/Kg	50	1/25/2023 1:13:39 PM

Matrix: SOIL

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

Analyte detected in the associated Method Blank в

Above Quantitation Range/Estimated Value Е

J Analyte detected below quantitation limits Р

Sample pH Not In Range

RL Reporting Limit Page 22 of 32

**Project:** Hackberry 6 Fed 1

**Analytical Report** Lab Order 2301754

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023

Client Sample ID: BS23-98 4' Collection Date: 1/19/2023 1:35:00 PM Received Date: 1/21/2023 10:30:00 AM

Lab ID: 2301754-023	Matrix: SOIL	Rece	eived Date:	1/21/2	023 10:30:00 AM
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: SB
Diesel Range Organics (DRO)	39	9.5	mg/Kg	1	1/24/2023 11:50:51 AM
Motor Oil Range Organics (MRO)	69	47	mg/Kg	1	1/24/2023 11:50:51 AM
Surr: DNOP	90.7	69-147	%Rec	1	1/24/2023 11:50:51 AM
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/24/2023 11:18:00 PM
Surr: BFB	93.1	37.7-212	%Rec	1	1/24/2023 11:18:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.024	mg/Kg	1	1/24/2023 11:18:00 PM
Toluene	ND	0.048	mg/Kg	1	1/24/2023 11:18:00 PM
Ethylbenzene	ND	0.048	mg/Kg	1	1/24/2023 11:18:00 PM
Xylenes, Total	ND	0.095	mg/Kg	1	1/24/2023 11:18:00 PM
Surr: 4-Bromofluorobenzene	90.3	70-130	%Rec	1	1/24/2023 11:18:00 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	2300	60	mg/Kg	20	1/24/2023 7:06:48 PM

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

**Qualifiers:** 

- Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** Lab Order 2301754

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023 Client Sample ID: BS23-99 4'

Project:	Hackberry 6 Fed 1		Collec	ction Date:	1/19/2	023 1:35:00 PM
Lab ID:	2301754-024	Matrix: SOIL	Rece	vived Date:	1/21/2	023 10:30:00 AM
Analyses		Result	RL Qu	al Units	DF	Date Analyzed
EPA ME	THOD 8015M/D: DIESEL RA	ANGE ORGANICS				Analyst: SB
Diesel R	ange Organics (DRO)	39	9.4	mg/Kg	1	1/24/2023 12:19:28 PM
Motor Oi	I Range Organics (MRO)	80	47	mg/Kg	1	1/24/2023 12:19:28 PM
Surr: I	DNOP	93.8	69-147	%Rec	1	1/24/2023 12:19:28 PM
EPA ME	THOD 8015D: GASOLINE R	ANGE				Analyst: CCM
Gasoline	Range Organics (GRO)	ND	4.8	mg/Kg	1	1/24/2023 11:37:00 PM
Surr: E	BFB	91.2	37.7-212	%Rec	1	1/24/2023 11:37:00 PM
EPA ME	THOD 8021B: VOLATILES					Analyst: CCM
Benzene	1	ND	0.024	mg/Kg	1	1/24/2023 11:37:00 PM
Toluene		ND	0.048	mg/Kg	1	1/24/2023 11:37:00 PM
Ethylben	zene	ND	0.048	mg/Kg	1	1/24/2023 11:37:00 PM
Xylenes,	Total	ND	0.097	mg/Kg	1	1/24/2023 11:37:00 PM
Surr: 4	4-Bromofluorobenzene	92.1	70-130	%Rec	1	1/24/2023 11:37:00 PM
EPA ME	THOD 300.0: ANIONS					Analyst: <b>JMT</b>
Chloride		2300	60	mg/Kg	20	1/24/2023 7:43:50 PM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- Н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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	WO#:	2301754
Inc.		30-Jan-23

Client: Project:		n Energy berry 6 Fed 1								
Sample ID:	MB-72771	SampType:	mblk	Tes	tCode: EP	A Method	300.0: Anions	6		
Client ID:	PBS	Batch ID:	72771	F	RunNo: <b>94</b>	168				
Prep Date:	1/23/2023	Analysis Date:	1/24/2023	S	SeqNo: <b>34</b>	00465	Units: mg/K	g		
Analyte Chloride		Result PC	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	LCS-72771	SampType:	-	Tes	tCode: <b>FP</b>	A Method	300.0: Anions			
Client ID:	LCSS	Batch ID:			RunNo: <b>94</b>			-		
Prep Date:	1/23/2023	Analysis Date:			SeqNo: 34		Units: <b>mg/K</b>	g		
Analyte		Result PC	L SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5 15.00	0	94.3	90	110			
Sample ID:	MB-72790	SampType:	mblk	Tes	tCode: EP	A Method	300.0: Anions	5		
Client ID:	PBS	Batch ID:	72790	F	RunNo: <b>94</b>	168				
Prep Date:	1/24/2023	Analysis Date:	1/24/2023	S	SeqNo: <b>34</b>	00495	Units: mg/K	g		
Analyte Chloride		Result PC	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chionde		UN	1.5							
Sample ID:	LCS-72790	SampType:	lcs	Tes	tCode: EP	A Method	300.0: Anions	6		
Client ID:	LCSS	Batch ID:	72790	F	RunNo: <b>94</b>	168				
Prep Date:	1/24/2023	Analysis Date:	1/24/2023	S	SeqNo: <b>34</b>	00496	Units: mg/K	g		
Analyte		Result PC		SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5 15.00	0	93.1	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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ALPOK I	WO#:	2301754
Analysis Laboratory, Inc.		30-Jan-23

Client: Devon E Project: Hackber	nergy ry 6 Fed 1				
Sample ID: MB-72763	SampType: MBLK	Те	stCode: EPA Method	8015M/D: Diesel Rang	e Organics
Client ID: PBS	Batch ID: 72763		RunNo: <b>94149</b>		
Prep Date: 1/23/2023	Analysis Date: 1/24/202	23	SeqNo: <b>3399774</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	9.8	10.00	98.4 69	147	
Sample ID: LCS-72763	SampType: LCS	Те	stCode: EPA Method	8015M/D: Diesel Rang	e Organics
Client ID: LCSS	Batch ID: 72763		RunNo: <b>94149</b>		
Prep Date: 1/23/2023	Analysis Date: 1/24/202	23	SeqNo: <b>3399775</b>	Units: <b>mg/Kg</b>	
Analyte	Result PQL SPK	value SPK Ref Val	%REC LowLimit	HighLimit %RPD	RPDLimit Qual
Diesel Range Organics (DRO)	42 10	50.00 0	84.3 61.9	130	
Surr: DNOP	4.5	5.000	90.2 69	147	
Sample ID: MB-72760	SampType: MBLK	Те	stCode: EPA Method	8015M/D: Diesel Rang	e Organics
Client ID: PBS	Batch ID: 72760		RunNo: <b>94149</b>		
Prep Date: 1/23/2023	Analysis Date: 1/24/202	23	SeqNo: <b>3400226</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	122 69	147	
Sample ID: LCS-72760	SampType: LCS	Те	stCode: EPA Method	8015M/D: Diesel Rang	e Organics
Client ID: LCSS	Batch ID: 72760		RunNo: <b>94149</b>		
Prep Date: 1/23/2023	Analysis Date: 1/24/202	23	SeqNo: <b>3400227</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	94.6 61.9	130	
Surr: DNOP	5.5	5.000	110 69	147	
Sample ID: LCS-72784	SampType: LCS	Те	stCode: EPA Method	8015M/D: Diesel Rang	e Organics
Client ID: LCSS	Batch ID: 72784		RunNo: <b>94184</b>		
Prep Date: 1/24/2023	Analysis Date: 1/25/202	23	SeqNo: <b>3401254</b>	Units: %Rec	
Analyte	Result PQL SPK	value SPK Ref Val	%REC LowLimit	HighLimit %RPD	RPDLimit Qual
Surr: DNOP	5.8	5.000	116 69	147	

#### Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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30-Jan-23

