Incident ID nAPP2307924732 District RP Facility ID Application ID

## **Site Assessment/Characterization**

This information must be provided to the appropriate district office no taler than 90 days after the release discovery date.				
What is the shallowest depth to groundwater beneath the area affected by the release?	(ft bgs)			
Did this release impact groundwater or surface water?	Yes X No			
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	Yes X 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 X No			
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	Yes X 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 X No			
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	X Yes No			
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	Yes X 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 <b>not</b> on an exploration, development, production, or storage site?	Yes X 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.
- | Field data
- X Data table of soil contaminant concentration data
- X Depth to water determination
- 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
- Topographic/Aerial maps
- 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.

Received by OCD: 6/29/2023 7:57:17 AM Form C-141 State of New Mexico Page 4 Oil Conservation Division

	Page	2	of I	41
20702	4722			İ

Incident ID	nAPP2307924732
District RP	
Facility ID	
Application ID	

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: Dale Woodall	Title: Environmental Professional			
Signature: Dale Woodall	Date: 6/29/2023			
email: <u>Dale.woodall@dvn.com</u>	Telephone <u>575-748-1838</u>			
OCD Only				
Received by: Shelly Wells	Date: <u>6/29/2023</u>			

7:17 AM State of New Mexico

Incident ID	nAPP2307924732
District RP	
Facility ID	
Application ID	

# **Remediation Plan**

Remediation Plan Checklist: Each of the following items must b	e included in the plan.			
Detailed description of proposed remediation technique  Scaled sitemap with GPS coordinates showing delineation points  Estimated volume of material to be remediated  Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC  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 predeconstruction.	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.			
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: Dale Woodall	Title: Environmental Professional			
Signature: Dale Woodall	Date: 6/29/2023			
email:dale.woodall@dvn.com Telephone:575-748-1838				
OCD Only				
Received by: Shelly Wells	Date: <u>6/29/2023</u>			
Approved				
Signature: Date:				



#### **General Information**

NMOCD District:	District 2	Incident ID:	nAPP2307924732
Landowner:	Private	RP Reference:	N/A
Client:	Devon Energy Production Company, LP	Site Location:	Bindel 4 Fee #001H
Date:	June 27, 2023	Project #:	23E-01581
Client Contact:	Dale Woodall	Phone #:	405.318.4697
Vertex PM:	Kent Stallings	Phone #:	346.814.1413

#### **Objective**

The objective of the environmental remediation work plan is to identify exceedances found during the site assessment and characterization activity at Bindel 4 Fee #001H, and to propose an appropriate remediation technique to address these areas (Attachment 1). Areas of environmental concern identified and delineated include: the three phase separator containment and surrounding area. Closure criteria have been selected as per New Mexico Administrative Code 19.15.29. All applicable research as it pertains to closure criteria selection is presented in Attachment 2. The closure criteria for the site is presented below.

Table 1. Closure Criteria for Soils Impacted by a Release				
Minimum depth below any point within the horizontal boundary of the release to groundwater				
less than 10,000 mg/l TDS	Constituent	Limit		
	Chloride	600 mg/kg		
.506	TPH (GRO+DRO+MRO)	100 mg/kg		
< 50 feet	BTEX	50 mg/kg		
	Benzene	10 mg/kg		

TDS - Total dissolved solids

#### **Site Assessment/Characterization**

Site characterization was completed on May 31, 2023. A total of 16 sample points were established and 46 samples collected for field screening. In total, 44 samples were submitted to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico, for analysis. The sample locations are presented in Attachment 3. Laboratory analysis results have been compared to the above noted closure criteria and the results from the characterization activity are presented in Attachment 4. Exceedances are identified in the table as bold with a grey background.

#### **Remedial Activities**

#### General

Areas identified with contaminant concentrations above closure criteria will be remediated through excavation. Laboratory results from the site assessment and characterization have been referenced to estimate both the vertical and horizontal limits of the impacts and the volume of soil to be removed. Soil will be excavated to the extents of the known contamination. Field screening will be utilized to confirm removal of contaminanted soil below the applicable closure criteria. Contaminated soils will be stored on a 30mil liner prior to disposal at an approved facility. Once excavation is complete, confirmatory samples will be collected and laboratory analysis completed to confirm closure criteria guidelines are met. Excavations will be backfilled with clean soil sourced locally.

VERSATILITY. EXPERTISE.

TPH - Total petroleum hydrocarbons = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO),

BTEX – Benzene, toluene, ethylbenzene, and xylenes



#### nAPP2307924732 - Release into and Adjacent to Containment

A total of 46 samples were collected for analysis adjacent to the tank containment area. All sample points were established on the site pad. Due to the proximity to buried utility lines and containment, and potential for safety concerns, a hydro vac truck and hand crew will be utilized to remove contaminated soil in close proximity to the containment area and around utility lines. Heavy equipment will be used to complete excavation in open areas. Confirmatory samples will be collected as per New Mexico Oil Conservation Division guidance and submitted for laboratory analysis of all applicable parameters. The estimated volume to be excavated is **275 cubic yards**.

Sample Point	Excavation Depth	Remediation Method
BH23-01	6'	Backhoe/Handcrew
BH23-02	4'	Backhoe/Handcrew
BH23-03	4'	Backhoe/Handcrew
BH23-09	0.5'	Backhoe/Handcrew
BH23-10	0.5'	Backhoe/Handcrew
BH23-12	0.5'	Backhoe/Handcrew
BH23-14	0.5'	Backhoe/Handcrew

Should you have any questions or concerns, please do not hesitate to contact the undersigned at 346.814.1413 or kstallings@vertex.ca.

Stephanie McCarty	June 27, 2023	
Stephanie McCarty, B.Sc. ENVIRONMENTAL TECHNICIAN, REPORTING	Date	
Kent Stallings P.G.	June 29,2023	
Kent Stallings, P.G. PROJECT MANAGER, REPORT REVIEW	Date	

#### **Attachments**

Attachment 1. NMOCD C-141 Report

Attachment 2. Closure Criteria Research

Attachment 3. Characterization Sampling Site Schematic

Attachment 4. Laboratory Results Table and Laboratory Data Reports

VERSATILITY. EXPERTISE.

## **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

Incident ID	
District RP	
Facility ID	
Application ID	

# **Release Notification**

## **Responsible Party**

Responsible Party OGRID						
Contact Name			Contact Telephone			
Contact email			Incident # (assigned by OCD)			
Contact mail	ing address			-		
			Location	of Release So	ource	
Latitude				Longitude		
			(NAD 83 in de	cimal degrees to 5 decin	nal places)	
Site Name				Site Type		
Date Release	Discovered			API# (if app	olicable)	
Unit Letter	Section	Township	Range	Cour	ntv	]
Ont Letter	Section	Township	runge	Cour	11.7	
Surface Owner	r: State	☐ Federal ☐ Tr	ibal Private (I	Name:		)
			Nature and	d Volume of 1	Release	
Crude Oil		(s) Released (Select al Volume Release		calculations or specific	Volume Reco	volumes provided below) vered (bbls)
Produced	Water	Volume Release	` '		Volume Recovered (bbls)	
			ion of total dissol	ved solids (TDS)	☐ Yes ☐ No	
		in the produced	water >10,000 mg			
Condensa	te	Volume Release	d (bbls)		Volume Recovered (bbls)	
Natural G	as	Volume Release	d (Mcf)		Volume Recovered (Mcf)	
Other (describe) Volume/Weight Released (provide units)		e units)	Volume/Weight Recovered (provide units)			
Cause of Rele	ease					

Received by OCD: 6/29/2023 7:57:17 AM Form C-141 State of New Mexico Page 2 Oil Conservation Division

	Page 8 of 14	41
Incident ID		
District RP		
Facility ID		
Application ID		

Was this a major	If YES, for what reason(s) does the respon	sible party consider this a major release?
release as defined by 19.15.29.7(A) NMAC?		
19.13.29.7(11) TWINTE.		
☐ Yes ☐ No		
If YES, was immediate no	otice given to the OCD? By whom? To wh	om? When and by what means (phone, email, etc)?
	Initial Ro	esponse
The responsible p	party must undertake the following actions immediatel	y unless they could create a safety hazard that would 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 environment.
Released materials ha	ave been contained via the use of berms or contained via the use of the use o	ikes, absorbent pads, or other containment devices.
☐ All free liquids and re	ecoverable materials have been removed an	l managed appropriately.
If all the actions described	d above have <u>not</u> been undertaken, explain	- vhy:
		emediation immediately after discovery of a release. If remediation
		efforts have been successfully completed or if the release occurred lease attach all information needed for closure evaluation.
		post of my knowledge and understand that pursuant to OCD rules and factions and perform corrective actions for releases which may endanger
public health or the environr	ment. The acceptance of a C-141 report by the C	CD does not relieve the operator of liability should their operations have at to groundwater, surface water, human health or the environment. In
addition, OCD acceptance of		responsibility for compliance with any other federal, state, or local laws
and/or regulations.		
Printed Name:		Title:
Signature: Dale W	oodall	Date:
email:		Telephone:
OCD Only		
-	un Havina au	- 00/00/0000
Received by:Jocely	yn Harimon	Date: 03/22/2023

Incident ID nAPP2307924732 District RP Facility ID Application ID

## **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?	(ft bgs)
Did this release impact groundwater or surface water?	Yes X No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	Yes X 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 X No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	Yes X 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 X No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	X Yes No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	Yes X 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 <b>not</b> on an exploration, development, production, or storage site?	Yes X No
Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vergentamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.	tical extents of soil

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.
- | Field data
- X Data table of soil contaminant concentration data
- X Depth to water determination
- 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
- Topographic/Aerial maps
- 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.

Received by OCD: 6/29/2023 7:57:17 AM Form C-141 State of New Mexico Page 4 Oil Conservation Division

Page	10 o	f 141

Incident ID	nAPP2307924732
District RP	
Facility ID	
Application ID	

regulations all operators are required to report and/or file certain release public health or the environment. The acceptance of a C-141 report by failed to adequately investigate and remediate contamination that pose	o the best of my knowledge and understand that pursuant to OCD rules and e notifications and perform corrective actions for releases which may endanger the OCD does not relieve the operator of liability should their operations have a threat to groundwater, surface water, human health or the environment. In tor of responsibility for compliance with any other federal, state, or local laws
Printed Name: Dale Woodall	Title: Environmental Professional
Signature: Dale Woodall	Date: _6/29/2023
email: <u>Dale.woodall@dvn.com</u>	Telephone <u>575-748-1838</u>
OCD Only	
Received by:	Date:

State of New Mexico

Incident ID	nAPP2307924732
District RP	
Facility ID	
Application ID	

# **Remediation Plan**

Remediation Plan Checklist: Each of the following items must be	e included in the plan.									
<ul> <li>□ Detailed description of proposed remediation technique</li> <li>□ Scaled sitemap with GPS coordinates showing delineation points</li> <li>□ Estimated volume of material to be remediated</li> <li>□ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC</li> <li>□ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)</li> </ul>										
Deferral Requests Only: Each of the following items must be con	afirmed as part of any request for deferral of remediation.									
Contamination must be in areas immediately under or around predeconstruction.	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.									
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: Dale Woodall	Title: _Environmental Professional									
Signature: Dale Woodall	Date: 6/29/2023									
email:dale.woodall@dvn.com	Telephone: <u>575-748-1838</u>									
OCD Only										
Received by:	Date:									
Approved	Approval									
Signature:	<u>Date:</u>									

Closure	Criteria Worksheet		
Site Nan	ne: BINDEL 4 FEE 1 BATTERY		
Spill Cod	ordinates: 32.336466, -104.188824		
Site Spe	cific Conditions	Value	Unit
1	Depth to Groundwater	<50	feet
_	Within 300 feet of any continuously flowing	1 100	foot
2	watercourse or any other significant watercourse	1,108	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake	40.474	foot
3	(measured from the ordinary high-water mark)	49,474	feet
4	Within 300 feet from an occupied residence, school,	705	foot
4	hospital, institution or church	705	feet
	i) Within 500 feet of a spring or a private, domestic		
5	fresh water well used by less than five households for	2,136	feet
5	domestic or stock watering purposes, or		
	ii) Within 1000 feet of any fresh water well or spring	998	feet
	Within incorporated municipal boundaries or within a		
	defined municipal fresh water field covered under a		
6	municipal ordinance adopted pursuant to Section 3-27-	No	(Y/N)
	3 NMSA 1978 as amended, unless the municipality		
	specifically approves		
7	Within 300 feet of a wetland	20,909	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
			Critical
9	Within an unstable area (Karst Map)	Medium	High
			Medium
			Low
10	Within a 100-year Floodplain	500	year
11	Soil Type	Loam	
12	Ecological Classification	Loamy	
13	Geology	Qp	Piedmont alluvial
		-	deposits
İ	NMAC 19.15.29.12 E (Table 1) Closure Criteria	<50'	



# New Mexico Office of the State Engineer

# Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is

closed)

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

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

	,	POD Sub-		Q	Q	Q								W	⁄ater
POD Number C 00281	Code	<b>basin</b> C	County ED				Sec 04	Tws 23S	Rng 27E	<b>X</b> 576459	<b>Y</b> 3577846*	DistanceDe	pthWellDer 150	othWater Co	lumn
C 00400		C	ED				04	23S	27E	576459	3577846*	211	145		
C 00546		C	ED					23S	27E	576663	3578051*	325	113	123	
C 03476 POD1		C	ED				04	23S	27E	576488	3578407	414	200	123	
C 01971		C	ED	-					27E	576762	3578354*	538	164	145	19
C 01989		C	ED				03	23S	27E	576762	3578354*	538	168	88	80
C 02146		С	ED					23S		576762	3578354*	538	125	125	0
C 02148		С	ED				03	23S	27E	576762	3578354*	538	125	70	55
C 02150		С	ED		1	1	03	23S	27E	576762	3578354*	538	125	70	55
<u>C 02154</u>		C	ED		1	1	03	23S	27E	576762	3578354*	538	125	70	55
<u>C 02166</u>		C	ED		1	1	03	23S	27E	576762	3578354*	538	140	75	65
<u>C 01973</u>		C	ED	1	1	1	03	23S	27E	576661	3578453*	539	127	90	37
<u>C 00515</u>		CUB	ED	3	4	4	33	22S	27E	576254	3578650*	635	180	80	100
C 00515 CLW197977	O	CUB	ED	3	4	4	33	22S	27E	576254	3578650*	635	180		
<u>C 00071</u>		CUB	ED	2	1	3	03	23S	27E	576865	3577649*	643	205		
<u>C 01203</u>		C	ED		4	1	03	23S	27E	577168	3577958*	831	100	35	65
<u>C 03290</u>		C	ED	1	3	3	34	22S	27E	576715	3578778	846	127	72	55
<u>C 01700</u>		C	ED		3	3	34	22S	27E	576760	3578756*	847	205	118	87
<u>C 01801</u>		C	ED		3	3	34	22S	27E	576760	3578756*	847	220		
<u>C 03274</u>		C	ED	4	4	3	33	22S	27E	575643	3578641*	932	130	81	49
C 03000 POD2		C	ED	2	3	3	03	23S	27E	576866	3577246	936	150	80	70
<u>C 03000</u>	R	C	ED	2	3	3	03	23S	27E	576866	3577246*	936	52	19	33
<u>C 01172</u>		CUB	ED	3	4	3	34	22S	27E	577064	3578661*	967	220		
<u>C 03043</u>		C	ED	2	3	3	34	22S	27E	576859	3578855*	983	118	68	50
<u>C 00644</u>		CUB	ED	3	2	4	33	22S	27E	576251	3579056*	1039	190		
C 00644 CLW198574	O	CUB	ED	3	2	4	33	22S	27E	576251	3579056*	1039	100		
<u>C 00743</u>		C	ED				03	23S	27E	577370	3577750*	1065	125	60	65
<u>C 00287</u>		CUB	ED	3	1	3	34	22S	27E	576657	3579061*	1088			
<u>C 04480 POD1</u>		C	ED	4	1	4	33	22S	27E	576065	3579083	1098	140	89	51
<u>C 02977</u>		C	ED	1	1	2	03	23S	27E	577470	3578466*	1215	179	125	54
<u>C 02433</u>		C	ED	4	3	3	33	22S	27E	575238	3578636*	1261	96	64	32
<u>C 02324</u>		C	ED		1	2	03	23S	27E	577571	3578367*	1279	125	75	50

		_											
<u>C 02412</u>		C	ED	2 3				575238	3578836*	1370	251	65	186
C 03738 POD1		C	ED	1 1 :				576785	3579382	1433	137	68	69
C 04492 POD1		C	ED	2 4 1				574903	3578050	1436	20.5		
<u>C 00030</u>	_	CUB	ED	1 2				577062	3579267*	1441	205	50	155
C 00030 CLW193032	О	CUB	ED	1 2 :				577062	3579267*	1441	205		
<u>C 02230</u>		С	ED		33			575742	3579340*	1448	260	90	170
<u>C 02449</u>		С	ED		33			575742	3579340*	1448	300	70	230
<u>C 00215</u>		CUB	ED	4 3 1				576044	3579458*	1467	180	150	30
<u>C 03013</u>		С	ED	4 1 :			27E	575237	3579043*	1503	118	63	55
<u>C 01670</u>		С	ED		2 05			574842	3577826*	1509	385		
C 00109 CLW203096	О	CUB	ED	1 3	3 04			575051	3577226*	1513	260		
<u>C 00191</u>		CUB	ED	3 3	2 33	22S		575844	3579458*	1520	200		
<u>C 02696</u>		С	ED	1 3	3 33	22S	27E	575038	3578836*	1535	124	71	53
<u>C 03072</u>		С	ED	3 4	2 03	23S	27E	577873	3577869*	1541	119	72	47
<u>C 02392</u>		С	ED	4	2 33	22S	27E	576350	3579564*	1544	150	48	102
C 03799 POD1		С	ED	1 3	3 04	23S	27E	574981	3577170	1602	200	51	149
<u>C 00068</u>		CUB	ED	1 3	1 10	23S	27E	576673	3576441*	1613	175		
<u>C 00607</u>		С	ED	1 1 :	2 10	23S	27E	577476	3576858*	1625	200		
<u>C 00283</u>		С	ED	2	2 03	23S	27E	577973	3578373*	1671	108	60	48
<u>C 02226</u>		С	ED	2	2 03	23S	27E	577973	3578373*	1671	135	70	65
<u>C 00420</u>	С	CUB	ED	4	2 09	23S	27E	576370	3576337*	1683	2151		
<u>C 00356</u>		С	ED		34	22S	27E	577363	3579359*	1685	155	45	110
C 03653 POD1		С	ED	2 4	4 05	23S	27E	574757	3577331	1725	220	180	40
<u>C 03066</u>		С	ED	1 1 :	3 33	22S	27E	575037	3579243*	1786	240		
C 04452 POD1		С	ED	4 3	1 33	22S	27E	575199	3579419	1805	200		
<u>C 03074</u>		C	ED	4 3	1 33	22S	27E	575235	3579449*	1805	115	85	30
<u>C 02970</u>		C	ED	3 4	4 32	22S	27E	574635	3578630*	1809	138	71	67
C 00068 CLW193190	O	CUB	ED	3 3	1 10	23S	27E	576673	3576241*	1810	175		
<u>C 00323</u>		C	ED	4	4 05	23S	27E	574750	3577122*	1825	200		
<u>C 02711</u>		C	ED	4	4 05	23S	27E	574750	3577122*	1825	170	75	95
<u>C 03020</u>		C	ED	4	4 05	23S	27E	574750	3577122*	1825	176	135	41
C 03553 POD1		C	ED	4 2	2 33	22S	27E	576554	3579841	1834	200	75	125
<u>C 04581 POD1</u>		C	ED	3 1	1 09	23S	27E	575167	3576589	1849	165	109	56
<u>C 04447 POD1</u>		C	ED	2 1	2 05	23S	27E	574500	3578460	1890	200		
<u>C 02710</u>		C	ED		4 05	23S	27E	574550	3577318*	1921	200	72	128
<u>C 00230</u>		CUB	ED	1 1	3 02	23S	27E	578275	3577672*	1967	350	80	270
<u>C 00567</u>		CUB	ED	1 1	3 02	23S	27E	578275	3577672*	1967	174	90	84
<u>C 00171</u>		CUB	ED	1 2	4 34	22S	27E	577870	3579279*	1982	198	21	177
C 00171 CLW193980	O	CUB	ED	1 2	1 34	22S	27E	577870	3579279*	1982	265		
C 03504 POD1		С	ED	2 3	4 32	22S	27E	574508	3578789	1985	105	90	15

													0 ,
C 00030 CLW193040	О	CUB	ED	1 3 2	34	22S	27E	577465	3579680*	2005	220	69	151
C 00030 CLW193055	О	CUB	ED	1 3 2	34	22S	27E	577465	3579680*	2005	205		
<u>C 00030 S</u>		CUB	ED	1 3 2	34	22S	27E	577465	3579680*	2005	200	69	131
<u>C 00508 S</u>		CUB	ED	2 1 3	10	23S	27E	576877	3576039*	2052	234	28	206
<u>C 00296</u>		C	ED	1 4	05	23S	27E	574345	3577519*	2055	225		
C 04332 POD1		C	ED	2 3 4	32	22S	27E	574436	3578805	2058	98	87	11
<u>C 00720</u>		C	ED	1 1	02	23S	27E	578375	3578379*	2067	108	64	44
<u>C 00549</u>		C	ED	1 3 3	02	23S	27E	578276	3577270*	2077	150	65	85
<u>C 00229</u>		CUB	ED	1 1 1	34	22S	27E	576650	3580074	2077	200		
C 04518 POD1		CUB	ED	1 1 1	34	22S	27E	576629	3580078	2079	200	70	130
C 04349 POD1		C	ED	4 2 4	34	22S	27E	578110	3579115	2082	200	100	100
<u>C 00193</u>		CUB	ED	1 3 1	33	22S	27E	575035	3579649*	2086	190		
<u>C 01976</u>		C	ED	3 1 2	05	23S	27E	574236	3578224*	2112	250		
<u>C 02995</u>		C	ED	4 3 1	02	23S	27E	578475	3577875*	2140	89	65	24
<u>C 00295</u>		CUB	ED	3 3 3	02	23S	27E	578276	3577070*	2157	194	54	140
C 04390 POD1		C	ED	1 1 1	34	22S	27E	576741	3580142	2160	118	76	42
<u>C 02897</u>		C	ED	2 1 1	02	23S	27E	578474	3578478*	2183	168	68	100
<u>C 00680</u>		C	ED	3 1 3	35	22S	27E	578272	3579085*	2206	150	46	104
<u>C 00195</u>		CUB	ED	4 1 4	09	23S	27E	576069	3575827*	2209	128	83	45
<u>C 02262</u>		C	ED	4 2	32	22S	27E	574732	3579544*	2214	128	60	68
C 00508 CLW225089	О	CUB	ED	4 1 3	10	23S	27E	576877	3575839*	2246	234	28	206
C 00015		CUB	ED	4 4 4	28	22S	27E	576444	3580276*	2258	200		
<u>C 00486</u>		C	ED	4 4 4	28	22S	27E	576444	3580276*	2258	146		
<u>C 02149</u>		C	ED	4 4 4	28	22S	27E	576444	3580276*	2258	119	62	57
<u>C 03073</u>		C	ED	4 4 2	34	22S	27E	578068	3579486*	2266	150	122	28
C 04044 POD1		CUB	ED	3 2 3	09	23S	27E	575504	3575907	2272	290	150	140
<u>C 04309</u>		C	ED	3 2 2	32	22S	27E	574960	3579920	2347	142	134	8
<u>C 00653</u>		C	ED	1 1 2	34	22S	27E	577462	3580087*	2352	120	80	40
<u>C 01744</u>		C	ED	4 4	28	22S	27E	576345	3580377*	2357	140	100	40
<u>C 00766</u>		CUB	ED	3 1 1	11	23S	27E	578282	3576672*	2364	199	22	177
C 00766 CLW195348	О	CUB	ED	3 1 1	11	23S	27E	578282	3576672*	2364	155		
<u>C 00343</u>		CUB	ED	4 3 2	32	22S	27E	574427	3579437*	2379	200		
<u>C 00038 S</u>		CUB	ED	1 2 1	02	23S	27E	578679	3578485*	2385	171		
C 04603 POD1		C	ED	1 1 3	35	22S	27E	578340	3579320	2386	215	84	131
<u>C 02996</u>		C	ED	1 1 1	33	22S	27E	575034	3580055*	2417	120	62	58
<u>C 01523</u>		C	ED	3 3 1	35	22S	27E	578272	3579492*	2429	118	60	58
<u>C 01761</u>		C	ED	3	35	22S	27E	578575	3578980*	2433	135	85	50
<u>C 00508</u>		CUB	ED	3 1 4	10	23S	27E	577487	3575855*	2450	190		
<u>C 02502</u>		C	ED	2 2	32	22S	27E	574731	3579950*	2512	98	64	34
<u>C 03085</u>		C	ED	2 2 2	32	22S	27E	574830	3580049*	2528	155	82	73

ivea by OCD. 0/29/202.	3 7.37.1	/ Z1.IVI											T u	ge 10 0
<u>C 00204</u>		CUB	ED	3	3 2	32	22S	27E	574227	3579437*	2543	170		
C 00204 CLW194896	O	CUB	ED	3	3 2	32	22S	27E	574227	3579437*	2543	170		
C 00343 CLW242784	O	CUB	ED	3	3 2	32	22S	27E	574227	3579437*	2543	193	143	50
<u>C 00619</u>		C	ED	3	3 2	32	22S	27E	574227	3579437*	2543	250		
C 00880		C	ED	4	2 2	34	22S	27E	578066	3579893*	2547	190		
C 02149 CLW468826	О	C	ED		4	- 28	22S	27E	576141	3580572*	2559	125	70	55
<u>C 00194</u>		C	ED	1	4 3	27	22S	27E	577054	3580487*	2568	165	100	65
<u>C 01312</u>		CUB	ED		3 1	35	22S	27E	578373	3579593*	2571	203	65	138
<u>C 00034</u>		C	ED	2	2 1	02	23S	27E	578879	3578485*	2582	131		
<u>C 00038</u>		CUB	ED	2	2 1	02	23S	27E	578879	3578485*	2582	200		
C 03821 POD1		C	ED	2	2 3	32	22S	27E	573988	3579146	2606	200	120	80
C 03364 POD1	R	C	ED	4	3 4	27	22S	27E	577765	3580245	2642	107	50	57
C 03364 POD2		C	ED	4	3 4	27	22S	27E	577765	3580249	2646	250		
C 04522 POD1		CUB	ED	3	4 1	35	22S	27E	578616	3579396	2660	200	52	148
<u>C 00178</u>		CUB	ED	1	2 3	35	22S	27E	578677	3579293*	2662	119		
<u>C 00586</u>		CUB	ED	1	2 3	35	22S	27E	578677	3579293*	2662	254		
<u>C 01829</u>		CUB	ED	3	2 4	- 28	22S	27E	576242	3580682*	2663	125		
<u>C 03064</u>		C	ED	4	2 4	28	22S	27E	576442	3580682*	2663	125	70	55
<u>C 03129</u>	О	C	ED	4	2 4	- 28	22S	27E	576442	3580682*	2663	115		
<u>C 00455</u>		C	ED	2	2 2	34	22S	27E	578066	3580093*	2698	133		
<u>C 00981</u>		C	ED	2	2 2	34	22S	27E	578066	3580093*	2698	250	41	209
<u>C 02458</u>		CUB	ED	2	2 2	34	22S	27E	578066	3580093*	2698			
<u>C 01749</u>		C	ED		3	32	22S	27E	573728	3578915*	2760	156	126	30
<u>C 01833</u>		C	ED		3	32	22S	27E	573728	3578915*	2760	180	155	25
<u>C 00095</u>		CUB	ED	3	2 3	27	22S	27E	577052	3580694*	2767	157		
<u>C 02510</u>		C	ED	1	2 1	08	23S	27E	573848	3576806*	2771	350	350	0
<u>C 02590</u>		C	ED	2	1 2	32	22S	27E	574425	3580043*	2784	87	45	42
C 02590 POD2		C	ED	2	1 2	32	22S	27E	574425	3580043*	2784	300	114	186
C 00015 CLW238653	О	CUB	ED		1 4	- 28	22S	27E	575938	3580778*	2786	200		
C 03892 POD1		C	ED	1	2 1	08	23S	27E	573846	3576764	2791	148	54	94
<u>C 03030</u>		C	ED	3	1 2	32	22S	27E	574225	3579843*	2791	100	53	47
<u>C 00014</u>		CUB	ED	3	2 3	28	22S	27E	575434	3580672*	2802	202		
<u>C 00559</u>		C	ED	3	4 4	29	22S	27E	574628	3580255*	2814	200		
<u>C 00496</u>	O	CUB	ED	3	3 4	35	22S	27E	579083	3578694*	2825	225		
C 00212 CLW193845	О	CUB	ED	1	1 1	35	22S	27E	578271	3580099*	2838			
<u>C 00531</u>		CUB	ED	1	1 1	35	22S	27E	578271	3580099*	2838	150	87	63
C 04429 POD1		C	ED	4	4 1	08	23S	27E	574102	3576270	2839	400	350	50
C 03392 POD1		C	ED	2	2 4	- 28	22S	27E	576508	3580886	2870	140	70	70
<u>C 02488</u>		C	ED		4 4	27	22S	27E	577966	3580401*	2883	76	38	38
<u>C 02124</u>		C	ED		3 3	32	22S	27E	573527	3578714*	2896	195	60	135

