General Information

NMOCD District:	District II – Artesia	Incident ID:	NAB1815052591
Landowner:	Bureau of Land Management	RP Reference:	2RP-4773
Client:	Devon Energy Production Company, LP	Site Location:	Todd 36 D State #002
Date:	April 22, 2024	Project #:	23E-05197
Client Contact:	Jim Raley	Phone #:	575.689.7597
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/characterization activity and propose an appropriate remediation technique to address the release at Todd 36 D State #002. The release occurred when the two-phase separator dump became stuck closed, causing fluid to overflow and spill down the vent line into the water tank. Subsequently, the fluid reached the poly line, resulting in 8 barrels (bbls) of produced water and 1 bbls of crude oil to leak out from the poly line. Areas of environmental concern identified and delineated include the southeast corner of the pad (Attachment 1). Closure criteria has been selected as per New Mexico Administrative Code 19.15.29. The closure criteria for the site are 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
51 feet - 100 feet	Chloride	10,000 mg/kg
	TPH (GRO+DRO+MRO)	2,500 mg/kg
	GRO+DRO	1,000 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

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

Site Assessment/Characterization

Site characterization was started on November 12, 2023, and completed on April 4, 2024. Daily field reports documenting work conducted are included in Attachment 4. A total of 24 sample points (boreholes) were established, and 53 samples collected for field screening. Samples were obtained at various depths for horizontal and vertical delineation, and samples at the greatest lateral limits and the deepest vertical distance below criteria were submitted to the laboratory for analysis. All samples were submitted to Eurofins Environmental Testing South Central, formerly Hall Environmental Analysis Laboratory, in Albuquerque, New Mexico, for analysis. The sample locations are presented in Attachment 1. Laboratory analysis results have been compared to the above noted closure criteria and the results from the characterization activity are presented in Attachment 2. Exceedances are identified in the table as bold with a grey background or bold with a green background. The laboratory data reports with chain-of-custody forms are included in Attachment 2. Closure criteria research is included in Attachment 3 and the C-141 report is included in Attachment 5.

Proposed Remedial Activities

General

Areas identified with contaminant concentrations above closure criteria will be remediated through excavation. Laboratory results from the site assessment/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 or in 1-foot increments, whichever is less. Field screening will be utilized to confirm removal of contaminated soil below the applicable closure criteria. Contaminated soils will be stored on a 30 mil 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.

NAB1815052591 – Southeast Corner of the Pad

Exceedances to closure criteria were identified at multiple sample points on and around the southeast corner of the pad. Heavy equipment will be used to complete excavation in open areas and hand crews will be used to complete excavation next to equipment or lines that are deemed unsafe. A hydrovac truck will be utilized to remove contaminated soil in close proximity to underground flowlines and any other equipment. Field screening will be utilized to guide the horizontal and vertical extents of the impacted area. Confirmation samples will be collected as per New Mexico Oil Conservation Division (NMOCD) guidance and submitted for laboratory analysis of all applicable parameters. **The estimated volume to be excavated is approximately 96 cubic yards.**

Sample Point		Excavation Depth	Remediation Method
BH23-02		1'	Handcrew
BH23-06	(150 sq. ft.)		
BH23-10	(280 sq. ft.)	1'	Backhoe/Handcrew
BH23-08		1'	Backhoe/Handcrew
BH23-11			
BH23-21			
BH23-22	(795 sq. ft.)		
BH23-15	(225 sq. ft.)	3'	Backhoe/Handcrew

Should you have any questions or concerns, please do not hesitate to contact Project Manager Kent Stallings at 346.814.1413 or kstallings@vertex.ca.

John Rewis

John Rewis, B.Sc.
ENVIRONMENTAL TECHNICIAN, REPORTING

April 22, 2024
Date

kent stallings P.G.

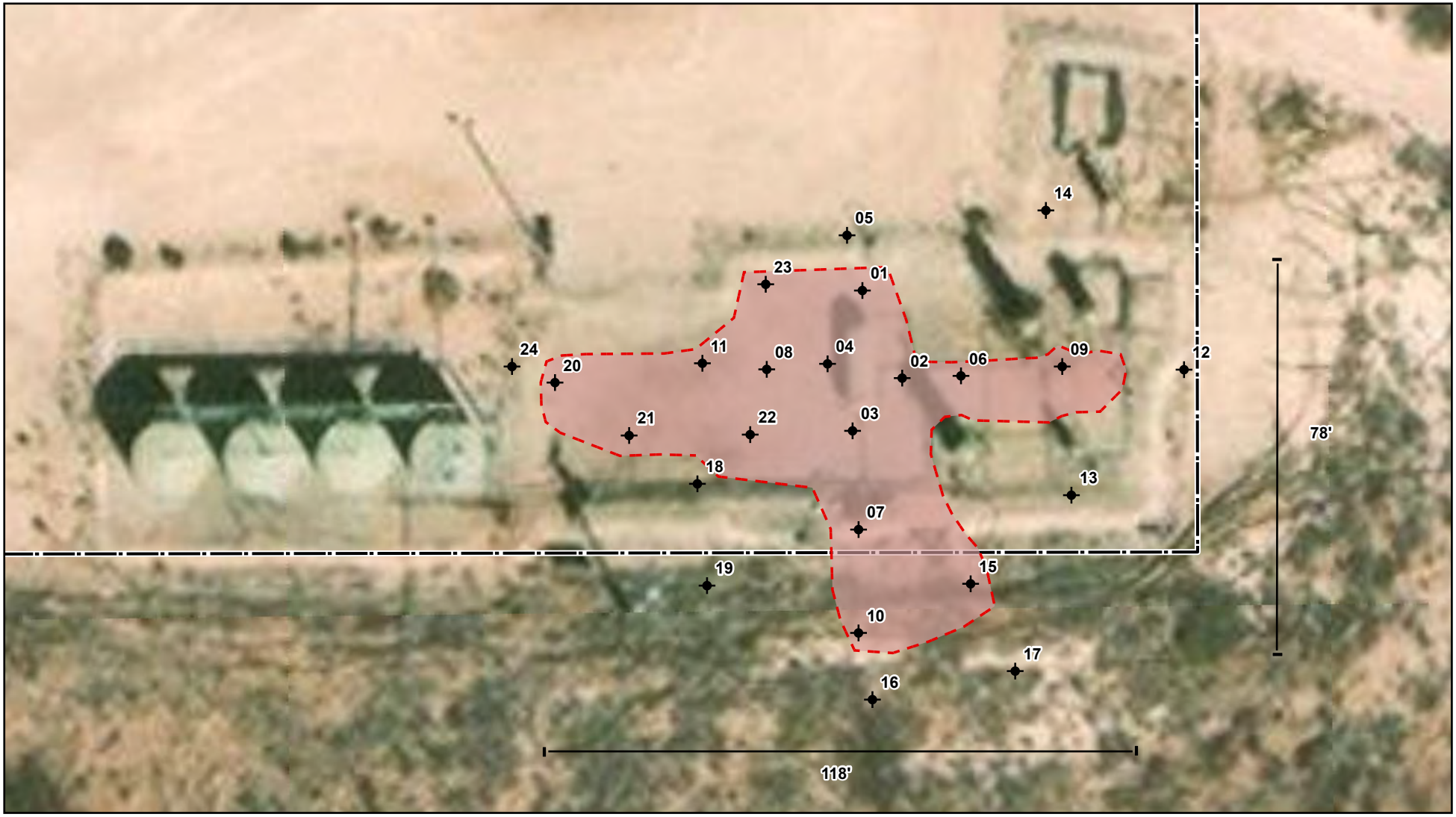
Kent Stallings, P.G.
PROJECT MANAGER, REPORT REVIEW