Client:	Devon En	ergy									
Project:	Hackberry	y 6 Fed 1									
Sample ID:	MB-72784	SampT	уре: <b>МЕ</b>	BLK	Tes	tCode: EF	PA Method	8015M/D: Die:	sel Range	Organics	
Client ID:	PBS	Batch	n ID: 727	784	F	RunNo: <b>9</b> 4	4184		-	-	
Prep Date:	1/24/2023	Analysis D	ate: 1/2	25/2023	S	SeqNo: 34	401255	Units: %Rec			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		10		10.00		104	69	147			
Sample ID:	MB-72768	SampT	уре: <b>МЕ</b>	BLK	Tes	tCode: EF	PA Method	8015M/D: Die:	sel Range	Organics	
Client ID:	PBS	Batch	n ID: 727	768	F	RunNo: <b>9</b> 4	4143		-	-	
Prep Date:	1/23/2023	Analysis D	ate: 1/2	24/2023	S	SeqNo: 34	402245	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range C	Drganics (DRO)	ND	10								
0	e Organics (MRO)	ND	50								
Surr: DNOP		10		10.00		100	69	147			
Sample ID:	LCS-72768	SampT	ype: LC	s	Tes	tCode: EF	PA Method	8015M/D: Die:	sel Range	Organics	
Client ID:	LCSS	Batch	n ID: 727	768	F	RunNo: <b>9</b> 4	4143				
Prep Date:	1/23/2023	Analysis D	ate: 1/2	24/2023	S	SeqNo: 34	402246	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range C	Organics (DRO)	57	10	50.00	0	114	61.9	130			
Surr: DNOP		5.4		5.000		108	69	147			
Sample ID:	2301754-003AMS	SampT	уре: МS	5	Tes	tCode: EF	PA Method	8015M/D: Die:	sel Range	Organics	
•	2301754-003AMS BS23-78 4'		ype: <b>MS</b>			tCode: EF		8015M/D: Die:	sel Range	Organics	
•			n ID: <b>72</b> 7	768	F		4143	8015M/D: Dies Units: mg/Kg	Ū	Organics	
Client ID:	BS23-78 4'	Batch	n ID: <b>72</b> 7	768 24/2023	F	RunNo: <b>9</b> 4	4143		Ū	Organics RPDLimit	Qual
Client ID: Prep Date: Analyte	BS23-78 4'	Batch Analysis D	n ID: <b>72</b> 7 Date: <b>1/</b> 2	768 24/2023	F	RunNo: 94 SeqNo: 34	4143 402250	Units: <b>mg/K</b> g	g	U	Qual
Client ID: Prep Date: Analyte	BS23-78 4' 1/23/2023	Batch Analysis D Result	n ID: <b>72</b> 7 Date: <b>1/</b> 2 PQL	768 24/2023 SPK value	F S SPK Ref Val	RunNo: 94 SeqNo: 34 %REC	4143 402250 LowLimit	Units: <b>mg/K</b> g HighLimit	g	U	Qual
Client ID: Prep Date: Analyte Diesel Range C Surr: DNOP	BS23-78 4' 1/23/2023	Batch Analysis D Result 150 5.4	n ID: <b>72</b> 7 Date: <b>1/</b> 2 PQL	768 24/2023 SPK value 44.52 4.452	F SPK Ref Val 96.37	RunNo: <b>9</b> 4 SeqNo: <b>3</b> 4 %REC 129 121	4143 402250 LowLimit 54.2 69	Units: <b>mg/K</b> HighLimit 135	g %RPD	RPDLimit	Qual
Client ID: Prep Date: Analyte Diesel Range C Surr: DNOP Sample ID:	BS23-78 4' 1/23/2023 Drganics (DRO)	Batch Analysis D Result 150 5.4 SampT	Di ID: <b>72</b> 7 Date: <b>1</b> /2 PQL 8.9	768 24/2023 SPK value 44.52 4.452	F SPK Ref Val 96.37 Tes	RunNo: <b>9</b> 4 SeqNo: <b>3</b> 4 %REC 129 121	4143 402250 LowLimit 54.2 69 PA Method	Units: <b>mg/K</b> HighLimit 135 147	g %RPD	RPDLimit	Qual
Client ID: Prep Date: Analyte Diesel Range C Surr: DNOP Sample ID:	BS23-78 4' 1/23/2023 Drganics (DRO) 2301754-003AMSD	Batch Analysis D Result 150 5.4 SampT	PQL 8.9 7ype: MS	768 24/2023 SPK value 44.52 4.452 6D 768	F SPK Ref Val 96.37 Tes F	RunNo: 94 SeqNo: 34 %REC 129 121 tCode: EF	4143 402250 LowLimit 54.2 69 PA Method 4143	Units: <b>mg/K</b> HighLimit 135 147	g %RPD sel Range	RPDLimit	Qual
Client ID: Prep Date: Analyte Diesel Range C Surr: DNOP Sample ID: Client ID:	BS23-78 4' 1/23/2023 Drganics (DRO) 2301754-003AMSD BS23-78 4'	Batch Analysis D Result 150 5.4 SampT Batch	PQL 8.9 7ype: MS	768 24/2023 SPK value 44.52 4.452 6D 768 24/2023	F SPK Ref Val 96.37 Tes F	RunNo: 9 SeqNo: 3 %REC 129 121 tCode: EF RunNo: 9	4143 402250 LowLimit 54.2 69 PA Method 4143	Units: mg/Kg HighLimit 135 147 8015M/D: Dies	g %RPD sel Range	RPDLimit	Qual
Client ID: Prep Date: Analyte Diesel Range C Surr: DNOP Sample ID: Client ID: Prep Date: Analyte	BS23-78 4' 1/23/2023 Drganics (DRO) 2301754-003AMSD BS23-78 4'	Batch Analysis D Result 150 5.4 SampT Batch Analysis D	PQL 8.9 7ype: MS 1D: 727 8.9 8.9 7ype: MS 0 ID: 727 0ate: 1/2	768 24/2023 SPK value 44.52 4.452 6D 768 24/2023	F SPK Ref Val 96.37 Tes F	RunNo: 94 SeqNo: 34 %REC 129 121 tCode: EF RunNo: 94 SeqNo: 34	4143 402250 LowLimit 54.2 69 PA Method 4143 402251	Units: mg/Kg HighLimit 135 147 8015M/D: Dies Units: mg/Kg	g %RPD sel Range	RPDLimit Organics	

#### **Qualifiers:**

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- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank В
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Sample pH Not In Range
- Р RL
  - Reporting Limit

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Client: Project:	Devon En Hackberry	•••									
Sample ID:	lcs-72751	SampT	ype: LC	S	Tes	tCode: EF	PA Method	8015D: Gasol	ine Range		
Client ID:	LCSS	Batch	n ID: 727	751	F	RunNo: <b>9</b> 4	1163				
Prep Date:	1/23/2023	Analysis D	Date: 1/2	24/2023	S	SeqNo: 33	399948	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	31	5.0	25.00	0	123	72.3	137			
Surr: BFB		1200		1000		121	37.7	212			
Sample ID:	lcs-72773	SampT	ype: <b>LC</b>	s	Tes	tCode: EF	PA Method	8015D: Gasol	ine Range		
Client ID:	LCSS	Batch	n ID: 727	773	F	RunNo: <b>9</b> 4	4163				
Prep Date:	1/23/2023	Analysis D	Date: 1/2	24/2023	Ş	SeqNo: 33	399950	Units: %Rec			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		1200		1000		116	37.7	212			
Sample ID:	mb-72751	SampT	ype: ME	BLK	Tes	tCode: EF	PA Method	8015D: Gasol	ine Rance		
Client ID:	PBS		n ID: <b>72</b> 7			RunNo: <b>9</b> 4					
Prep Date:	1/23/2023	Analysis D	Date: 1/2	24/2023		SeqNo: 33	399952	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	e Organics (GRO)	ND	5.0					5			
Surr: BFB		1100		1000		109	37.7	212			
Sample ID:	mb-72773	SampT	уре: МЕ	BLK	Tes	tCode: EF	PA Method	8015D: Gasol	ine Range		
Client ID:	PBS	Batch	n ID: 727	773	F	RunNo: <b>9</b> 4	1163				
Prep Date:	1/23/2023	Analysis D	Date: 1/2	25/2023	S	SeqNo: 33	399954	Units: %Rec			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		1000		1000		102	37.7	212			
Sample ID:	2301754-001ams	SampT	уре: МS	5	Tes	tCode: EF	PA Method	8015D: Gasol	ine Range		
Client ID:	BS23-76 4'	Batch	n ID: <b>72</b> 7	751	F	RunNo: <b>9</b> 4	1163				
Prep Date:	1/23/2023	Analysis D	Date: 1/2	24/2023	Ş	SeqNo: 33	399987	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	29	4.9	24.68	0	117	70	130			
Surr: BFB		1200		987.2		122	37.7	212			
Sample ID:	2301754-001amsd	SampT	уре: МS	D	Tes	tCode: EF	A Method	8015D: Gasol	ine Range		
Client ID:	BS23-76 4'	Batch	n ID: 727	751	F	RunNo: <b>9</b> 4	4163				
Prep Date:	1/23/2023	Analysis D	Date: 1/2	24/2023	Ş	SeqNo: 33	399988	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	e Organics (GRO)	30	5.0	24.95	0	119	70	130	2.72	20	
Surr: BFB		1200		998.0		122	37.7	212	0	0	

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- ND Not Detected at the Reporting Limit
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- S % Recovery outside of standard limits. If undiluted results may be estimated.
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- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2301754

30-Jan-23

WO#:

Client: Project:	Devon En Hackberry	•••									
Sample ID:	lcs-72758	SampT	ype: LC	S	Tes	tCode: EP	A Method	8015D: Gasoli	ne Range		
Client ID:	LCSS	Batch	n ID: 727	758	F	lunNo: <b>94</b>	152				
Prep Date:	1/23/2023	Analysis D	Date: 1/2	24/2023	S	SeqNo: 34	00159	Units: mg/Kg	9		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	27	5.0	25.00	0	106	72.3	137			
Surr: BFB		1100		1000		109	37.7	212			
Sample ID:	mb-72758	SampT	уре: МЕ	BLK	Tes	tCode: EP	A Method	8015D: Gasoli	ne Range		
Client ID:	PBS	Batch	n ID: 727	758	F	unNo: <b>94</b>	152				
Prep Date:	1/23/2023	Analysis D	Date: 1/2	24/2023	S	SeqNo: 34	00160	Units: mg/Kg	J		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	ND	5.0								
Surr: BFB		950		1000		94.8	37.7	212			
Sample ID:	2301754-021ams	SampT	ype: MS	;	Tes	tCode: EP	A Method	8015D: Gasoli	ne Range		
Client ID:	BS23-96 4'	Batch	n ID: 727	758	F	unNo: <b>94</b>	152				
Prep Date:	1/23/2023	Analysis D	Date: 1/2	24/2023	S	SeqNo: 34	00164	Units: mg/Kg	J		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	24	4.6	23.13	0	103	70	130			
Surr: BFB		950		925.1		103	37.7	212			
Sample ID:	2301754-021amsd	SampT	уре: МS	SD	Tes	tCode: EP	A Method	8015D: Gasoli	ne Range		
Client ID:	BS23-96 4'	Batch	n ID: 727	758	F	lunNo: <b>94</b>	152				
Prep Date:	1/23/2023	Analysis D	Date: 1/2	24/2023	S	SeqNo: 34	00165	Units: mg/Kg	9		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

0

99.3

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#### Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
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- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit

Gasoline Range Organics (GRO)

Surr: BFB

S % Recovery outside of standard limits. If undiluted results may be estimated.