11 ca by 0 cb. 0/2//202	0 / 10 / 11	/ 141/4										2 44	50 17 0
<u>C 01671</u>		C	ED	3 3	1 05	235	S 27E	573434	3577811*	2912	350		
C 00095 CLW196524	O	CUB	ED	2 1	3 27	225	S 27E	576847	3580888*	2912	157	112	45
<u>C 03028</u>		C	ED	1 1	2 32	225	S 27E	574225	3580043*	2926	217	89	128
<u>C 00825</u>		CUB	ED	3 3	3 20	225	S 27E	578270	3580306*	2992	132	68	64
<u>C 00623</u>		C	ED	2	1 15	235	S 27E	577189	3575142*	3000	200		
<u>C 01071</u>		C	ED		1 08	235	S 27E	573751	3576499*	3001	279	95	184
<u>C 02191</u>		C	ED		1 08	235	S 27E	573751	3576499*	3001	252	75	177
<u>C 00031</u>		CUB	ED	3 1	3 32	225	S 27E	573423	3579019	3082	208	170	38
<u>C 03062</u>		CUB	ED	3 2	4 27	225	S 27E	577863	3580706*	3088	150	100	50
C 04489 POD1		CUB	ED	3 4	2 28	225	S 27E	576240	3581118	3099			
<u>C 03060</u>		C	ED	4 4	4 10	235	S 27E	578098	3575460	3106	139	87	52
<u>C 00210</u>		CUB	ED	3 3	2 35	225	S 27E	579082	3579508*	3120	211		
C 00210 CLW193708	O	CUB	ED	3 3	2 35	225	S 27E	579082	3579508*	3120	211		
<u>C 00436</u>		C	ED	3	3 26	225	S 27E	578371	3580407*	3134	88	48	40
<u>C 00562</u>		C	ED	4 2	4 27	225	S 27E	578063	3580706*	3191	150		
<u>C 02667</u>		C	ED	1 3	4 29	225	S 27E	574223	3580448*	3220	128	81	47
<u>C 00467</u>		C	ED	2	4 27	225	S 27E	577964	3580807*	3226	200	74	126
<u>C 00056</u>		CUB	ED	1 3	2 28	225	S 27E	575835	3581284*	3302	98		
<u>C 00078</u>		CUB	ED	3 1	3 20	225	S 27E	578269	3580712*	3312	180		
C 00014 CLW244969	О	CUB	ED	3 3	1 28	225	S 27E	575028	3581074*	3323	205		
C 00014 CLW244972	О	CUB	ED	3 3	1 28	225	S 27E	575028	3581074*	3323	205		
<u>C 00014 S</u>		CUB	ED	3 3	1 28	225	S 27E	575028	3581074*	3323	205		
<u>C 00093</u>		CUB	ED	3 2	4 35	225	S 27E	579487	3579109*	3331	210	140	70
C 00093 CLW226379	О	CUB	ED	3 2	4 35	225	S 27E	579487	3579109*	3331	200		
C 00093 POD3		CUB	ED	3 2	4 35	225	S 27E	579487	3579109*	3331	174	60	114
<u>C 00620</u>		C	ED	4 2	2 02	238	S 27E	579689	3578299*	3361	96	60	36
C 04616 POD1		C	ED	3 4	4 3	225	S 27E	573033	3578676	3370	200		
<u>C 04027 POD1</u>		CUB	ED	1 3	1 27	225	S 27E	576704	3581378	3377	140	55	85
<u>C 02631</u>		C	ED	4 4	2 29	225	S 27E	574823	3581067*	3403	96	69	27
<u>C 00572</u>		CUB	ED	2 4	1 27	225	S 27E	577250	3581301*	3405	98	90	8
<u>C 00624</u>		C	ED		2 00	235	S 27E	572932	3578106*	3408	285		
C 03434 POD1		C	ED	4 4	2 29	225	S 27E	574876	3581101	3411	99	75	24
<u>C 00286</u>	C	CUB	ED	4 4	4 35	225	S 27E	579688	3578702*	3417	150		
C 00496 POD2		CUB	ED	4 4	4 35	225	S 27E	579688	3578702*	3417	172	30	142
C 00496 POD3		CUB	ED	4 4	4 35	225	S 27E	579688	3578702*	3417	152	21	131
<u>C 00410</u>		CUB	ED	4 4	3 20	225	S 27E	578875	3580313*	3418	150	50	100
C 00062 A-S		CUB	ED	3 1	1 32	225	S 27E	573417	3579830*	3437	200	100	100
<u>C 00291</u>		CUB	ED	4 3	3 1	235	S 27E	578581	3575407	3443	180	70	110
<u>C 02113</u>		C	ED	4	3 1	238	S 27E	578806	3575573*	3474	235	80	155
C 00291 CLW198354	O	CUB	ED	3 4	3 1	235	S 27E	578705	3575472*	3477	180	70	110

ived by OCD. 0/27/202.	3 7.37.1	/ /1///											1 4	ge 10 0
<u>C 00150</u>		CUB	ED	3 1	1	27	22S	27E	576643	3581501*	3494	80		
<u>C 00150 A</u>	O	CUB	ED	3 1	1	27	22S	27E	576643	3581501*	3494	147		
<u>C 02787</u>		C	ED	1 3	1	28	22S	27E	575028	3581274*	3508	143	54	89
<u>C 00028</u>		CUB	ED	4 1	2	06	23S	27E	572824	3578207*	3519	200		
C 00028 CLW204125	O	CUB	ED	4 1	2	06	23S	27E	572824	3578207*	3519	210		
<u>C 03078</u>		C	ED	1 2	4	31	22S	27E	573019	3579216*	3528	130	60	70
<u>C 02648</u>		C	ED	4	2	29	22S	27E	574724	3581168*	3538	200	66	134
<u>C 00041</u>		C	ED	1 3	1	01	23S	27E	579897	3578104*	3558	75		
<u>C 00459</u>		CUB	ED	1 3	1	01	23S	27E	579897	3578104	3558	180	42	138
C 00459 CLW197846	О	C	ED	1 3	1	01	23S	27E	579897	3578104*	3558	230	42	188
C 04290 POD1		CUB	ED	1 4	2	06	23S	27E	572752	3578077	3587	168	150	18
<u>C 00192</u>		CUB	ED	1 1	1	01	23S	27E	579895	3578507*	3589	117	60	57
<u>C 02456</u>		C	ED	4 4	3	11	23S	27E	578905	3575472*	3616	140	60	80
<u>C 00093 S</u>		CUB	ED	1 3	3	36	22S	27E	579831	3578986	3623	192	57	135
C 03763 POD1		C	ED	1 2	2	28	22S	27E	575687	3581616	3654	240	55	185
<u>C 00187</u>		C	ED	1 1	4	15	23S	27E	577380	3574509	3661	210	125	85
<u>C 01083</u>		C	ED	4	2	15	23S	27E	578003	3574751	3668	325	45	280
<u>C 00587</u>		C	ED	2 2	2	28	22S	27E	576438	3581696*	3677	130	84	46
<u>C 02117</u>		CUB	ED	1 1	2	28	22S	27E	575834	3581691*	3705	150	60	90
C 00028 CLW204118	О	CUB	ED	1 3	2	06	23S	27E	572630	3578004*	3709	263		
<u>C 00228 S</u>		CUB	ED	2 2	2	31	22S	27E	573213	3580025*	3713	225	145	80
<u>C 00249</u>		C	ED	2 2	2	31	22S	27E	573213	3580025*	3713	200		
<u>C 01037</u>		C	ED	2 2	2	31	22S	27E	573213	3580025*	3713	141	109	32
<u>C 00028 S</u>		CUB	ED	3 1	2	06	23S	27E	572624	3578207*	3719	231	190	41
<u>C 02326</u>		C	ED		2	07	23S	27E	572948	3576491*	3719	140	99	41
<u>C 00901</u>		C	ED	1 2	1	27	22S	27E	577048	3581707*	3754	193	40	153
<u>C 00310</u>		CUB	ED	3 3	4	11	23S	27E	579107	3575477*	3758	185	25	160
C 00310 CLW201186	O	CUB	ED	3 3	4	11	23S	27E	579107	3575477*	3758	180	30	150
C 00041 CLW181930	O	C	ED	2 3	1	01	23S	27E	580097	3578104*	3758	75		
<u>C 02624</u>		C	ED	3 2	2	31	22S	27E	573013	3579825*	3784	220	75	145
C 00192 CLW193749	O	CUB	ED	2 1	1	01	23S	27E	580095	3578507*	3787	117	60	57
<u>C 00597</u>		C	ED	1 2	3	29	22S	27E	573815	3580848*	3790	140	90	50
<u>C 00588</u>		C	ED	2 2	1	27	22S	27E	577248	3581707*	3797	200		
<u>C 01184</u>		C	ED	4 4	4	30	22S	27E	573210	3580230*	3830	144	131	13
C 03997 POD1		CUB	ED	2 3	1	14	23S	27E	578534	3574872	3837	230	125	105
C 04368 POD1		C	ED	4 2	2	27	22S	27E	578082	3581458	3854	200	34	166
<u>C 00870</u>		CUB	ED	3 3	1	36	22S	27E	579892	3579523*	3857	200	50	150
<u>C_00009</u>		CUB	ED	3 3	3	22	22S	27E	576641	3581908	3899	165	100	65
<u>C_00152</u>		C	ED	3 3	3	22	22S	27E	576641	3581908*	3899	151		
C 00410 CLW195750	О	CUB	ED	3 4	4	26	22S	27E	579486	3580329*	3903	209	41	168

•														
C 04354 POD2		CUB	ED	1 1	2	27	22S	27E	577364	3581802	3918	200	123	77
C 04076 POD1		CUB	ED	2 3	1	14	23S	27E	578554	3574786	3919	245	99	146
<u>C 00062</u>		CUB	ED	1	3	29	22S	27E	573511	3580743*	3925	270		
<u>C 00027</u>		CUB	ED	4 4	3	21	22S	27E	575628	3581891	3935	166		
C 00027 CLW238752	O	CUB	ED	4 4	3	21	22S	27E	575628	3581891*	3935	166		
C 03767 POD1		C	ED	4 3	1	14	23S	27E	578503	3574702	3960	235	140	95
C 04354 POD1		CUB	ED	1 1	2	27	22S	27E	577533	3581803	3967	200	120	80
C 03766 POD1		C	ED	3 3	1	14	23S	27E	578373	3574609	3971	260	25	235
<u>C 01632</u>		C	ED	3 2	4	07	23S	27E	573050	3575789*	3974	162	100	62
C 01632 CLW197648	О	C	ED	3 2	4	07	23S	27E	573050	3575789*	3974	162	100	62
C 01632 POD2		C	ED	3 2	4	07	23S	27E	573050	3575789*	3974	173	100	73
C 04126 POD1		CUB	ED	2 4	1	14	23S	27E	578870	3574935	3989	282	135	147
<u>C 02099</u>		C	ED	2	3	06	23S	27E	572335	3577498*	4037	200	165	35
<u>C 00228</u>		CUB	ED	1 3	2	31	22S	27E	572613	3579617*	4053	210		
<u>C 01618</u>		C	ED	4 4	4	07	23S	27E	573252	3575384*	4059	250		
<u>C 00532</u>		C	ED	2 2	2	27	22S	27E	578060	3581720*	4080	90		
<u>C 01356</u>		C	ED	4 2	4	30	22S	27E	573207	3580636*	4080	210	130	80
<u>C 02151</u>		C	ED	4	3	06	23S	27E	572341	3577095*	4103	196	130	66
<u>C 00031 C</u>		CUB	ED	1 4	4	30	22S	27E	573010	3580430*	4109	204	172	32
C 04453 POD1		C	ED	3 2	1	07	23S	27E	572475	3576566	4128	250	70	180
<u>C 00320</u>		C	ED	4	3	01	23S	27E	580407	3577208*	4148	300		
<u>C 00833</u>		C	ED	4	3	01	23S	27E	580407	3577208*	4148			
<u>C 03130</u>		C	ED	4 2	1	29	22S	27E	574010	3581461*	4155	162		
<u>C 00077</u>		CUB	ED	1 1	1	26	22S	27E	578266	3581726*	4177	118	40	78
<u>C 00155</u>		CUB	ED	4 3	1	12	23S	27E	580110	3576218	4179	215	73	142
<u>C 02903</u>		C	ED	3 4	4	22	22S	27E	577858	3581926*	4190	57	40	17
<u>C 01478</u>		C	ED	2 2	4	30	22S	27E	573207	3580836*	4211	172	149	23
<u>C 03123</u>		C	ED	2 2	4	30	22S	27E	573207	3580836*	4211	159	97	62
<u>C 03005</u>		C	ED	3 4	4	07	23S	27E	573052	3575384*	4213	140	100	40
<u>C 01286</u>		C	ED	2	3	36	22S	27E	580401	3579227*	4237	210	60	150
<u>C 00613</u>		C	ED	4 2	4	21	22S	27E	576434	3582309*	4290	100	60	40
<u>C 00614</u>		C	ED	3 1	3	22	22S	27E	576639	3582314*	4304	95	60	35
<u>C 02961</u>		C	ED	3 1	4	21	22S	27E	575830	3582303*	4313	150	70	80
<u>C 00332</u>		C	ED	2 2	1	12	23S	27E	580508	3576903*	4316	100	24	76
<u>C 00251</u>		C	ED	4	4	22	22S	27E	577959	3582027*	4322	84		
<u>C 02881</u>		C	ED	4	4	22	22S	27E	577959	3582027*	4322	60	39	21
<u>C 02409</u>		C	ED	3 3	4	30	22S	27E	572607	3580225*	4334	191	90	101
C 03557 POD1		C	ED	3 3	3	12	23S	27E	579895	3575503	4356	250		
C 04045 POD1		CUB	ED	3 3	2	14	23S	27E	579013	3574571	4363	240	150	90
<u>C 00144 POD2</u>		CUB	ED	3 3	2	01	23S	27E	580710	3577923*	4372	200	60	140

	7.07.0													uge zo oj
C 00171 CLW223473	О	CUB	ED	1 3	2	01	23S	27E	580710	3578123*	4372			
C 00171 POD2		CUB	ED	1 3	2	01	23S	27E	580710	3578123*	4372	200		
C 04591 POD1		C	ED	3 2	1	07	23S	27E	572168	3576690	4377	300		
<u>C 02259</u>		C	ED	2	4	21	22S	27E	576335	3582410*	4390	60	45	15
<u>C 02558</u>		C	ED	2	4	21	22S	27E	576335	3582410*	4390	55	36	19
<u>C 02512</u>		C	ED	1	3	22	22S	27E	576740	3582415*	4413	68	38	30
C 02512 POD2		C	ED	1	3	22	22S	27E	576740	3582415*	4413	142	57	85
C 03661 POD1		CUB	ED	3 3	4	01	23S	27E	580668	3577103	4424	170	60	110
<u>C 00393</u>		CUB	ED	3 1	3	25	22S	27E	579890	3580742*	4474	200	30	170
C 00393 CLW198205	О	CUB	ED	3 1	3	25	22S	27E	579890	3580742*	4474	193	37	156
C 00393 CLW198226	О	CUB	ED	3 1	3	25	22S	27E	579890	3580742*	4474	200	40	160
C 00393 CLW223748	O	CUB	ED	3 1	3	25	22S	27E	579890	3580742*	4474	200	30	170
<u>C 00451</u>		CUB	ED	4	2	30	22S	27E	573104	3581143*	4496	256	130	126
<u>C 01242</u>		CUB	ED	1 3	3	23	22S	27E	578264	3582133*	4541	155	40	115
C 04299 POD1		C	ED	3 1	3	06	23S	27E	571800	3577405	4580	175	160	15
<u>C 00921</u>		C	ED	2 1	2	01	23S	27E	580909	3578526*	4597	150	31	119
<u>C 03445</u>		CUB	ED	3 3	3	31	22S	27E	571774	3578630	4605		200	
C 03741 POD1		C	ED	3 1	2	12	23S	27E	580853	3576976	4633	160	51	109
<u>C 03301</u>		C	ED	3 3	4	07	23S	27E	572597	3575268	4645	375		
<u>C 00163</u>		C	ED	2 4	3	20	22S	27E	574007	3582067*	4670	184	80	104
<u>C 00241</u>		CUB	ED	3 3	2	12	23S	27E	580715	3576307*	4699	160		
<u>C 00733</u>		C	ED	4 3	3	20	22S	27E	573601	3581860*	4716	220	60	160
<u>C 01383</u>		C	ED	4 3	3	20	22S	27E	573601	3581860*	4716	65	50	15
<u>C 00747</u>		CUB	ED	3 3	2	21	22S	27E	575828	3582709*	4716	148	85	63
C 00747 CLW198561	О	CUB	ED	3 3	2	21	22S	27E	575828	3582709*	4716	148		
<u>C 00282</u>		CUB	ED	3 2	2	26	22S	27E	579482	3581546*	4723	125	50	75
<u>C 01713</u>		C	ED	3 1	3	23	22S	27E	578262	3582339*	4727	101	46	55
C 03505 POD1		C	ED	3 2	2	26	22S	27E	579548	3581491	4727	80		
<u>C 00114</u>		CUB	ED	3 1	4	20	22S	27E	574210	3582279*	4761	253		
<u>C 01805</u>		C	ED		3	23	22S	27E	578566	3582235*	4767	125	98	27
<u>C 02300</u>		CUB	ED		3	07	23S	27E	572160	3575676*	4791	402		
<u>C 03161</u>		C	ED	3 1	1	31	22S	27E	571829	3579813*	4853	200		
<u>C 00016</u>		CUB	ED	3 3	1	21	22S	27E	575018	3582698	4860	167		
C 00016 CLW202898	О	CUB	ED	3 3	1	21	22S	27E	575018	3582698*	4860	209		
<u>C 00279</u>		C	ED	2	2	26	22S	27E	579583	3581647*	4866	160	48	112
<u>C 01847</u>		C	ED	1	3	07	23S	27E	571956	3575878*	4878	300		
<u>C 01847 POD2</u>		C	ED	1	3	07	23S	27E	571956	3575878*	4878	243		
<u>C 00074</u>		CUB	ED	2 3	3	20	22S	27E	573601	3582060*	4880	222	52	170
<u>C 00628</u>		C	ED	2 3	3	20	22S	27E	573601	3582060*	4880	175	80	95
<u>C 01661</u>		C	ED	3	1	13	23S	27E	580014	3574783*	4897	238	195	43

<u>C 01035</u>		C	ED		3	20	22S	27E	573703	3582162*	4909	90	75	15
<u>C 00770</u>		CUB	ED	3	3 4	25	22S	27E	580705	3580351*	4949	200	44	156
<u>C 02587</u>	R	C	ED		2 2	26	22S	27E	579630	3581720	4952	71	12	59
C 03068		C	ED	1	3 3	20	22S	27E	573401	3582060*	4995		60	

Average Depth to Water: 81 feet

Minimum Depth: 12 feet

Maximum Depth: 350 feet

Record Count: 316

**UTMNAD83 Radius Search (in meters):** 

**Easting (X):** 576339 **Northing (Y):** 3578020 **Radius:** 5000

\*UTM location was derived from PLSS - see Help

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

3/29/23 10:40 AM

WATER COLUMN/ AVERAGE DEPTH TO

WATER



# New Mexico Office of the State Engineer

# **Point of Diversion Summary**

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

Well Tag POD Number Q64 Q16 Q4 Sec Tw

Q64 Q16 Q4 Sec Tws Rng

X

C 00281 4 4 2 04 23S 2

576459 3577846\*

Driller License: Driller Company:

**Driller Name:** HOWARD HEMLER

Drill Start Date:

Log File Date:

PCW Rcv Date:

Plug Date:

Source:

Pump Type:Pipe Discharge Size:Estimated Yield:Casing Size:7.00Depth Well:150 feetDepth Water:

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

3/29/23 11:21 AM

POINT OF DIVERSION SUMMARY

<sup>\*</sup>UTM location was derived from PLSS - see Help



USGS Home Contact USGS Search USGS

## **National Water Information System: Web Interface**

**USGS** Water Resources

Data Category:	Geographic Area:		
Site Information	United States	~	GO
			•

#### Click to hideNews Bulletins

- Explore the NEW <u>USGS National Water Dashboard</u> interactive map to access realtime water <u>data</u> from over 13,500 stations nationwide.
- Full News

## USGS 322008104105701 23S.27E.03.13433

Available data for this site SUMMARY OF ALL AVAILABLE DATA V GO

#### **Well Site**

#### **DESCRIPTION:**

Latitude 32°20'08", Longitude 104°10'57" NAD27 Eddy County, New Mexico , Hydrologic Unit 13060011

Well depth: 205 feet

Land surface altitude: 3,115 feet above NAVD88.

Well completed in "Other aquifers" (N9999OTHER) national aquifer.

Well completed in "Alluvium, Bolson Deposits and Other Surface Deposits"

(110AVMB) local aquifer

#### **AVAILABLE DATA:**

Data Type	<b>Begin Date</b>	End Date	Count
Field groundwater-level measurements	1978-01-12	1998-01-07	7
Revisions	Unavailable (	site:0) (timese	eries:0)

#### **OPERATION:**

Record for this site is maintained by the USGS New Mexico Water Science Center Email questions about this site to <a href="New Mexico Water Science Center Water-Data">New Mexico Water Science Center Water-Data</a> <a href="Inquiries">Inquiries</a>

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms

### <u>Subscribe for system changes</u> <u>News</u>

Accessibility FOIA Privacy Policies and Notices

<u>U.S. Department of the Interior</u> | <u>U.S. Geological Survey</u>

Title: NWIS Site Information for USA: Site Inventory URL: https://waterdata.usgs.gov/nwis/inventory?agency\_code=USGS&site\_no=322008104105701

Page Contact Information: New Mexico Water Data Support Team

Page Last Modified: 2023-03-29 16:30:35 EDT

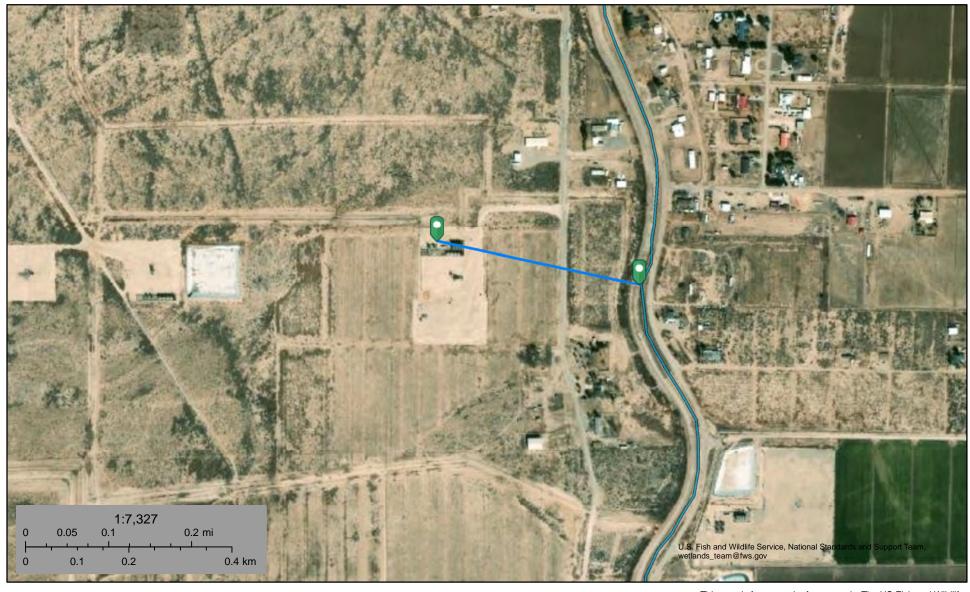
0.27 0.26 caww01





# National Wetlands Inventory

# Bindel 4 Fee 1H Irrigation Canal 0.21 mi



March 29, 2023

#### Wetlands

Estuarine and Marine Deepwater

Estuarine and Marine Wetland

Freshwater Emergent Wetland

Lake

Freshwater Forested/Shrub Wetland

Other

Freshwater Pond



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.



# Bindel 4 Fee 1H Lake 9.37 Miles



March 29, 2023

#### Wetlands

Estuarine and Marine Deepwater

Estuarine and Marine Wetland

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Freshwater Pond

Lake

Other

Riverine

Other

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.