April 24, 2024
Date

Attachments

Attachment 1. Figures
Attachment 2. Field Screening and Laboratory Results Table and Laboratory Data Reports
Attachment 3. Closure Criteria Research
Attachment 4. Daily Field Reports
Attachment 5. NMOCD C-141

ATTACHMENT 1



Approximate Lease Boundary

Approximate Release Area (~ 3,846 sq. ft.)

Borehole (Prefixed by "BH23-")

VERTEX

0 5 10 20 ft

Map Center:
Lat/Long: 32.266922°,-103.738789°

NAD 1983 UTM Zone 13N
Date: Apr 19/24

N

Characterization Sampling Site Schematic
Todd 36 D State #002

FIGURE:
1

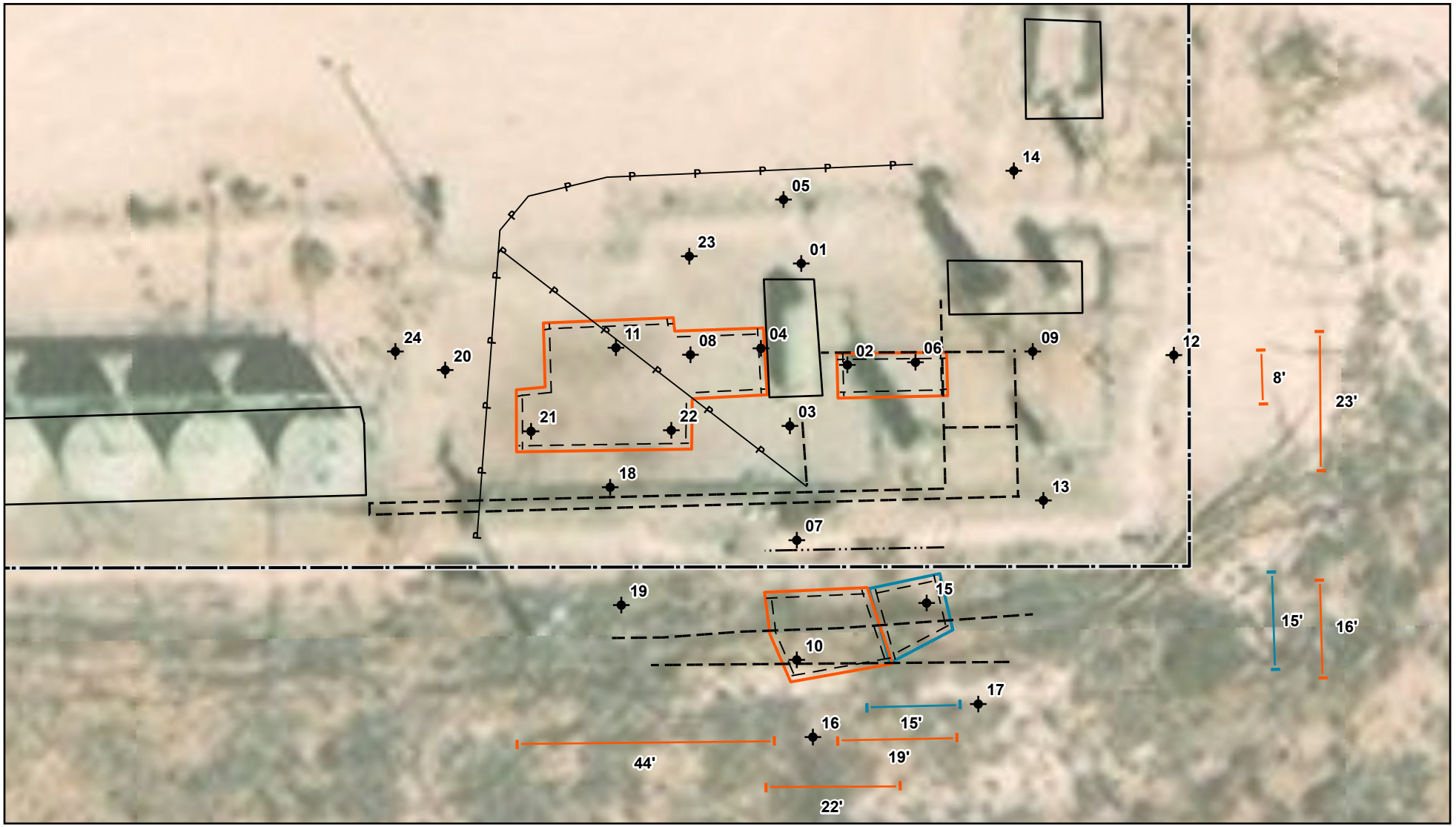
devon

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: Georeferenced image from Esri, 2022. Approximate site boundary from sketch by Vertex Professional Services Ltd. (Vertex), 2024. Site features from GPS, Vertex, 2023.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\Devon Energy Corporation\2023\23E-05197 - Todd 36 D State #002\Project\23E-05197.aprx



Borehole (Prefixed by "BH23-")
Pipeline (Aboveground)
Pipeline (Underground)
Powerline
Approximate Lease Boundary
Infrastructure (Existing)
Proposed Excavation to 1' bgs (~ 1,225 sq. ft.)
Proposed Excavation to 3' bgs (~ 225 sq. ft.)

VERTEX

0 5 10 20 ft

Map Center:
Lat/Long: 32.266915°,-103.738743°

NAD 1983 UTM Zone 13N
Date: Apr 18/24

N

Proposed Excavation Site Schematic
Todd 36 D State #002

FIGURE:
2

devon

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: Georeferenced image from Esri, 2022. Approximate lease boundary from imagery by Vertex Professional Services Ltd. (Vertex), 2024. Site features from GPS, Vertex, 2023.