23

1000

4.6

23.21

928.5

B Analyte detected in the associated Method Blank

70

37.7

130

212

2.96

0

20

0

- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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WO#: 2301754 30-Jan-23

WO#:	2301754

30-Jan-23

	Devon Energy Hackberry 6 Fed 1									
Sample ID: LCS-727	<b>'51</b> Samp	Type: LC	s	Tes	tCode: EF	PA Method	8021B: Volati	les		
Client ID: LCSS	Bate	ch ID: 727	751	F	RunNo: <b>9</b> 4	1163				
Prep Date: 1/23/20	23 Analysis	Date: 1/2	24/2023	S	SeqNo: 34	100008	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	91.0	80	120			Quui
Toluene	0.95	0.050	1.000	0	95.4	80	120			
Ethylbenzene	0.96	0.050	1.000	0	96.0	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.7	80	120			
Surr: 4-Bromofluoroben:	zene 1.0		1.000		101	70	130			
Sample ID: LCS-727	73 Samp	oType: LC	S	Tes	tCode: EF	PA Method	8021B: Volati	les		
Client ID: LCSS	Bat	ch ID: 727	773	F	RunNo: <b>9</b> 4	1163				
Prep Date: 1/23/20	23 Analysis	Date: 1/2	25/2023	S	SeqNo: 34	400009	Units: %Rec	:		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluoroben:	zene 0.98		1.000		97.6	70	130			
Sample ID: mb-7275	i <b>1</b> Samp	оТуре: <b>МЕ</b>	BLK	Tes	tCode: EF	PA Method	8021B: Volati	les		
Client ID: PBS	Bate	ch ID: 727	751	F	RunNo: <b>9</b> 4	1163				
Prep Date: 1/23/20	23 Analysis	Date: 1/2	24/2023	S	SeqNo: 34	400010	Units: mg/K	g		
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-Bromofluoroben:	zene 1.0		1.000		101	70	130			
Sample ID: mb-7277	<b>'3</b> Samp	оТуре: <b>МЕ</b>	BLK	Tes	tCode: EF	PA Method	8021B: Volati	les		
Client ID: PBS	Bate	ch ID: 727	773	F	RunNo: <b>9</b> 4	4163				
Prep Date: 1/23/20	23 Analysis	Date: 1/2	25/2023	S	SeqNo: 34	400011	Units: %Rec	:		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluoroben:	zene 0.96		1.000		95.5	70	130			
Sample ID: 2301754	-002ams Samp	Type: MS	;	Tes	tCode: EF	PA Method	8021B: Volati	les		
Client ID: BS23-77	4' Bate	ch ID: 727	751	F	RunNo: <b>9</b> 4	1163				
Prep Date: 1/23/20	23 Analysis	Date: 1/2	24/2023	S	SeqNo: 34	400030	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.023	0.9363	0	88.8	68.8	120			
Toluene	0.88	0.047	0.9363	0.01662	92.5	73.6	124			
Ethylbenzene	0.91	0.047	0.9363	0	97.1	72.7	129			
Xylenes, Total	2.7	0.094	2.809	0.02836	95.1	75.7	126			

#### Qualifiers:

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- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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WO#:	2301754

30-Jan-23

Client: Project:	Devon En Hackberry	•••									
Ŭ	2301754-002ams		Гуре: <b>МS</b>		Tee	tCode: EE	A Mothod	8021B: Volati	ilee		
								OUZID. VOIALI	lies		
Client ID:	BS23-77 4'		h ID: 727			RunNo: 94					
Prep Date:	1/23/2023	Analysis [	Date: 1/2	24/2023	· · · ·	SeqNo: 34	100030	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bron	nofluorobenzene	0.93		0.9363		99.4	70	130			
Sample ID:	2301754-002amsd	Samp	Гуре: <b>МS</b>	D	Tes	tCode: EF	PA Method	8021B: Volati	iles		
Client ID:	BS23-77 4'	Batcl	h ID: <b>727</b>	/51	F	RunNo: <b>9</b> 4	4163				
Prep Date:	1/23/2023	Analysis [	Date: 1/2	24/2023	S	SeqNo: 34	400031	Units: <b>mg/K</b>	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.83	0.023	0.9355	0	88.4	68.8	120	0.568	20	
Toluene		0.88	0.047	0.9355	0.01662	92.6	73.6	124	0.0724	20	
Ethylbenzene		0.91	0.047	0.9355	0	97.2	72.7	129	0.0505	20	
Xylenes, Total		2.7	0.094	2.806	0.02836	96.1	75.7	126	0.910	20	
Surr: 4-Bron	nofluorobenzene	0.94		0.9355		101	70	130	0	0	
Sample ID:	lcs-72758	SampT	Гуре: LC	s	Tes	tCode: EF	PA Method	8021B: Volati	iles		
Client ID:	LCSS	Batcl	h ID: <b>727</b>	'58	F	RunNo: <b>9</b> 4	1152				
Prep Date:	1/23/2023	Analysis [	Date: 1/2	24/2023	S	SeqNo: 34	400370	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene		0.93	0.025	1.000	0	93.0	80	120			
Toluene		0.93	0.050	1.000	0	92.6	80	120			
Ethylbenzene		0.91	0.050	1.000	0	91.4	80	120			
Xylenes, Total		2.7	0.10	3.000	0	91.3	80	120			
Surr: 4-Bron	nofluorobenzene	0.97		1.000		97.4	70	130			
Sample ID:	mb-72758	SampT	Гуре: <b>МВ</b>	LK	Tes	tCode: EF	PA Method	8021B: Volati	iles		
Client ID:	PBS	Batc	h ID: <b>727</b>	58	F	RunNo: <b>9</b> 4	152				
Prep Date:	1/23/2023	Analysis I	Date: 1/2	24/2023	S	SeqNo: 34	100371	Units: mg/K	g		
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-Bron	nofluorobenzene	0.94		1.000		93.7	70	130			
Sample ID:	2301754-022ams	Samp	Гуре: <b>МЅ</b>	;	Tes	tCode: EF	PA Method	8021B: Volati	iles		
Client ID:	BS23-97 4'	Batcl	h ID: <b>727</b>	'58	F	RunNo: <b>9</b> 4	152				
						Deables Of	100070	Units: mg/K	~		
Prep Date:	1/23/2023	Analysis E	Date: 1/2	24/2023	5	SeqNo: 34	100376	Units. Ing/n	g		

Qualifiers:

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PQL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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**Client:** 

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

Project:	Hackberr	y 6 Fed 1	
Sample ID:	2301754-022ams	SampType: <b>MS</b>	
Client ID:	BS23-97 4'	Batch ID: 72758	
Prep Date:	1/23/2023	Analysis Date: 1/24/2023	

Devon Energy

Prep Date: 1/23/2023	Analysis [	Date: 1/2	24/2023	S	SeqNo: 34	400376	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.024	0.9506	0	92.3	68.8	120			
Toluene	0.88	0.048	0.9506	0	92.6	73.6	124			
Ethylbenzene	0.87	0.048	0.9506	0	91.8	72.7	129			
Xylenes, Total	2.6	0.095	2.852	0	91.2	75.7	126			
Surr: 4-Bromofluorobenzene	0.90		0.9506		94.9	70	130			
Sample ID: 2301754-022amsd	Samp	Гуре: <b>МЅ</b>	D	Tes	tCode: EF	PA Method	8021B: Volati	les		
Client ID: BS23-97 4'	Batc	h ID: <b>727</b>	'58	F	RunNo: <b>9</b> 4	1152				
Prep Date: 1/23/2023	Analysis [	Date: 1/2	24/2023	5	SeqNo: 34	400377	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.024	0.9533	0	98.0	68.8	120	6.29	20	
Toluene	0.00		0.0500	0		70.0	404	F 00		
Toluene	0.93	0.048	0.9533	0	98.0	73.6	124	5.93	20	
Ethylbenzene	0.93 0.92	0.048 0.048	0.9533 0.9533	0	98.0 96.9	73.6 72.7	124 129	5.93 5.67	20 20	
				-					-	