# New Mexico Office of the State Engineer

# **Point of Diversion Summary**

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

Well Tag POD Number

C 00098 A-S-2

**Q64 Q16 Q4 Sec Tws Rng**4 4 2 04 23S 27E

X Y

576459 3577846\*



Driller License: Driller Company:

**Driller Name:** 

Drill Start Date: Plug Date: Plug Date:

Log File Date: PCW Rev Date: Source: Shallow

Pump Type: Pipe Discharge Size: Estimated Yield: Casing Size: Depth Well: Depth Water:

Meter Number: 477 Meter Make: WATER SPEC

Meter Serial Number:940101Meter Multiplier:1.0000Number of Dials:3Meter Type:Diversion

Unit of Measure:Acre-FeetReturn Flow Percent:Usage Multiplier:Reading Frequency:

#### **Meter Readings (in Acre-Feet)**

Read Date	Year	Mtr Reading	Flag	Rdr Comment	Mtr Amount Online
12/30/1998	1999	216	A	ms	0
07/20/1999	1999	216	A	ms	0
10/05/1999	1999	216	A	ms	0
12/27/1999	1999	216	A	ms	0
04/05/2000	2000	216	A	mb	0
11/12/2001	2000	216	A	tg	0
01/02/2003	2002	216	A	MB	0
05/16/2003	2003	216	A	ab	0

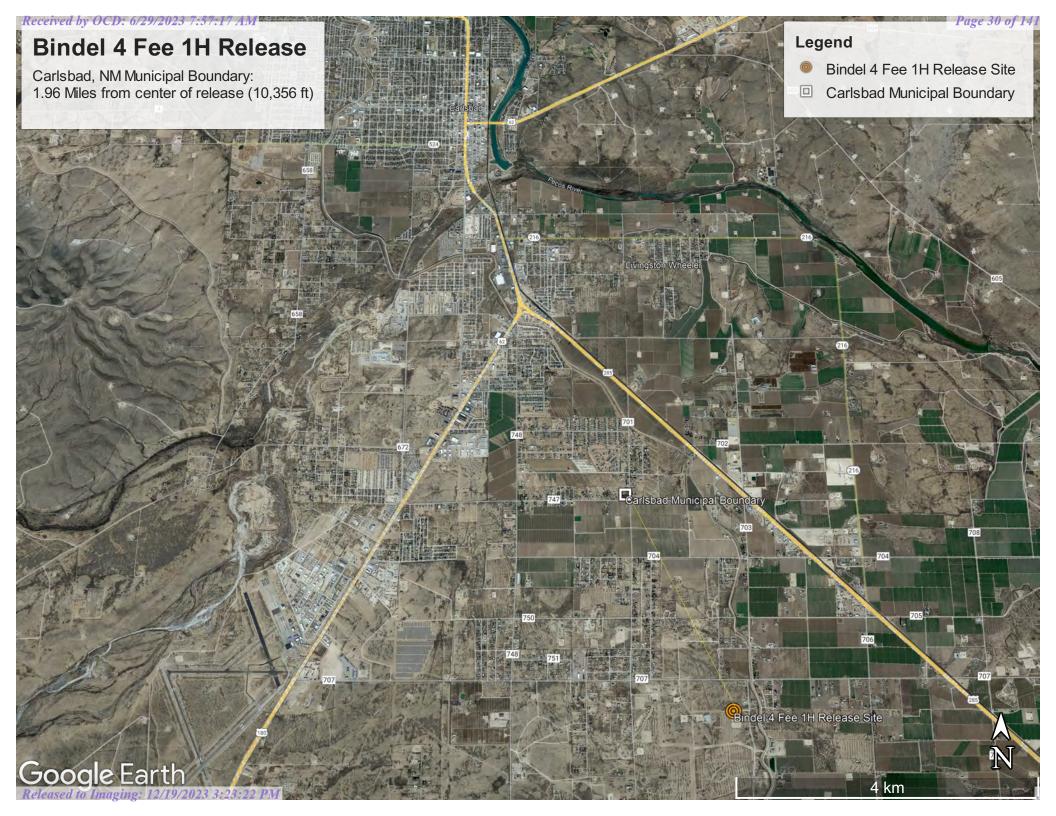
**YTD Meter Amounts:	Year	Amount
	1999	0
	2000	0
	2002	0
	2003	0

<sup>\*</sup>UTM location was derived from PLSS - see Help

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

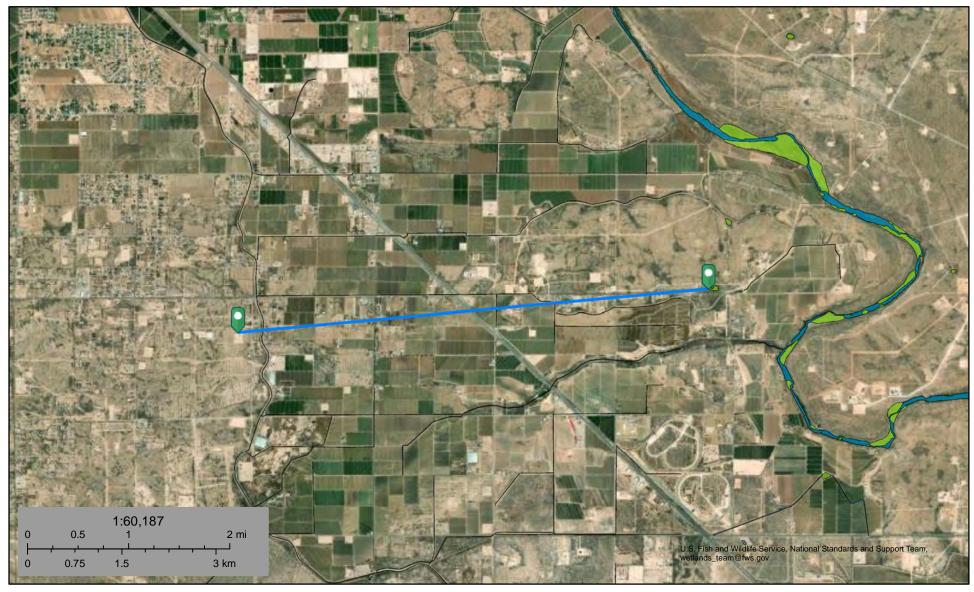
4/3/23 9:51 AM

POINT OF DIVERSION SUMMARY





# Bindel 4 Fee 1 Wetland 3.96 Mi



June 20, 2023

#### Wetlands\_Alaska

Estuarine and Marine Deepwater

Estuarine and Marine Wetland

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Freshwater Pond

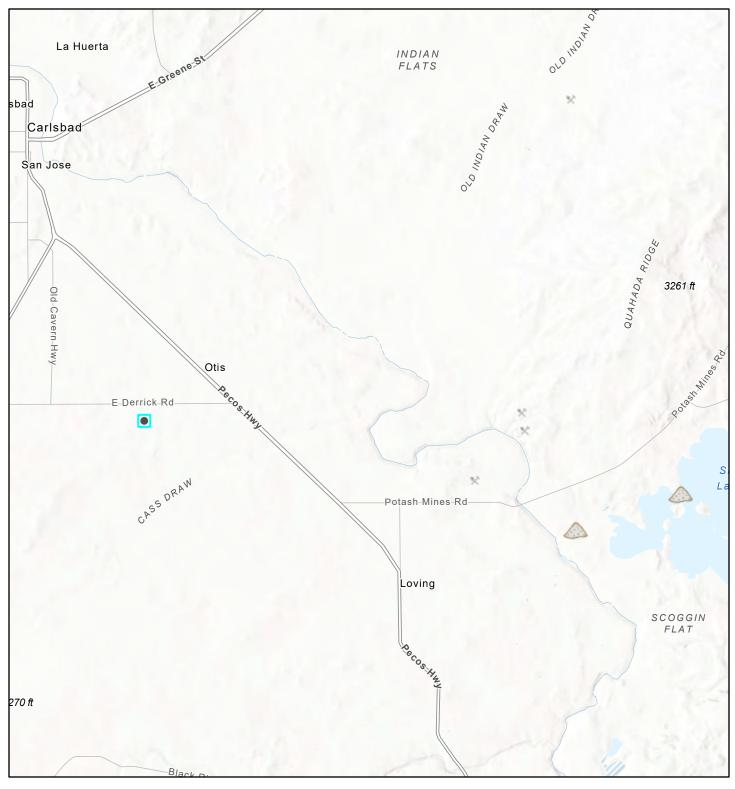
Lake

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.

# Bindel4 Fee 1H Mines



3/29/2023, 2:20:21 PM

**Registered Mines** 

Aggregate, Stone etc.

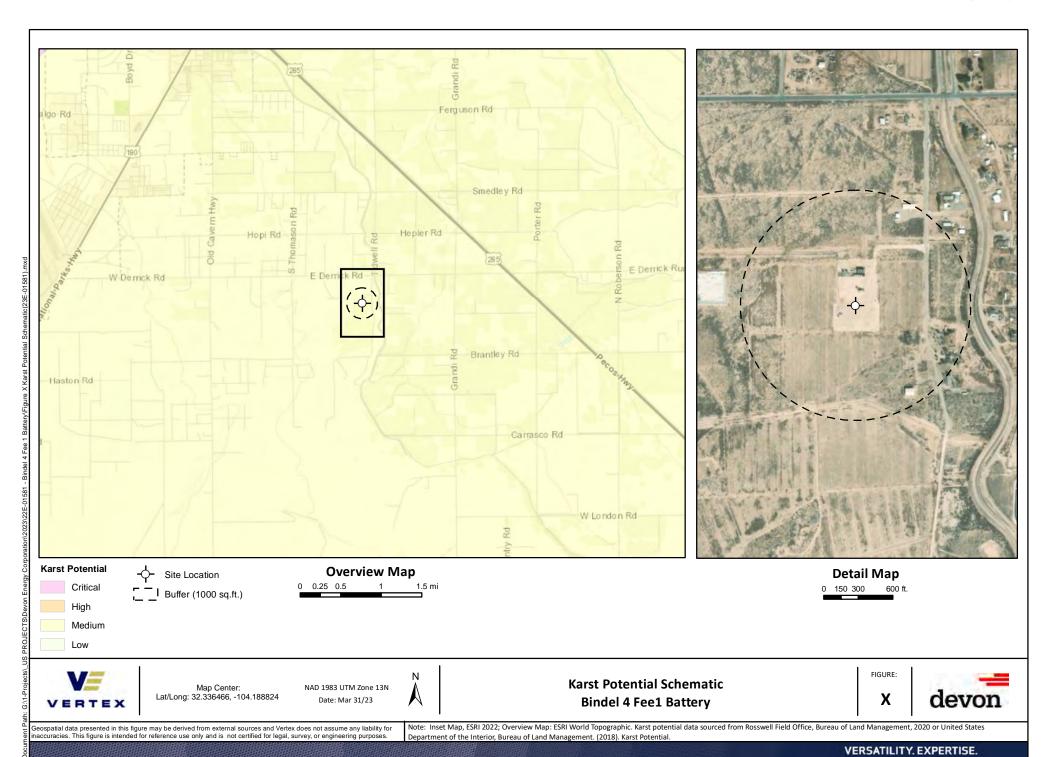
1:144,448 0 1 2 4 mi 0 1.5 3 6 km

\* Aggregate, Stone etc.

📤 Salt

Aggregate, Stone etc.

U.S. BLM, Esri, NASA, NGA, USGS, New Mexico State University, Texas Parks & Wildlife, CONANP, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA



# Received by OCD: 6/29/2023 7:57:17,AM National Flood Hazard Layer FIRMette



# Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

Without Base Flood Elevation (BFE) With BFE or Depth Zone AE, AO, AH, VE, AR SPECIAL FLOOD HAZARD AREAS Regulatory Floodway 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X **Future Conditions 1% Annual** Chance Flood Hazard Zone X Area with Reduced Flood Risk due to

OTHER AREAS OF FLOOD HAZARD

NO SCREEN Area of Minimal Flood Hazard Zone X

Area with Flood Risk due to Levee Zone D

Levee. See Notes. Zone X

Effective LOMRs

OTHER AREAS Area of Undetermined Flood Hazard Zone D - - - Channel, Culvert, or Storm Sewer

**GENERAL** STRUCTURES | LILLI Levee, Dike, or Floodwall

> 20.2 Cross Sections with 1% Annual Chance 17.5 Water Surface Elevation **Coastal Transect** Base Flood Elevation Line (BFE) Limit of Study Jurisdiction Boundary **Coastal Transect Baseline**

OTHER **FEATURES** 

MAP PANELS

Digital Data Available

**Profile Baseline** 

No Digital Data Available

Hydrographic Feature

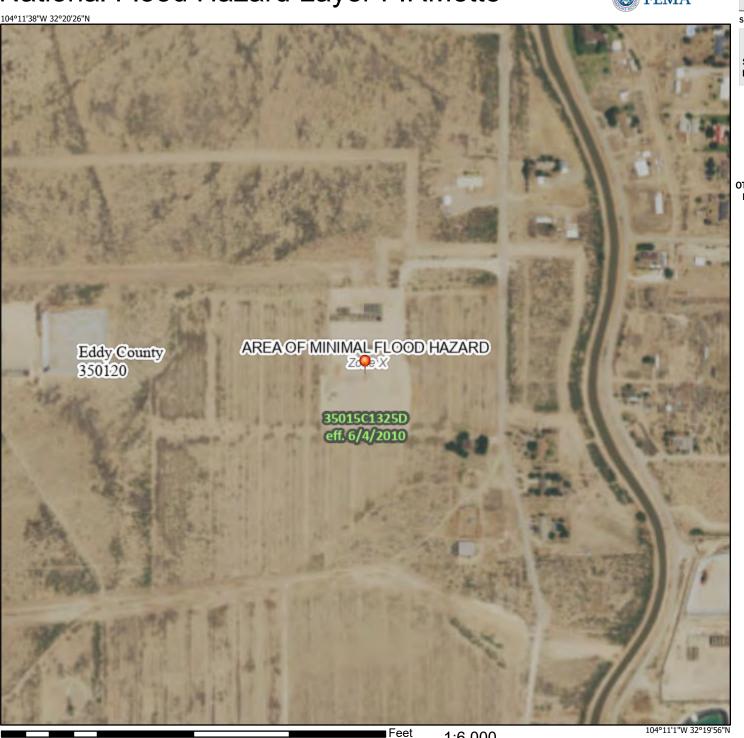
Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/29/2023 at 3:40 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



1:6.000



**VRCS** 

Natural Resources Conservation Service A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for Eddy Area, New Mexico



# **Preface**

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2 053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

# **Contents**

Preface	2
How Soil Surveys Are Made	
Soil Map	
Soil Map	
Legend	
Map Unit Legend	11
Map Unit Descriptions	11
Eddy Area, New Mexico	13
Rc—Reagan loam, 0 to 1 percent slopes	13
Uo—Upton gravelly loam, 0 to 9 percent slopes	14
References	16

# **How Soil Surveys Are Made**

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



#### MAP LEGEND

å

Ŷ

Δ

**Water Features** 

Transportation

---

00

Background

Spoil Area

Stony Spot

Wet Spot

Other

Rails

**US Routes** 

Major Roads

Local Roads

Very Stony Spot

Special Line Features

Streams and Canals

Interstate Highways

Aerial Photography

#### Area of Interest (AOI)

Area of Interest (AOI)

#### Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

#### Special Point Features

ဖ

Blowout

Borrow Pit

Clay Spot

**Closed Depression** 

Gravel Pit

Gravelly Spot

Landfill Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

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

Soil map units are labeled (as space allows) for map scales 1:50.000 or larger.

Date(s) aerial images were photographed: Nov 12, 2022—Dec 2. 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI					
Rc	Reagan loam, 0 to 1 percent slopes	6.8	98.2%					
Upton gravelly loam, 0 to 9 percent slopes		0.1	1.8%					
Totals for Area of Interest		6.9	100.0%					

# **Map Unit Descriptions**

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

# **Eddy Area, New Mexico**

# Rc—Reagan loam, 0 to 1 percent slopes

### **Map Unit Setting**

National map unit symbol: 1w5l Elevation: 1,100 to 5,300 feet

Mean annual precipitation: 7 to 15 inches

Mean annual air temperature: 57 to 70 degrees F

Frost-free period: 200 to 240 days

Farmland classification: Farmland of statewide importance

## **Map Unit Composition**

Reagan and similar soils: 97 percent *Minor components*: 3 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

### **Description of Reagan**

### Setting

Landform: Fan remnants, alluvial fans Landform position (three-dimensional): Rise

Down-slope shape: Convex, linear

Across-slope shape: Linear

Parent material: Alluvium and/or eolian deposits

### **Typical profile**

H1 - 0 to 8 inches: loam H2 - 8 to 82 inches: loam

## **Properties and qualities**

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high

(0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Calcium carbonate, maximum content: 40 percent

Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum: 1.0

Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

#### Interpretive groups

Land capability classification (irrigated): 2e Land capability classification (nonirrigated): 6c

Hydrologic Soil Group: B

Ecological site: R070BC007NM - Loamy

Hydric soil rating: No

## **Minor Components**

#### Reagan

Percent of map unit: 1 percent

Ecological site: R070BC007NM - Loamy

Hydric soil rating: No

#### Upton

Percent of map unit: 1 percent

Ecological site: R070BC025NM - Shallow

Hydric soil rating: No

### Reeves

Percent of map unit: 1 percent

Ecological site: R070BC007NM - Loamy

Hydric soil rating: No

# Uo—Upton gravelly loam, 0 to 9 percent slopes

### **Map Unit Setting**

National map unit symbol: 1w67 Elevation: 1,100 to 4,400 feet

Mean annual precipitation: 7 to 15 inches

Mean annual air temperature: 60 to 70 degrees F

Frost-free period: 200 to 240 days

Farmland classification: Not prime farmland

### **Map Unit Composition**

Upton and similar soils: 96 percent Minor components: 4 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

#### **Description of Upton**

#### Setting

Landform: Ridges, fans

Landform position (three-dimensional): Side slope, rise

Down-slope shape: Convex Across-slope shape: Convex

Parent material: Residuum weathered from limestone

#### Typical profile

H1 - 0 to 9 inches: gravelly loam H2 - 9 to 13 inches: gravelly loam H3 - 13 to 21 inches: cemented

H4 - 21 to 60 inches: very gravelly loam

#### **Properties and qualities**

Slope: 0 to 9 percent

Depth to restrictive feature: 7 to 20 inches to petrocalcic

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high

(0.01 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Calcium carbonate, maximum content: 75 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 1.4 inches)

## Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D

Ecological site: R070BC025NM - Shallow

Hydric soil rating: No

### **Minor Components**

#### **Atoka**

Percent of map unit: 1 percent

Ecological site: R070BC007NM - Loamy

Hydric soil rating: No

#### Atoka

Percent of map unit: 1 percent

Ecological site: R070BC007NM - Loamy

Hydric soil rating: No

#### Upton

Percent of map unit: 1 percent

Ecological site: R070BC025NM - Shallow

Hydric soil rating: No

#### Reagan

Percent of map unit: 1 percent

Ecological site: R070BC007NM - Loamy

Hydric soil rating: No

# References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2 054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2 053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2 053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2 053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2\_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE\_DOCUMENTS/nrcs142p2\_052290.pdf

# Ecological site R070BC007NM Loamy

Accessed: 03/29/2023

#### **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.

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

# Physiographic features

This site occurs on uplands landforms, mainly on hill slopes, ridges, plains, terraces and some fan remnants. Slopes range from 1 to 5 percent and average about 3 percent. Average annual precipitation is about 8 to 14 inches. Elevations range from 2,842 to 5,000 feet.

Table 2. Representative physiographic features

Landforms	(1) Plain (2) Terrace (3) Fan piedmont
Flooding frequency	None
Ponding frequency	None
Elevation	2,842–5,000 ft
Slope	0–5%
Aspect	E, S, W

## **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 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 this site. Strong winds blow from the southwest in January through June rapidly drying out the soil during a critical time for cool season 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 by wetland or streams.

### Soil features

The soils of this site are deep to moderately deep. The moderately deep soils have either a petrocalcic, petrogypsic or gypsum horizon between 30 and 40 inches.

Surface textures are loam, silt loam, very fine sandy loam, or clay loam. Substratum textures are loam, silty clay loam, or silt loams. Subsoil textures are silt loam, clay loam silty clay loam, gravelly loam, gravelly clay loam or very gravelly loam. Permeability is moderate to slow and the available water holding capacity is high to moderate. The Atoka, Reeves, Russler, Milner soils may have highr amounts of CaC03, ranging as high as 40 percent in the subsoil. Rock fragments range fro 5 to 50 percent in the subsoil. Reeves, Rusler, Milner, Holloman soils will have 40 to 80 percent gypsum in the underlying material.

Maximum and minimum values listed below represent the characteristic soils for this site.

Characteristic Soils:

Atoka (petrocalcic)

**Bigetty** 

Reagan

Reakor

Reeves (gypsum)

Russler (gypsum)

Largo

Russler (gypsum)

Largo

Berino

Tinney

Midessa

Ratliff

Holloman (gypsum)

Milner (gypsum)

Table 4. Representative soil features

Surface texture	(1) Loam (2) Very fine sandy loam (3) Silt loam
Family particle size	(1) Loamy
Drainage class	Well drained to somewhat excessively drained
Permeability class	Moderate to slow
Soil depth	30–72 in

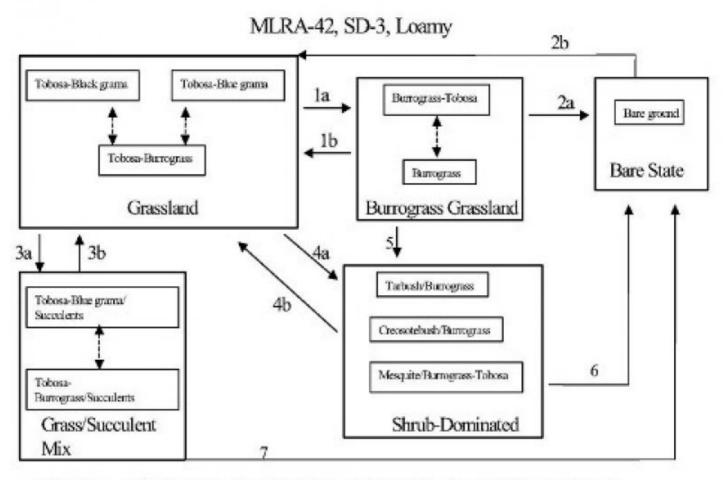
Surface fragment cover <=3"	0–5%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	5–12 in
Calcium carbonate equivalent (0-40in)	0–10%
Electrical conductivity (0-40in)	0–8 mmhos/cm
Sodium adsorption ratio (0-40in)	0–6
Soil reaction (1:1 water) (0-40in)	6.6–8.4
Subsurface fragment volume <=3" (Depth not specified)	0–5%
Subsurface fragment volume >3" (Depth not specified)	0%

# **Ecological dynamics**

Overview: The Loamy site is associated with the Gyp Upland ecological site with which it intergrades. There is a pronounced increase in alkali sacaton along this interface. The loamy site is also associated with the Gravelly and Shallow ecological sites from which it receives run-on water. The Draw site often dissects Loamy sites and is distinguished from the Loamy site by increased production or greater densities of woody species. The historic plant community has a grassland aspect, dominated by grasses with shrubs and half-shrubs sparse and evenly distributed. Tobosa, black grama and blue grama are the dominant species. Retrogression within this state is characterized by a decrease in black and blue grama and an increase in burrograss. Continuous overgrazing and drought can initiate a transition to a Burrograss- Grassland state. Continued reduction in grass cover and resulting infiltration problems may eventually effect a change to a Bare State, with very little or no remaining grass cover. Alternatively, creosotebush, tarbush or mesquite may expand or invade. Transitions back to a Grassland State from a Bare or Shrub-Dominated state are costly and may not be economically feasible. Decreased fire frequency may play a part in the transition to the Grass/Succulent Mix state with increased amounts of cholla and prickly pear.

### State and transition model

## Plant Communities and Transitional Pathways (diagram)



- Ia. Soil drying, overgrazing, drought, soil surface sealing. Ib. Restore natural overland flow, increase infiltration, prescribed grazing.
- Severe reduction in cover, soil surface sealing, decreased infiltration, erosion. 2b. Restore hydrology, break up physical crust, range seeding, prescribed grazing.
- 3a. Lack of fire, overgrazing, hall storms or other physical disturbance, drought, 3b. Prescribed fire, brush control, prescribed grazing.
- 4a. Seed dispersal of shrubs, persistent loss of grass cover, competition by shrubs, lack of fire. 4b. Brush control, range seeding -dependent on amount of grass (seed bank) remaining.
- 5. Loss of grass cover, seed dispersal of shrubs, competition by shrubs.
- 6. & 7. Brush control with continued loss of grass cover, soil sealing, erosion.

# State 1 Historic Climax Plant Community

# **Community 1.1 Historic Climax Plant Community**

State Containing Historic Climax Plant Community Grassland: The historic plant community has a grassland aspect, dominated by grasses with shrubs and half-shrubs sparse and evenly distributed. Black grama, blue grama, and tobosa are the dominant grass species. There are a variety of perennial forbs and their production varies widely by season and year. Globemallow, verbena, groundsels, croton and filaree are forbs commonly found on this site. Fourwing saltbush and winterfat are two of the more palatable shrubs. The Loamy ecological site encompasses a

wide variety of soils, with surface textures ranging from sandy loams to clay loams. Soil depths range from shallow to very deep and can include sub surface features such as calcic, petrocalcic, and gypsic horizons. These variations cause differences in plant community composition and dynamics. Black grama is found at highest densities on coarser textured sandy loams, with blue grama preferring finer textured loam and silt loam, and tobosa favoring lower landscape positions and loam to clay loam surface textures. Burrograss may often be the dominant grass species on silty soils, perhaps in part due to the seedlings ability to auger into and establish on physically crusted soils. Gypsum influenced soils typically have greater amounts of tobosa, burrograss, and ephedra. There is greater representation of sideoats and vine mesquite within the tobosa-blue grama community. Retrogression under continuous heavy grazing results in a decrease of black grama, blue grama, sideoats grama, plains bristlegrass, bush muhly, cane bluestem, vine mesquite, winterfat, and fourwing saltbush. Species such as burrograss, threeawns, sand dropseed, sand muhly, and broom snakeweed increase under continuous heavy grazing or prolonged periods of drought. Under continued retrogression burrograss can completely dominate the site. Creosotebush, tarbush, and mesquite, can also dominate. Cholla and prickly pear can increase on areas that are disturbed or overgrazed. Diagnosis: Tobosa, black grama, and blue grama are the dominant species. Grass cover is uniformly distributed with few large bare areas. Shrubs are sparse and evenly distributed. Slopes range from level to gently sloping and usually display limited evidence of active rills and gully formation if plant cover remains intact. Litter movement associated with overland flow is limited to smaller size class litter and short distances. Other shrubs include: yucca, mesquite, tarbush, cholla and creosote bush. Other forbs include: desert holly, scorpionweed, bladderpod, flax, nama, fleabane, Indianwheat, Indian blanket flower, groundcherry, deerstongue, and rayless goldenrod.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	
Grass/Grasslike	585	833	1080
Forb	39	55	72
Shrub/Vine	26	37	48
Total	650	925	1200

Table 6. Ground cover

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

Figure 5. Plant community growth curve (percent production by month). NM2807, R042XC007NM Loamy HCPC. R042XC007NM Loamy HCPC Warm Season Plant Community..

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0	0	0	5	10	10	25	30	15	5	0	0

## **Burrograss-Grassland**

# Community 2.1 Burrograss-Grassland

Burrograss-Grassland: Changes in hydrology resulting in decreased available soil moisture, reduces grass cover and increases bare ground. Burrograss is the dominant grass. Tobosa cover is variable and can range from sizeable areas to small patches occupying only depressions or the lowest and wettest positions within the site. Threeawns, ear muhly, sand muhly, and fluffgrass occur at increased densities compared to the grassland state. Shrub densities may increase especially mesquite, creosotebush or tarbush. Retrogression within this state is characterized by a further decrease in grass cover and increased bare ground. Further deterioration of this site can result in the transition to a bare state or becoming shrub dominated. Diagnosis: Burrograss is the dominant species. Grass cover is no longer uniformly distributed, instead tending to be patchy with large areas of bare ground present. Physical crusts are present in bare areas reducing infiltration and suppressing seedling establishment by any grass species other than burrograss. Transition to Burrograss-Grassland (1a): Transitions from grassland to a burrograssgrassland state may occur due to changes in hydrology. Gullies, roads or obstructions that alter natural water flow patterns may cause this transition. Changes in surface hydrology may also occur due to overgrazing or drought. The reduction in grass cover promotes increased soil physical crusts and reduces infiltration. 5 Key indicators of approach to transition: ? Diversion of overland flow resulting in decreased soil moisture. ? Increase in amount of burrograss cover ? Reduction in grass cover and increase in size and frequency of bare patches. ? Formation of physical crusts—indicating reduced infiltration. ? Evidence of litter movement—indicating loss or redistribution of organic matter. Transition back to Grassland (1b) The natural hydrology of the site must be returned. Culverts, turnouts, or rerouting roads may help re-establish natural overland flow, if roads or trails have altered the hydrology. Erosion control structures or shaping and filling gullies may help regain natural flow patterns and establish vegetation if the flow has been channeled. Breaking up physical crusts by soil disturbance may promote infiltration and seedling emergence. Allow natural revegetation to take place. Prescribed grazing will help ensure proper forage utilization and reduce grass loss due to grazing.

# State 3 Bare State

# Community 3.1 Bare State

Bare State: Extremely low ground cover, soil degradation and erosion characterize this state. Very little vegetation remains. Burrograss is the dominant grass and cover is extremely patchy. Physical soil crusts are extensive. Erosion and resource depletion increase as site degrades. Diagnosis: Very little cover remains. Erosion is evident by soil sealing, water flow patterns, pedestals or terracettes. Rills and gullies may be present and active. Transition to Bare State (2a): Extended drought, continuous heavy grazing, or other disturbance that severely depletes grass cover can effect this transition. As grass cover decreases, sheet flow and erosion increase, and physical soil crusts form, thereby further reducing infiltration. Key indicators of approach to transition: ? Continued reduction in grass cover. ? Increased soil surface sealing. ? Increased erosion. ? Reduced aggregate stability in bare areas.