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\Devon Energy Corporation\2023\23E-05197 - Todd 36 D State #002\Project\23E-05197.aprx

ATTACHMENT 2

Client Name: Devon Energy Production Company, LP
Site Name: Todd 36 D State #002
NMOCD Tracking #: nAB1815052591
Project #: 23E-05197
Lab Reports: 2311675, 2311C31, 2311C33 and 885-2488-1

Table 2. Initial Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater 51 - 100 feet bgs

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH23-01	0	November 12, 2023	0	228	1,583	ND	ND	ND	25	ND	ND	25	2,400
	2	November 12, 2023	1	11	606	ND	ND	ND	ND	ND	ND	ND	430
	4	November 12, 2023	1	21	813	ND	ND	ND	ND	ND	ND	ND	830
	5	November 12, 2023	0	34	590	ND	ND	ND	ND	ND	ND	ND	390
BH23-02	0	November 12, 2023	1	4,880	173	ND	ND	ND	1,100	2,100	**1,100**	**3,200**	80
	2	November 12, 2023	0	43	365	ND	ND	ND	ND	ND	ND	ND	300
BH23-03	0	November 12, 2023	1	1,042	148	ND	ND	ND	390	930	390	1,320	ND
	2	November 12, 2023	0	136	148	ND	ND	ND	16	ND	16	16	ND
	4	November 12, 2023	1	50	738	ND	ND	ND	ND	ND	ND	ND	830
BH23-04	0	November 12, 2023	0	5,980	451	ND	ND	ND	1,800	2,600	**1,800**	**4,400**	430
	2	November 12, 2023	0	19	212	ND	ND	ND	ND	ND	ND	ND	130
BH23-05	0	November 12, 2023	1	22	103	ND	ND	ND	ND	ND	ND	ND	67
	2	November 12, 2023	1	9	12	ND	ND	ND	ND	ND	ND	ND	ND
BH23-06	0	November 12, 2023	0	1,171	327	ND	ND	ND	1,200	2,200	**1,200**	**3,400**	180
	2	November 12, 2023	1	13	388	ND	ND	ND	ND	ND	ND	ND	200
BH23-07	0	November 12, 2023	0	57	1,401	ND	ND	ND	ND	ND	ND	ND	1,400
	2	November 12, 2023	0	69	588	ND	ND	ND	21	ND	21	21	430
BH23-08	0	November 12, 2023	10	8,094	381	ND	ND	ND	15,000	8,500	**15,000**	**23,500**	810
	2	November 12, 2023	1	44	1,083	ND	ND	ND	17	ND	17	17	1,200
	4	November 12, 2023	0	8	85	ND	ND	ND	ND	ND	ND	ND	73
BH23-09	0	November 12, 2023	0	3,660	320	ND	ND	ND	1,000	1,400	1,000	2,400	290
	2	November 12, 2023	0	21	207	ND	ND	ND	ND	ND	ND	ND	110
BH23-10	0	November 12, 2023	0	932	63	ND	ND	ND	230	500	230	730	ND
	2	November 12, 2023	0	25	10	ND	ND	ND	ND	ND	ND	ND	ND
BH23-11	0	November 12, 2023	1	850	38	ND	ND	ND	25,000	15,000	**25,000**	**40,000**	ND
	2	November 12, 2023	1	54	552	ND	ND	ND	ND	ND	ND	ND	470
BH23-12	0	November 17, 2023	-	9	519	ND	ND	ND	ND	ND	ND	ND	89
	2	November 17, 2023	-	44	243	ND	ND	ND	ND	ND	ND	ND	270
BH23-13	0	November 17, 2023	-	92	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 17, 2023	-	0	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-14	0	November 17, 2023	-	91	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 17, 2023	-	21	12	ND	ND	ND	ND	ND	ND	ND	ND
BH23-15	0	November 17, 2023	321	9,790	640	ND	ND	ND	2,900	2,100	**2,900**	**5,000**	400
	2	November 17, 2023	-	1,064	ND	ND	ND	ND	140	310	**140**	**450**	ND
	4	November 17, 2023	-	26	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-16	0	November 17, 2023	-	20	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 17, 2023	-	17	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-17	0	November 17, 2023	-	22	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 17, 2023	-	11	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-18	0	November 17, 2023	-	62	ND	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 17, 2023	-	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-19	0	November 17, 2023	-	33	7	ND	ND	ND	ND	ND	ND	ND	ND
	2	November 17, 2023	-	9	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-20	0	November 18, 2023	-	207	541	ND	ND	ND	17	ND	17	17	800
	2	November 18, 2023	-	0	62	ND	ND	ND	ND	ND	ND	ND	ND
BH23-21	0	November 18, 2023	-	8,630	31	ND	ND	ND	26,000	17,000	**26,000**	**43,000**	ND
	2	November 18, 2023	-	0	27	ND	ND	ND	ND	ND	ND	ND	ND
BH23-22	0	November 18, 2023	-	10,870	36	ND	ND	ND	7,200	4,700	**7,200**	**11,900**	ND
	2	November 18, 2023	-	896	111	ND	ND	ND	260	490	260	750	180

Client Name: Devon Energy Production Company, LP
Site Name: Todd 36 D State #002
NMOCD Tracking #: nAB1815052591
Project #: 23E-05197
Lab Reports: 2311675, 2311C31, 2311C33 and 885-2488-1

Table 2. Initial Characterization Sample Field Screen and Laboratory Results - Depth to Groundwater 51 - 100 feet bgs

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFlag)	Chloride Concentration	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride Concentration
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH23-23	0	November 18, 2023	-	2,520	36	ND	ND	ND	370	930	370	1,300	ND
	2	November 18, 2023	-	0	ND	ND	ND	ND	ND	ND	ND	ND	ND
BH23-24	0	April 4, 2024	-	204	400	ND	ND	ND	ND	ND	ND	ND	15
	2	April 4, 2024	-	16	108	ND	ND	ND	11	ND	11	11	15

"ND" Not Detected at the Reporting Limit
"-" indicates not analyzed/assessed
Bold and grey shaded indicates exceedance outside of NMOCD Remediation Closure Criteria
Bold and green shaded indicates exceedance outside of NMOCD Reclamation Closure Criteria

VERTEX

eurofins | Environment Testing

Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 29, 2023

Kent Stallings

Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL:
FAX:

RE: Todd 36 D State 2 OrderNo.: 2311675

Dear Kent Stallings:

Eurofins Environment Testing South Central, LLC received 26 sample(s) on 11/14/2023 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 do not hesitate to contact Eurofins Albuquerque for any additional information or clarifications.