TestCode: EPA Method 8021B: Volatiles

RunNo: 94152

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- в Analyte detected in the associated Method Blank
- Е
- J
- Р
- RL
- Above Quantitation Range/Estimated Value
- Analyte detected below quantitation limits
- Sample pH Not In Range
- Reporting Limit

Page 32 of 32

WO#: 2301754

30-Jan-23

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

## Sample Log-In Check List

Client Name:	Devon Energy	Work Order Num	ber: 2301754		RcptNo:	1
Received By:	Juan Rojas	1/21/2023 10:30:00	AM	Heaven y		
Completed By:	Juan Rojas	1/21/2023 10:55:15	AM	(Juansay		
Reviewed By:	JA 1-21-25 1-23.23			2		
Chain of Cus	stody					
1. Is Chain of C	ustody complete?		Yes	No 🗹	Not Present	
2. How was the	sample delivered?		Courier			
Log In						
3. Was an atter	npt made to cool the sa	mples?	Yes 🔽	No 🗌	NA	
4. Were all sam	ples received at a tempe	erature of >0° C to 6.0°C	Yes 🔽	No 🗌	NA 🗌	
5. Sample(s) in	proper container(s)?		Yes 🔽	No 🗌		
6. Sufficient san	nple volume for indicated	d test(s)?	Yes 🗹	No 🗌		
7. Are samples	(except VOA and ONG)	properly preserved?	Yes 🗹	No 🗌		
8. Was preserva	ative added to bottles?		Yes	No 🗹	NA 🗌	
9. Received at le	east 1 vial with headspa	ce <1/4" for AQ VOA?	Yes	No 🗌	NA 🗹	
10. Were any sar	mple containers received	d broken?	Yes	No 🗹	# of preserved	
	ork match bottle labels?	4.)	Yes 🗹	No 🗌	bottles checked for pH:	>12 unless noted)
	ancies on chain of custo correctly identified on Cl		Yes 🗹	No 🗌	Adjusted?	>12 unless holed)
	t analyses were request		Yes 🗹			
14. Were all holdi	ing times able to be met	?	Yes 🗹	No 🗌	Checked by:	WY21/23
	ustomer for authorizatio	n.)		Ŭ		
	ling (if applicable) otified of all discrepancie	s with this order?	Yes 🗌	Νο	NA 🗹	
	Notified:	Date	,	Dhana 🗔 Fav		
By Who Regard	,	Via:	eMail	Phone Fax	In Person	
0	nstructions:					
16. Additional re	marks:					
Missing	phone number and em	ail address. JR 1/21/23				
17. Cooler Infor						
Cooler No	and part in the second s	n Seal Intact Seal No	Seal Date	Signed By		
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บ	hain	of-Cu	Chain-of-Custody Record	rd	Turn-Around Time:	lime:				HALL		N	11F	ENVIRONMENTAL	M	L	AL	
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		1			Project Name:					M	/.halle	nviror	Iment	www.hallenvironmental.com				
Mailing Address:	Address:	UD .	f:le		Hackl	Hackberry 6 Fed	ed (	490	1 Hav	4901 Hawkins NE -		Albuqı	nerqu	Albuquerque, NM 87109	87109			
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Phone #:					JAE-	02537	7				An	Analysis Request	s Req	uest				
email or Fax#	Fax#:				Project Manager:	ıger:						₹∩¢		(jue	_	1		
QA/QC Package: □ Standard	ackage: Jard		Level 4 (Full Validation)	lidation)	Chan	Chance Dixon			PCB's	SMISC		PO₄, 5		esdA\tr				
Accreditation:	ation:	□ Az Co	Az Compliance		Sampler: S	SPC						^{'7} 01		iəsə				
	Q V	□ Other			On Ice:	-B-Yes	O No					3 'E	(AC	19)	_			
	EDD (Type)				# of Coolers:		worty				_		_	uu				
					Cooler Temp(	(including CF): 0	3020.3 (°C)	_			_	_		olifo		1		
Date	Time	Matrix	Samnle Name		Container Tvne and #	Preservative Tvne	HEAL No.	1PH:80	9 1808	N) 803 PAHs F	ARDA	8560 (/	s) 0228	D listoT	1			
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	0:6		BS23-83	۲ [′]			-008											_
	4:04		た	'n			2003								-		-	
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	\$0: b		BS23-86	4			-01/					-			_			+
	9:08		BS23-87	4'			01	-										_
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Cel al	900	VIVI	anner			FLOWING	1/21/23/03	) ) O	ן א	5				00	ue.	古		
Released to	lf necessary	/, samples su g: 6/9/20	ubmitted to Hall Environment 123 11:32:08 AM	al may be sut	ocontracted to other	accredited laborator	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. Released to Imaging: 6/9/2023 11:32:08 AM	s possibility.	Any suk	-contracte	ed data ∨	/ill be cle	aarly noi	ated on th	le analyt	ical repo	ť	•

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	ANALYSIS LABORATORY	www.hallanvironmantal.com	www.rialierivi.offinierikal.com 4901 Hawkins NE - Albuquerque, NM 87109	505-345-3975 Fax 505-345-4107	Analysis		PO4, S MISU	(1. , <u>s</u> Ol	(AC	-VC 103 103 103 103	ethc y 83 3 Me 3r, 1 (AO)	8081 Pe EDB (M PAHs b 8260 (V 8270 (S 201al Co 10tal Co													() = ; ;	Direct Bill Levon: NO 1007101301	Sally Car Har	prae 2/2	This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.
			490	Tel.				שא	105	49)	12D	08:H9T	>							-					Remarks:	Direc	3		possibility. A
Turn-Around Time:	Standard & Rush 48 MV	1.25	Hackburry le Fed I Well Pad	Project #: 0	22E-02537		Dixon		A No	olers: 1 (Murtu)	(Including CF): 0.3-0℃のごろ (°C)	Container Preservative 2301 50	100 - 013	1 - 01 1	-012-	9 (0-	210-	-018	10/0-	- 020	-021	-022	-023	0- 1		5e/ve/, 0	Received by: Via: Date Time	TOUNIE 1/21/23 10:30	itracted to other accredited laboratories. This serves as notice of this p
Chain-of-Custody Record	Client: Devon (Vertex)		Mailing Address: On hill.	<u>a</u>	Phone #:	email or Fax#: Pr	e:	1: D Az Compliance	□ Other	EDD (Type)     #		Date Time Matrix Sample Name T	4'	1 9:12 1 8523- 89 4'	9:14 B523-90 4'	14   BS23-91 41		9:24 B523-93 4'	13:27 3523-94 4'		13:32 B523 910 4'	1(3:32 B523-974'	13:35 BS23-98 4'	4'	Time: Relinquished by:	23/16:24 Sally Centrar	Time: Relinquishéd by:	mas 1900 Curunn	If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories.

Released to Imaging: 6/9/2023 11:32:08 AM



January 30, 2023

Chance Dixon Devon Energy 6488 Seven Rivers Highway Artesia, NM 88210 TEL: (505) 350-1336 FAX

RE: Hackberry 6 Fed 1 Well Pad

OrderNo.: 2301870

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

Dear Chance Dixon:

Hall Environmental Analysis Laboratory received 15 sample(s) on 1/24/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

**Project:** Hackberry 6 Fed 1 Well Pad

Analytical Report
Lab Order 2301870

Date Reported: 1/30/2023

### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BS23-100 4' Collection Date: 1/20/2023 8:36:00 AM Received Date: 1/24/2023 1:40:00 PM

Lab ID: 2301870-001	Matrix: SOIL	<b>Received Date:</b> 1/24/2023 1:40:00 PM							
Analyses	Result	RL Qu	al Units	DF	Date Analyzed				
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS				Analyst: SB				
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	1/26/2023 10:41:23 AM				
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	1/26/2023 10:41:23 AM				
Surr: DNOP	75.9	69-147	%Rec	1	1/26/2023 10:41:23 AM				
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst: CCM				
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/26/2023 8:42:00 AM				
Surr: BFB	96.1	37.7-212	%Rec	1	1/26/2023 8:42:00 AM				
EPA METHOD 8021B: VOLATILES					Analyst: CCM				
Benzene	ND	0.025	mg/Kg	1	1/26/2023 8:42:00 AM				
Toluene	ND	0.049	mg/Kg	1	1/26/2023 8:42:00 AM				
Ethylbenzene	ND	0.049	mg/Kg	1	1/26/2023 8:42:00 AM				
Xylenes, Total	ND	0.098	mg/Kg	1	1/26/2023 8:42:00 AM				
Surr: 4-Bromofluorobenzene	94.5	70-130	%Rec	1	1/26/2023 8:42:00 AM				
EPA METHOD 300.0: ANIONS					Analyst: JMT				
Chloride	2800	150	mg/Kg	50	1/26/2023 12:30:35 PM				