Transition back to Grassland (2b) Restore the hydrology, see (1a). With the extent of grass loss range seeding may be necessary. Utilizing livestock or mechanical means to break up the physical crusts may increase infiltration and aid seedling establishment. Prescribed grazing will help ensure adequate deferment period following seeding, and proper forage utilization once the grass stand is well established. The degree to which this site is capable of recovery depends on the restoration of hydrology, extent of degradation to soil resources, and adequate rainfall necessary to establish grasses.

# State 4 Grass/Succulent Mix

# Community 4.1 Grass/Succulent Mix

Grass / Succulent Mix: Increased representations of succulents characterize this site. Increased densities of cholla or pricklypear is recognized as a management concern, but their impact on grass production is unclear. Light to

medium cholla or prickly pear infestation doesn't seem to greatly reduce grass production, however it limits access to palatable grasses and interferes with livestock movement and handling. Tobosa and blue grama are the dominant species on this site. Retrogression within this site is characterized by a decrease in blue grama and an increase in succulents, tobosa and burrograss. Diagnosis: Cholla or prickly pear is found at increased densities. Grass cover is variable ranging from uniformly distributed to patchy with frequent areas of bare ground present. Tobosa or blue grama is the dominant grass species. Transition to Grass/Succulent Mix (3a): If fire was historically a part of desert grassland ecosystem and played a role in suppressing seedlings of shrubs and succulents, then fire suppression may favor the increase of succulents.1 Heavy grazing by livestock or other physical disturbances may help disseminate seed and increase the establishment of succulents. Areas historically overgrazed by sheep are sometimes associated with higher densities of Succulents. Intense hailstorms can spread pricklypear by breaking off joints causing new plants to take root.3 During severe drought perennial grass cover can decline significantly, leaving resources available for use by more drought tolerant succulents. Cholla and pricklypear are both adapted to and favored by drought due to the ability of their shallow, wide spreading root systems to absorb and store water.4 Key indicators of approach to transition: ? Decrease or change in distribution of grass cover. ? Increase in amount of succulent seedlings. ? Increased cover of succulents. Transition back to Grassland (3b) Fire is an effective means of controlling cholla and prickly pear if adequate grass cover remains to carry fire.2 Cholla greater than two feet tall or pricklypear with a large amount of pads (>15-20) are harder to kill. Chemical control is effective in controlling prickly pear and cholla; apply when growth starts in May. Hand grubbing is also effective if cholla or pricklypear is severed 2-4 inches below ground and care is taken not to let broken joints or pads take root. Stacking and burning piles and grubbing during winter or drought help keeps broken joints and pads from rooting. Prescribed grazing will help ensure proper forage utilization and sustain grass cover.

# State 5 Shrub Dominated

# Community 5.1 Shrub Dominated

Shrub Dominated: Increased shrub cover characterizes this state. Mesquite, creosotebush, and/or tarbush are the dominant shrub species. Burrograss or tobosa is the dominant grass species. Grass cover is decreased, typically patchy with large bare areas present; however, sometimes grass cover can remain relatively high for extended periods when associated with light to moderate infestations of mesquite. Variations in soil characteristics play a part in determining which shrub species increase. Mesquite is well adapted to a wide range of soil types, but increases more often on deep soils low in carbonates, that have a sandy surface overlying finer textured soils. Tarbush prefers finer textured, calcareous soils, usually in lower positions that receive some extra water. Creosotebush is less tolerant of fine textured soils, preferring sandy, calcareous soils that have some gravel. Creosotebush also does well on soils that are shallow over caliche. Retrogression within this state is characterized by a decrease in tobosa, and an increase in burrograss. As the site continues to degrade shrub cover continues to increase and grass cover is severely reduced. Diagnosis: Mesquite, Creosotebush, and/or tarbush are the dominant shrubs. Blue grama and black grama cover is low or absent. Burrograss or tobosa are the dominant grasses. Typically grass cover is patchy with large interconnected bare areas present. Physical soil crusts are present, especially on silt loam surface soils. Transition to Shrub Dominated (4a): Wildlife and livestock consume and disperse mesquite seeds. Flood events may wash creosote or tarbush seeds off adjacent gravelly sites onto the loamy site and supply adequate moisture for germination. Persistent loss of grass cover due to overgrazing or drought can cause large bare patches, providing competition free areas for shrub seedling establishment. As shrub cover increases, competition for soil resources, especially water, becomes a major factor in further reducing grass cover. Reduction of fire, due to either fire suppression policy or loss of adequate fine fuels may increase the probability of shrub encroachment. Increased soil surface physical crusts and associated decreased infiltration, may prevent the establishment of grass seedlings. Transition to Shrub Dominated (5): The dispersal of creosotebush, tarbush or mesquite seed, combined with loss of grass cover and resource competition by shrubs may cause this transition. Key indicators of approach to transition: ? Decreased grass and litter cover. ? Increased bare patch size. ? Increased physical soil crusts. ? Increased amount of mesquite, creosotebush, or tarbush seedlings. ? Increased shrub cover. Transition back to Grassland (4b) Brush control will be necessary to remove shrubs and eliminate competition for resources necessary for grass establishment or reproduction. Seeding may be necessary on those sites where desired grass species are absent or very limited. Pitting and seeding may increase the chances of successful grass establishment. Prescribed grazing will help ensure adequate time is elapsed before grazing seeded area is allowed and proper forage utilization following seeding establishment. Transition to Bare State (6): If grass cover on the shrub-dominated state is

severely limited and shrubs are removed a bare state may result. This transition will depend on amount of grasses or seed remaining, whether site is seeded, or if seeding is successful. Transition to Bare State (7): Removal of succulents and continued overgrazing or drought may cause loss of remaining grasses and erosion. Soil surface physical crusting may also be an important factor in inhibiting grass seedling establishment

# Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliai Cover (%)
Grass	/Grasslike				
1	Warm Season			278–324	
	tobosagrass	PLMU3	Pleuraphis mutica	278–324	_
2	Warm Season	•		9–46	
	burrograss	SCBR2	Scleropogon brevifolius	9–46	
3	Warm Season			231–278	
	black grama	BOER4	Bouteloua eriopoda	231–278	
	blue grama	BOGR2	Bouteloua gracilis	231–278	
4	Warm Season			28–46	
	sideoats grama	BOCU	Bouteloua curtipendula	28–46	
5	Warm Season			46–93	
	bush muhly	MUPO2	Muhlenbergia porteri	46–93	_
	plains bristlegrass	SEVU2	Setaria vulpiseta	46–93	
6	Warm Season			9–28	
	Arizona cottontop	DICA8	Digitaria californica	9–28	_
7	Warm Season			46–93	
	threeawn	ARIST	Aristida	46–93	
	muhly	MUHLE	Muhlenbergia	46–93	
	sand dropseed	SPCR	Sporobolus cryptandrus	46–93	
8	Warm Season	<u> </u>		28–46	
	Graminoid (grass or grass-like)	2GRAM	Graminoid (grass or grass-like)	28–46	
Shrub	/Vine	<u> </u>			
9	Shrub			9–28	
	fourwing saltbush	ATCA2	Atriplex canescens	9–28	
	jointfir	EPHED	Ephedra	9–28	
	winterfat	KRLA2	Krascheninnikovia lanata	9–28	
	cane bluestem	BOBA3	Bothriochloa barbinodis	5–24	
	Arizona cottontop	DICA8	Digitaria californica	5–24	
	plains bristlegrass	SEVU2	Setaria vulpiseta	5–24	
10	Shrub	l	,	9–28	
	javelina bush	COER5	Condalia ericoides	9–28	
	broom snakeweed	GUSA2	Gutierrezia sarothrae	9–28	
	Grass, annual	2GA	Grass, annual	5–15	
11	Shrubs		.,	9–28	
	Shrub (>.5m)	2SHRUB	Shrub (>.5m)	9–28	
Forb		1 =	()	1 3 20	

12	Forb			9–46	
	threadleaf ragwort	SEFLF	Senecio flaccidus var. flaccidus	9–46	_
	globemallow	SPHAE	Sphaeralcea	9–46	_
	verbena	VEPO4	Verbena polystachya	9–46	_
	broom snakeweed	GUSA2	Gutierrezia sarothrae	5–15	_
	pricklypear	OPUNT	Opuntia	5–15	_
13	Forb	9–28			
	croton	CROTO	Croton	9–28	_
	woolly groundsel	PACA15	Packera cana	9–28	_
14	Forb	9–28			
	Goodding's tansyaster	MAPIG2	Machaeranthera pinnatifida ssp. gooddingii var. gooddingii	9–28	_
	woolly paperflower	PSTA	Psilostrophe tagetina	9–28	_
15	Forb	9–28			
	redstem stork's bill	ERCI6	Erodium cicutarium	9–28	_
	Texas stork's bill	ERTE13	Erodium texanum	9–28	_
16	Forb	9–28			
	Forb (herbaceous, not grass nor grass-like)	2FORB	Forb (herbaceous, not grass nor grass-like)	9–28	_

# **Animal community**

This site provides habitats which support a resident animal community that is characterized by pronghorn antelope, black-tailed jackrabbit, black tailed prairie dog, yellow-faced pocket gopher, banner-tailed kangaroo rat, hispid cotton rat, swift fox, burrowing owl, horned lark, mockingbird, meadowlark, mourning dove, scaled quail, Great Plains toad, plains spadefoot toad, prairie rattlesnake and western coachwhip shake.

## **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

Atoka C

Bigetty B

Ratliff B

Reyab B

Holloman B

Largo B

Holloman B

Bigetty B

Berino B

Reagan B

Reakor B

Reeves B

Russler C

### Recreational uses

This site offers limited potential for hiking, horseback riding, nature observation and photography. Game bird, antelope and predator hunting are also limited.

### **Wood products**

This site has no potential for wood products

# Other products

This site is suitable for grazing by all kinds and classes of livestock, during all seasons of the year. Under retrogression, such plants as black grama, blue grama, sideoats grama, bush muhly, plains bristlegrass, Arizona cottontop, fourwing saltbush and winterfat decrease and there is an increase in burrograss, threeawns, sand dropseed, muhlys, broom snakeweed and javilinabush. Under continued retrogression, burrograss can completely dominate the site. Creosotebush, mesquite, and tarbush can also dominate. Grazing management alone will not improve the site in the above situation. This site is well suited 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 3.0 - 4.2 75 - 51 4.1 - 5.5 50 - 26 5.3 - 7.0 25 - 0 7.1 +

# Inventory data references

Other 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 Chavez 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. Bunting, S.C., H.A. Wright, and L.F. Neuenschwander. 1980. Long-term effects of fire on cactus in the Southern Mixed Prairie of Texas. J. Range. Manage. 33: 85-88.
- 3. Laycock, W.A. 1982. Hail as an ecological factor in the increase of prickly pear cactus. p. 359-361. In: J.A. Smith and V.W. Hays (eds.) Proc. XIV Int. Grassland Congr. Westview Press, Boulder, Colo.
- 4. Vallentine, J.F. 1989. Range Developments and Improvements. 3rd Edition. Academic Press. San Diego, California.
- 5. U.S. Department of Agriculture, Natural Resources Conservation Service. 2001. Soil Quality Information Sheet. Rangeland Soil Quality—Physical and Biological Soil Crusts. Rangeland Sheet 6, [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

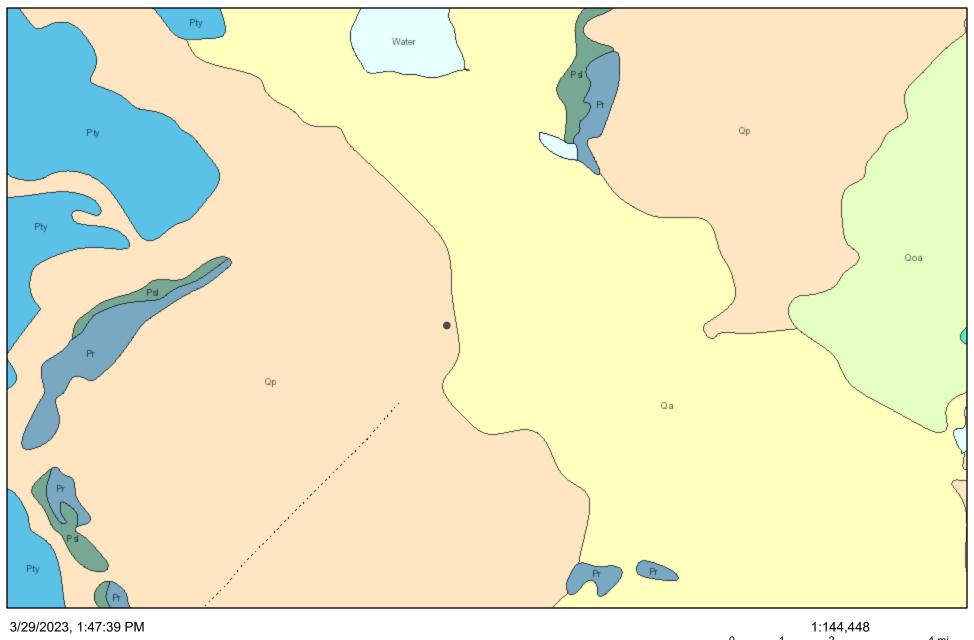
Inc	licators
1.	Number and extent of rills:
2.	Presence of water flow patterns:
3.	Number and height of erosional pedestals or terracettes:
4.	Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):
5.	Number of gullies and erosion 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 annual-production):
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:

# Bindel 4 Fee 1H Qp

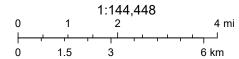


Lithologic Units

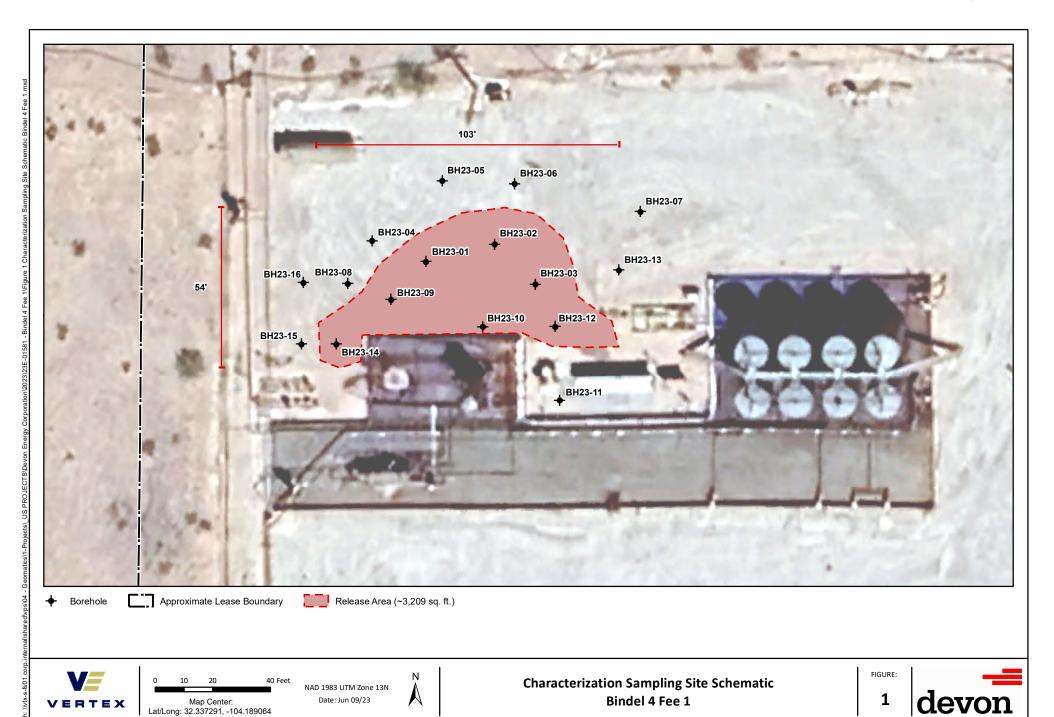
Playa—Alluvium and evaporite deposits (Holocene)

Water—Perenial standing water

Qa—Alluvium (Holocene to upper Pleistocene)



Esri, NASA, NGA, USGS, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System,



Released to Imaging: 12/19/2023 3:23:22 PM

Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Image from Google Earth, 2023; georeferenced by Vertex Professional Services Ltd. (Vertex). Site features from GPS by Vertex, 2023.

Table 1. Initial Characterization Laboratory Results - Depth to Groundwater <50 feet bgs
Devon Energy Corporation
Bindel 4 Fee 1 Battery
NMOCD Tracking #: nAPP2307924732
Project #: 23E-01581
Lab Reports: 2304492, 2305987 and 2306058

	Sample Des	cription					Petroleum	Hydrocarb	ons				Inorganic
Sample ID	Depth (ft)	Date	Benzene	roluene	Ethylbenzene	Total Xylenes	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	≥ (mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
		D - NMAC <50 ft 19.15.29 (2018)	10	-	-	-	50	-	-	-	-	100	600
Criteria		- NMAC 51-100 ft 19.15.29 (2018)	10	-	-	-	50	-	-	-	1000	2500	10000
2023 Boreholes	NIVIOCE	0 - NMAC >100 ft 19.15.29 (2018)	10	-	-	-	50	-	-	-	1000	2500	20000
BH23-01	0	April 7, 2023	2.6	68	12	230	312.6	5500	16000	2600	21500	24100	110
	1	April 7, 2023	2.7	54	9.5	160	226.2	4700	8100	1200	12800	14000	ND
	2	May 31, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	110
	4	May 31, 2023	ND	ND	ND	ND	ND	15	860	240	875	1115	ND
	6	May 31, 2023	ND ND	ND	ND	ND	ND	5.8	350	100	355.8	455.8	ND ND
BH23-02	8	May 31, 2023 April 7, 2023	ND 0.22	ND 13	ND 5.8	ND 94	ND 113.02	ND 1400	37 8800	ND 1500	ND 10200	ND 11700	ND 3900
DI123-U2	1	April 7, 2023	0.22	12	5.8	93	110.7	1300	6500	930	7800	8730	1600
	2	May 31, 2023	ND	ND	ND	ND	ND	ND	130	ND	130	130	1000
	4	May 31, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	660
	6	May 31, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	440
	8	May 31, 2023	ND	ND	ND	ND	ND	ND	70	ND	70	70	460
	9	May 31, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	440
BH23-03	0	April 7, 2023	0.26	14	5.6	100	119.86	2500	12000	2200	14500	16700	680
	1	April 7, 2023	0.31	15	3.5	83	101.81	1900	9500	1800	11400	13200	520
	<u>2</u> 4	May 31, 2023 May 31, 2023	ND ND	ND ND	ND ND	ND ND	ND ND	5.7 ND	610 92	210 ND	615.7 92	825.7 92	110 160
	6	May 31, 2023	ND ND	ND	ND ND	ND	ND	ND	11	ND	11	11	110
BH23-04	0	April 7, 2023	ND	ND	ND	ND	ND	ND	41	ND	41	41	ND
	1	April 7, 2023	ND	ND	ND	ND	ND	ND	47	ND	47	47	72
BH23-05	0	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	1	April 7, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-06	0	April 7, 2023	ND ND	ND	ND	ND	ND	ND	15	ND	15	15	ND ND
BH23-07	0	April 7, 2023 April 7, 2023	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	14 ND	ND ND	14 ND	14 ND	ND ND
BH23-07	1	April 7, 2023	ND ND	ND	ND ND	ND	ND ND	ND	ND	ND	ND	ND	62
BH23-08	0	May 16, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	77
	2	May 16, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	250
BH23-09	0	May 16, 2023	ND	ND	ND	ND	ND	ND	170	63	170	233	430
	2	May 16, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	150
	4	May 31, 2023	ND	ND	ND	ND	ND	ND	16	ND	16	16	310
DU22 40	6	May 31, 2023	ND ND	ND	ND	ND	ND	ND CO	10	ND	10	10	410
BH23-10	2	May 16, 2023 May 16, 2023	ND ND	ND ND	ND ND	ND ND	ND ND	6.9 ND	2500 ND	680 ND	2506.9 ND	3186.9 ND	ND 380
BH23-11	0	May 16, 2023	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND	ND ND	ND ND	61
5.125 11	1.5	May 16, 2023	ND ND	ND	ND ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-12	0	May 16, 2023	ND	ND	ND	ND	ND	ND	48	150	48	198	410
	2	May 16, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	87
BH23-13	0	May 16, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	May 16, 2023	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-14	2	May 16, 2023	ND	ND	ND	ND	ND	ND ND	140	100	140	240 ND	180
BH23-15	0	May 16, 2023 May 16, 2023	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	100 180
DU52-13	2	May 16, 2023	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	270
BH23-16	0	May 16, 2023	-	-	-	-	-	-	-	-	-	-	-
	2	May 16, 2023	-	-	-	-	-	-	-	-	-	-	-
			_	_	_	_	_	_	_		_	_	_

NMAC - New Mexico Administrative Code (Title 19, Chapter 15, Part 29; 2018)

 $\ensuremath{\mathsf{ND}}$  -  $\ensuremath{\mathsf{Not}}$  Detected at the Reporting Limit

- Denotes no standard/not analyzed

Bold and grey shaded indicates exceedance outside of NMOCD Closure Criteria (on-pad)

Bold and green shaded indicates exceedance outside of NMOCD Reclamation Criteria (off-pad)





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

April 20, 2023

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

FAX:

RE: Bindel 4 Fee 1 Battery OrderNo.: 2304492

## Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 14 sample(s) on 4/12/2023 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 Freeman

Laboratory Manager

Indest

4901 Hawkins NE

Albuquerque, NM 87109

Date Reported: 4/20/2023

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-01 0'

 Project:
 Bindel 4 Fee 1 Battery
 Collection Date: 4/7/2023 10:00:00 AM

 Lab ID:
 2304492-001
 Matrix: SOIL
 Received Date: 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORG	GANICS					Analyst: PRD
Diesel Range Organics (DRO)	16000	240		mg/Kg	25	4/17/2023 5:57:38 PM
Motor Oil Range Organics (MRO)	2600	1200		mg/Kg	25	4/17/2023 5:57:38 PM
Surr: DNOP	0	69-147	S	%Rec	25	4/17/2023 5:57:38 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	5500	250		mg/Kg	50	4/17/2023 4:14:00 PM
Surr: BFB	243	37.7-212	S	%Rec	50	4/17/2023 4:14:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	2.6	0.12		mg/Kg	5	4/15/2023 5:11:00 AM
Toluene	68	2.5		mg/Kg	50	4/17/2023 4:14:00 PM
Ethylbenzene	12	0.25		mg/Kg	5	4/15/2023 5:11:00 AM
Xylenes, Total	230	4.9		mg/Kg	50	4/17/2023 4:14:00 PM
Surr: 4-Bromofluorobenzene	166	70-130	S	%Rec	5	4/15/2023 5:11:00 AM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	110	60		mg/Kg	20	4/17/2023 4:06:28 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 22

Date Reported: 4/20/2023

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-01 1'

 Project:
 Bindel 4 Fee 1 Battery
 Collection Date: 4/7/2023 10:15:00 AM

 Lab ID:
 2304492-002
 Matrix: SOIL
 Received Date: 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS					Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	8100	96		mg/Kg	10	4/18/2023 1:21:51 PM
Motor Oil Range Organics (MRO)	1200	480		mg/Kg	10	4/18/2023 1:21:51 PM
Surr: DNOP	0	69-147	S	%Rec	10	4/18/2023 1:21:51 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	4700	240		mg/Kg	50	4/17/2023 4:35:00 PM
Surr: BFB	241	37.7-212	S	%Rec	50	4/17/2023 4:35:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	2.7	0.12		mg/Kg	5	4/15/2023 5:32:00 AM
Toluene	54	2.4		mg/Kg	50	4/17/2023 4:35:00 PM
Ethylbenzene	9.5	0.24		mg/Kg	5	4/15/2023 5:32:00 AM
Xylenes, Total	160	4.9		mg/Kg	50	4/17/2023 4:35:00 PM
Surr: 4-Bromofluorobenzene	156	70-130	S	%Rec	5	4/15/2023 5:32:00 AM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	ND	60		mg/Kg	20	4/17/2023 4:18:53 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 22

Date Reported: 4/20/2023

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-02 0'

 Project:
 Bindel 4 Fee 1 Battery
 Collection Date: 4/7/2023 10:30:00 AM

 Lab ID:
 2304492-003
 Matrix: SOIL
 Received Date: 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	8800	98		mg/Kg	10	4/18/2023 2:02:58 PM
Motor Oil Range Organics (MRO)	1500	490		mg/Kg	10	4/18/2023 2:02:58 PM
Surr: DNOP	0	69-147	S	%Rec	10	4/18/2023 2:02:58 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	1400	24		mg/Kg	5	4/15/2023 5:54:00 AM
Surr: BFB	367	37.7-212	S	%Rec	5	4/15/2023 5:54:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	0.22	0.12		mg/Kg	5	4/15/2023 5:54:00 AM
Toluene	13	0.24		mg/Kg	5	4/15/2023 5:54:00 AM
Ethylbenzene	5.8	0.24		mg/Kg	5	4/15/2023 5:54:00 AM
Xylenes, Total	94	4.9		mg/Kg	50	4/17/2023 4:57:00 PM
Surr: 4-Bromofluorobenzene	148	70-130	S	%Rec	5	4/15/2023 5:54:00 AM
EPA METHOD 300.0: ANIONS						Analyst: <b>JMT</b>
Chloride	3900	150		mg/Kg	50	4/18/2023 9:51:36 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

Page 3 of 22

Date Reported: 4/20/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BH23-02 1'

 Project:
 Bindel 4 Fee 1 Battery
 Collection Date: 4/7/2023 10:45:00 AM

 Lab ID:
 2304492-004
 Matrix: SOIL
 Received Date: 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS					Analyst: PRD
Diesel Range Organics (DRO)	6500	100		mg/Kg	10	4/17/2023 4:06:42 PM
Motor Oil Range Organics (MRO)	930	500		mg/Kg	10	4/17/2023 4:06:42 PM
Surr: DNOP	0	69-147	S	%Rec	10	4/17/2023 4:06:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	1300	24		mg/Kg	5	4/15/2023 6:16:00 AM
Surr: BFB	352	37.7-212	S	%Rec	5	4/15/2023 6:16:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	0.20	0.12		mg/Kg	5	4/15/2023 6:16:00 AM
Toluene	12	0.24		mg/Kg	5	4/15/2023 6:16:00 AM
Ethylbenzene	5.5	0.24		mg/Kg	5	4/15/2023 6:16:00 AM
Xylenes, Total	93	4.8		mg/Kg	50	4/17/2023 5:18:00 PM
Surr: 4-Bromofluorobenzene	146	70-130	S	%Rec	5	4/15/2023 6:16:00 AM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	1600	60		mg/Kg	20	4/17/2023 5:33:20 PM

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of 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 22

Date Reported: 4/20/2023

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-03 0'

 Project:
 Bindel 4 Fee 1 Battery
 Collection Date: 4/7/2023 11:00:00 AM

 Lab ID:
 2304492-005
 Matrix: SOIL
 Received Date: 4/12/2023 8:42:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR					Analyst: PRD	
Diesel Range Organics (DRO)	12000	240		mg/Kg	25	4/17/2023 6:39:21 PM
Motor Oil Range Organics (MRO)	2200	1200		mg/Kg	25	4/17/2023 6:39:21 PM
Surr: DNOP	0	69-147	S	%Rec	25	4/17/2023 6:39:21 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	2500	240		mg/Kg	50	4/17/2023 5:40:00 PM
Surr: BFB	214	37.7-212	S	%Rec	50	4/17/2023 5:40:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: CCM
Benzene	0.26	0.12		mg/Kg	5	4/15/2023 6:37:00 AM
Toluene	14	0.24		mg/Kg	5	4/15/2023 6:37:00 AM
Ethylbenzene	5.6	0.24		mg/Kg	5	4/15/2023 6:37:00 AM
Xylenes, Total	100	4.9		mg/Kg	50	4/17/2023 5:40:00 PM
Surr: 4-Bromofluorobenzene	145	70-130	S	%Rec	5	4/15/2023 6:37:00 AM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	680	60		mg/Kg	20	4/17/2023 5:45:45 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
- 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 22