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-01 0'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 9:00:00 AM
Lab ID: 2311675-001 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	25	9.6		mg/Kg	1	11/16/2023 12:25:53 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/16/2023 12:25:53 PM
Surr: DNOP	87.0	69-147		%Rec	1	11/16/2023 12:25:53 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/18/2023 5:00:21 PM
Surr: BFB	96.8	15-244		%Rec	1	11/18/2023 5:00:21 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/18/2023 5:00:21 PM
Toluene	ND	0.047		mg/Kg	1	11/18/2023 5:00:21 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/18/2023 5:00:21 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/18/2023 5:00:21 PM
Surr: 4-Bromofluorobenzene	94.5	39.1-146		%Rec	1	11/18/2023 5:00:21 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	2400	150		mg/Kg	50	11/20/2023 8:40:44 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-01 2'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 9:10:00 AM
Lab ID: 2311675-002 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	11/16/2023 4:20:10 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/16/2023 4:20:10 PM
Surr: DNOP	112	69-147		%Rec	1	11/16/2023 4:20:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/18/2023 5:24:06 PM
Surr: BFB	99.1	15-244		%Rec	1	11/18/2023 5:24:06 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	11/18/2023 5:24:06 PM
Toluene	ND	0.047		mg/Kg	1	11/18/2023 5:24:06 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/18/2023 5:24:06 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/18/2023 5:24:06 PM
Surr: 4-Bromofluorobenzene	96.4	39.1-146		%Rec	1	11/18/2023 5:24:06 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	430	60		mg/Kg	20	11/17/2023 9:22:48 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-02 0'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 9:20:00 AM
Lab ID: 2311675-003 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	1100	200		mg/Kg	20	11/16/2023 12:47:13 PM
Motor Oil Range Organics (MRO)	2100	980		mg/Kg	20	11/16/2023 12:47:13 PM
Surr: DNOP	0	69-147	S	%Rec	20	11/16/2023 12:47:13 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/18/2023 5:47:47 PM
Surr: BFB	95.1	15-244		%Rec	1	11/18/2023 5:47:47 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/18/2023 5:47:47 PM
Toluene	ND	0.048		mg/Kg	1	11/18/2023 5:47:47 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/18/2023 5:47:47 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/18/2023 5:47:47 PM
Surr: 4-Bromofluorobenzene	92.7	39.1-146		%Rec	1	11/18/2023 5:47:47 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	80	60		mg/Kg	20	11/17/2023 10:00:02 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-02 2'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 9:30:00 AM
Lab ID: 2311675-004 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/16/2023 4:31:04 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/16/2023 4:31:04 PM
Surr: DNOP	109	69-147		%Rec	1	11/16/2023 4:31:04 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/18/2023 6:11:29 PM
Surr: BFB	95.2	15-244		%Rec	1	11/18/2023 6:11:29 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/18/2023 6:11:29 PM
Toluene	ND	0.049		mg/Kg	1	11/18/2023 6:11:29 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/18/2023 6:11:29 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/18/2023 6:11:29 PM
Surr: 4-Bromofluorobenzene	94.0	39.1-146		%Rec	1	11/18/2023 6:11:29 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	300	59		mg/Kg	20	11/17/2023 10:37:15 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-03 0'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 9:40:00 AM
Lab ID: 2311675-005 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	390	180		mg/Kg	20	11/16/2023 1:08:36 PM
Motor Oil Range Organics (MRO)	930	920		mg/Kg	20	11/16/2023 1:08:36 PM
Surr: DNOP	0	69-147	S	%Rec	20	11/16/2023 1:08:36 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/18/2023 6:35:11 PM
Surr: BFB	91.9	15-244		%Rec	1	11/18/2023 6:35:11 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/18/2023 6:35:11 PM
Toluene	ND	0.049		mg/Kg	1	11/18/2023 6:35:11 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/18/2023 6:35:11 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/18/2023 6:35:11 PM
Surr: 4-Bromofluorobenzene	90.1	39.1-146		%Rec	1	11/18/2023 6:35:11 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	11/17/2023 10:49:40 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-03 2'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 9:50:00 AM
Lab ID: 2311675-006 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	16	9.8		mg/Kg	1	11/17/2023 3:15:51 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/17/2023 3:15:51 PM
Surr: DNOP	108	69-147		%Rec	1	11/17/2023 3:15:51 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/20/2023 10:40:34 AM
Surr: BFB	100	15-244		%Rec	1	11/20/2023 10:40:34 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/20/2023 8:03:32 PM
Toluene	ND	0.047		mg/Kg	1	11/20/2023 8:03:32 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/20/2023 8:03:32 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/20/2023 8:03:32 PM
Surr: 4-Bromofluorobenzene	92.5	39.1-146		%Rec	1	11/20/2023 8:03:32 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	11/17/2023 11:02:04 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-04 0'
Project: Todd 36 D State 2
Collection Date: 11/12/2023 10:00:00 AM
Lab ID: 2311675-007 **Matrix:** SOIL
Received Date: 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	1800	200		mg/Kg	20	11/17/2023 4:54:38 PM
Motor Oil Range Organics (MRO)	2600	980		mg/Kg	20	11/17/2023 4:54:38 PM
Surr: DNOP	0	69-147	S	%Rec	20	11/17/2023 4:54:38 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/20/2023 11:04:06 AM
Surr: BFB	91.6	15-244		%Rec	1	11/20/2023 11:04:06 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	11/20/2023 8:50:23 PM
Toluene	ND	0.049		mg/Kg	1	11/20/2023 8:50:23 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/20/2023 8:50:23 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/20/2023 8:50:23 PM
Surr: 4-Bromofluorobenzene	90.8	39.1-146		%Rec	1	11/20/2023 8:50:23 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	430	60		mg/Kg	20	11/17/2023 11:14:28 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-04 2'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 10:10:00 AM
Lab ID: 2311675-008 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/17/2023 3:40:25 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/17/2023 3:40:25 PM
Surr: DNOP	110	69-147		%Rec	1	11/17/2023 3:40:25 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/20/2023 11:27:30 AM
Surr: BFB	99.3	15-244		%Rec	1	11/20/2023 11:27:30 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	11/20/2023 9:13:47 PM
Toluene	ND	0.047		mg/Kg	1	11/20/2023 9:13:47 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/20/2023 9:13:47 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/20/2023 9:13:47 PM
Surr: 4-Bromofluorobenzene	94.3	39.1-146		%Rec	1	11/20/2023 9:13:47 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	130	60		mg/Kg	20	11/17/2023 11:26:52 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-01 4'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 10:20:00 AM
Lab ID: 2311675-009 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	11/17/2023 4:05:03 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/17/2023 4:05:03 PM
Surr: DNOP	111	69-147		%Rec	1	11/17/2023 4:05:03 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/20/2023 11:51:04 AM
Surr: BFB	95.1	15-244		%Rec	1	11/20/2023 11:51:04 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	11/20/2023 9:37:10 PM
Toluene	ND	0.046		mg/Kg	1	11/20/2023 9:37:10 PM