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

**Qualifiers:** 

- * Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 1 of 19

**Analytical Report** Lab Order 2301870

Date Reported: 1/30/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy Client Sample ID: BS23-101 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/20/2023 8:37:00 AM Lab ID: 2301870-002 Matrix: SOIL Received Date: 1/24/2023 1:40:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: SB Diesel Range Organics (DRO) ND 9.6 mg/Kg 1 1/26/2023 11:09:35 AM Motor Oil Range Organics (MRO) ND 48 mg/Kg 1 1/26/2023 11:09:35 AM 69-147 Surr: DNOP %Rec 1 1/26/2023 11:09:35 AM 118 **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/26/2023 12:02:00 PM 5.0 mg/Kg 1 Surr: BFB 105 37.7-212 %Rec 1 1/26/2023 12:02:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/26/2023 12:02:00 PM 0.025 mg/Kg 1 Toluene ND 0.050 mg/Kg 1 1/26/2023 12:02:00 PM Ethylbenzene ND 0.050 mg/Kg 1 1/26/2023 12:02:00 PM Xylenes, Total ND 0.099 mg/Kg 1 1/26/2023 12:02:00 PM Surr: 4-Bromofluorobenzene 99.8 70-130 %Rec 1 1/26/2023 12:02:00 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride 1700 60 1/25/2023 4:46:18 PM ma/Ka 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

Е Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

Р Sample pH Not In Range

Reporting Limit RL

Page 2 of 19

**Project:** 

Lab ID:

Analyses

**Analytical Report** Lab Order 2301870

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 1/30/2023 Client Sample ID: BS23-102 4' **CLIENT:** Devon Energy Hackberry 6 Fed 1 Well Pad Collection Date: 1/20/2023 8:42:00 AM 2301870-003 Matrix: SOIL Received Date: 1/24/2023 1:40:00 PM Result **RL** Qual Units DF **Date Analyzed EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: SB **Diesel Range Organics (DRO)** 1/26/2023 11:23:22 AM 20 8.7 mg/Kg 1 Motor Oil Range Organics (MRO) ND 44 mg/Kg 1 1/26/2023 11:23:22 AM 2 AM ссм 0 PM 0 PM ССМ

Motor On Range Organics (MRO)	ND		iiig/ixg		1/20/2020 11.20.22 AW
Surr: DNOP	129	69-147	%Rec	1	1/26/2023 11:23:22 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: CCM
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	1/26/2023 12:21:00 PM
Surr: BFB	96.4	37.7-212	%Rec	1	1/26/2023 12:21:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.025	mg/Kg	1	1/26/2023 12:21:00 PM
Toluene	ND	0.050	mg/Kg	1	1/26/2023 12:21:00 PM
Ethylbenzene	ND	0.050	mg/Kg	1	1/26/2023 12:21:00 PM
Xylenes, Total	ND	0.10	mg/Kg	1	1/26/2023 12:21:00 PM
Surr: 4-Bromofluorobenzene	98.2	70-130	%Rec	1	1/26/2023 12:21:00 PM
EPA METHOD 300.0: ANIONS					Analyst: NAI
Chloride	2000	60	mg/Kg	20	1/25/2023 4:59:10 PM

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

**Qualifiers:** 

* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

- Not Detected at the Reporting Limit
- ND PQL Practical Quanitative Limit

% Recovery outside of standard limits. If undiluted results may be estimated. S

- Analyte detected in the associated Method Blank в
- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

Page 3 of 19

**Analytical Report** Lab Order 2301870

Date Reported: 1/30/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy Client Sample ID: BS23-103 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/20/2023 8:42:00 AM Lab ID: 2301870-004 Matrix: SOIL Received Date: 1/24/2023 1:40:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: SB Diesel Range Organics (DRO) 39 9.7 mg/Kg 1 1/26/2023 12:05:35 PM Motor Oil Range Organics (MRO) 64 48 mg/Kg 1 1/26/2023 12:05:35 PM 69-147 Surr: DNOP 114 %Rec 1 1/26/2023 12:05:35 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/26/2023 12:41:00 PM 5.0 mg/Kg 1 Surr: BFB 102 37.7-212 %Rec 1 1/26/2023 12:41:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 1/26/2023 12:41:00 PM 0.025 mg/Kg 1 Toluene ND 0.050 mg/Kg 1 1/26/2023 12:41:00 PM Ethylbenzene ND 0.050 mg/Kg 1 1/26/2023 12:41:00 PM Xylenes, Total ND 0.10 mg/Kg 1 1/26/2023 12:41:00 PM Surr: 4-Bromofluorobenzene 98.7 70-130 %Rec 1 1/26/2023 12:41:00 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride 1800 60 1/25/2023 5:12:02 PM ma/Ka 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit POL

Practical Quanitative Limit S % Recovery outside of standard limits. If undiluted results may be estimated.

Analyte detected in the associated Method Blank в

- Е Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits

Р Sample pH Not In Range

Reporting Limit RL

Page 4 of 19

Analytical Report
Lab Order 2301870

Date Reported: 1/30/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy Client Sample ID: BS23-104 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/20/2023 8:47:00 AM Lab ID: 2301870-005 Matrix: SOIL Received Date: 1/24/2023 1:40:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: SB Diesel Range Organics (DRO) 43 9.5 mg/Kg 1 1/26/2023 9:37:39 AM Motor Oil Range Organics (MRO) 63 47 mg/Kg 1 1/26/2023 9:37:39 AM 69-147 Surr: DNOP 118 %Rec 1 1/26/2023 9:37:39 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/26/2023 1:00:00 PM 4.8 mg/Kg 1 Surr: BFB 97.5 37.7-212 %Rec 1 1/26/2023 1:00:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 0.024 mg/Kg 1/26/2023 1:00:00 PM 1 Toluene ND 0.048 mg/Kg 1 1/26/2023 1:00:00 PM Ethylbenzene ND 0.048 mg/Kg 1 1/26/2023 1:00:00 PM Xylenes, Total ND 0.096 mg/Kg 1 1/26/2023 1:00:00 PM 1/26/2023 1:00:00 PM Surr: 4-Bromofluorobenzene 99.5 70-130 %Rec 1 **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride 2300 60 1/25/2023 5:24:54 PM ma/Ka 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range RL Reporting Limit

Page 5 of 19

Project:

**Analytical Report** Lab Order 2301870

Date Reported: 1/30/2023

## Hall Environmental Analysis Laboratory, Inc.

Hackberry 6 Fed 1 Well Pad

Client Sample ID: BS23-105 4' Collection Date: 1/20/2023 8:46:00 AM Received Date: 1/24/2023 1:40:00 PM

Lab ID: 2301870-006	Matrix: SOIL	Received Date: 1/24/2023 1:40:00 PM							
Analyses	Result	RL Qu	al Units	DF	Date Analyzed				
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: SB				
Diesel Range Organics (DRO)	100	9.5	mg/Kg	1	1/26/2023 10:24:52 AM				
Motor Oil Range Organics (MRO)	180	47	mg/Kg	1	1/26/2023 10:24:52 AM				
Surr: DNOP	130	69-147	%Rec	1	1/26/2023 10:24:52 AM				
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM				
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/26/2023 1:20:00 PM				
Surr: BFB	99.5	37.7-212	%Rec	1	1/26/2023 1:20:00 PM				
EPA METHOD 8021B: VOLATILES					Analyst: CCM				
Benzene	ND	0.024	mg/Kg	1	1/26/2023 1:20:00 PM				
Toluene	ND	0.048	mg/Kg	1	1/26/2023 1:20:00 PM				
Ethylbenzene	ND	0.048	mg/Kg	1	1/26/2023 1:20:00 PM				
Xylenes, Total	ND	0.096	mg/Kg	1	1/26/2023 1:20:00 PM				
Surr: 4-Bromofluorobenzene	101	70-130	%Rec	1	1/26/2023 1:20:00 PM				
EPA METHOD 300.0: ANIONS					Analyst: JMT				
Chloride	2300	150	mg/Kg	50	1/26/2023 12:42:57 PM				

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

**Qualifiers:** 

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**EPA METHOD 300.0: ANIONS** 

Chloride

Analytical Report
Lab Order 2301870

Date Reported: 1/30/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy Client Sample ID: BS23-106 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/20/2023 8:51:00 AM Lab ID: 2301870-007 Matrix: SOIL Received Date: 1/24/2023 1:40:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: SB Diesel Range Organics (DRO) 76 9.1 mg/Kg 1 1/26/2023 11:12:15 AM Motor Oil Range Organics (MRO) 130 46 mg/Kg 1 1/26/2023 11:12:15 AM 69-147 Surr: DNOP 130 %Rec 1 1/26/2023 11:12:15 AM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/26/2023 1:40:00 PM 5.0 mg/Kg 1 Surr: BFB 96.4 37.7-212 %Rec 1 1/26/2023 1:40:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 0.025 mg/Kg 1/26/2023 1:40:00 PM 1 Toluene ND 0.050 mg/Kg 1 1/26/2023 1:40:00 PM Ethylbenzene ND 0.050 mg/Kg 1 1/26/2023 1:40:00 PM Xylenes, Total ND 0.10 mg/Kg 1 1/26/2023 1:40:00 PM 1/26/2023 1:40:00 PM Surr: 4-Bromofluorobenzene 96.4 70-130 %Rec 1