Date Reported: 4/20/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. **Client Sample ID:** BH23-03 1'

 Project:
 Bindel 4 Fee 1 Battery
 Collection Date: 4/7/2023 11:15:00 AM

 Lab ID:
 2304492-006
 Matrix: SOIL
 Received Date: 4/12/2023 8:42:00 AM

Analyses	Result	RL (	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS					Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	9500	97		mg/Kg	10	4/18/2023 2:44:05 PM
Motor Oil Range Organics (MRO)	1800	480		mg/Kg	10	4/18/2023 2:44:05 PM
Surr: DNOP	0	69-147	S	%Rec	10	4/18/2023 2:44:05 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: CCM
Gasoline Range Organics (GRO)	1900	46		mg/Kg	10	4/17/2023 6:01:00 PM
Surr: BFB	314	37.7-212	S	%Rec	10	4/17/2023 6:01:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: CCM
Benzene	0.31	0.023		mg/Kg	1	4/15/2023 6:59:00 AM
Toluene	15	0.46		mg/Kg	10	4/17/2023 6:01:00 PM
Ethylbenzene	3.5	0.046		mg/Kg	1	4/15/2023 6:59:00 AM
Xylenes, Total	83	0.93		mg/Kg	10	4/17/2023 6:01:00 PM
Surr: 4-Bromofluorobenzene	216	70-130	S	%Rec	1	4/15/2023 6:59:00 AM
EPA METHOD 300.0: ANIONS						Analyst: CAS
Chloride	520	60		mg/Kg	20	4/17/2023 5:58:10 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
- 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 6 of 22

Date Reported: 4/20/2023

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-04 0'

 Project:
 Bindel 4 Fee 1 Battery
 Collection Date: 4/7/2023 11:30:00 AM

 Lab ID:
 2304492-007
 Matrix: SOIL
 Received Date: 4/12/2023 8:42:00 AM

Analyses	Result	RL Qu	al Units	DF	<b>Date Analyzed</b>
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst: PRD
Diesel Range Organics (DRO)	41	9.6	mg/Kg	1	4/17/2023 9:27:31 AM
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	4/17/2023 9:27:31 AM
Surr: DNOP	95.5	69-147	%Rec	1	4/17/2023 9:27:31 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	4/17/2023 3:52:00 PM
Surr: BFB	89.0	37.7-212	%Rec	1	4/17/2023 3:52:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.024	mg/Kg	1	4/17/2023 3:52:00 PM
Toluene	ND	0.049	mg/Kg	1	4/17/2023 3:52:00 PM
Ethylbenzene	ND	0.049	mg/Kg	1	4/17/2023 3:52:00 PM
Xylenes, Total	ND	0.097	mg/Kg	1	4/17/2023 3:52:00 PM
Surr: 4-Bromofluorobenzene	86.2	70-130	%Rec	1	4/17/2023 3:52:00 PM
EPA METHOD 300.0: ANIONS					Analyst: CAS
Chloride	ND	60	mg/Kg	20	4/17/2023 6:10:35 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 7 of 22

Date Reported: 4/20/2023

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-04 1

 Project:
 Bindel 4 Fee 1 Battery
 Collection Date: 4/7/2023 11:45:00 AM

 Lab ID:
 2304492-008
 Matrix: SOIL
 Received Date: 4/12/2023 8:42:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OF	RGANICS				Analyst: PRD
Diesel Range Organics (DRO)	47	9.4	mg/Kg	1	4/17/2023 9:38:00 AM
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	4/17/2023 9:38:00 AM
Surr: DNOP	94.5	69-147	%Rec	1	4/17/2023 9:38:00 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: CCM
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	4/15/2023 7:42:00 AM
Surr: BFB	108	37.7-212	%Rec	1	4/15/2023 7:42:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: CCM
Benzene	ND	0.024	mg/Kg	1	4/15/2023 7:42:00 AM
Toluene	ND	0.049	mg/Kg	1	4/15/2023 7:42:00 AM
Ethylbenzene	ND	0.049	mg/Kg	1	4/15/2023 7:42:00 AM
Xylenes, Total	ND	0.098	mg/Kg	1	4/15/2023 7:42:00 AM
Surr: 4-Bromofluorobenzene	88.7	70-130	%Rec	1	4/15/2023 7:42:00 AM
EPA METHOD 300.0: ANIONS					Analyst: CAS
Chloride	72	60	mg/Kg	20	4/17/2023 6:22:59 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 8 of 22

Date Reported: 4/20/2023

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-05 0'

 Project:
 Bindel 4 Fee 1 Battery
 Collection Date: 4/7/2023 1:00:00 PM

 Lab ID:
 2304492-009
 Matrix: SOIL
 Received Date: 4/12/2023 8:42:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OF	RGANICS				Analyst: PRD
Diesel Range Organics (DRO)	ND	8.6	mg/Kg	1	4/17/2023 7:43:30 PM
Motor Oil Range Organics (MRO)	ND	43	mg/Kg	1	4/17/2023 7:43:30 PM
Surr: DNOP	113	69-147	%Rec	1	4/17/2023 7:43:30 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/17/2023 1:07:25 PM
Surr: BFB	88.3	37.7-212	%Rec	1	4/17/2023 1:07:25 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.024	mg/Kg	1	4/17/2023 1:07:25 PM
Toluene	ND	0.048	mg/Kg	1	4/17/2023 1:07:25 PM
Ethylbenzene	ND	0.048	mg/Kg	1	4/17/2023 1:07:25 PM
Xylenes, Total	ND	0.095	mg/Kg	1	4/17/2023 1:07:25 PM
Surr: 4-Bromofluorobenzene	93.7	70-130	%Rec	1	4/17/2023 1:07:25 PM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	ND	60	mg/Kg	20	4/17/2023 3:35:59 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 9 of 22

Date Reported: 4/20/2023

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-05 1'

**Project:** Bindel 4 Fee 1 Battery
 Collection Date: 4/7/2023 1:15:00 PM

 **Lab ID:** 2304492-010
 Matrix: SOIL
 Received Date: 4/12/2023 8:42:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst: PRD
Diesel Range Organics (DRO)	ND	8.4	mg/Kg	1	4/17/2023 8:27:19 PM
Motor Oil Range Organics (MRO)	ND	42	mg/Kg	1	4/17/2023 8:27:19 PM
Surr: DNOP	74.6	69-147	%Rec	1	4/17/2023 8:27:19 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	4/17/2023 2:17:27 PM
Surr: BFB	77.0	37.7-212	%Rec	1	4/17/2023 2:17:27 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.024	mg/Kg	1	4/17/2023 2:17:27 PM
Toluene	ND	0.049	mg/Kg	1	4/17/2023 2:17:27 PM
Ethylbenzene	ND	0.049	mg/Kg	1	4/17/2023 2:17:27 PM
Xylenes, Total	ND	0.098	mg/Kg	1	4/17/2023 2:17:27 PM
Surr: 4-Bromofluorobenzene	90.6	70-130	%Rec	1	4/17/2023 2:17:27 PM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	ND	60	mg/Kg	20	4/17/2023 3:48:24 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 10 of 22

Date Reported: 4/20/2023

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-06 0'

**Project:** Bindel 4 Fee 1 Battery
 Collection Date: 4/7/2023 1:30:00 PM

 **Lab ID:** 2304492-011
 Matrix: SOIL
 Received Date: 4/12/2023 8:42:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE O	RGANICS				Analyst: PRD
Diesel Range Organics (DRO)	15	9.3	mg/Kg	1	4/17/2023 8:38:18 PM
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	4/17/2023 8:38:18 PM
Surr: DNOP	75.7	69-147	%Rec	1	4/17/2023 8:38:18 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	4/17/2023 3:27:33 PM
Surr: BFB	91.7	37.7-212	%Rec	1	4/17/2023 3:27:33 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.023	mg/Kg	1	4/17/2023 3:27:33 PM
Toluene	ND	0.047	mg/Kg	1	4/17/2023 3:27:33 PM
Ethylbenzene	ND	0.047	mg/Kg	1	4/17/2023 3:27:33 PM
Xylenes, Total	ND	0.094	mg/Kg	1	4/17/2023 3:27:33 PM
Surr: 4-Bromofluorobenzene	95.0	70-130	%Rec	1	4/17/2023 3:27:33 PM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	ND	60	mg/Kg	20	4/17/2023 4:00:49 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 11 of 22

Date Reported: 4/20/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BH23-06 1'

**Project:** Bindel 4 Fee 1 Battery
 Collection Date: 4/7/2023 1:45:00 PM

 **Lab ID:** 2304492-012
 Matrix: SOIL
 Received Date: 4/12/2023 8:42:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OF	RGANICS				Analyst: PRD
Diesel Range Organics (DRO)	14	9.4	mg/Kg	1	4/17/2023 9:00:03 PM
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	4/17/2023 9:00:03 PM
Surr: DNOP	100	69-147	%Rec	1	4/17/2023 9:00:03 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/17/2023 3:51:02 PM
Surr: BFB	101	37.7-212	%Rec	1	4/17/2023 3:51:02 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.024	mg/Kg	1	4/17/2023 3:51:02 PM
Toluene	ND	0.048	mg/Kg	1	4/17/2023 3:51:02 PM
Ethylbenzene	ND	0.048	mg/Kg	1	4/17/2023 3:51:02 PM
Xylenes, Total	ND	0.096	mg/Kg	1	4/17/2023 3:51:02 PM
Surr: 4-Bromofluorobenzene	95.7	70-130	%Rec	1	4/17/2023 3:51:02 PM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	ND	60	mg/Kg	20	4/17/2023 4:38:02 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 12 of 22

Date Reported: 4/20/2023

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-07 0'

 Project:
 Bindel 4 Fee 1 Battery
 Collection Date: 4/7/2023 2:00:00 PM

 Lab ID:
 2304492-013
 Matrix: SOIL
 Received Date: 4/12/2023 8:42:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OF	RGANICS				Analyst: PRD
Diesel Range Organics (DRO)	ND	8.7	mg/Kg	1	4/17/2023 9:10:58 PM
Motor Oil Range Organics (MRO)	ND	43	mg/Kg	1	4/17/2023 9:10:58 PM
Surr: DNOP	77.3	69-147	%Rec	1	4/17/2023 9:10:58 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/17/2023 4:14:25 PM
Surr: BFB	103	37.7-212	%Rec	1	4/17/2023 4:14:25 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.024	mg/Kg	1	4/17/2023 4:14:25 PM
Toluene	ND	0.048	mg/Kg	1	4/17/2023 4:14:25 PM
Ethylbenzene	ND	0.048	mg/Kg	1	4/17/2023 4:14:25 PM
Xylenes, Total	ND	0.096	mg/Kg	1	4/17/2023 4:14:25 PM
Surr: 4-Bromofluorobenzene	97.1	70-130	%Rec	1	4/17/2023 4:14:25 PM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	ND	60	mg/Kg	20	4/17/2023 5:15:15 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
- 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 13 of 22

Date Reported: 4/20/2023

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-07 1'

**Project:** Bindel 4 Fee 1 Battery
 Collection Date: 4/7/2023 2:15:00 PM

 **Lab ID:** 2304492-014
 Matrix: SOIL
 Received Date: 4/12/2023 8:42:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst: PRD
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	4/17/2023 9:21:51 PM
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	4/17/2023 9:21:51 PM
Surr: DNOP	82.4	69-147	%Rec	1	4/17/2023 9:21:51 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	4/17/2023 4:37:51 PM
Surr: BFB	93.1	37.7-212	%Rec	1	4/17/2023 4:37:51 PM
EPA METHOD 8021B: VOLATILES					Analyst: JJP
Benzene	ND	0.024	mg/Kg	1	4/17/2023 4:37:51 PM
Toluene	ND	0.048	mg/Kg	1	4/17/2023 4:37:51 PM
Ethylbenzene	ND	0.048	mg/Kg	1	4/17/2023 4:37:51 PM
Xylenes, Total	ND	0.096	mg/Kg	1	4/17/2023 4:37:51 PM
Surr: 4-Bromofluorobenzene	93.6	70-130	%Rec	1	4/17/2023 4:37:51 PM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	62	60	mg/Kg	20	4/17/2023 5:27:40 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
- 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 14 of 22

### Hall Environmental Analysis Laboratory, Inc.

WO#: 2304492 20-Apr-23

**Client:** Vertex Resources Services, Inc.

**Project:** Bindel 4 Fee 1 Battery

Sample ID: MB-74353 SampType: mblk TestCode: EPA Method 300.0: Anions

Client ID: **PBS** Batch ID: 74353 RunNo: 96079

Prep Date: 4/17/2023 Analysis Date: 4/17/2023 SeqNo: 3479713 Units: mg/Kg

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

Chloride ND 1.5

Sample ID: LCS-74353 TestCode: EPA Method 300.0: Anions SampType: Ics

Client ID: LCSS Batch ID: 74353 RunNo: 96079

Prep Date: Analysis Date: 4/17/2023 SeqNo: 3479714 4/17/2023 Units: mg/Kg

15.00

%REC %RPD **RPDLimit** Result PQL SPK value SPK Ref Val Qual Analyte I owl imit HighLimit 0

93.1

90

Sample ID: MB-74367 SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PRS Batch ID: 74367 RunNo: 96081

1.5

14

Prep Date: 4/17/2023 Analysis Date: 4/17/2023 SeqNo: 3479906 Units: mg/Kg

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

Chloride ND 1.5

Sample ID: LCS-74367 SampType: LCS TestCode: EPA Method 300.0: Anions

RunNo: 96081 Client ID: LCSS Batch ID: 74367

Prep Date: 4/17/2023 Analysis Date: 4/17/2023 SeqNo: 3479907 Units: mg/Kg

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

Chloride 15.00

#### Qualifiers:

Chloride

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

Page 15 of 22

# Hall Environmental Analysis Laboratory, Inc.

WO#: **2304492** 

20-Apr-23

Client: Vertex Resources Services, Inc.

**Project:** Bindel 4 Fee 1 Battery

Sample ID: MB-74323	SampT	уре: МВ	BLK	TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch	Batch ID: <b>74323</b>			RunNo: 96062						
Prep Date: 4/14/2023	Analysis D	Analysis Date: 4/14/2023			SeqNo: <b>3478497</b>			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	10									
Motor Oil Range Organics (MRO)	ND	50									
Surr: DNOP	8.9		10.00		89.1	69	147				

Sample ID: LCS-74323	SampT	SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics									
Client ID: LCSS	Batch	n ID: <b>74</b> 3	323	F							
Prep Date: 4/14/2023	Analysis D	Date: 4/	14/2023	5	SeqNo: <b>3478501</b>			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	40	10	50.00	0	81.0	61.9	130				
Surr: DNOP	4.6		5 000		91.2	69	147				

Sample ID:	WB-74347	Samp i ype:	MBLK	res	itCode: El	A Method	8015M/D: Die	sei Range	Organics	
Client ID:	PBS	Batch ID:	74347	F	RunNo: 90	6078				
Prep Date:	4/17/2023	Analysis Date:	4/17/2023	5	SeqNo: 34	479110	Units: %Rec			
Analyte		Result PC	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		9.4	10.00		93.5	69	147			

Sample ID: LCS-74347	Samply	/pe: LC	S	I es	tCode: E	PA Method	8015M/D: Die:	sel Range	Organics		
Client ID: LCSS	Batch	ID: <b>743</b>	347	F	RunNo: 9	6078					
Prep Date: 4/17/2023	Analysis Da	ate: <b>4/</b> 1	17/2023	5	SeqNo: 3	479111	Units: %Rec				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	4.6		5.000		91.6	69	147				

Sample ID: <b>2304492-008AMS</b>	SampT	ype: MS	3	Tes	tCode: El	PA Method	8015M/D: Die	sel Range	Organics	
Client ID: BH23-04 1'	Batch	n ID: <b>74</b> 3	323	F	RunNo: 90	6078				
Prep Date: 4/14/2023	Analysis D	oate: <b>4/</b>	17/2023	5	SeqNo: 34	479115	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	87	9.6	47.89	47.26	83.3	54.2	135			
Surr: DNOP	4.6		4.789		95.7	69	147			

Sample ID: 2304492-008AMS	<b>D</b> Samp1	Гуре: М 5	SD	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID: BH23-04 1'	Batcl	h ID: <b>74</b> 3	323	F	RunNo: 90	6078				
Prep Date: 4/14/2023	Analysis [	Date: 4/	17/2023	5	SeqNo: 34	479116	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	80	8.6	42.84	47.26	76.9	54.2	135	8.30	29.2	

#### 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 16 of 22

### Hall Environmental Analysis Laboratory, Inc.

WO#: 2304492

20-Apr-23

**Client:** Vertex Resources Services, Inc.

**Project:** Bindel 4 Fee 1 Battery

Sample ID: 2304492-008AMSD SampType: MSD TestCode: EPA Method 8015M/D: Diesel Range Organics

BH23-04 1' Client ID: Batch ID: 74323 RunNo: 96078

Prep Date: Analysis Date: 4/17/2023 SeqNo: 3479116 4/14/2023 Units: mq/Kq

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Surr: DNOP 96.0 4.284 69 4 1 147

Sample ID: MB-74336 TestCode: EPA Method 8015M/D: Diesel Range Organics SampType: MBLK Client ID: Batch ID: 74336 RunNo: 96078 Analysis Date: 4/17/2023 SeqNo: 3479504 Prep Date: 4/14/2023 Units: mg/Kg SPK value SPK Ref Val %REC %RPD **RPDLimit** Analyte Result POI I owl imit HighLimit Qual Diesel Range Organics (DRO) ND 10

Motor Oil Range Organics (MRO) ND 50 Surr: DNOP 12 10.00

119 147

Sample ID: LCS-74336 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 74336 RunNo: 96078

Prep Date: Analysis Date: 4/17/2023 SeqNo: 3479507 4/14/2023 Units: mg/Kg

SPK Ref Val %REC %RPD **RPDLimit** Analyte Result **PQL** SPK value LowLimit HighLimit Qual Diesel Range Organics (DRO) 51 10 61.9 50.00 Λ 101 130 Surr: DNOP 6.1 5.000 122 69 147

Sample ID: 2304492-009AMS SampType: MS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: BH23-05 0' Batch ID: 74336 RunNo: 96078 SeqNo: 3479521 Prep Date: Analysis Date: 4/17/2023 4/14/2023 Units: mg/Kg SPK Ref Val %REC %RPD **RPDLimit** Analyte Result **PQL** SPK value I owl imit HighLimit Qual 7.864 40 8.7 43.37 74.0 54 2 135

Diesel Range Organics (DRO) Surr: DNOP 4.337 3.7 86.2 69 147

Sample ID: 2304492-009AMSD SampType: MSD TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: BH23-05 0' Batch ID: 74336 RunNo: 96078 Prep Date: Analysis Date: 4/17/2023 SeqNo: 3479522 4/14/2023 Units: mg/Kg Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Analyte Diesel Range Organics (DRO) 42 9.0 44.88 7.864 75.5 54.2 4.41 29.2 135 Surr: DNOP 3.5 4.488 77 1 69 147 n 0

Sample ID: LCS-74375 TestCode: EPA Method 8015M/D: Diesel Range Organics SampType: LCS

Client ID: LCSS Batch ID: 74375 RunNo: 96131

Prep Date: 4/17/2023 Analysis Date: 4/18/2023 SeqNo: 3481381 Units: %Rec

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

#### Qualifiers:

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

Page 17 of 22

# Hall Environmental Analysis Laboratory, Inc.

4.3

WO#: 2304492

20-Apr-23

**Client:** Vertex Resources Services, Inc.

**Project:** Bindel 4 Fee 1 Battery

Sample ID: LCS-74375 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS Batch ID: 74375 RunNo: 96131

Prep Date: 4/17/2023 Analysis Date: 4/18/2023 SeqNo: 3481381 Units: %Rec

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Surr: DNOP 5.000 69

85.4

147

Sample ID: MB-74375 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: Batch ID: 74375 RunNo: 96131

Prep Date: Analysis Date: 4/18/2023 SeqNo: 3481385 4/17/2023 Units: %Rec

SPK value SPK Ref Val %RPD **RPDLimit** Result **PQL** %REC Qual Analyte I owl imit HighLimit

Surr: DNOP 8.7 10.00 86.6 69 147

#### Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

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

Analyte detected in the associated Method Blank

Е Above Quantitation Range/Estimated Value

Analyte detected below quantitation limits

Sample pH Not In Range

Reporting Limit RL

Page 18 of 22

# Hall Environmental Analysis Laboratory, Inc.

WO#: **2304492** 

20-Apr-23

Client: Vertex Resources Services, Inc.

**Project:** Bindel 4 Fee 1 Battery

Sample ID: Ics-74316	SampTyp	De: LCS	Tes	tCode: EP	A Method	8015D: Gasol	ine Range		
Client ID: LCSS	Batch I	D: <b>74316</b>	F	RunNo: <b>96</b> 0	058				
Prep Date: 4/13/2023	Analysis Dat	te: <b>4/14/2023</b>	5	SeqNo: 34	78184	Units: mg/K	g		
Analyte	Result	PQL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0 25.00	0	87.1	70	130			
Surr: BFB	1900	1000		193	37.7	212			
Sample ID: mb-74316	SampTyp	oe: MBLK	Tes	tCode: <b>EP</b>	A Method	8015D: Gasol	ine Range	ı	
Client ID: PBS	Batch I	D: <b>74316</b>	F	RunNo: <b>96</b> 0	058				
Prep Date: 4/13/2023	Analysis Dat	te: <b>4/14/2023</b>	5	SeqNo: 34	78185	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	940	1000		94.0	37.7	212			
Sample ID: Ics-74331	SampTyp	pe: LCS	Tes	tCode: <b>EP</b>	A Method	8015D: Gasol	ine Range		
Client ID: LCSS	Batch I	D: <b>74331</b>	F	RunNo: <b>96</b> 0	073				
Prep Date: 4/14/2023	Analysis Dat	te: <b>4/17/2023</b>	9	SeqNo: 34	79019	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	94.4	70	130			
Surr: BFB	5200	1000		517	37.7	212			S
Sample ID: <b>mb-74331</b>	SampTyp	oe: MBLK	Tes	tCode: <b>EP</b>	A Method	8015D: Gasol	ine Range	!	
Client ID: PBS	Batch I	F	RunNo: <b>96</b> 0	073					
Prep Date: 4/14/2023	Analysis Dat	te: <b>4/17/2023</b>	5	SeqNo: 34	79020	Units: ma/K	a		

Sample ID: 2304492-009ams	SampT	уре: МS	3	Tes	tCode: EF	PA Method	8015D: Gaso	line Range	)	
Client ID: BH23-05 0'	Batch	n ID: <b>74</b> 3	331	F	RunNo: 90	6073				
Prep Date: 4/14/2023	Analysis D	oate: <b>4/</b>	17/2023	9	SeqNo: 34	479022	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.8	23.90	0	85.6	70	130			
Surr: BFB	4900		956.0		512	37.7	212			S

%REC

97.3

LowLimit

37.7

HighLimit

212

%RPD

**RPDLimit** 

Qual

Sample ID: 2304492-009amsd SampType: MSD TestCode: EPA Method 8015D: Gasoline Range

SPK value SPK Ref Val

1000

Client ID: BH23-05 0' Batch ID: 74331 RunNo: 96073

**PQL** 

5.0

Result

ND

970

Prep Date: 4/14/2023 Analysis Date: 4/17/2023 SeqNo: 3479256 Units: mg/Kg

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

#### Qualifiers:

Analyte

Surr: BFB

Gasoline Range Organics (GRO)

- 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 19 of 22

# Hall Environmental Analysis Laboratory, Inc.

WO#: **2304492** 

20-Apr-23

Client: Vertex Resources Services, Inc.

**Project:** Bindel 4 Fee 1 Battery

Sample ID: 2304492-009amsd SampType: MSD TestCode: EPA Method 8015D: Gasoline Range

Client ID: BH23-05 0' Batch ID: 74331 RunNo: 96073

Prep Date: 4/14/2023 Analysis Date: 4/17/2023 SegNo: 3479256 Units: mg/Kg

Prep Date. 4/14/2023	Allalysis D	ale. <b>4/</b> 1	1//2023		beqino. 34	179236	Offics. Hig/K	g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	21	4.8	23.97	0	87.2	70	130	2.14	20		
Surr: BFB	5100		958.8		531	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

Page 20 of 22

# Hall Environmental Analysis Laboratory, Inc.

WO#: **2304492** 

20-Apr-23

Client: Vertex Resources Services, Inc.

**Project:** Bindel 4 Fee 1 Battery

Sample ID: Ics-74316						PA Method	8021B: Volati	iles		
Client ID: LCSS	Batc	h ID: <b>74</b> 3	316	F	RunNo: 90	6058				
Prep Date: 4/13/2023	Analysis [	Date: <b>4/</b> *	14/2023	(	SeqNo: 34	478356	Units: mg/K	(g		
				SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.6	80	120			
Toluene	0.89	0.050	1.000	0	89.2	80	120			
Ethylbenzene	0.87	0.050	1.000	0	86.5	80	120			
Xylenes, Total	2.6	0.10	3.000	0	85.6	80	120			
Surr: 4-Bromofluorobenzene 0.86 1.000		1.000		86.3	70	130				
Sample ID: mb-74316 SampType: MBLK			Tes	tCode: El	PA Method	8021B: Volati	iles			

Sample ID: mb-74316	SampT	ype: ME	BLK	Tes	tCode: <b>EF</b>	PA Method	8021B: Volati	les		
Client ID: PBS	Batch	n ID: <b>74</b> 3	316	F	RunNo: 96	6058				
Prep Date: 4/13/2023	Analysis D	Date: <b>4/</b> *	14/2023	5	SeqNo: 34	478357	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	0.85		1.000		84.8	70	130			

Sample ID: LCS-74331	Samp	Type: <b>LC</b>	S	Tes	tCode: El	PA Method	8021B: Volati	les		
Client ID: LCSS	Batcl	h ID: <b>74</b> 3	331	F	RunNo: 90	6073				
Prep Date: 4/14/2023	.,				SeqNo: 34	479024	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	1.000	0	85.3	80	120			
Toluene	0.86	0.050	1.000	0	85.9	80	120			
Ethylbenzene	0.87	0.050	1.000	0	87.0	80	120			
Xylenes, Total	2.6	0.10	3.000	0	87.7	80	120			
Surr: 4-Bromofluorobenzene	0.96		1.000		96.2	70	130			

Sample ID: <b>mb-74331</b>	SampT	уре: МЕ	BLK	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: PBS	Batcl	n ID: <b>74</b> 3	331	F	RunNo: 90	6073				
Prep Date: 4/14/2023	Analysis D	Date: 4/	17/2023	5	SeqNo: 34	479025	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		96.0	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 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 21 of 22

# Hall Environmental Analysis Laboratory, Inc.

WO#: **2304492** 

20-Apr-23

Client: Vertex Resources Services, Inc.