Ethylbenzene	ND	0.046		mg/Kg	1	11/20/2023 9:37:10 PM
Xylenes, Total	ND	0.093		mg/Kg	1	11/20/2023 9:37:10 PM
Surr: 4-Bromofluorobenzene	93.8	39.1-146		%Rec	1	11/20/2023 9:37:10 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	830	61		mg/Kg	20	11/17/2023 11:39:17 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-03 4'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 10:30:00 AM
Lab ID: 2311675-010 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	11/17/2023 4:29:28 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/17/2023 4:29:28 PM
Surr: DNOP	98.1	69-147		%Rec	1	11/17/2023 4:29:28 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/20/2023 12:14:40 PM
Surr: BFB	92.2	15-244		%Rec	1	11/20/2023 12:14:40 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/20/2023 10:00:31 PM
Toluene	ND	0.049		mg/Kg	1	11/20/2023 10:00:31 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/20/2023 10:00:31 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/20/2023 10:00:31 PM
Surr: 4-Bromofluorobenzene	95.4	39.1-146		%Rec	1	11/20/2023 10:00:31 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	830	61		mg/Kg	20	11/17/2023 11:51:42 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-05 0'
Project: Todd 36 D State 2
Collection Date: 11/12/2023 10:40:00 AM
Lab ID: 2311675-011 **Matrix:** SOIL
Received Date: 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/17/2023 5:18:19 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/17/2023 5:18:19 PM
Surr: DNOP	123	69-147		%Rec	1	11/17/2023 5:18:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/20/2023 1:48:53 PM
Surr: BFB	91.7	15-244		%Rec	1	11/20/2023 1:48:53 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	11/20/2023 1:48:53 PM
Toluene	ND	0.047		mg/Kg	1	11/20/2023 1:48:53 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/20/2023 1:48:53 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/20/2023 1:48:53 PM
Surr: 4-Bromofluorobenzene	95.2	39.1-146		%Rec	1	11/20/2023 1:48:53 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	67	60		mg/Kg	20	11/18/2023 12:04:07 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-05 2'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 10:50:00 AM
Lab ID: 2311675-012 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	11/17/2023 5:42:44 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/17/2023 5:42:44 PM
Surr: DNOP	116	69-147		%Rec	1	11/17/2023 5:42:44 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/20/2023 2:12:19 PM
Surr: BFB	92.6	15-244		%Rec	1	11/20/2023 2:12:19 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	11/20/2023 2:12:19 PM
Toluene	ND	0.049		mg/Kg	1	11/20/2023 2:12:19 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/20/2023 2:12:19 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/20/2023 2:12:19 PM
Surr: 4-Bromofluorobenzene	95.4	39.1-146		%Rec	1	11/20/2023 2:12:19 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	11/18/2023 12:16:31 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-06 0'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 11:00:00 AM
Lab ID: 2311675-013 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	1200	200		mg/Kg	20	11/17/2023 5:41:55 PM
Motor Oil Range Organics (MRO)	2200	980		mg/Kg	20	11/17/2023 5:41:55 PM
Surr: DNOP	0	69-147	S	%Rec	20	11/17/2023 5:41:55 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/20/2023 2:35:46 PM
Surr: BFB	92.8	15-244		%Rec	1	11/20/2023 2:35:46 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/20/2023 2:35:46 PM
Toluene	ND	0.048		mg/Kg	1	11/20/2023 2:35:46 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/20/2023 2:35:46 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/20/2023 2:35:46 PM
Surr: 4-Bromofluorobenzene	96.0	39.1-146		%Rec	1	11/20/2023 2:35:46 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	180	60		mg/Kg	20	11/18/2023 12:28:56 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-06 2'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 11:10:00 AM
Lab ID: 2311675-014 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/17/2023 6:07:10 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/17/2023 6:07:10 PM
Surr: DNOP	122	69-147		%Rec	1	11/17/2023 6:07:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/20/2023 2:59:20 PM
Surr: BFB	94.4	15-244		%Rec	1	11/20/2023 2:59:20 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	11/20/2023 2:59:20 PM
Toluene	ND	0.047		mg/Kg	1	11/20/2023 2:59:20 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/20/2023 2:59:20 PM
Xylenes, Total	ND	0.093		mg/Kg	1	11/20/2023 2:59:20 PM
Surr: 4-Bromofluorobenzene	97.5	39.1-146		%Rec	1	11/20/2023 2:59:20 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	200	60		mg/Kg	20	11/18/2023 1:06:10 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-07 0'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 11:20:00 AM
Lab ID: 2311675-015 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/17/2023 6:31:34 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/17/2023 6:31:34 PM
Surr: DNOP	107	69-147		%Rec	1	11/17/2023 6:31:34 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/20/2023 3:22:52 PM
Surr: BFB	95.2	15-244		%Rec	1	11/20/2023 3:22:52 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	11/20/2023 3:22:52 PM
Toluene	ND	0.050		mg/Kg	1	11/20/2023 3:22:52 PM
Ethylbenzene	ND	0.050		mg/Kg	1	11/20/2023 3:22:52 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/20/2023 3:22:52 PM
Surr: 4-Bromofluorobenzene	98.0	39.1-146		%Rec	1	11/20/2023 3:22:52 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	1400	59		mg/Kg	20	11/18/2023 1:18:34 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-07 2'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 11:30:00 AM
Lab ID: 2311675-016 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	21	9.5		mg/Kg	1	11/17/2023 6:55:59 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/17/2023 6:55:59 PM
Surr: DNOP	135	69-147		%Rec	1	11/17/2023 6:55:59 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/20/2023 3:46:21 PM
Surr: BFB	91.9	15-244		%Rec	1	11/20/2023 3:46:21 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/20/2023 3:46:21 PM
Toluene	ND	0.048		mg/Kg	1	11/20/2023 3:46:21 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/20/2023 3:46:21 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/20/2023 3:46:21 PM
Surr: 4-Bromofluorobenzene	95.0	39.1-146		%Rec	1	11/20/2023 3:46:21 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	430	61		mg/Kg	20	11/19/2023 3:52:10 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-08 0'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 11:40:00 AM
Lab ID: 2311675-017 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	15000	190		mg/Kg	20	11/17/2023 2:26:42 PM
Motor Oil Range Organics (MRO)	8500	960		mg/Kg	20	11/17/2023 2:26:42 PM
Surr: DNOP	0	69-147	S	%Rec	20	11/17/2023 2:26:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/20/2023 4:09:43 PM
Surr: BFB	90.4	15-244		%Rec	1	11/20/2023 4:09:43 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	11/20/2023 4:09:43 PM
Toluene	ND	0.050		mg/Kg	1	11/20/2023 4:09:43 PM
Ethylbenzene	ND	0.050		mg/Kg	1	11/20/2023 4:09:43 PM
Xylenes, Total	ND	0.10		mg/Kg	1	11/20/2023 4:09:43 PM
Surr: 4-Bromofluorobenzene	93.8	39.1-146		%Rec	1	11/20/2023 4:09:43 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	810	60		mg/Kg	20	11/19/2023 4:29:24 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-08 2'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 11:50:00 AM
Lab ID: 2311675-018 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	17	10		mg/Kg	1	11/17/2023 7:20:23 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/17/2023 7:20:23 PM
Surr: DNOP	88.9	69-147		%Rec	1	11/17/2023 7:20:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/20/2023 4:32:57 PM