2200

150

ma/Ka

50

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Analyst: JMT

1/26/2023 12:55:18 PM

Project:

**Analytical Report** Lab Order 2301870

Date Reported: 1/30/2023

## Hall Environmental Analysis Laboratory, Inc.

Hackberry 6 Fed 1 Well Pad

Client Sample ID: BS23-107 4' Collection Date: 1/20/2023 8:51:00 AM **Dessived Dete:** 1/24/2022 1:40:00 DM

Lab ID: 2301870-008	Matrix: SOIL	<b>Received Date:</b> 1/24/2023 1:40:00 PM						
Analyses	Result	RL Qu	al Units	DF	Date Analyzed			
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: SB			
Diesel Range Organics (DRO)	40	9.3	mg/Kg	1	1/26/2023 11:59:30 AM			
Motor Oil Range Organics (MRO)	62	46	mg/Kg	1	1/26/2023 11:59:30 AM			
Surr: DNOP	126	69-147	%Rec	1	1/26/2023 11:59:30 AM			
EPA METHOD 8015D: GASOLINE RANGI	E				Analyst: CCM			
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/26/2023 1:59:00 PM			
Surr: BFB	98.7	37.7-212	%Rec	1	1/26/2023 1:59:00 PM			
EPA METHOD 8021B: VOLATILES					Analyst: CCM			
Benzene	ND	0.024	mg/Kg	1	1/26/2023 1:59:00 PM			
Toluene	ND	0.049	mg/Kg	1	1/26/2023 1:59:00 PM			
Ethylbenzene	ND	0.049	mg/Kg	1	1/26/2023 1:59:00 PM			
Xylenes, Total	ND	0.097	mg/Kg	1	1/26/2023 1:59:00 PM			
Surr: 4-Bromofluorobenzene	98.8	70-130	%Rec	1	1/26/2023 1:59:00 PM			
EPA METHOD 300.0: ANIONS					Analyst: JMT			
Chloride	2300	150	mg/Kg	50	1/26/2023 1:07:40 PM			

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

**Qualifiers:** 

* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Project:

**Analytical Report** Lab Order 2301870

Date Reported: 1/30/2023

## Hall Environmental Analysis Laboratory, Inc.

Hackberry 6 Fed 1 Well Pad

Client Sample ID: BS23-108 4' Collection Date: 1/20/2023 8:55:00 AM **Received Date:** 1/24/2023 1:40:00 PM

Lab ID: 2301870-009	Matrix: SOIL	<b>Received Date:</b> 1/24/2023 1:40:00 PM						
Analyses	Result	RL Qu	al Units	DF	Date Analyzed			
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: SB			
Diesel Range Organics (DRO)	38	9.3	mg/Kg	1	1/26/2023 12:19:44 PM			
Motor Oil Range Organics (MRO)	63	47	mg/Kg	1	1/26/2023 12:19:44 PM			
Surr: DNOP	95.2	69-147	%Rec	1	1/26/2023 12:19:44 PM			
EPA METHOD 8015D: GASOLINE RANGE	E				Analyst: CCM			
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/26/2023 2:19:00 PM			
Surr: BFB	98.0	37.7-212	%Rec	1	1/26/2023 2:19:00 PM			
EPA METHOD 8021B: VOLATILES					Analyst: CCM			
Benzene	ND	0.024	mg/Kg	1	1/26/2023 2:19:00 PM			
Toluene	ND	0.048	mg/Kg	1	1/26/2023 2:19:00 PM			
Ethylbenzene	ND	0.048	mg/Kg	1	1/26/2023 2:19:00 PM			
Xylenes, Total	ND	0.097	mg/Kg	1	1/26/2023 2:19:00 PM			
Surr: 4-Bromofluorobenzene	98.2	70-130	%Rec	1	1/26/2023 2:19:00 PM			
EPA METHOD 300.0: ANIONS					Analyst: NAI			
Chloride	2200	60	mg/Kg	20	1/25/2023 6:16:21 PM			

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

**Qualifiers:** 

* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Project:

**Analytical Report** Lab Order 2301870

Date Reported: 1/30/2023

## Hall Environmental Analysis Laboratory, Inc.

Hackberry 6 Fed 1 Well Pad

Client Sample ID: BS23-109 4' Collection Date: 1/20/2023 8:55:00 AM **Received Date:** 1/24/2023 1:40:00 PM

Lab ID: 2301870-010	Matrix: SOIL	<b>Received Date:</b> 1/24/2023 1:40:00 PM						
Analyses	Result	RL Qua	l Units	DF	Date Analyzed			
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: SB			
Diesel Range Organics (DRO)	25	9.9	mg/Kg	1	1/26/2023 12:34:06 PM			
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	1/26/2023 12:34:06 PM			
Surr: DNOP	104	69-147	%Rec	1	1/26/2023 12:34:06 PM			
EPA METHOD 8015D: GASOLINE RANGE	E				Analyst: CCM			
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	1/26/2023 2:38:00 PM			
Surr: BFB	98.2	37.7-212	%Rec	1	1/26/2023 2:38:00 PM			
EPA METHOD 8021B: VOLATILES					Analyst: CCM			
Benzene	ND	0.025	mg/Kg	1	1/26/2023 2:38:00 PM			
Toluene	ND	0.049	mg/Kg	1	1/26/2023 2:38:00 PM			
Ethylbenzene	ND	0.049	mg/Kg	1	1/26/2023 2:38:00 PM			
Xylenes, Total	ND	0.099	mg/Kg	1	1/26/2023 2:38:00 PM			
Surr: 4-Bromofluorobenzene	98.3	70-130	%Rec	1	1/26/2023 2:38:00 PM			
EPA METHOD 300.0: ANIONS					Analyst: JMT			
Chloride	2900	150	mg/Kg	50	1/26/2023 1:20:01 PM			

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

**Qualifiers:** 

* Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range Reporting Limit
- RL

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Analytical Report
Lab Order 2301870

Date Reported: 1/30/2023

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy Client Sample ID: BS23-110 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/20/2023 8:58:00 AM Lab ID: 2301870-011 Matrix: SOIL Received Date: 1/24/2023 1:40:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: SB Diesel Range Organics (DRO) ND 9.0 mg/Kg 1 1/26/2023 12:48:23 PM Motor Oil Range Organics (MRO) ND 45 mg/Kg 1 1/26/2023 12:48:23 PM 69-147 Surr: DNOP 93.0 %Rec 1 1/26/2023 12:48:23 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/26/2023 3:17:00 PM 4.9 mg/Kg 1 Surr: BFB 96.6 37.7-212 %Rec 1 1/26/2023 3:17:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 0.025 mg/Kg 1/26/2023 3:17:00 PM 1 Toluene ND 0.049 mg/Kg 1 1/26/2023 3:17:00 PM Ethylbenzene ND 0.049 mg/Kg 1 1/26/2023 3:17:00 PM Xylenes, Total ND 0.098 mg/Kg 1 1/26/2023 3:17:00 PM Surr: 4-Bromofluorobenzene 99.6 70-130 %Rec 1 1/26/2023 3:17:00 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride 1600 60 1/25/2023 7:07:49 PM ma/Ka 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range

RL Reporting Limit

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Released to Imaging: 6/9/2023 11:32:08 AM

Analytical Report
Lab Order 2301870

Date Reported: 1/30/2023

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy Client Sample ID: BS23-111 4' **Project:** Hackberry 6 Fed 1 Well Pad Collection Date: 1/20/2023 8:58:00 AM Lab ID: 2301870-012 Matrix: SOIL Received Date: 1/24/2023 1:40:00 PM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: SB Diesel Range Organics (DRO) 21 9.2 mg/Kg 1 1/26/2023 1:02:43 PM Motor Oil Range Organics (MRO) ND 46 mg/Kg 1 1/26/2023 1:02:43 PM Surr: DNOP 118 69-147 %Rec 1 1/26/2023 1:02:43 PM **EPA METHOD 8015D: GASOLINE RANGE** Analyst: CCM Gasoline Range Organics (GRO) ND 1/26/2023 3:37:00 PM 4.9 mg/Kg 1 Surr: BFB 98.2 37.7-212 %Rec 1 1/26/2023 3:37:00 PM **EPA METHOD 8021B: VOLATILES** Analyst: CCM Benzene ND 0.025 mg/Kg 1/26/2023 3:37:00 PM 1 Toluene ND 0.049 mg/Kg 1 1/26/2023 3:37:00 PM Ethylbenzene ND 0.049 mg/Kg 1 1/26/2023 3:37:00 PM Xylenes, Total ND 0.099 mg/Kg 1 1/26/2023 3:37:00 PM Surr: 4-Bromofluorobenzene 97.6 70-130 %Rec 1 1/26/2023 3:37:00 PM **EPA METHOD 300.0: ANIONS** Analyst: NAI Chloride 960 60 1/25/2023 7:20:40 PM ma/Ka 20

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit

S % Recovery outside of standard limits. If undiluted results may be estimated.

- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Project:

Analytical Report
Lab Order 2301870

Date Reported: 1/30/2023

## Hall Environmental Analysis Laboratory, Inc.

Hackberry 6 Fed 1 Well Pad

Client Sample ID: WS23-43 0-4' Collection Date: 1/20/2023 11:31:00 AM Received Date: 1/24/2023 1:40:00 PM

Lab ID: 2301870-013	Matrix: SOIL	<b>Received Date:</b> 1/24/2023 1:40:00 PM						
Analyses	Result	RL Qu	al Units	DF	Date Analyzed			
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: SB			
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	1/26/2023 1:16:56 PM			
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	1/26/2023 1:16:56 PM			
Surr: DNOP	120	69-147	%Rec	1	1/26/2023 1:16:56 PM			
EPA METHOD 8015D: GASOLINE RANG	E				Analyst: CCM			
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	1/26/2023 3:57:00 PM			
Surr: BFB	102	37.7-212	%Rec	1	1/26/2023 3:57:00 PM			
EPA METHOD 8021B: VOLATILES					Analyst: CCM			
Benzene	ND	0.024	mg/Kg	1	1/26/2023 3:57:00 PM			
Toluene	ND	0.048	mg/Kg	1	1/26/2023 3:57:00 PM			
Ethylbenzene	ND	0.048	mg/Kg	1	1/26/2023 3:57:00 PM			
Xylenes, Total	ND	0.097	mg/Kg	1	1/26/2023 3:57:00 PM			
Surr: 4-Bromofluorobenzene	102	70-130	%Rec	1	1/26/2023 3:57:00 PM			
EPA METHOD 300.0: ANIONS					Analyst: NAI			
Chloride	ND	60	mg/Kg	20	1/25/2023 7:33:32 PM			

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level.
 D Sample Diluted Due to Matrix

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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Project:

**Analytical Report** Lab Order 2301870

Date Reported: 1/30/2023

## Hall Environmental Analysis Laboratory, Inc.

Hackberry 6 Fed 1 Well Pad

Client Sample ID: WS23-44 0-4' Collection Date: 1/20/2023 11:39:00 AM **Received Date:** 1/24/2023 1:40:00 PM

Lab ID: 2301870-014	Matrix: SOIL	Rece	<b>Received Date:</b> 1/24/2023 1:40:00 PM						
Analyses	Result	RL Qu	al Units	DF	Date Analyzed				
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: SB				
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	1/26/2023 12:24:15 PM				
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	1/26/2023 12:24:15 PM				
Surr: DNOP	119	69-147	%Rec	1	1/26/2023 12:24:15 PM				
EPA METHOD 8015D: GASOLINE RANGE	E				Analyst: CCM				
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	1/26/2023 4:17:00 PM				
Surr: BFB	96.7	37.7-212	%Rec	1	1/26/2023 4:17:00 PM				
EPA METHOD 8021B: VOLATILES					Analyst: CCM				
Benzene	ND	0.025	mg/Kg	1	1/26/2023 4:17:00 PM				
Toluene	ND	0.050	mg/Kg	1	1/26/2023 4:17:00 PM				
Ethylbenzene	ND	0.050	mg/Kg	1	1/26/2023 4:17:00 PM				
Xylenes, Total	ND	0.099	mg/Kg	1	1/26/2023 4:17:00 PM				
Surr: 4-Bromofluorobenzene	99.0	70-130	%Rec	1	1/26/2023 4:17:00 PM				
EPA METHOD 300.0: ANIONS					Analyst: NAI				
Chloride	ND	60	mg/Kg	20	1/25/2023 7:46:23 PM				

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

**Qualifiers:** 

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**Project:** 

**Analytical Report** Lab Order 2301870

Date Reported: 1/30/2023

## Hall Environmental Analysis Laboratory, Inc.

Hackberry 6 Fed 1 Well Pad

Client Sample ID: WS23-45 0-4' Collection Date: 1/20/2023 12:42:00 PM Received Date: 1/24/2023 1:40:00 PM

Lab ID: 2301870-015	Matrix: SOIL	<b>Received Date:</b> 1/24/2023 1:40:00 PM						
Analyses	Result	RL Qua	l Units	DF	Date Analyzed			
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: SB			
Diesel Range Organics (DRO)	ND	8.8	mg/Kg	1	1/26/2023 12:48:04 PM			
Motor Oil Range Organics (MRO)	ND	44	mg/Kg	1	1/26/2023 12:48:04 PM			
Surr: DNOP	135	69-147	%Rec	1	1/26/2023 12:48:04 PM			
EPA METHOD 8015D: GASOLINE RANGE	E				Analyst: CCM			
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	1/26/2023 4:36:00 PM			
Surr: BFB	97.0	37.7-212	%Rec	1	1/26/2023 4:36:00 PM			
EPA METHOD 8021B: VOLATILES					Analyst: CCM			
Benzene	ND	0.025	mg/Kg	1	1/26/2023 4:36:00 PM			
Toluene	ND	0.050	mg/Kg	1	1/26/2023 4:36:00 PM			
Ethylbenzene	ND	0.050	mg/Kg	1	1/26/2023 4:36:00 PM			
Xylenes, Total	ND	0.099	mg/Kg	1	1/26/2023 4:36:00 PM			
Surr: 4-Bromofluorobenzene	96.5	70-130	%Rec	1	1/26/2023 4:36:00 PM			
EPA METHOD 300.0: ANIONS					Analyst: NAI			
Chloride	ND	60	mg/Kg	20	1/25/2023 7:59:15 PM			

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

**Qualifiers:** 

- * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- н
- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated. S
- Analyte detected in the associated Method Blank в
- Above Quantitation Range/Estimated Value Е
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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Client:		on Energy	W-11 D.								
Project:	Hack	kberry 6 Fed 1 V	wen Pa	la							
Sample ID: ME	3-72815	SampT	ype: <b>m</b> l	olk	Tes	tCode: El	PA Method	300.0: Anion	s		
Client ID: PB	s	Batch	n ID: 72	815	F	RunNo: <b>9</b>	4198				
Prep Date: 1	/25/2023	Analysis D	ate: 1/	25/2023	S	SeqNo: 3	401847	Units: <b>mg/K</b>	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID: LC	S-72815	SampT	ype: Ics	6	Tes	tCode: El	PA Method	300.0: Anion	s		
Client ID: LC	ss	Batch	n ID: 72	815	F	RunNo: 9	4198				
Prep Date: 1	/25/2023	Analysis D	ate: 1/	25/2023	S	SeqNo: 3	401848	Units: <b>mg/K</b>	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	94.0	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 Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

2301870

30-Jan-23

WO#:

Devon Energy

**Client:** 

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Project: Hackber	ry 6 Fed 1	Well Pa	d							
Sample ID: MB-72814	SampT	ype: ME	BLK	TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: PBS	Batch	n ID: 72	314	RunNo: 94191						
Prep Date: 1/25/2023	Analysis D	Date: 1/	26/2023	SeqNo: 3401999			Units: mg/K	(g		
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	9.8		10.00		97.6	69	147			
Sample ID: LCS-72814	SampT	ype: LC	S	Tes	tCode: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: LCSS	Batch	n ID: <b>72</b>	314	F	RunNo: <b>9</b> 4	4191				
Prep Date: 1/25/2023	Analysis D	Date: 1/	26/2023	5	SeqNo: 34	402000	Units: mg/K	íg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	59	10	50.00	0	118	61.9	130			
Surr: DNOP	4.7		5.000		94.0	69	147			
Sample ID: 2301870-001AMS	SampT	уре: М	;	Tes	tCode: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: BS23-100 4'	Batch	n ID: <b>72</b>	314	F	RunNo: <b>9</b> 4	4195				
Prep Date: 1/25/2023	Analysis D	Date: 1/	26/2023	8	SeqNo: 34	402860	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	9.1	45.41	9.499	78.2	54.2	135			
Surr: DNOP	4.3		4.541		94.3	69	147			
Sample ID: 2301870-001AMS	D SampT	уре: <b>М</b>	D	Tes	tCode: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID: BS23-100 4'	Batch	n ID: <b>72</b>	314	F	RunNo: <b>9</b> 4	4195				
Prep Date: 1/25/2023	Analysis D	Date: 1/	26/2023	S	SeqNo: 34	402863	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	9.6	47.94	9,499	90.5	54.2	135	16.1	29.2	

#### Qualifiers:

Surr: DNOP

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.

4.8

4.794

B Analyte detected in the associated Method Blank

99.2

69

147

0

- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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2301870

30-Jan-23

WO#:

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc.