**Project:** Bindel 4 Fee 1 Battery

Sample ID: 2304492-010ams	Samp <sup>1</sup>	Гуре: МЅ	}	Tes	tCode: EF	PA Method	8021B: Volati	iles		
Client ID: <b>BH23-05 1'</b>	Batc	h ID: <b>74</b> 3	331	F	RunNo: 90	6073				
Prep Date: 4/14/2023	Analysis [	Date: <b>4/</b>	17/2023	9	SeqNo: 34	479262	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.024	0.9718	0	84.2	68.8	120			
Toluene	0.85	0.049	0.9718	0.01769	85.8	73.6	124			
Ethylbenzene	0.87	0.049	0.9718	0	89.7	72.7	129			
Xylenes, Total	2.6	0.097	2.915	0	90.9	75.7	126			
Surr: 4-Bromofluorobenzene	0.95		0.9718		97.9	70	130			

Sample ID: 2304492-010amsd	Samp <sup>1</sup>	Гуре: <b>МЅ</b>	SD.	Tes	tCode: EF	PA Method	8021B: Volati	iles		
Client ID: BH23-05 1'	Batc	h ID: <b>74</b> 3	331	F	RunNo: 90	6073				
Prep Date: 4/14/2023	Analysis [	Date: <b>4/</b> *	17/2023	5	SeqNo: 34	479263	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.81	0.024	0.9718	0	83.7	68.8	120	0.655	20	
Toluene	0.85	0.049	0.9718	0.01769	85.4	73.6	124	0.457	20	
Ethylbenzene	0.87	0.049	0.9718	0	89.6	72.7	129	0.179	20	
Xylenes, Total	2.6	0.097	2.915	0	90.0	75.7	126	0.947	20	
Surr: 4-Bromofluorobenzene	0.94		0.9718		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

Page 22 of 22

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: 12/19/2023 3:23:22 PM

			neosue. www.	nanenvironmer	uai.com		
	/ertex Resources Services, Inc.	Wor	k Order Numbe	er: 2304492		RcptNo	p: 1
Received By:	Tracy Casarrubia	s 4/12/2	023 8:42:00 A	М			
Completed By:	Tracy Casarrubia	s 4/12/2	023 9:37:09 A	M			
Reviewed By:	KP4 4.1	2.23					
Chain of Custo	ody						
1. Is Chain of Cus	tody complete?			Yes 🗌	No 🗹	Not Present	
2. How was the sa	ample delivered?			Courier			
<u>Log In</u>				_			
3. Was an attempt	t made to cool the	samples?		Yes 🗹	No 🗌	NA 🗌	
4. Were all sample	es received at a ten	nperature of >0° C	c to 6.0°C	Yes 🗹	No 🗌	na 🗆	
5. Sample(s) in pro	oper container(s)?			Yes 🗹	No 🗌		
6. Sufficient sampl	e volume for indica	ated test(s)?		Yes 🗹	No 🗌		
7. Are samples (ex	cept VOA and ON	G) properly presen	ved?	Yes 🗹	No 🗌		
8. Was preservativ	e added to bottles	?		Yes 🗌	No 🗹	NA 🗆	
9. Received at leas	st 1 vial with heads	pace <1/4" for AQ	VOA?	Yes 🗌	No 🗌	NA 🗹	
10. Were any samp	le containers recei	ved broken?		Yes	No 🗹	# of preserved	
11.Does paperwork (Note discrepand	match bottle label			Yes 🗹	No 🗌	bottles checked for pH:	or >12 unless noted)
2. Are matrices cor	rectly identified on	Chain of Custody?	?	Yes 🗹	No 🗌	Adjusted?	
3. Is it clear what a	nalyses were requ	ested?		Yes 🗹	No 🗌		مأر د
<ol> <li>Were all holding (If no, notify cust</li> </ol>	times able to be mathoriza			Yes 🗹	No 🗆	Checked by:	724/16/2
Special Handlin	g (if applicabl	<u>e)</u>					
15. Was client notif	ied of all discrepan	cies with this order	r?	Yes 🗌	No 🗌	NA 🗹	
Person No	otified:		Date:				
By Whom			Via:	eMail [	Phone 🔲 Fax	☐ In Person	
Regarding	j:		V CAN PARTIE SCHOOL STATE OF THE				
Client Inst	3,,,,,,,,,,,,,	address, phone nu	imbe and Ema	il are missing	on COC - TMC 4	/12/23	
16. Additional rema							
17. Cooler Informa				0 15		9	
Cooler No	Temp <sup>o</sup> C Cond 5.2 Good	ition Seal Intact Yes		Seal Date	Signed By	999	
11 5	5.2 Good		Yogi			E .	

			stody Record	Turn-Around	Time:					HA	LL	El	NV	IR	OI	IMI	ENT	AL	_
Client:	Vec.	tex (	(Devon)	☑ Standard	Rush	Battery		1000		AN	AL	YS	SIS	L	AB	OR	ATO	DR'	Y
				Project Nam	e:		100			ww	w.ha	llenv	ironn	nenta	al.con	n			
Mailing	Address	On	file	Bindel	4 Fee 1	Battery		490	1 Ha	wkins	NE -	Alb	uque	erque	, NM	8710	9		
				Project #:				Tel	1. 505	5-345-3	3975	F	ax :	505-3	345-4	107			
Phone #	<i>‡</i> :			23 E-	01581						/	naly	/sis	Requ	est				
email or			V	Project Man	ager:		5	Q				SO <sub>4</sub>			eut)				
QA/QC F	Package:			Kent	Stallings		TMB's (8021)	DRO / MRO)	PCB's	.1) 8270SIMS		PO <sub>4</sub> ,			Abs				
□ Stan	dard		☐ Level 4 (Full Validation	) ]	•		- Sa	8		705		2, P			ent/				
Accredi			mpliance	Sampler: Z	ach Engle	bert	_ ≥	_	8081 Pesticides/8082	504.1) or 827		NO <sub>2</sub> ,		7	Total Coliform (Present/Absent)			.4	
□ NEL		☐ Other		On Ice: # of Coolers	A 102	□ No yogi	- <u>`</u>	GRC	des	d 50	tals	ő		9	E I			-	
□ EDD	(Type)_					5-0.3 -52 (°C)	1 🗒	) 2D(	stici	\$   \$	Me	Z	8	Ë	<u>i</u>				
				300.01 10111	- (III stating st. /1 - G)			\$01	Pe	\(\frac{1}{2}\) \(\frac{1}{2}\)	A 8	m,	Š	(Se	ပ္ပို				11
				Container	Preservative		BTEX) MTBE /	(PH.)8015D(GRO	081	EDB (Method 5 PAHs bv 8310	RCRA 8 Metals	CI)F, Br, NO <sub>3</sub> ,	8260 (VOA)	8270 (Semi-VOA)	Fotal		1 1		·
		Matrix	Sample Name	Type and #	Туре	2304492	V	7		<u> </u>	1 -	V	<u> </u>			$\top$	+-1	_	$\neg   \neg  $
4-7-23	10:00	501	BH23-01 0'	1 jar	100	001	1	~			+-	<del>                                     </del>				_	+	-+	$\dashv$
	10:15		B 1723-01			200					-	-		-	_	_	+		+
	10:30		BH53-05 0.			003	#	$ \bot $			-	$\vdash$			_		-	$\dashv$	$\dashv$
	10:45		BH23-02 1'			004	1				ļ	1			_		$\perp$	_	
	11:00		BH23-03 0'			005	1		_		-				_		4		_
	11:15		BH23-03 1,			006	1			_		$\Box$	<u> </u>		$\dashv$		$\perp$		
	11:30		BH53-04 O.			007	1					Ц	_						
	11:45		BH23-04 1'		W.,	008	Щ	A				$\sqcup$							
	13:00		BH23-05 0'			009	$\parallel$				_	$\sqcup$	-			$\dashv$		<del></del>	_
	13:15		BH23-05 1'			010	Ш				_							$\vdash$	
	13:30		BH23-06 0°			011	11	Ш				11							
1	13745	1/	BH23-06 1'	V	V	012	1 V	W				V							
Date:	Time:	Relinquis	ned by: Sull Gnack	Received by:	Via:	Date Time	Rei	mark:	s: ~a -⁴	+ 12.º	(1	to	De	v0 n	)				
4-7-23	18:00	Zach	Englobert	- Willia	mà	4/11/33 (330	_	71.47 N.11	22	~07	0	=	01	3					
Date:	Time:	Relinquis	hed by:	Received by:	Via: CCU/		2	13	H2	+ Bi -07 3.27	1	=	01	4.					
11/13	1900	acu	my	62	3	9/12/23 8.4		pe		1:2 Nt						the anal	utical ren	ort	



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

May 31, 2023

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

FAX

RE: Bindel 4 Fee 1 OrderNo.: 2305987

#### Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 16 sample(s) on 5/18/2023 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 Freeman

Laboratory Manager

Indes

4901 Hawkins NE

Albuquerque, NM 87109

Date Reported: 5/31/2023

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-08 0'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/16/2023 12:40:00 PM

 Lab ID:
 2305987-001
 Matrix: SOIL
 Received Date: 5/18/2023 7:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst: PRD
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	5/23/2023 5:30:36 PM
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	5/23/2023 5:30:36 PM
Surr: DNOP	78.3	69-147	%Rec	1	5/23/2023 5:30:36 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	5/24/2023 10:55:01 AM
Surr: BFB	85.3	15-244	%Rec	1	5/24/2023 10:55:01 AM
EPA METHOD 8021B: VOLATILES					Analyst: <b>JJP</b>
Benzene	ND	0.024	mg/Kg	1	5/24/2023 10:55:01 AM
Toluene	ND	0.049	mg/Kg	1	5/24/2023 10:55:01 AM
Ethylbenzene	ND	0.049	mg/Kg	1	5/24/2023 10:55:01 AM
Xylenes, Total	ND	0.097	mg/Kg	1	5/24/2023 10:55:01 AM
Surr: 4-Bromofluorobenzene	95.1	39.1-146	%Rec	1	5/24/2023 10:55:01 AM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	77	60	mg/Kg	20	5/23/2023 3:24:31 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

ple pH Not In Range
orting Limit
Page 1 of 23

Date Reported: 5/31/2023

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-08 2'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/16/2023 1:00:00 PM

 Lab ID:
 2305987-002
 Matrix: SOIL
 Received Date: 5/18/2023 7:30:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OF	RGANICS				Analyst: PRD
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	5/23/2023 5:41:20 PM
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	5/23/2023 5:41:20 PM
Surr: DNOP	101	69-147	%Rec	1	5/23/2023 5:41:20 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: <b>JJP</b>
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	5/24/2023 11:18:23 AM
Surr: BFB	88.7	15-244	%Rec	1	5/24/2023 11:18:23 AM
EPA METHOD 8021B: VOLATILES					Analyst: <b>JJP</b>
Benzene	ND	0.024	mg/Kg	1	5/24/2023 11:18:23 AM
Toluene	ND	0.048	mg/Kg	1	5/24/2023 11:18:23 AM
Ethylbenzene	ND	0.048	mg/Kg	1	5/24/2023 11:18:23 AM
Xylenes, Total	ND	0.096	mg/Kg	1	5/24/2023 11:18:23 AM
Surr: 4-Bromofluorobenzene	96.6	39.1-146	%Rec	1	5/24/2023 11:18:23 AM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	250	60	mg/Kg	20	5/23/2023 4:01:32 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
- QL 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

porting Limit Page 2 of 23

Date Reported: 5/31/2023

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.

Client Sample ID: BH23-09 0'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/16/2023 11:55:00 AM

 Lab ID:
 2305987-003
 Matrix: SOIL
 Received Date: 5/18/2023 7:30:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OI	RGANICS				Analyst: PRD
Diesel Range Organics (DRO)	170	8.7	mg/Kg	1	5/23/2023 5:52:09 PM
Motor Oil Range Organics (MRO)	63	43	mg/Kg	1	5/23/2023 5:52:09 PM
Surr: DNOP	80.8	69-147	%Rec	1	5/23/2023 5:52:09 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	5/24/2023 11:41:51 AM
Surr: BFB	79.9	15-244	%Rec	1	5/24/2023 11:41:51 AM
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst: <b>JJP</b>
Benzene	ND	0.025	mg/Kg	1	5/24/2023 11:41:51 AM
Toluene	ND	0.049	mg/Kg	1	5/24/2023 11:41:51 AM
Ethylbenzene	ND	0.049	mg/Kg	1	5/24/2023 11:41:51 AM
Xylenes, Total	ND	0.098	mg/Kg	1	5/24/2023 11:41:51 AM
Surr: 4-Bromofluorobenzene	93.6	39.1-146	%Rec	1	5/24/2023 11:41:51 AM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	430	59	mg/Kg	20	5/23/2023 4:13:52 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

pH Not In Range
ng Limit Page 3 of 23

Date Reported: 5/31/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BH23-09 2'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/16/2023 12:00:00 PM

 Lab ID:
 2305987-004
 Matrix: SOIL
 Received Date: 5/18/2023 7:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst: PRD
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	5/23/2023 6:02:59 PM
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	5/23/2023 6:02:59 PM
Surr: DNOP	86.6	69-147	%Rec	1	5/23/2023 6:02:59 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	5/24/2023 12:52:09 PM
Surr: BFB	88.4	15-244	%Rec	1	5/24/2023 12:52:09 PM
EPA METHOD 8021B: VOLATILES					Analyst: <b>JJP</b>
Benzene	ND	0.024	mg/Kg	1	5/24/2023 12:52:09 PM
Toluene	ND	0.048	mg/Kg	1	5/24/2023 12:52:09 PM
Ethylbenzene	ND	0.048	mg/Kg	1	5/24/2023 12:52:09 PM
Xylenes, Total	ND	0.096	mg/Kg	1	5/24/2023 12:52:09 PM
Surr: 4-Bromofluorobenzene	95.6	39.1-146	%Rec	1	5/24/2023 12:52:09 PM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	150	60	mg/Kg	20	5/23/2023 4:26:12 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 4 of 23

Date Reported: 5/31/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BH23-10 0'

**Project:** Bindel 4 Fee 1 Collection Date: 5/16/2023 11:30:00 AM 2305987-005 Lab ID: Matrix: SOIL Received Date: 5/18/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OF	RGANICS					Analyst: PRD
Diesel Range Organics (DRO)	2500	45		mg/Kg	5	5/24/2023 11:39:04 AM
Motor Oil Range Organics (MRO)	680	230		mg/Kg	5	5/24/2023 11:39:04 AM
Surr: DNOP	105	69-147		%Rec	5	5/24/2023 11:39:04 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: JJP
Gasoline Range Organics (GRO)	6.9	4.9		mg/Kg	1	5/24/2023 12:05:15 PM
Surr: BFB	272	15-244	S	%Rec	1	5/24/2023 12:05:15 PM
EPA METHOD 8021B: VOLATILES						Analyst: JJP
Benzene	ND	0.025		mg/Kg	1	5/24/2023 12:05:15 PM
Toluene	ND	0.049		mg/Kg	1	5/24/2023 12:05:15 PM
Ethylbenzene	ND	0.049		mg/Kg	1	5/24/2023 12:05:15 PM
Xylenes, Total	ND	0.098		mg/Kg	1	5/24/2023 12:05:15 PM
Surr: 4-Bromofluorobenzene	94.6	39.1-146		%Rec	1	5/24/2023 12:05:15 PM
EPA METHOD 300.0: ANIONS						Analyst: SNS
Chloride	ND	60		mg/Kg	20	5/23/2023 5:03:16 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

Practical Quanitative Limit

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

Analyte detected in the associated Method Blank

Above Quantitation Range/Estimated Value Ε

J Analyte detected below quantitation limits

Sample pH Not In Range

RL Reporting Limit Page 5 of 23

Date Reported: 5/31/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BH23-10 2'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/16/2023 11:48:00 AM

 Lab ID:
 2305987-006
 Matrix: SOIL
 Received Date: 5/18/2023 7:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OF	RGANICS				Analyst: PRD
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	5/23/2023 6:35:39 PM
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	5/23/2023 6:35:39 PM
Surr: DNOP	102	69-147	%Rec	1	5/23/2023 6:35:39 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: JJP
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	5/24/2023 12:28:41 PM
Surr: BFB	90.3	15-244	%Rec	1	5/24/2023 12:28:41 PM
<b>EPA METHOD 8021B: VOLATILES</b>					Analyst: <b>JJP</b>
Benzene	ND	0.024	mg/Kg	1	5/24/2023 12:28:41 PM
Toluene	ND	0.048	mg/Kg	1	5/24/2023 12:28:41 PM
Ethylbenzene	ND	0.048	mg/Kg	1	5/24/2023 12:28:41 PM
Xylenes, Total	ND	0.095	mg/Kg	1	5/24/2023 12:28:41 PM
Surr: 4-Bromofluorobenzene	95.8	39.1-146	%Rec	1	5/24/2023 12:28:41 PM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	380	60	mg/Kg	20	5/23/2023 10:48:54 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
- 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 6 of 23

Date Reported: 5/31/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BH23-11 0'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/16/2023 10:15:00 AM

 Lab ID:
 2305987-007
 Matrix: SOIL
 Received Date: 5/18/2023 7:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst: <b>PRD</b>
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	5/23/2023 6:46:33 PM
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	5/23/2023 6:46:33 PM
Surr: DNOP	81.0	69-147	%Rec	1	5/23/2023 6:46:33 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	5/24/2023 10:27:00 PM
Surr: BFB	86.2	15-244	%Rec	1	5/24/2023 10:27:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: KMN
Benzene	ND	0.024	mg/Kg	1	5/24/2023 10:27:00 PM
Toluene	ND	0.049	mg/Kg	1	5/24/2023 10:27:00 PM
Ethylbenzene	ND	0.049	mg/Kg	1	5/24/2023 10:27:00 PM
Xylenes, Total	ND	0.097	mg/Kg	1	5/24/2023 10:27:00 PM
Surr: 4-Bromofluorobenzene	83.6	39.1-146	%Rec	1	5/24/2023 10:27:00 PM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	61	60	mg/Kg	20	5/23/2023 11:25:56 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
- 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 7 of 23

Date Reported: 5/31/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BH23-11 1.5'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/16/2023 10:30:00 AM

 Lab ID:
 2305987-008
 Matrix: SOIL
 Received Date: 5/18/2023 7:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst: PRD
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	5/23/2023 6:57:25 PM
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	5/23/2023 6:57:25 PM
Surr: DNOP	75.1	69-147	%Rec	1	5/23/2023 6:57:25 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	5/24/2023 11:32:00 PM
Surr: BFB	87.7	15-244	%Rec	1	5/24/2023 11:32:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: <b>KMN</b>
Benzene	ND	0.024	mg/Kg	1	5/24/2023 11:32:00 PM
Toluene	ND	0.049	mg/Kg	1	5/24/2023 11:32:00 PM
Ethylbenzene	ND	0.049	mg/Kg	1	5/24/2023 11:32:00 PM
Xylenes, Total	ND	0.097	mg/Kg	1	5/24/2023 11:32:00 PM
Surr: 4-Bromofluorobenzene	84.5	39.1-146	%Rec	1	5/24/2023 11:32:00 PM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	ND	60	mg/Kg	20	5/23/2023 11:38:17 PM

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- S % Recovery outside of 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: 5/31/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BH23-12 0'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/16/2023 9:50:00 AM

 Lab ID:
 2305987-009
 Matrix: SOIL
 Received Date: 5/18/2023 7:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analyst: PRD
Diesel Range Organics (DRO)	48	9.7	mg/Kg	1	5/25/2023 5:41:01 PM
Motor Oil Range Organics (MRO)	150	49	mg/Kg	1	5/25/2023 5:41:01 PM
Surr: DNOP	93.0	69-147	%Rec	1	5/25/2023 5:41:01 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	5/25/2023 12:37:00 AM
Surr: BFB	88.1	15-244	%Rec	1	5/25/2023 12:37:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: <b>KMN</b>
Benzene	ND	0.025	mg/Kg	1	5/25/2023 12:37:00 AM
Toluene	ND	0.049	mg/Kg	1	5/25/2023 12:37:00 AM
Ethylbenzene	ND	0.049	mg/Kg	1	5/25/2023 12:37:00 AM
Xylenes, Total	ND	0.098	mg/Kg	1	5/25/2023 12:37:00 AM
Surr: 4-Bromofluorobenzene	82.9	39.1-146	%Rec	1	5/25/2023 12:37:00 AM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	410	61	mg/Kg	20	5/23/2023 11:50:38 PM

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

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- 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

porting Limit Page 9 of 23

Date Reported: 5/31/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BH23-12 2'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/16/2023 10:00:00 AM

 Lab ID:
 2305987-010
 Matrix: SOIL
 Received Date: 5/18/2023 7:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE O	RGANICS				Analyst: PRD
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	5/23/2023 7:19:14 PM
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	5/23/2023 7:19:14 PM
Surr: DNOP	87.1	69-147	%Rec	1	5/23/2023 7:19:14 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	5/25/2023 12:58:00 AM
Surr: BFB	91.4	15-244	%Rec	1	5/25/2023 12:58:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: KMN
Benzene	ND	0.023	mg/Kg	1	5/25/2023 12:58:00 AM
Toluene	ND	0.047	mg/Kg	1	5/25/2023 12:58:00 AM
Ethylbenzene	ND	0.047	mg/Kg	1	5/25/2023 12:58:00 AM
Xylenes, Total	ND	0.094	mg/Kg	1	5/25/2023 12:58:00 AM
Surr: 4-Bromofluorobenzene	86.1	39.1-146	%Rec	1	5/25/2023 12:58:00 AM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	87	60	mg/Kg	20	5/24/2023 12:02:58 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
- $ND \qquad Not \ Detected \ at \ the \ Reporting \ Limit$
- 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 10 of 23

Date Reported: 5/31/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BH23-13 0'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/16/2023 9:25:00 AM

 Lab ID:
 2305987-011
 Matrix: SOIL
 Received Date: 5/18/2023 7:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS					Analyst: PRD
Diesel Range Organics (DRO)	ND	9.1	mg/Kg	1	5/23/2023 7:30:05 PM
Motor Oil Range Organics (MRO)	ND	45	mg/Kg	1	5/23/2023 7:30:05 PM
Surr: DNOP	83.7	69-147	%Rec	1	5/23/2023 7:30:05 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	5/25/2023 1:20:00 AM
Surr: BFB	86.9	15-244	%Rec	1	5/25/2023 1:20:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: <b>KMN</b>
Benzene	ND	0.023	mg/Kg	1	5/25/2023 1:20:00 AM
Toluene	ND	0.046	mg/Kg	1	5/25/2023 1:20:00 AM
Ethylbenzene	ND	0.046	mg/Kg	1	5/25/2023 1:20:00 AM
Xylenes, Total	ND	0.092	mg/Kg	1	5/25/2023 1:20:00 AM
Surr: 4-Bromofluorobenzene	84.3	39.1-146	%Rec	1	5/25/2023 1:20:00 AM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	ND	60	mg/Kg	20	5/24/2023 12:15:19 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

Page 11 of 23

Date Reported: 5/31/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BH23-13 2'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/16/2023 9:40:00 AM

 Lab ID:
 2305987-012
 Matrix: SOIL
 Received Date: 5/18/2023 7:30:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS				Analyst: PRD	
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	5/23/2023 7:40:56 PM
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	5/23/2023 7:40:56 PM
Surr: DNOP	78.7	69-147	%Rec	1	5/23/2023 7:40:56 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	5/25/2023 1:42:00 AM
Surr: BFB	85.4	15-244	%Rec	1	5/25/2023 1:42:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: KMN
Benzene	ND	0.024	mg/Kg	1	5/25/2023 1:42:00 AM
Toluene	ND	0.047	mg/Kg	1	5/25/2023 1:42:00 AM
Ethylbenzene	ND	0.047	mg/Kg	1	5/25/2023 1:42:00 AM
Xylenes, Total	ND	0.095	mg/Kg	1	5/25/2023 1:42:00 AM
Surr: 4-Bromofluorobenzene	83.5	39.1-146	%Rec	1	5/25/2023 1:42:00 AM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	ND	60	mg/Kg	20	5/24/2023 12:27:40 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

QL 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 12 of 23

Date Reported: 5/31/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BH23-14 0'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/16/2023 12:10:00 PM

 Lab ID:
 2305987-013
 Matrix: SOIL
 Received Date: 5/18/2023 7:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analyst: PRD
Diesel Range Organics (DRO)	140	9.9	mg/Kg	1	5/25/2023 5:51:58 PM
Motor Oil Range Organics (MRO)	100	50	mg/Kg	1	5/25/2023 5:51:58 PM
Surr: DNOP	92.0	69-147	%Rec	1	5/25/2023 5:51:58 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	5/25/2023 2:03:00 AM
Surr: BFB	87.6	15-244	%Rec	1	5/25/2023 2:03:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: <b>KMN</b>
Benzene	ND	0.024	mg/Kg	1	5/25/2023 2:03:00 AM
Toluene	ND	0.048	mg/Kg	1	5/25/2023 2:03:00 AM
Ethylbenzene	ND	0.048	mg/Kg	1	5/25/2023 2:03:00 AM
Xylenes, Total	ND	0.096	mg/Kg	1	5/25/2023 2:03:00 AM
Surr: 4-Bromofluorobenzene	82.9	39.1-146	%Rec	1	5/25/2023 2:03:00 AM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	180	60	mg/Kg	20	5/24/2023 12:40:00 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

QL 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 13 of 23

Date Reported: 5/31/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BH23-14 2'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/16/2023 12:20:00 PM

 Lab ID:
 2305987-014
 Matrix: SOIL
 Received Date: 5/18/2023 7:30:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS					Analyst: PRD
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	5/23/2023 8:02:34 PM
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	5/23/2023 8:02:34 PM
Surr: DNOP	92.1	69-147	%Rec	1	5/23/2023 8:02:34 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	5/25/2023 2:25:00 AM
Surr: BFB	87.3	15-244	%Rec	1	5/25/2023 2:25:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: <b>KMN</b>
Benzene	ND	0.024	mg/Kg	1	5/25/2023 2:25:00 AM
Toluene	ND	0.048	mg/Kg	1	5/25/2023 2:25:00 AM
Ethylbenzene	ND	0.048	mg/Kg	1	5/25/2023 2:25:00 AM
Xylenes, Total	ND	0.096	mg/Kg	1	5/25/2023 2:25:00 AM
Surr: 4-Bromofluorobenzene	83.1	39.1-146	%Rec	1	5/25/2023 2:25:00 AM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	100	61	mg/Kg	20	5/24/2023 12:52:21 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

Page 14 of 23

Date Reported: 5/31/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BH23-15 0'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/16/2023 2:20:00 PM

 Lab ID:
 2305987-015
 Matrix: SOIL
 Received Date: 5/18/2023 7:30:00 AM

Analyses	Result	RL Qu	ual Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS					Analyst: PRD
Diesel Range Organics (DRO)	ND	8.7	mg/Kg	1	5/23/2023 8:24:09 PM
Motor Oil Range Organics (MRO)	ND	43	mg/Kg	1	5/23/2023 8:24:09 PM
Surr: DNOP	91.5	69-147	%Rec	1	5/23/2023 8:24:09 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	5/25/2023 2:46:00 AM
Surr: BFB	89.2	15-244	%Rec	1	5/25/2023 2:46:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: <b>KMN</b>
Benzene	ND	0.024	mg/Kg	1	5/25/2023 2:46:00 AM
Toluene	ND	0.048	mg/Kg	1	5/25/2023 2:46:00 AM
Ethylbenzene	ND	0.048	mg/Kg	1	5/25/2023 2:46:00 AM
Xylenes, Total	ND	0.097	mg/Kg	1	5/25/2023 2:46:00 AM
Surr: 4-Bromofluorobenzene	84.9	39.1-146	%Rec	1	5/25/2023 2:46:00 AM
EPA METHOD 300.0: ANIONS					Analyst: SNS
Chloride	180	61	mg/Kg	20	5/24/2023 1:04:41 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

Page 15 of 23

Date Reported: 5/31/2023

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Vertex Resources Services, Inc. Client Sample ID: BH23-15 2'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/16/2023 2:25:00 PM

 Lab ID:
 2305987-016
 Matrix: SOIL
 Received Date: 5/18/2023 7:30:00 AM

Analyses	Result	RL Q	ual Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS				Analyst: PRD	
Diesel Range Organics (DRO)	ND	9.0	mg/Kg	1	5/23/2023 8:34:56 PM
Motor Oil Range Organics (MRO)	ND	45	mg/Kg	1	5/23/2023 8:34:56 PM
Surr: DNOP	115	69-147	%Rec	1	5/23/2023 8:34:56 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	5/25/2023 3:08:00 AM
Surr: BFB	92.0	15-244	%Rec	1	5/25/2023 3:08:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: KMN
Benzene	ND	0.023	mg/Kg	1	5/25/2023 3:08:00 AM
Toluene	ND	0.046	mg/Kg	1	5/25/2023 3:08:00 AM
Ethylbenzene	ND	0.046	mg/Kg	1	5/25/2023 3:08:00 AM
Xylenes, Total	ND	0.091	mg/Kg	1	5/25/2023 3:08:00 AM
Surr: 4-Bromofluorobenzene	88.0	39.1-146	%Rec	1	5/25/2023 3:08:00 AM
EPA METHOD 300.0: ANIONS					Analyst: CAS
Chloride	270	60	mg/Kg	20	5/24/2023 12:41:51 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
- 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 16 of 23

### Hall Environmental Analysis Laboratory, Inc.

WO#: **2305987** 

31-May-23

Client: Vertex Resources Services, Inc.