Surr: BFB	89.0	15-244		%Rec	1	11/20/2023 4:32:57 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/20/2023 4:32:57 PM
Toluene	ND	0.049		mg/Kg	1	11/20/2023 4:32:57 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/20/2023 4:32:57 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/20/2023 4:32:57 PM
Surr: 4-Bromofluorobenzene	96.4	39.1-146		%Rec	1	11/20/2023 4:32:57 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	1200	60		mg/Kg	20	11/19/2023 4:41:49 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-09 0'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 12:00:00 PM
Lab ID: 2311675-019 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	1000	190		mg/Kg	20	11/17/2023 12:51:07 PM
Motor Oil Range Organics (MRO)	1400	960		mg/Kg	20	11/17/2023 12:51:07 PM
Surr: DNOP	0	69-147	S	%Rec	20	11/17/2023 12:51:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/20/2023 4:56:16 PM
Surr: BFB	89.6	15-244		%Rec	1	11/20/2023 4:56:16 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	11/20/2023 4:56:16 PM
Toluene	ND	0.047		mg/Kg	1	11/20/2023 4:56:16 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/20/2023 4:56:16 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/20/2023 4:56:16 PM
Surr: 4-Bromofluorobenzene	92.3	39.1-146		%Rec	1	11/20/2023 4:56:16 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	290	60		mg/Kg	20	11/19/2023 4:54:14 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-09 2'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 12:10:00 PM
Lab ID: 2311675-020 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/17/2023 7:44:42 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/17/2023 7:44:42 PM
Surr: DNOP	123	69-147		%Rec	1	11/17/2023 7:44:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/20/2023 5:19:47 PM
Surr: BFB	93.3	15-244		%Rec	1	11/20/2023 5:19:47 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/20/2023 5:19:47 PM
Toluene	ND	0.049		mg/Kg	1	11/20/2023 5:19:47 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/20/2023 5:19:47 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/20/2023 5:19:47 PM
Surr: 4-Bromofluorobenzene	96.9	39.1-146		%Rec	1	11/20/2023 5:19:47 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	110	60		mg/Kg	20	11/19/2023 5:06:39 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-10 0'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 12:20:00 PM
Lab ID: 2311675-021 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	230	47		mg/Kg	5	11/17/2023 6:29:26 PM
Motor Oil Range Organics (MRO)	500	230		mg/Kg	5	11/17/2023 6:29:26 PM
Surr: DNOP	137	69-147		%Rec	5	11/17/2023 6:29:26 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/20/2023 6:06:28 PM
Surr: BFB	91.3	15-244		%Rec	1	11/20/2023 6:06:28 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	11/20/2023 6:06:28 PM
Toluene	ND	0.049		mg/Kg	1	11/20/2023 6:06:28 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/20/2023 6:06:28 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/20/2023 6:06:28 PM
Surr: 4-Bromofluorobenzene	93.9	39.1-146		%Rec	1	11/20/2023 6:06:28 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	11/19/2023 5:19:03 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-10 2'
Project: Todd 36 D State 2
Collection Date: 11/12/2023 12:30:00 PM
Lab ID: 2311675-022 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/17/2023 8:09:07 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/17/2023 8:09:07 PM
Surr: DNOP	116	69-147		%Rec	1	11/17/2023 8:09:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/20/2023 6:29:56 PM
Surr: BFB	93.5	15-244		%Rec	1	11/20/2023 6:29:56 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	11/20/2023 6:29:56 PM
Toluene	ND	0.049		mg/Kg	1	11/20/2023 6:29:56 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/20/2023 6:29:56 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/20/2023 6:29:56 PM
Surr: 4-Bromofluorobenzene	95.9	39.1-146		%Rec	1	11/20/2023 6:29:56 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	61		mg/Kg	20	11/19/2023 5:56:16 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-11 0'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 12:40:00 PM
Lab ID: 2311675-023 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	25000	980		mg/Kg	100	11/17/2023 7:16:53 PM
Motor Oil Range Organics (MRO)	15000	4900		mg/Kg	100	11/17/2023 7:16:53 PM
Surr: DNOP	0	69-147	S	%Rec	100	11/17/2023 7:16:53 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/20/2023 6:53:15 PM
Surr: BFB	87.7	15-244		%Rec	1	11/20/2023 6:53:15 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/20/2023 6:53:15 PM
Toluene	ND	0.049		mg/Kg	1	11/20/2023 6:53:15 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/20/2023 6:53:15 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/20/2023 6:53:15 PM
Surr: 4-Bromofluorobenzene	90.5	39.1-146		%Rec	1	11/20/2023 6:53:15 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	61		mg/Kg	20	11/19/2023 6:08:40 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-11 2'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 12:50:00 PM
Lab ID: 2311675-024 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/17/2023 8:33:26 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/17/2023 8:33:26 PM
Surr: DNOP	105	69-147		%Rec	1	11/17/2023 8:33:26 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/20/2023 7:16:39 PM
Surr: BFB	90.1	15-244		%Rec	1	11/20/2023 7:16:39 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	11/20/2023 7:16:39 PM
Toluene	ND	0.049		mg/Kg	1	11/20/2023 7:16:39 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/20/2023 7:16:39 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/20/2023 7:16:39 PM
Surr: 4-Bromofluorobenzene	96.9	39.1-146		%Rec	1	11/20/2023 7:16:39 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	470	60		mg/Kg	20	11/19/2023 6:21:04 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-08 4'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 1:00:00 PM
Lab ID: 2311675-025 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	11/17/2023 8:57:51 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/17/2023 8:57:51 PM
Surr: DNOP	124	69-147		%Rec	1	11/17/2023 8:57:51 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/20/2023 7:40:05 PM
Surr: BFB	91.5	15-244		%Rec	1	11/20/2023 7:40:05 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/20/2023 7:40:05 PM
Toluene	ND	0.049		mg/Kg	1	11/20/2023 7:40:05 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/20/2023 7:40:05 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/20/2023 7:40:05 PM
Surr: 4-Bromofluorobenzene	93.6	39.1-146		%Rec	1	11/20/2023 7:40:05 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	73	60		mg/Kg	20	11/19/2023 6:33:29 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311675**
Date Reported: **11/29/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc. **Client Sample ID:** BH23-01 5'
Project: Todd 36 D State 2 **Collection Date:** 11/12/2023 1:10:00 PM
Lab ID: 2311675-026 **Matrix:** SOIL **Received Date:** 11/14/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/17/2023 12:01:42 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/17/2023 12:01:42 PM
Surr: DNOP	118	69-147		%Rec	1	11/17/2023 12:01:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/21/2023 12:20:32 AM
Surr: BFB	91.5	15-244		%Rec	1	11/21/2023 12:20:32 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	11/21/2023 12:20:32 AM
Toluene	ND	0.050		mg/Kg	1	11/21/2023 12:20:32 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/21/2023 12:20:32 AM
Xylenes, Total	ND	0.10		mg/Kg	1	11/21/2023 12:20:32 AM
Surr: 4-Bromofluorobenzene	95.2	39.1-146		%Rec	1	11/21/2023 12:20:32 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	390	60		mg/Kg	20	11/19/2023 6:45:54 PM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311675**