Client:Devon 1Project:Hackber	Energy rry 6 Fed 1 V	Well Pa	d							
Sample ID: Ics-72799	SampT	ype: LC	S	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e	
Client ID: LCSS	Batch	n ID: 72	799	F	RunNo: 94183					
Prep Date: 1/24/2023	Analysis D	ate: 1/	26/2023	S	SeqNo: 34	401214	Units: mg/K	mg/Kg		
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	72.3	137			
Surr: BFB	1000		1000		104	37.7	212			
Sample ID: mb-72799	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e	
Client ID: PBS	Batch	n ID: 72	799	F	RunNo: <b>9</b> 4	4183				
Prep Date: 1/24/2023	Analysis D	ate: 1/	26/2023	S	SeqNo: 34	401215	Units: <b>mg/K</b>	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	920		1000		91.7	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 Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

Page 18 of 19

WO#: 2301870 30-Jan-23 Devon Energy

**Client:** 

# QC SUMMARY REPORT Hall Environmental Analysis Laboratory, Inc

С.		30-Jan-23
	WO#:	2301870

Project: Hackbe	erry 6 Fed 1	Well Pa	d									
Sample ID: Ics-72799	SampT	ype: LC	S	Tes	TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batcl	h ID: 72	799	F	RunNo: <b>94183</b>							
Prep Date: 1/24/2023	Analysis E	Date: 1/	26/2023	S	SeqNo: 3401309 Units: mg/K				g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Benzene	0.96	0.025	1.000	0	96.2	80	120					
Toluene	0.96	0.050	1.000	0	95.8	80	120					
Ethylbenzene	0.93	0.050	1.000	0	93.3	80	120					
Xylenes, Total	2.8	0.10	3.000	0	92.1	80	120					
Surr: 4-Bromofluorobenzene	0.95		1.000		94.6	70	130					
Sample ID: mb-72799	SampT	Гуре: <b>МЕ</b>	BLK	Tes	tCode: El	PA Method	hod 8021B: Volatiles					
Client ID: PBS	Batc	h ID: 72	799	F	RunNo: <b>9</b> 4	4183						
Prep Date: 1/24/2023	Analysis E	Date: 1/	26/2023	5	SeqNo: 34	401310	Units: <b>mg/</b> #	٤g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Benzene	ND	0.025										
Toluene	ND	0.050										
Ethylbenzene	ND	0.050										
Xylenes, Total	ND	0.10										
Surr: 4-Bromofluorobenzene	0.95		1.000		94.7	70	130					

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of standard limits. If undiluted results may be estimated.
- B Analyte detected in the associated Method Blank
- E Above Quantitation Range/Estimated Value
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Limit

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### 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

Released to Imaging: 6/9/2023 11:32:08 AM

Client Name:	Devon Ene	ergy	Work	Order Num	ber: 230	1870		RcptNc	x 1
Received By:	Joseph A	Iderette	1/24/20	23 2:40:00	PM		diff.		
Completed By	/: Desiree D	ominguez	1/24/20	23 2:02:53	РМ		TPS		
Reviewed By:	821 1	24/23							
<u>Chain of Cu</u>	ustody								
1. Is Chain of	Custody comp	olete?			Yes		No 🗹	Not Present	
2. How was the	he sample deliv	vered?			<u>Cou</u>	rier			
Log In		-						NA []	
3. Was an att	empt made to	cool the samp	les?		Yes	$\checkmark$	No 🗌	NA 🗍	
4. Were all sa	mples received	l at a tempera	ture of >0° C	to 6.0°C	Yes	$\checkmark$	No 🗌	NA 🗌	
5. Sample(s)	in proper conta	iner(s)?			Yes	<	No 🗌		
6. Sufficient sa	ample volume	for indicated te	est(s)?		Yes		No 🗌		
7. Are sample	s (except VOA	and ONG) pro	operly preserve	ed?	Yes	$\checkmark$	No 🗌		
8. Was preser	vative added to	bottles?			Yes		No 🗹	NA 🗌	
9. Received at	t least 1 vial wi	th headspace	<1/4" for AQ \	/OA?	Yes		No 🗌	NA 🗹	
10. Were any s			roken?		Yes		No 🗹	# of preserved bottles checked	/
11. Does paper (Note discre	work match bo epancies on ch		)		Yes		No 🗌	for pH: (<2 c	r >12 unless noted)
12. Are matrice	s correctly ider	ntified on Chai	n of Custody?		Yes		No 🗌	Adjusted?	
13. Is it clear w	hat analyses w	ere requested	?		Yes		No 🗌		1.
14. Were all ho (If no, notify	lding times abl				Yes	$\checkmark$	No 🗌	Checked by:	JA 1-24.23
Special Han								L	
15. Was client			with this order	?	Yes		No 🗌	NA 🗹	
Perso	on Notified:	ſ		Date:					
By W	/hom:			Via:	eM	ail 🗌	Phone Sax	In Person	
Rega	arding:	, 							
Clien	t Instructions:	Í.	1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -			-			
16. Additional	remarks:								
COC	missing client	info (on file) -	DAD 1/24/23						
17. Cooler Inf			Distance and					1	
Cooler			Seal Intact	Seal No	Seal D	ate	Signed By		
1 2	0.2	Good Good	Not Present Not Present						
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ΡM
1:52:13
2/7/2023
v OCD:
Received by

cted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical repo
ubcontracted to other accredited laboratorie
If necessary, samples submitted to Hall Environmental may be submode to $Imaging;\ 6/9/2023\ 11:32:08\ AM$

Received by OCD: 2/7/2023 1:52:13 PM		Page 410 of 414
Chain-of-Custody Record	Turn-Around Time:	
Client: Devon /Vertex)	Candard Kush 48-4mur	ANALYSIS LABORATORY
٢	Project Name:	www.hallenvironmental.com
Mailing Address: Oの 子) し	Hackberry & Fedt Wellsad	4901 Hawkins NE - Albuquerque, NM 87109
	Project #:	Tel. 505-345-3975 Fax 505-345-4107
Phone #:	22 E - 02537	Anal
email or Fax#:	Project Manager:	¢0;
ö	Chance Dixon	s (802 SIMS SIMS SIMS
		) 220 35 F
:u		// C 806
	On Ice: TYes I No	(O) )3' 0 0 62 (S2)
EDD (Type)	0.2.0	D)(G cid 31( 31( V)
	Cooler Temp(Including CF): J. 8 - 6.2 / J. 6 Vog. (°C)	)151( )esti 09 8 8 M 8 M 8 M 8 M 8 M
	Container Preservative HEAL No.	)8:H9 98:H9 98:H8 98: 18: 18: 18: 18: 18: 19: 19: 19: 19: 19: 19: 19: 19: 19: 19
Date Time Matrix Sample Name	# Type	
1/20/22 8:36 Soil 8523 - 100 4.		
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r	×00×	
- 7758	- 206	
8:21 B323-108 4,	- 007	
101 - 8233 / 1233 dr	- 008	
8:22 BS23-108 41	- 004	
1 8:32 BS23-109 4'	- 010	
	110-	
1 8:28 1 8:29 - 111 d	-012	
Reling	Via: Date	
221524	MMMMMM 1010 915	
Date Time: ReMquished by:		WO 1007 101301
If necessary samples submitted to Hall Environmental may be sub	2000 the serves as notice of the	FIM WWW F Take a service of this possibility. Any sub-contracted for other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

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Received by OCD: 2/7/2023 1:52:13 PM										Page 411 of 414
Chain-of-Custody Record	Turn-Around Time:	le:	and the second				N	VTR	HALL ENVIRONMENTAL	NTAL
client: Devon (Vertex)	□ Standard		VRush 48 W		• •	NAI	YSI	S L	ANALYSIS LABORATORY	TORY
	Project Name:					ed.www	www.hallenvironmental.com	Imenta	l.com	
Mailing Address: DIN LJ(D	Hackberry		le Fed I Well Pad	490	1 Hawk	ns NE	- Albuq	nerque	4901 Hawkins NE - Albuquerque, NM 87109	
	Project #:			Tel.	505-34	505-345-3975	Fax .	505-3	Fax 505-345-4107	
Phone #:	126-0	02537					Anal	s Requ	est	
email or Fax#:	Project Manager:						⁷ 05		(jua	
QA/QC Package:	Chance	e Dikon	No		PCB's	SMIS	S '⁺Od		esdA\tr	
n: 🗆 Az Con	Sampler:	SPC				9270	' ^z ON	(	Jəsə.	_
			D No		_			AC	ıд)	
🗆 EDD (Type)	# of Coolers: 2	0.4- D.C	= 0.2°C +00.		. C		ON		uu	
	Cooler Temp(Including CF): / §	1	0.2=1.6 J (°C)				Br,	_	ofilo:	
Date Time Matrix Sample Name	Container Pr Type and # Ty	Preservative Type	2301870	8.H9T	8081 F	ehag Arda	8560 ( GIJE'	) 0728	) letoT	
211:31 Soil	1	ice	- 013	2 1						
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1000 MU WMMMMM Sales as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.	subcontracted to other accre	dited laboratories	s This serves as notice of this		Ally Martheory	CC Sally Curtar	a will be cl	sarlv nota	ed on the analytic	al report

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The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgment of Vertex based on the data collected during the assessment. Due to the nature of the assessment and the data available, Vertex cannot warrant against undiscovered environmental liabilities. Conclusions and recommendations presented in this report should not be considered legal advice.

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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

Operator:	OGRID:	
DEVON ENERGY PRODUCTION COMPANY, LP	6137	
333 West Sheridan Ave.	Action Number:	
Oklahoma City, OK 73102	183720	
	Action Type:	
	[C-141] Release Corrective Action (C-141)	

#### CONDITIONS

Created By	Condition	Condition Date
rhamlet	We have received your closure report and final C-141 for Incident #NAPP2219226827 PASTURE NORTH OF HACKBERRY 6 FEDERAL 1, thank you. This closure is approved.	6/9/2023

Action 183720