**Project:** Bindel 4 Fee 1

Sample ID: MB-75123 SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 75123 RunNo: 96982

Prep Date: 5/23/2023 Analysis Date: 5/23/2023 SeqNo: 3518858 Units: mq/Kq

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

Chloride ND 1.5

Sample ID: LCS-75123 SampType: LCS TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 75123 RunNo: 96982

Prep Date: 5/23/2023 Analysis Date: 5/23/2023 SeqNo: 3518859 Units: mg/Kg

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

Chloride 14 1.5 15.00 0 94.0 90 110

Sample ID: MB-75136 SampType: MBLK TestCode: EPA Method 300.0: Anions

Client ID: PBS Batch ID: 75136 RunNo: 96982

Prep Date: 5/23/2023 Analysis Date: 5/23/2023 SeqNo: 3518888 Units: mg/Kg

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

Chloride ND 1.5

Sample ID: LCS-75136 SampType: LCS TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 75136 RunNo: 96982

Prep Date: 5/23/2023 Analysis Date: 5/23/2023 SeqNo: 3518889 Units: mg/Kg

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

Chloride 14 1.5 15.00 0 94.6 90 110

Sample ID: MB-75144 SampType: mblk TestCode: EPA Method 300.0: Anions

Client ID: **PBS** Batch ID: **75144** RunNo: **96996** 

Prep Date: 5/24/2023 Analysis Date: 5/24/2023 SeqNo: 3520026 Units: mg/Kg

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

Chloride ND 1.5

Sample ID: LCS-75144 SampType: Ics TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 75144 RunNo: 96996

Prep Date: 5/24/2023 Analysis Date: 5/24/2023 SeqNo: 3520028 Units: mg/Kg

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

Chloride 14 1.5 15.00 0 92.3 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

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 17 of 23

## Hall Environmental Analysis Laboratory, Inc.

WO#: **2305987** 

31-May-23

Client: Vertex Resources Services, Inc.

**Project:** Bindel 4 Fee 1

Sample ID: LCS-75104	SampT	ype: <b>LC</b>	S	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID: LCSS	Batch	ID: <b>75</b>	104	F	RunNo: 9	6945				
Prep Date: 5/22/2023	Analysis D	ate: <b>5/</b>	23/2023	S	SeqNo: 3	518231	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.4	61.9	130			
Surr: DNOP	4.8		5.000		95.1	69	147			
Sample ID: LCS-75110	SampT	ype: <b>LC</b>	s	Tes	tCode: E	PA Method	8015M/D: Die	esel Rang	e Organics	
Client ID: LCSS	Batch	ID: <b>75</b>	110	F	RunNo: 9	6945				
Prep Date: 5/22/2023	Analysis D	ate: <b>5/</b>	23/2023	S	SeqNo: 3	518232	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	98.8	61.9	130			
Surr: DNOP	5.0		5.000		101	69	147			
Sample ID: MB-75104	SampT	уре: <b>МЕ</b>	BLK	Tes	tCode: E	PA Method	8015M/D: Die	esel Rang	e Organics	
Client ID: PBS	Batch	ID: <b>75</b>	104	F	RunNo: 9	6945				
Prep Date: 5/22/2023	Analysis D	ate: <b>5/</b>	23/2023	S	SeqNo: 3	518235	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	12		10.00		125	69	147			
Sample ID: MB-75110	SampT	уре: <b>МЕ</b>	BLK	Tes	tCode: E	PA Method	8015M/D: Die	esel Rang	e Organics	
Client ID: PBS	Batch	ID: <b>75</b>	110	F	RunNo: 9	6945				
Prep Date: 5/22/2023	Analysis D	ate: <b>5/</b>	23/2023	S	SeqNo: 3	518236	Units: mg/k	(a		

Surr: DNOP	8.1		10.00		80.8	69	147			
Sample ID: LCS-75177	SampT	ype: <b>LC</b>	S	Tes	tCode: El	PA Method	8015M/D: Di	esel Range	e Organics	
Client ID: LCSS	Batch	1D: <b>75</b>	177	F	RunNo: 9	7035				
Prep Date: 5/25/2023	Analysis D	ate: <b>5/</b>	25/2023	S	SeqNo: 3	521100	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.0	61.9	130			
Surr: DNOP	4.4		5.000		87.2	69	147			

SPK value SPK Ref Val %REC LowLimit

HighLimit

%RPD

**RPDLimit** 

Qual

#### Qualifiers:

Analyte

Diesel Range Organics (DRO)

Motor Oil Range Organics (MRO)

- 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

Result

ND

ND

PQL

10

50

- 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 23

### Hall Environmental Analysis Laboratory, Inc.

2305987 31-May-23

WO#:

Client: Vertex Resources Services, Inc.

**Project:** Bindel 4 Fee 1

Sample ID: MB-75177 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: **PBS** Batch ID: **75177** RunNo: **97035** 

Prep Date: 5/25/2023 Analysis Date: 5/25/2023 SeqNo: 3521102 Units: mg/Kg

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

Diesel Range Organics (DRO) ND 10

Motor Oil Range Organics (MRO) ND 50

Surr: DNOP 9.4 10.00 94.1 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

Page 19 of 23

## Hall Environmental Analysis Laboratory, Inc.

2305987 31-May-23

WO#:

Client: Vertex Resources Services, Inc.

**Project:** Bindel 4 Fee 1

Sample ID: Ics-75096	SampT	ype: <b>LC</b>	S	TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch	1D: <b>75</b> 0	096	F	RunNo: 9	6952				
Prep Date: 5/22/2023	Analysis D	ate: <b>5/</b> 2	24/2023	9	SeqNo: 3	518258	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.1	70	130			
Surr: BFB	5000		1000		504	15	244			S
Sample ID: <b>mb-75096</b>	SampT	уре: <b>МЕ</b>	BLK	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	e	

Client ID: PBS	Batch	n ID: <b>75</b>	096	F	RunNo: 9	6952				
Prep Date: 5/22/2023	Analysis D	oate: <b>5/</b>	24/2023	9	SeqNo: 3	518259	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. RER	870		1000		87 3	15	244			

Sample ID: <b>mb-75105</b>	Sampl	ype: <b>ME</b>	BLK	les	tCode: El	PA Method	8015D: Gasc	line Rang	е	
Client ID: PBS	Batch	ID: <b>75</b>	105	F	RunNo: 9	6984				
Prep Date: 5/22/2023	Analysis D	ate: <b>5/</b>	24/2023	S	SeqNo: 3	519769	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	850		1000		84.6	15	244			

Sample ID: Ics-75105	SampT	ype: <b>LC</b>	s	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	е	
Client ID: LCSS	Batch	1D: <b>75</b>	105	R	RunNo: 9	6984				
Prep Date: 5/22/2023	Analysis D	ate: 5/	24/2023	S	SeqNo: 3	519770	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	88.6	70	130			
Surr: BFB	1900		1000		191	15	244			

Sample ID: 2305987-007ams	SampT	ype: MS	8	Tes	tCode: El	PA Method	8015D: Gaso	line Rang	е	
Client ID: BH23-11 0'	Batch	n ID: <b>75</b>	105	F	RunNo: 9	6984				
Prep Date: 5/22/2023	Analysis D	Date: <b>5/</b>	24/2023	8	SeqNo: 3	519772	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	24.37	0	87.9	70	130			
Surr: BFB	1900		974.7		193	15	244			

Sample ID: 2305987-007ams	d SampType: <b>MSD</b>	TestCode: EPA Method 801	5D: Gasoline Range
Client ID: BH23-11 0'	Batch ID: <b>75105</b>	RunNo: 96984	
Prep Date: 5/22/2023	Analysis Date: 5/24/2023	SeqNo: <b>3519773</b> Un	nits: mg/Kg
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit H	lighLimit %RPD 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
- 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 20 of 23

### Hall Environmental Analysis Laboratory, Inc.

WO#: **2305987** 

31-May-23

Client: Vertex Resources Services, Inc.

**Project:** Bindel 4 Fee 1

Sample ID: 2305987-007amsd SampType: MSD TestCode: EPA Method 8015D: Gasoline Range

Client ID: **BH23-11 0'** Batch ID: **75105** RunNo: **96984** 

Prep Date: 5/22/2023 Analysis Date: 5/24/2023 SeqNo: 3519773 Units: mg/Kg

,	,						5	5			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	21	4.8	24.15	0	86.4	70	130	2.57	20		
Surr: BFB	1900		966.2		194	15	244	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 21 of 23

### Hall Environmental Analysis Laboratory, Inc.

WO#: **2305987** *31-May-23* 

**Client:** Vertex Resources Services, Inc.

**Project:** Bindel 4 Fee 1

Sample ID: LCS-75096	Samp	Гуре: <b>LC</b>	s	Tes						
Client ID: LCSS	Batc	h ID: <b>75</b> 0	096	F	RunNo: 9	6952				
Prep Date: 5/22/2023	Analysis [	Date: <b>5/</b> 3	24/2023	8	SeqNo: 3	518273	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	1.000	0	84.5	70	130			
Toluene	0.86	0.050	1.000	0	86.1	70	130			
Ethylbenzene	0.87	0.050	1.000	0	87.2	70	130			
Xylenes, Total	2.6	0.10	3.000	0	87.2	70	130			
Surr: 4-Bromofluorobenzene	0.98		1.000		97.8	39.1	146			
Sample ID: mb-75096	Samp	Гуре: МЕ	BLK	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: PBS	Batc	h ID: <b>75</b> 0	096	F	RunNo: 9	6952				
Prep Date: 5/22/2023	Analysis [	Date: <b>5/</b>	24/2023	S	SeqNo: 3	518274	Units: mg/k	(g		

Prep Date: 5/22/2023	Analysis D	)ate: <b>5/</b> .	24/2023	S	SeqNo: 3	518274	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		97.1	39.1	146			

Sample ID: <b>mb-75105</b>	SampT	уре: МЕ	BLK	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: PBS	Batch	n ID: <b>75</b>	105	R	lunNo: 9	6984				
Prep Date: 5/22/2023	Analysis D	oate: 5/	24/2023	S	SeqNo: 3	519793	Units: mg/K	ίg		
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	0.84		1.000		84.2	39.1	146			

Sample ID: Ics-75105	SampT	ype: <b>LC</b>	s	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batcl	h ID: <b>75</b> 1	105	F	RunNo: 9	6984						
Prep Date: 5/22/2023	Analysis D	Date: <b>5/</b> 2	24/2023	9	SeqNo: 3	519794	Units: mg/k	(g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Benzene	0.85	0.025	1.000	0	84.9	70	130					
Toluene	0.84	0.050	1.000	0	84.5	70	130					
Ethylbenzene	0.83	0.050	1.000	0	82.5	70	130					
Xylenes, Total	2.5	0.10	3.000	0	82.2	70	130					
Surr: 4-Bromofluorobenzene	0.86		1.000		86.2	39.1	146					

### 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 23

## Hall Environmental Analysis Laboratory, Inc.

WO#: **2305987** 

31-May-23

**Client:** Vertex Resources Services, Inc.

**Project:** Bindel 4 Fee 1

Sample ID: 2305987-008ams SampType: MS TestCode: EPA Method 8021B: Volatiles										
Client ID: BH23-11 1.5'	Batch	n ID: <b>75</b> ′	105	F	RunNo: 9	6984				
Prep Date: 5/22/2023	Analysis D	oate: <b>5/</b> 2	24/2023	8	SeqNo: 3	519796	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.81	0.024	0.9699	0	83.7	70	130			
Toluene	0.82	0.048	0.9699	0	84.6	70	130			
Ethylbenzene	0.81	0.048	0.9699	0	83.0	70	130			
Xylenes, Total	2.4	0.097	2.910	0	82.2	70	130			
Surr: 4-Bromofluorobenzene	0.82		0.9699		84.5	39.1	146			

Sample ID: 2305987-008ams	sd Samp	Type: MSD TestCode: EPA Method 8021B: Volatiles											
Client ID: BH23-11 1.5'	Batc	h ID: <b>75</b>	105	F	RunNo: 96984								
Prep Date: 5/22/2023	Analysis [	Date: <b>5/</b>	25/2023	5	SeqNo: 3	519797	Units: mg/k	(g					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Benzene	0.90	0.024	0.9718	0	92.1	70	130	9.73	20				
Toluene	0.90	0.049	0.9718	0	93.0	70	130	9.64	20				
Ethylbenzene	0.89	0.049	0.9718	0	91.4	70	130	9.84	20				
Xylenes, Total	2.6	0.097	2.915	0	90.6	70	130	9.93	20				
Surr: 4-Bromofluorobenzene	0.84		0.9718		86.4	39.1	146	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
- 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 23

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: 12/19/2023 3:23:22 PM

Client Name: Vertex Resources Services, Inc.	Work Order Num	ber: 2305987		RcptNo	: 1
Received By: Juan Rojas	5/18/2023 7:30:00	АМ	Guar Eng		
Completed By: Tracy Casarrubias	5/18/2023 11:19:32	2 AM			
Reviewed By:	5/18/23				
Chain of Custody					
1. Is Chain of Custody complete?		Yes 🗹	No 🗌	Not Present	
2. How was the sample delivered?		<u>Courier</u>			
<u>Log In</u>		🗖		NA [7]	
Was an attempt made to cool the sam,	ples?	Yes 🗸	No 🗌	NA 🗌	
4. Were all samples received at a temper	ature 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 🗆		
$7_{\cdot}$ Are samples (except VOA and ONG) p	roperly preserved?	Yes 🗹	No 🗌		
8. Was preservative added to bottles?		Yes 🗌	No 🗹	NA 🗌	
9. Received at least 1 vial with headspace	e <1/4" for AQ VOA?	Yes 🗌	No 🗆	NA 🗹	
10. Were any sample containers received	broken?	Yes 📙	No 🗹	# of preserved bottles checked	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custod	y)	Yes 🗹	No 🗆	for pH: (<2 o	r >12 unless noted
12. Are matrices correctly identified on Cha	in of Custody?	Yes 🗹	No 🗌	Adjusted?	
13. Is it clear what analyses were requeste	d?	Yes 🗹	No 🗌		
14. Were all holding times able to be met? (If no, notify customer for authorization.	)	Yes 🗹	No 🗆	Checked by:	5/18/23
Special Handling (if applicable)			/	-000	3110163
15. Was client notified of all discrepancies	with this order?	Yes 🗌	No 🗌	NA 🗹	
Person Notified:	Date	T			
By Whom:	Via:	eMail F	Phone  Fax	☐ In Person	
Regarding:				had a state of the	
Client Instructions:					
16. Additional remarks:					
17. Cooler Information					
Cooler No Temp °C Condition		Seal Date	Signed By		
1 2.1 Good	Yes Morty				

Cilent:   Davin   Vertex   Estandard   Project Name:   Name	C	hain-	of-Cu	stody Record	Turn-Around	Time:		HALL ENVIRONMENTAL				L									
Project Name:   Www.hallenvironmental.com   4901 Hawkins NE - Albuquerque, NM 87109   Tel. 505-345-3975   Fax 505-345-4107   Froject #:   Project #:   Project #:   Project Manager:   Care of the project Manager:   C	Client:	Devo	n/ Ve	(tex			<u> 50au</u>					W. 120 120 120 120 120 120 120 120 120 120									
Project #:   Tel. 505-345-3975   Fax 505-345-4107					Project Nam	e:		www.hallenvironmental.com													
Phone #:	Mailing	Address	00	File	Bindel	4 Fee		4901 Hawkins NE - Albuquerque, NM 87109													
Project Manager:					Project #:				Te	l. 50	5-34	5-39		773.6	100 100 100	17000	700		open side		7.764
Standard	Phone ?	<b>‡</b> :			23E-01	581					a (1.6)		Α	-	sis	Req					
Date   Milling   Malik   Sample Name   Type and   Typ	email o	Fax#:			Project Man	ager:		21)	8	s		<u>"</u>					sent)				
Date   Milling   Malik   Sample Name   Type and   Typ		-		— )	Kent S	Lallings		8	Σ	SG		SIMS		0,40			/Abs				
Date   Milling   Malik   Sample Name   Type and   Typ			- A O-				<u>-</u>	₩ W	씱	82 F	=	270		02,1			sen			1/87	
Date   Milling   Malik   Sample Name   Type and   Typ				·			□ No	I 🛴	<u>à</u>	08/s	504	৳	s		100	(A)	(Pre				
Date   Milling   Malik   Sample Name   Type and   Typ						V			) (G	icide	boc	3310	letal	Š	8	ni-V(	E O	100	7		
Date   Milling   Malik   Sample Name   Type and   Typ					Cooler Tem	P(including CF): 7	0+0.172.1 (0)	Σ	015	Pest	Met	by 8	8 1	Br,	S	(Ser	S				
Date   Milling   Malik   Sample Name   Type and   Typ								僧	PH:8	381	8	AHs	CRA	F,	260	270	otal				
13:00	<del></del>					-		1.7	F	<u> </u>	Ш	<u>U,</u>	꼰	$\frac{O}{2}$	80	80	-		10		
11:35   BH23-09 0'   003   12:00   BH23-09 2'   004   11:36   BH23-10 0'   005   11:48   BH23-10 2'   006   10:15   BH23-11 0'   007   10:30   BH23-11 1.5'   008   9:50   BH23-12 0'   009	5/16/2	12:40	Soil		40zjar	ice		<del>  \</del>	V .					7			$\vdash$	-	+	-	
12:00   BH23-09 2'   004   11:36   BH23-10 0'   005   11:48   BH23-10 2'   006   10:15   BH23-11 0'   007   10:30   BH23-11 1.5'   008   10:50   BH23-12 0'   009   00		13:00		BH23-08 2"				11					n d te di	+	are did?	riul Si			164 100	1	
11:36   BH23-10 0'   005		11:55		BH23-09 0'			003	+	-		$\dashv$	100.00		-		111	i anii	4 1 1	_	_	
11:48   BH23-10 2'   006		12:00		BH23-09 2-		211	004	H	$\vdash$	$\vdash$				-		Day As a				2	
10:15   BH23-11 0'   007   10:30   BH23-11 1.5'   008   10:50   BH23-12 0'   009   1		11:38		<del></del>			200	4		ŭ.	171	1,719-7	ne Obj	1	dinga		-		100	_	
10:30 B+123-11 1.5' 008 9:50 B+23-12 0' 009		11:48		BH23-10 2			006	11	1				cert for	+		dyter	. =.21	uli Ses Turk	-	_	31
9:50 BH23-12 0' 009		10:15		BH23-11 0'			6007	+	$\vdash$	<u> </u>		<u> </u>		-	1900	- 3 to 5			_	+	
				B+123-11 1.5"				+	$\vdash$					4					_	+	
1 10:00 B H23-12 2' 1010		<del></del>							H			: [11 <sup>3</sup> ]	Heiligh		10.00	Harr			+	9.4	<del>                                     </del>
		-						+	H	_		11.5					100		+	20	
9: 25 BH23-13 0' OII								-	+		_				1		T T		1 11		_
9:40 BH23-13 2 OII  Date: Time: Relinquished by: Received by: Via: Date Time Remarks: Discord hill the Day 10 11/32/139358	Deter		Polinguiol		Received by:	Via:		Re	 mark					J		Alexander of the second	_	J. I. S.		215	20200
Date: Time: Relinquished by:  S/192 1630 Relinquished by:  Received by: Via: Date Time  Remarks: Direct bill to: Devon w10:21139358	5/16/22	4.0	DEO	at Macal	(A MILLI	A.A		'``	man	υ. [	) i c	e	ct	bi	(1 1	ე:	De	200	W	الكنال	137338
Date: Time: Refinquished by: Received by: Via: Date Time	Date:	-	Relinquis	ned by:	Received by:	/1	Date Time	1													
5/17/23 1900 grunns 700/18/237:30 C.C. SMccarty@vertex.ca pg. 1.0f2	5/1/22	1910	DA.	(444)	6/1/	7 Course	c/18/237/30	0	, C.	5	M	2 Ca	ctu	(a)	Ver	tex	c.Co	A T	D	4.1	of 2

C	hain	of-Cu	stody Record	Turn-Around	Time:		HALL ENVIRONMENTAL												
Client:	Der	run /1	Vertex	Standard	Rush	50ay_											RAT		
Mailing	Address	: On	file	Bindu Project#:		1	www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107												
Phone #	#:			23 E-	01281							Analy			310000				
email o			et .	Project Mana			<del>1</del>	(Ĉ				SO4			£		Made		
QA/QC I □ Stan	Package: dard		☐ Level 4 (Full Validation)	Kent St	allins	i 1	TMB's (8021)	30 / MF	PCB's	F.1)		PO <sub>4</sub> ,			nt/Abse				
□ NEL	AC	□ Az Co □ Other	mpliance	Sampler: 5 On Ice:	M Yes	□ No	I 👡 I	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082	\overline{2}  \overline{2}		3, NO <sub>2</sub> ,	17	OA)	Total Coliform (Present/Absent)				
□ EDD	(Type)			# of Coolers: Cooler Temp		7. Uto. 1=2. (°C)	/ MTBE	)15D(G	esticid	EDB (Method 5	8 Meta	Br, NC	VOA)	Semi-V	oliform				
Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2305987	SEEX.	TPH:80	8081 P	EDB (A	RCRA 8 Metals	C F, Br, NO3,	8260 (	8270 (Semi-VOA)	Total C				
716123	12:10	Soil	BH23-14 0'	402 jac	ice	013	1	4				1	_					$\perp$	
	12:20		BH23-14 2-			014					ar j			Lj		F 161 F	- , -,-		
	14:20		BH23-15 0°		orden v	015						1	, i >		- 1				
	14:25	+	BH23-15 2-	Į Į	And the second	Olp	Ш		-		-		72.5		3 - 11				
																	$\pm$		
					To The Control		_					11.74		73.0				1	
					71								7	1		2 -			
							-				E Total			Proc.				14	
							<u> </u>			1796	- V				1		Total I	16	
Date:	Time:	Relinquish	MOCK	Received by:	Via:	Date Time 5 17 23 1030 Date Time	1			rect									
Date: 5   17   33	1900	aci	lilla ,	1 A	Lourier	5/18/23 7130	3 0	. C.	SY	ncc	uty	a	ver	ter	K. C	ب	pg	2	f2



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

June 15, 2023

Kent Stallings Devon Energy 6488 Seven Rivers Highway Artesia, NM 88210 TEL: (505) 350-1336

FAX:

RE: Bindel 4 Fee 1 OrderNo.: 2306058

#### Dear Kent Stallings:

Hall Environmental Analysis Laboratory received 14 sample(s) on 6/2/2023 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 Freeman

Laboratory Manager

andyl

4901 Hawkins NE

Albuquerque, NM 87109

Date Reported: 6/15/2023

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy Client Sample ID: BH23-01 2'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/31/2023 12:30:00 PM

 Lab ID:
 2306058-001
 Matrix: SOIL
 Received Date: 6/2/2023 7:25:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: PRD
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	6/7/2023 10:20:42 PM
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/7/2023 10:20:42 PM
Surr: DNOP	90.7	69-147	%Rec	1	6/7/2023 10:20:42 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/10/2023 8:02:00 AM
Surr: BFB	99.7	15-244	%Rec	1	6/10/2023 8:02:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: KMN
Benzene	ND	0.025	mg/Kg	1	6/10/2023 8:02:00 AM
Toluene	ND	0.049	mg/Kg	1	6/10/2023 8:02:00 AM
Ethylbenzene	ND	0.049	mg/Kg	1	6/10/2023 8:02:00 AM
Xylenes, Total	ND	0.098	mg/Kg	1	6/10/2023 8:02:00 AM
Surr: 4-Bromofluorobenzene	92.4	39.1-146	%Rec	1	6/10/2023 8:02:00 AM
EPA METHOD 300.0: ANIONS					Analyst: JTT
Chloride	110	60	mg/Kg	20	6/9/2023 9:50:19 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

Page 1 of 18

Date Reported: 6/15/2023

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy Client Sample ID: BH23-01 4'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/31/2023 12:35:00 PM

 Lab ID:
 2306058-002
 Matrix: SOIL
 Received Date: 6/2/2023 7:25:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst: PRD
Diesel Range Organics (DRO)	860	20	mg/Kg	2	6/8/2023 1:23:23 PM
Motor Oil Range Organics (MRO)	240	98	mg/Kg	2	6/8/2023 1:23:23 PM
Surr: DNOP	91.1	69-147	%Rec	2	6/8/2023 1:23:23 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: KMN
Gasoline Range Organics (GRO)	15	4.9	mg/Kg	1	6/10/2023 8:24:00 AM
Surr: BFB	238	15-244	%Rec	1	6/10/2023 8:24:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: KMN
Benzene	ND	0.025	mg/Kg	1	6/10/2023 8:24:00 AM
Toluene	ND	0.049	mg/Kg	1	6/10/2023 8:24:00 AM
Ethylbenzene	ND	0.049	mg/Kg	1	6/10/2023 8:24:00 AM
Xylenes, Total	ND	0.098	mg/Kg	1	6/10/2023 8:24:00 AM
Surr: 4-Bromofluorobenzene	116	39.1-146	%Rec	1	6/10/2023 8:24:00 AM
EPA METHOD 300.0: ANIONS					Analyst: <b>JTT</b>
Chloride	ND	60	mg/Kg	20	6/9/2023 10:02:39 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

Page 2 of 18

Date Reported: 6/15/2023

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy Client Sample ID: BH23-01 6'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/31/2023 12:40:00 PM

 Lab ID:
 2306058-003
 Matrix: SOIL
 Received Date: 6/2/2023 7:25:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	RGANICS				Analyst: PRD
Diesel Range Organics (DRO)	350	9.6	mg/Kg	1	6/7/2023 10:42:26 PM
Motor Oil Range Organics (MRO)	100	48	mg/Kg	1	6/7/2023 10:42:26 PM
Surr: DNOP	85.4	69-147	%Rec	1	6/7/2023 10:42:26 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: KMN
Gasoline Range Organics (GRO)	5.8	4.8	mg/Kg	1	6/10/2023 8:45:00 AM
Surr: BFB	155	15-244	%Rec	1	6/10/2023 8:45:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: KMN
Benzene	ND	0.024	mg/Kg	1	6/10/2023 8:45:00 AM
Toluene	ND	0.048	mg/Kg	1	6/10/2023 8:45:00 AM
Ethylbenzene	ND	0.048	mg/Kg	1	6/10/2023 8:45:00 AM
Xylenes, Total	ND	0.096	mg/Kg	1	6/10/2023 8:45:00 AM
Surr: 4-Bromofluorobenzene	102	39.1-146	%Rec	1	6/10/2023 8:45:00 AM
EPA METHOD 300.0: ANIONS					Analyst: JTT
Chloride	ND	60	mg/Kg	20	6/9/2023 10:15:00 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

Page 3 of 18

Date Reported: 6/15/2023

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy Client Sample ID: BH23-01 8'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/31/2023 2:25:00 PM

 Lab ID:
 2306058-004
 Matrix: SOIL
 Received Date: 6/2/2023 7:25:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE (	ORGANICS				Analyst: PRD
Diesel Range Organics (DRO)	37	9.3	mg/Kg	1	6/7/2023 10:53:23 PM
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	6/7/2023 10:53:23 PM
Surr: DNOP	91.0	69-147	%Rec	1	6/7/2023 10:53:23 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/10/2023 9:07:00 AM
Surr: BFB	100	15-244	%Rec	1	6/10/2023 9:07:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: <b>KMN</b>
Benzene	ND	0.024	mg/Kg	1	6/10/2023 9:07:00 AM
Toluene	ND	0.049	mg/Kg	1	6/10/2023 9:07:00 AM
Ethylbenzene	ND	0.049	mg/Kg	1	6/10/2023 9:07:00 AM
Xylenes, Total	ND	0.097	mg/Kg	1	6/10/2023 9:07:00 AM
Surr: 4-Bromofluorobenzene	91.7	39.1-146	%Rec	1	6/10/2023 9:07:00 AM
EPA METHOD 300.0: ANIONS					Analyst: <b>JTT</b>
Chloride	ND	60	mg/Kg	20	6/9/2023 10:27:21 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