29-Nov-23

Client: Vertex Resources Services, Inc.

Project: Todd 36 D State 2

Sample ID: **MB-78869** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **78869** RunNo: **101286**
Prep Date: **11/17/2023** Analysis Date: **11/17/2023** SeqNo: **3724875** Units: **mg/Kg**

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

Sample ID: **LCS-78869** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **78869** RunNo: **101286**
Prep Date: **11/17/2023** Analysis Date: **11/17/2023** SeqNo: **3724876** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.6	90	110			

Sample ID: **MB-78892** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **78892** RunNo: **101309**
Prep Date: **11/19/2023** Analysis Date: **11/19/2023** SeqNo: **3726155** Units: **mg/Kg**

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

Sample ID: **LCS-78893** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **78893** RunNo: **101309**
Prep Date: **11/19/2023** Analysis Date: **11/19/2023** SeqNo: **3726157** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.3	90	110			

Sample ID: **MB-78893** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **78893** RunNo: **101309**
Prep Date: **11/19/2023** Analysis Date: **11/19/2023** SeqNo: **3726158** Units: **mg/Kg**

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

Sample ID: **LCS-78892** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **78892** RunNo: **101309**
Prep Date: **11/19/2023** Analysis Date: **11/19/2023** SeqNo: **3726159** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.7	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311675**

29-Nov-23

Client: Vertex Resources Services, Inc.

Project: Todd 36 D State 2

Sample ID: **LCS-78823** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **78823** RunNo: **101250**
Prep Date: **11/15/2023** Analysis Date: **11/16/2023** SeqNo: **3722305** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		93.8	69	147			

Sample ID: **LCS-78828** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **78828** RunNo: **101250**
Prep Date: **11/15/2023** Analysis Date: **11/16/2023** SeqNo: **3722306** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	64	10	50.00	0	128	61.9	130			
Surr: DNOP	7.4		5.000		148	69	147			S

Sample ID: **MB-78823** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **78823** RunNo: **101250**
Prep Date: **11/15/2023** Analysis Date: **11/16/2023** SeqNo: **3722307** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		103	69	147			

Sample ID: **MB-78828** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **78828** RunNo: **101250**
Prep Date: **11/15/2023** Analysis Date: **11/16/2023** SeqNo: **3722308** 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	12		10.00		116	69	147			

Sample ID: **LCS-78851** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **78851** RunNo: **101270**
Prep Date: **11/16/2023** Analysis Date: **11/17/2023** SeqNo: **3724368** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	107	61.9	130			
Surr: DNOP	5.4		5.000		109	69	147			

Sample ID: **MB-78851** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **78851** RunNo: **101270**
Prep Date: **11/16/2023** Analysis Date: **11/17/2023** SeqNo: **3724369** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311675**

29-Nov-23

Client: Vertex Resources Services, Inc.

Project: Todd 36 D State 2

Sample ID: **MB-78851**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **78851**	RunNo: **101270**
Prep Date: **11/16/2023**	Analysis Date: **11/17/2023**	SeqNo: **3724369** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		110	69	147			

Sample ID: **MB-78848**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **78848**	RunNo: **101314**
Prep Date: **11/16/2023**	Analysis Date: **11/17/2023**	SeqNo: **3726336** 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	8.8		10.00		87.7	69	147			

Sample ID: **LCS-78848**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **78848**	RunNo: **101314**
Prep Date: **11/16/2023**	Analysis Date: **11/17/2023**	SeqNo: **3726337** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	104	61.9	130			
Surr: DNOP	4.1		5.000		81.3	69	147			

Sample ID: **2311675-025AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-08 4'**	Batch ID: **78848**	RunNo: **101314**
Prep Date: **11/16/2023**	Analysis Date: **11/17/2023**	SeqNo: **3726359** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	9.6	47.80	0	119	54.2	135			
Surr: DNOP	4.9		4.780		102	69	147			

Sample ID: **2311675-025AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH23-08 4'**	Batch ID: **78848**	RunNo: **101314**
Prep Date: **11/16/2023**	Analysis Date: **11/17/2023**	SeqNo: **3726360** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	9.2	46.00	0	109	54.2	135	13.3	29.2	
Surr: DNOP	4.2		4.600		90.5	69	147	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311675**

29-Nov-23

Client: Vertex Resources Services, Inc.

Project: Todd 36 D State 2

Sample ID: **lcs-78842**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **78842**	RunNo: **101265**							
Prep Date: **11/16/2023**	Analysis Date: **11/17/2023**	SeqNo: **3723385**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	92.2	70	130			
Surr: BFB	2000		1000		197	15	244			

Sample ID: **mb-78842**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **78842**	RunNo: **101265**							
Prep Date: **11/16/2023**	Analysis Date: **11/17/2023**	SeqNo: **3723386**	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	930		1000		93.2	15	244			

Sample ID: **lcs-78825**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **78825**	RunNo: **101265**							
Prep Date: **11/15/2023**	Analysis Date: **11/18/2023**	SeqNo: **3725395**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.6	70	130			
Surr: BFB	2000		1000		205	15	244			

Sample ID: **mb-78825**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **78825**	RunNo: **101265**							
Prep Date: **11/15/2023**	Analysis Date: **11/18/2023**	SeqNo: **3725396**	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		96.4	15	244			

Sample ID: **lcs-78830**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **78830**	RunNo: **101322**							
Prep Date: **11/15/2023**	Analysis Date: **11/20/2023**	SeqNo: **3726923**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	92.7	70	130			
Surr: BFB	1900		1000		188	15	244			

Sample ID: **mb-78830**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **78830**	RunNo: **101322**							
Prep Date: **11/15/2023**	Analysis Date: **11/20/2023**	SeqNo: **3726924**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311675**

29-Nov-23

Client: Vertex Resources Services, Inc.