Page 4 of 18

Date Reported: 6/15/2023

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy Client Sample ID: BH23-02 2'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/31/2023 12:15:00 PM

 Lab ID:
 2306058-005
 Matrix: SOIL
 Received Date: 6/2/2023 7:25:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE O	RGANICS				Analyst: PRD
Diesel Range Organics (DRO)	130	9.2	mg/Kg	1	6/7/2023 11:04:19 PM
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	6/7/2023 11:04:19 PM
Surr: DNOP	79.5	69-147	%Rec	1	6/7/2023 11:04:19 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/10/2023 9:29:00 AM
Surr: BFB	143	15-244	%Rec	1	6/10/2023 9:29:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: <b>KMN</b>
Benzene	ND	0.024	mg/Kg	1	6/10/2023 9:29:00 AM
Toluene	ND	0.049	mg/Kg	1	6/10/2023 9:29:00 AM
Ethylbenzene	ND	0.049	mg/Kg	1	6/10/2023 9:29:00 AM
Xylenes, Total	ND	0.097	mg/Kg	1	6/10/2023 9:29:00 AM
Surr: 4-Bromofluorobenzene	100	39.1-146	%Rec	1	6/10/2023 9:29:00 AM
EPA METHOD 300.0: ANIONS					Analyst: JTT
Chloride	1000	61	mg/Kg	20	6/9/2023 10:39:43 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

Page 5 of 18

Date Reported: 6/15/2023

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy Client Sample ID: BH23-02 4'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/31/2023 12:20:00 PM

 Lab ID:
 2306058-006
 Matrix: SOIL
 Received Date: 6/2/2023 7:25:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OF	RGANICS				Analyst: PRD
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	6/7/2023 11:15:14 PM
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/7/2023 11:15:14 PM
Surr: DNOP	92.0	69-147	%Rec	1	6/7/2023 11:15:14 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/10/2023 9:50:00 AM
Surr: BFB	101	15-244	%Rec	1	6/10/2023 9:50:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: KMN
Benzene	ND	0.024	mg/Kg	1	6/10/2023 9:50:00 AM
Toluene	ND	0.049	mg/Kg	1	6/10/2023 9:50:00 AM
Ethylbenzene	ND	0.049	mg/Kg	1	6/10/2023 9:50:00 AM
Xylenes, Total	ND	0.098	mg/Kg	1	6/10/2023 9:50:00 AM
Surr: 4-Bromofluorobenzene	95.1	39.1-146	%Rec	1	6/10/2023 9:50:00 AM
EPA METHOD 300.0: ANIONS					Analyst: JTT
Chloride	660	60	mg/Kg	20	6/9/2023 10:52:04 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

Page 6 of 18

Date Reported: 6/15/2023

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy Client Sample ID: BH23-02 6'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/31/2023 12:25:00 PM

 Lab ID:
 2306058-007
 Matrix: SOIL
 Received Date: 6/2/2023 7:25:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OF	RGANICS				Analyst: PRD
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	6/7/2023 11:26:08 PM
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/7/2023 11:26:08 PM
Surr: DNOP	85.2	69-147	%Rec	1	6/7/2023 11:26:08 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	6/10/2023 10:12:00 AM
Surr: BFB	98.5	15-244	%Rec	1	6/10/2023 10:12:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: KMN
Benzene	ND	0.025	mg/Kg	1	6/10/2023 10:12:00 AM
Toluene	ND	0.050	mg/Kg	1	6/10/2023 10:12:00 AM
Ethylbenzene	ND	0.050	mg/Kg	1	6/10/2023 10:12:00 AM
Xylenes, Total	ND	0.10	mg/Kg	1	6/10/2023 10:12:00 AM
Surr: 4-Bromofluorobenzene	93.9	39.1-146	%Rec	1	6/10/2023 10:12:00 AM
EPA METHOD 300.0: ANIONS					Analyst: JTT
Chloride	440	60	mg/Kg	20	6/9/2023 11:04:25 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
- 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 7 of 18

Date Reported: 6/15/2023

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy Client Sample ID: BH23-02 8'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/31/2023 2:30:00 PM

 Lab ID:
 2306058-008
 Matrix: SOIL
 Received Date: 6/2/2023 7:25:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OI	RGANICS				Analyst: PRD
Diesel Range Organics (DRO)	70	9.6	mg/Kg	1	6/7/2023 11:37:00 PM
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	6/7/2023 11:37:00 PM
Surr: DNOP	82.6	69-147	%Rec	1	6/7/2023 11:37:00 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: KMN
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	6/10/2023 10:34:00 AM
Surr: BFB	96.7	15-244	%Rec	1	6/10/2023 10:34:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: KMN
Benzene	ND	0.025	mg/Kg	1	6/10/2023 10:34:00 AM
Toluene	ND	0.050	mg/Kg	1	6/10/2023 10:34:00 AM
Ethylbenzene	ND	0.050	mg/Kg	1	6/10/2023 10:34:00 AM
Xylenes, Total	ND	0.099	mg/Kg	1	6/10/2023 10:34:00 AM
Surr: 4-Bromofluorobenzene	92.0	39.1-146	%Rec	1	6/10/2023 10:34:00 AM
EPA METHOD 300.0: ANIONS					Analyst: JTT
Chloride	460	60	mg/Kg	20	6/9/2023 11:16:45 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
- 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

ple pH Not In Range Page 8 of 18

Date Reported: 6/15/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy Client Sample ID: BH23-02 9'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/31/2023 3:06:00 PM

 Lab ID:
 2306058-009
 Matrix: SOIL
 Received Date: 6/2/2023 7:25:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OF	RGANICS				Analyst: <b>DGH</b>
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	6/8/2023 2:08:35 PM
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/8/2023 2:08:35 PM
Surr: DNOP	89.4	69-147	%Rec	1	6/8/2023 2:08:35 PM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	6/10/2023 10:55:00 AM
Surr: BFB	102	15-244	%Rec	1	6/10/2023 10:55:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: KMN
Benzene	ND	0.024	mg/Kg	1	6/10/2023 10:55:00 AM
Toluene	ND	0.048	mg/Kg	1	6/10/2023 10:55:00 AM
Ethylbenzene	ND	0.048	mg/Kg	1	6/10/2023 10:55:00 AM
Xylenes, Total	ND	0.096	mg/Kg	1	6/10/2023 10:55:00 AM
Surr: 4-Bromofluorobenzene	95.3	39.1-146	%Rec	1	6/10/2023 10:55:00 AM
EPA METHOD 300.0: ANIONS					Analyst: JTT
Chloride	440	60	mg/Kg	20	6/9/2023 11:53:48 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

Page 9 of 18

Date Reported: 6/15/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy Client Sample ID: BH23-03 2'

Bindel 4 Fee 1 **Project:** Collection Date: 5/31/2023 12:00:00 PM 2306058-010 Lab ID: Matrix: SOIL Received Date: 6/2/2023 7:25:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE C	RGANICS				Analyst: PRD
Diesel Range Organics (DRO)	610	9.7	mg/Kg	1	6/8/2023 12:09:36 AM
Motor Oil Range Organics (MRO)	210	48	mg/Kg	1	6/8/2023 12:09:36 AM
Surr: DNOP	87.6	69-147	%Rec	1	6/8/2023 12:09:36 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: KMN
Gasoline Range Organics (GRO)	5.7	5.0	mg/Kg	1	6/10/2023 11:17:00 AM
Surr: BFB	162	15-244	%Rec	1	6/10/2023 11:17:00 AM
EPA METHOD 8021B: VOLATILES					Analyst: KMN
Benzene	ND	0.025	mg/Kg	1	6/10/2023 11:17:00 AM
Toluene	ND	0.050	mg/Kg	1	6/10/2023 11:17:00 AM
Ethylbenzene	ND	0.050	mg/Kg	1	6/10/2023 11:17:00 AM
Xylenes, Total	ND	0.099	mg/Kg	1	6/10/2023 11:17:00 AM
Surr: 4-Bromofluorobenzene	103	39.1-146	%Rec	1	6/10/2023 11:17:00 AM
EPA METHOD 300.0: ANIONS					Analyst: <b>JTT</b>
Chloride	110	61	mg/Kg	20	6/9/2023 12:06:09 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
- Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated.
- Analyte detected in the associated Method Blank
- Above Quantitation Range/Estimated Value Ε
- J Analyte detected below quantitation limits
- Sample pH Not In Range

RL Reporting Limit Page 10 of 18

Date Reported: 6/15/2023

### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy Client Sample ID: BH23-03 4'

Bindel 4 Fee 1 **Project:** Collection Date: 5/31/2023 12:05:00 PM 2306058-011 Lab ID: Matrix: SOIL Received Date: 6/2/2023 7:25:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst: PRD
Diesel Range Organics (DRO)	92	9.6	mg/Kg	1	6/8/2023 12:20:27 AM
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	6/8/2023 12:20:27 AM
Surr: DNOP	79.5	69-147	%Rec	1	6/8/2023 12:20:27 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/10/2023 12:01:00 PM
Surr: BFB	115	15-244	%Rec	1	6/10/2023 12:01:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: KMN
Benzene	ND	0.024	mg/Kg	1	6/10/2023 12:01:00 PM
Toluene	ND	0.049	mg/Kg	1	6/10/2023 12:01:00 PM
Ethylbenzene	ND	0.049	mg/Kg	1	6/10/2023 12:01:00 PM
Xylenes, Total	ND	0.098	mg/Kg	1	6/10/2023 12:01:00 PM
Surr: 4-Bromofluorobenzene	95.6	39.1-146	%Rec	1	6/10/2023 12:01:00 PM
EPA METHOD 300.0: ANIONS					Analyst: JTT
Chloride	160	60	mg/Kg	20	6/9/2023 12:18:30 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
- Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated.
- Analyte detected in the associated Method Blank
- Above Quantitation Range/Estimated Value Ε
- J Analyte detected below quantitation limits
- Sample pH Not In Range
- RL Reporting Limit

Page 11 of 18

Date Reported: 6/15/2023

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy Client Sample ID: BH23-03 6'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/31/2023 12:10:00 PM

 Lab ID:
 2306058-012
 Matrix: SOIL
 Received Date: 6/2/2023 7:25:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst: PRD
Diesel Range Organics (DRO)	11	9.6	mg/Kg	1	6/8/2023 12:31:19 AM
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	6/8/2023 12:31:19 AM
Surr: DNOP	91.8	69-147	%Rec	1	6/8/2023 12:31:19 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	6/10/2023 12:22:00 PM
Surr: BFB	103	15-244	%Rec	1	6/10/2023 12:22:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: <b>KMN</b>
Benzene	ND	0.024	mg/Kg	1	6/10/2023 12:22:00 PM
Toluene	ND	0.048	mg/Kg	1	6/10/2023 12:22:00 PM
Ethylbenzene	ND	0.048	mg/Kg	1	6/10/2023 12:22:00 PM
Xylenes, Total	ND	0.096	mg/Kg	1	6/10/2023 12:22:00 PM
Surr: 4-Bromofluorobenzene	94.0	39.1-146	%Rec	1	6/10/2023 12:22:00 PM
EPA METHOD 300.0: ANIONS					Analyst: JTT
Chloride	110	60	mg/Kg	20	6/9/2023 12:30:50 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

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 12 of 18

Date Reported: 6/15/2023

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy Client Sample ID: BH23-09 4'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/31/2023 12:45:00 PM

 Lab ID:
 2306058-013
 Matrix: SOIL
 Received Date: 6/2/2023 7:25:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst: PRD
Diesel Range Organics (DRO)	16	9.2	mg/Kg	1	6/8/2023 12:42:11 AM
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	6/8/2023 12:42:11 AM
Surr: DNOP	79.5	69-147	%Rec	1	6/8/2023 12:42:11 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: KMN
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/10/2023 12:44:00 PM
Surr: BFB	102	15-244	%Rec	1	6/10/2023 12:44:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: KMN
Benzene	ND	0.024	mg/Kg	1	6/10/2023 12:44:00 PM
Toluene	ND	0.049	mg/Kg	1	6/10/2023 12:44:00 PM
Ethylbenzene	ND	0.049	mg/Kg	1	6/10/2023 12:44:00 PM
Xylenes, Total	ND	0.097	mg/Kg	1	6/10/2023 12:44:00 PM
Surr: 4-Bromofluorobenzene	93.6	39.1-146	%Rec	1	6/10/2023 12:44:00 PM
EPA METHOD 300.0: ANIONS					Analyst: <b>JTT</b>
Chloride	310	60	mg/Kg	20	6/9/2023 12:43:10 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
- 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 13 of 18

Date Reported: 6/15/2023

### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy Client Sample ID: BH23-09 6'

 Project:
 Bindel 4 Fee 1
 Collection Date: 5/31/2023 2:15:00 PM

 Lab ID:
 2306058-014
 Matrix: SOIL
 Received Date: 6/2/2023 7:25:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE OF	RGANICS				Analyst: PRD
Diesel Range Organics (DRO)	10	9.6	mg/Kg	1	6/8/2023 12:53:05 AM
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	6/8/2023 12:53:05 AM
Surr: DNOP	96.7	69-147	%Rec	1	6/8/2023 12:53:05 AM
EPA METHOD 8015D: GASOLINE RANGE					Analyst: <b>KMN</b>
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/10/2023 1:06:00 PM
Surr: BFB	99.1	15-244	%Rec	1	6/10/2023 1:06:00 PM
EPA METHOD 8021B: VOLATILES					Analyst: KMN
Benzene	ND	0.025	mg/Kg	1	6/10/2023 1:06:00 PM
Toluene	ND	0.049	mg/Kg	1	6/10/2023 1:06:00 PM
Ethylbenzene	ND	0.049	mg/Kg	1	6/10/2023 1:06:00 PM
Xylenes, Total	ND	0.099	mg/Kg	1	6/10/2023 1:06:00 PM
Surr: 4-Bromofluorobenzene	93.7	39.1-146	%Rec	1	6/10/2023 1:06:00 PM
EPA METHOD 300.0: ANIONS					Analyst: JTT
Chloride	410	60	mg/Kg	20	6/9/2023 12:55:31 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 14 of 18

### Hall Environmental Analysis Laboratory, Inc.

WO#: 2306058

15-Jun-23

**Client:** Devon Energy **Project:** Bindel 4 Fee 1

Sample ID: MB-75485 SampType: MBLK TestCode: EPA Method 300.0: Anions

PBS Client ID: Batch ID: 75485 RunNo: 97340

Prep Date: 6/9/2023 Analysis Date: 6/9/2023 SeqNo: 3536299 Units: mg/Kg

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

Chloride ND 1.5

Sample ID: LCS-75485 SampType: LCS TestCode: EPA Method 300.0: Anions

Client ID: LCSS Batch ID: 75485 RunNo: 97340

Prep Date: 6/9/2023 Analysis Date: 6/9/2023 SeqNo: 3536300 Units: mg/Kg

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

Chloride 15.00 95.9 110

#### 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
- PQL Practical Quanitative Limit
- % Recovery outside of standard limits. If undiluted results may be estimated.
- Analyte detected in the associated Method Blank
- Above Quantitation Range/Estimated Value
- Analyte detected below quantitation limits
- Sample pH Not In Range
- RL Reporting Limit

Page 15 of 18

### Hall Environmental Analysis Laboratory, Inc.

WO#: **2306058** 

15-Jun-23

Client: Devon Energy
Project: Bindel 4 Fee 1

Project: Bindel 4	Fee 1									
Sample ID: LCS-75370	SampTyp	oe: LC	S	Tes	tCode: EF	EPA Method 8015M/D: Diesel Range Organics				
Client ID: LCSS	Batch II	D: <b>753</b>	70	F	RunNo: 97	7270				
Prep Date: 6/6/2023	Analysis Dat	te: <b>6/7</b>	7/2023	5	SeqNo: 3	533132	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	108	61.9	130			
Surr: DNOP	5.4		5.000		108	69	147			
Sample ID: MB-75370	SampTyp	oe: MB	LK	TestCode: EPA Method 8015M/D: Diesel Range O					Organics	
Client ID: PBS	Batch II	D: <b>753</b>	70	F	RunNo: 97	7270				
Prep Date: 6/6/2023	Analysis Dat	te: <b>6/7</b>	7/2023	8	SeqNo: 3	533136	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		109	69	147			
Sample ID: LCS-75460	SampTyp	oe: LCS	S	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID: LCSS	Batch II	D: <b>754</b>	60	F	RunNo: 97	7297				
Prep Date: 6/8/2023	Analysis Dat	te: <b>6/8</b>	3/2023	8	SeqNo: 3	535111	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	36	10	50.00	0	71.4	61.9	130			
Surr: DNOP	4.0		5.000		79.4	69	147			
Sample ID: MB-75460	SampTyp	oe: MB	LK	Tes	tCode: EF	PA Method	8015M/D: Die	sel Range	Organics	
Client ID: PBS	Batch II	D: <b>754</b>	60	F	RunNo: 97	7297				
Prep Date: 6/8/2023	Analysis Dat	te: <b>6/8</b>	3/2023	5	SeqNo: 3	535122	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	8.7		10.00		87.1	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
- 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 16 of 18

### Hall Environmental Analysis Laboratory, Inc.

15-Jun-23

2306058

WO#:

**Client:** Devon Energy **Project:** Bindel 4 Fee 1

Sample ID: Ics-75364 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range Client ID: LCSS Batch ID: 75364 RunNo: 97349 Prep Date: 6/5/2023 Analysis Date: 6/10/2023 SeqNo: 3537188 Units: mg/Kg PQL SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Analyte Result LowLimit Qual Gasoline Range Organics (GRO) 23 5.0 25.00 n 91.7 70 130 Surr: BFB 2100 1000 206 15 244

Sample ID: mb-75364 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range Client ID: PBS Batch ID: 75364 RunNo: 97349 Prep Date: Analysis Date: 6/10/2023 SeqNo: 3537189 6/5/2023 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

960

1000

96.1

15

244

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

PQL Practical Quanitative Limit

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

Analyte detected in the associated Method Blank

Above Quantitation Range/Estimated Value

Analyte detected below quantitation limits

Sample pH Not In Range

RL Reporting Limit Page 17 of 18

### Hall Environmental Analysis Laboratory, Inc.

WO#: **2306058** 

15-Jun-23

Client: Devon Energy
Project: Bindel 4 Fee 1

Sample ID: Ics-75364	Samp	SampType: LCS			tCode: EF	les				
Client ID: LCSS	Batcl	n ID: <b>75</b> 3	364	RunNo: 97289						
Prep Date: 6/5/2023	Analysis [	Date: 6/8	8/2023	5	SeqNo: 3	534107	Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	1.000	0	83.8	70	130			
Toluene	0.83	0.050	1.000	0	83.0	70	130			
Ethylbenzene	0.81	0.050	1.000	0	80.7	70	130			
Xylenes, Total	2.4	0.10	3.000	0	79.6	70	130			
Surr: 4-Bromofluorobenzene	0.82		1.000		81.5	39.1	146			

Sample ID: mb-75364	SampT	уре: МЕ	BLK	TestCode: EPA Method			8021B: Volati	les		
Client ID: PBS	Batch	n ID: <b>75</b> 3	364	RunNo: 97289						
Prep Date: 6/5/2023	Analysis D	Date: <b>6/</b> 8	8/2023	SeqNo: <b>3534108</b>			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.82		1.000		81.7	39.1	146			

#### 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 18



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: 12/19/2023 3:23:22 PM

Client Name: Devo	n Energy	Work (	Order Numb	er: 2306	058		Rcp	iNo: 1
Received By: Trac	cy Casarrubias	6/2/2023	7:25:00 AN	/I				
Completed By: Trac	cy Casarrubias	6/2/2023	7:28:28 AN	Λ				
Reviewed By:	in 6.2	-23						
Chain of Custody								
1. Is Chain of Custody	complete?			Yes		No 🗹	Not Present [	
2. How was the sampl	e delivered?			<u>Cou</u>	<u>ier</u>			
<u>Log In</u>							_	_
3. Was an attempt ma	de to cool the samp	oles?		Yes	<b>V</b>	No 🗌	NA [	
4. Were all samples re	ceived at a tempera	ature of >0° C to	o 6.0°C	Yes	<b>✓</b>	No 🗌	NA [	
5. Sample(s) in proper	container(s)?			Yes	<b>✓</b>	No 🗌		
6. Sufficient sample vo	lume for indicated t	est(s)?		Yes	<b>V</b>	No 🗆		
7. Are samples (except	t VOA and ONG) pr	operly preserve	d?	Yes	V	No 🗌		
8. Was preservative ac	ided to bottles?			Yes		No 🗹	NA 🗆	
9. Received at least 1	vial with headspace	<1/4" for AQ V	OA?	Yes		No 🗌	NA 🕨	
10. Were any sample o	ontainers received I	broken?		Yes		No 🗹	# of preserved	
11. Does paperwork ma				Yes	<b>V</b>	No 🗆	bottles checked for pH:	2 or >12 unless noted)
(Note discrepancies 12. Are matrices correct				Yes		No 🗌	Adjusted?	2 of 7 12 dinges noted)
13. Is it clear what analy				Yes		No 🗆		, 1
14. Were all holding time					<b>✓</b>	No 🗆	Checked by	1726/2/2
(If no, notify custome		)						· · · · · · · · · · · · · · · · · · ·
Special Handling (	if applicable)							
15. Was client notified	of all discrepancies	with this order?		Yes	Ш	No 🔔	NA E	<b>⊻</b> I
Person Notifie	ed:		Date:				~	
By Whom:		CONTRACTOR AND AND AND AND AND AND AND AND AND AND	Via:	eMa	ail 🗌	] Phone 🗌 Fa	x In Person	
Regarding:								
Client Instruct	tions: Mailing addi	ress, phone num	ber, and En	nail are r	nissin	on COC-TMC	6/2/23	
16. Additional remarks	:							
17. Cooler Informatio	<u>n</u> mp ⁰C	Seal Intact	Seal No	Seal D	ate	Signed By		
1 4.5	Good		Yogi	ocai D		oignou by		

Chain-of-Custody Record	Turn-Around Time:	HALL ENVIRONMENTAL									
Dient: Devon/Vertex	Standard Rush 5 Day Project Name:	ANALYSIS LABORATORY  www.hallenvironmental.com									
		4901 Hawkins NE - Albuquerque, NM 87109									
Mailing Address: On file	Bindel4 Feel Project#:										
		Tel. 505-345-3975 Fax 505-345-4107  Analysis Request									
Phone #:	23E-01581	4 3									
email or Fax#:	Project Manager:	MRC   SA   SA   SA   SA   SA   SA   SA   S									
QA/QC Package:  ☐ Standard ☐ Level 4 (Full Validation	Kent Stallings	(2)									
Accreditation:   Az Compliance	Sampler: 8 M	O (Pre (Pre (Pre (Pre (Pre (Pre (Pre (Pre									
□ NELAC □ Other	On Ice: Yes No Yes	ETEN / MTBE / TME									
□ EDD (Type)	Cooler Temp(including CF): 4.6 -0.1-45	CPH:8015D(GR 3081 Pesticides 3081 Pesticides EDB (Method 5 PAHs by 8310 PAHs by 8310 CPF, Br, NO <sub>3</sub> 8260 (VOA) Total Coliform									
	III LUTAL NO	RIEW/ TPH:80 8081 P EDB (N PAHS k RCRA (CP)F, U 7 Total (									
Date Time Matrix Sample Name	Type and # Type 2306050										
30.0	Yozjar Ice 001										
-27/60	007										
	003										
1000	004										
1101010	COS										
12:15 BH23-02 2'	Me										
	003										
12:25 BH23-02 6'	608										
14:30 BH23-02 8'	009										
1 2 .00	3 90 10 - 21 - 30 10 10										
12:00 BH23-03 2	2 1973 - N 2012 Ave 21 to 10 10 10 20 10 10 10										
12:05 BH23-03 4											
Date: Time: Relinquished by:	Received by: Via: Date	Remarks: Direct bill to: Devon W/0#: 21142-553									
DBINS 18:00 Step Mcat	Received by: Via: Coun Date	Time									
Date: Time: Relinquilened by:	7.1.	C.C. KStallings@Vectex.ca DJ uf 2 s notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.									

	in-of-	Cus	stody Record	Turn-Around			HALL ENVIRONMENTAL							L						
Client: De	Lun/	vert	lex	Standard	Rush :: 4 Fee	5 Day	ANALYSIS LABORATORY													
			70.0	Project Name	1		Later			٧	ww	.hall	envi	ronn	nent	al.co	m			
Mailing Addr	ress: (	In f	2/e	Bindel	4 Fee	1	4901 Hawkins NE - Albuquerque, NM 87109													
		/		Project #:				Te	l. 50	5-34	5-39	75	F	ax 5	505-	345-	4107	All Hard		
Phone #:		7		23 E-0	1581				TAK.			A	naly	sis l	Req	uest	No.			
email or Fax	<b>(#</b> :			Project Mana	ger:		뒨	<u>©</u>					SO4			ent)				
QA/QC Packa	-		☐ Level 4 (Full Validation)	Kent S	tallings	1 0 11 VO	TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	PCB's		8270SIMS		PO <sub>4</sub> ,	*		Total Coliform (Present/Absent)	M. 1	du e		
Accreditation		z Com	pliance	Sampler: S		Y	Ţ₩.		3082	504.1)	827		NO <sub>2</sub> ,			rese	4.			
□ NELAC	□ 0	ther_		On Ice:		□ No yogi	E/	8	les/8	20	0 0	<u>s</u>	ر ش		Q V	n (P				
□ EDD (Typ	pe)			# of Coolers:		0-01245 (°C)	ATB	9	ţi	lg th	831	Met	ž	<b>₹</b>	i-i	iforr		1.0		
	·			Oddier Temp	(including CP).	7-0:(-2 (-)	18	301	Pes	<u>₩</u>	b b	8 A	ä	3	(Se	공				
Date Time	e Matr	ix S	Sample Name	Container Type and #	Preservative Type	HEAL No. 2306058	RTEX/ MTBE/	TPH:	8081 Pesticides/8082	EDB (Method	PAHs by 8310	RCRA 8 Metals	C. F, Br, NO <sub>3</sub> ,	8260 (VOA)	8270 (Semi-VOA)	Total				
5/31/13 12:0			8423-09 4	Yoziar		013	V	V					$\checkmark$			led pro	HERE			
	15		BH23-09 6		- 2	019	Ÿ	6		11.0		10.12	V		Lincoln Chi	1,0001	giller er	7		
	1 141		And the second s		serro els								11	11 12	2.13				1	
	1					e Avie la					M ANT	60 - 0 (c. 10)	100 SEC	- 111	le l	W.U.Y				
					T 11 11 11 11 11 11 11 11 11 11 11 11 11	1155 1												1112	1_	
	101					4 Acet					100	Gallery (	11.00	97 . B	= (=1)	1 100°	J	nie nie		
																	Pin-	1 11	4	
4				1900		ACA, hell a						1971						r=0 11==		
			The state of the s				V	Ý.		100		10.4	100	2115		- 4		200		
							t .								o i arig		PER 17 10 1	(0.00 300)	2	
											1			3 1		704				
						per il per in the				- 1	Marin Marin			(177) (177)	1 4	Cappello Ballifor		0:00 	(1)	
Date: Time	W J	iquished iquished	Micas	Received by:  Received by:	Via:	Date Time	Rei	mark D	s: )ì (\e	et	61	II t	: טי	Dei	VV)	U	加井	211	42	.553 L
Date: Time	100 a	Cu	um.			0/2/23 7:25			_				- 14				Pg.	20	f 2	L

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

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 234213

#### **CONDITIONS**

Operator:	OGRID:
DEVON ENERGY PRODUCTION COMPANY, LP	6137
333 West Sheridan Ave.	Action Number:
Oklahoma City, OK 73102	234213
	Action Type:
	[C-141] Release Corrective Action (C-141)

#### CONDITIONS

Created By	Condition	Condition Date
scwells	None	12/19/2023