Project: Todd 36 D State 2

Sample ID: **mb-78830** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **78830** RunNo: **101322**
Prep Date: **11/15/2023** Analysis Date: **11/20/2023** SeqNo: **3726924** 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	910		1000		91.4	15	244			

Sample ID: **2311675-006ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-03 2'** Batch ID: **78830** RunNo: **101322**
Prep Date: **11/15/2023** Analysis Date: **11/20/2023** SeqNo: **3726929** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.7	23.65	0	84.9	70	130			
Surr: BFB	1900		946.1		196	15	244			

Sample ID: **2311675-006amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-03 2'** Batch ID: **78830** RunNo: **101322**
Prep Date: **11/15/2023** Analysis Date: **11/20/2023** SeqNo: **3726930** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.7	23.61	0	87.1	70	130	2.37	20	
Surr: BFB	1800		944.3		193	15	244	0	0	

Sample ID: **2311675-026ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-01 5'** Batch ID: **78842** RunNo: **101322**
Prep Date: **11/16/2023** Analysis Date: **11/21/2023** SeqNo: **3726951** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	85.8	70	130			
Surr: BFB	1900		1000		194	15	244			

Sample ID: **2311675-026amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-01 5'** Batch ID: **78842** RunNo: **101322**
Prep Date: **11/16/2023** Analysis Date: **11/21/2023** SeqNo: **3726952** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	24.80	0	88.6	70	130	2.42	20	
Surr: BFB	1900		992.1		195	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311675**

29-Nov-23

Client: Vertex Resources Services, Inc.

Project: Todd 36 D State 2

Sample ID: **LCS-78842**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **78842**	RunNo: **101265**
Prep Date: **11/16/2023**	Analysis Date: **11/17/2023**	SeqNo: **3723388** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	104	70	130			
Toluene	1.0	0.050	1.000	0	103	70	130			
Ethylbenzene	1.0	0.050	1.000	0	102	70	130			
Xylenes, Total	3.0	0.10	3.000	0	101	70	130			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	39.1	146			

Sample ID: **mb-78842**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **78842**	RunNo: **101265**
Prep Date: **11/16/2023**	Analysis Date: **11/17/2023**	SeqNo: **3723389** 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	0.97		1.000		96.9	39.1	146			

Sample ID: **LCS-78825**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **78825**	RunNo: **101265**
Prep Date: **11/15/2023**	Analysis Date: **11/18/2023**	SeqNo: **3725514** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.1	70	130			
Toluene	0.94	0.050	1.000	0	94.0	70	130			
Ethylbenzene	0.94	0.050	1.000	0	94.3	70	130			
Xylenes, Total	2.8	0.10	3.000	0	94.0	70	130			
Surr: 4-Bromofluorobenzene	1.0		1.000		100	39.1	146			

Sample ID: **mb-78825**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **78825**	RunNo: **101265**
Prep Date: **11/15/2023**	Analysis Date: **11/18/2023**	SeqNo: **3725516** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		94.7	39.1	146			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311675**

29-Nov-23

Client: Vertex Resources Services, Inc.

Project: Todd 36 D State 2

Sample ID: **LCS-78830**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **78830**	RunNo: **101322**
Prep Date: **11/15/2023**	Analysis Date: **11/20/2023**	SeqNo: **3726965** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	94.2	70	130			
Toluene	0.95	0.050	1.000	0	95.2	70	130			
Ethylbenzene	0.94	0.050	1.000	0	94.1	70	130			
Xylenes, Total	2.8	0.10	3.000	0	93.5	70	130			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	39.1	146			

Sample ID: **MB-78830**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **78830**	RunNo: **101322**
Prep Date: **11/15/2023**	Analysis Date: **11/20/2023**	SeqNo: **3726967** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		95.2	39.1	146			

Sample ID: **2311675-007ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-04 0'**	Batch ID: **78830**	RunNo: **101322**
Prep Date: **11/15/2023**	Analysis Date: **11/20/2023**	SeqNo: **3727001** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.024	0.9766	0	87.3	70	130			
Toluene	0.86	0.049	0.9766	0	87.7	70	130			
Ethylbenzene	0.84	0.049	0.9766	0	86.3	70	130			
Xylenes, Total	2.5	0.098	2.930	0	84.5	70	130			
Surr: 4-Bromofluorobenzene	0.96		0.9766		98.8	39.1	146			

Sample ID: **2311675-007amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-04 0'**	Batch ID: **78830**	RunNo: **101322**
Prep Date: **11/15/2023**	Analysis Date: **11/20/2023**	SeqNo: **3727003** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.025	0.9823	0	83.5	70	130	3.86	20	
Toluene	0.83	0.049	0.9823	0	84.2	70	130	3.45	20	
Ethylbenzene	0.82	0.049	0.9823	0	83.1	70	130	3.14	20	
Xylenes, Total	2.4	0.098	2.947	0	81.9	70	130	2.61	20	
Surr: 4-Bromofluorobenzene	0.97		0.9823		98.8	39.1	146	0	0	

Qualifiers:

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

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Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Vertex Resources | Work Order Number: 2311675 | RcptNo: 1

Received By: Juan Rojas | 11/14/2023 7:40:00 AM

Completed By: Tracy Casarrubias | 11/14/2023 8:23:06 AM

Reviewed By: SCM 11/14/23

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: TMN 11/14/23

TMN 11/14/23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: Mailing address,phone number and Email/Fax are missing on COC- TMC 11/14/23

16. Additional remarks:

Client did not relinquish chain of custody

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0	Good	Yes	Morty		

Chain-of-Custody Record

Client: Vertex (Deron)

Mailing Address: on file

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush 5 Day

Project Name: Todd 36 D State 2

Project #: 23E-05197

Project Manager: Kent Stallings

Sampler: Zach Englebert

On Ice: ☐ Yes ☐ No

# of Coolers: 1 Morty

Cooler Temp(including CF): 0.1-0.1=0 (°C)

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2311675
11-12-23	9 00	Soil	BH23-01 0'	1 jar	ice	001
	9 10		BH23-01 2'			002
	9 20		BH23-02 0'			003
	9 30		BH23-02 2'			004
	9 40		BH23-03 0'			005
	9 50		BH23-03 2'			006
	10 00		BH23-04 0'			007
	10 10		BH23-04 2'			008
	10 20		BH23-01 4'			009
	10 30		BH23-03 4'			010
	10 40		BH23-05 0'			011
↓	10 50	↓	BH23-05 2'	↓	↓	012

Analysis Request

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

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
			[signature]		11/13/23	1130
11/13/23	1900	[signature]	[signature]	courier	11/14/23	7:40

Remarks: Direct Bill to Deron
cc KStallings @vertex.ca

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

Chain-of-Custody Record

Client: Vertex (Deron)

Mailing Address: on file

Phone #:

email or Fax#:

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

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

Turn-Around Time:
☑ Standard ☑ Rush 5 day

Project Name: Todd 36 D State 2

Project #: 23E-05197

Project Manager: Kent Stallings

Sampler: Zach Eaglebert

On Ice: ☑ Yes ☐ No

# of Coolers: 1 Marty

Cooler Temp (Including CF): 0.1-0.1=0 (°C)

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2311675	BTEX / MTBE / TMB's (8021)	TPH 8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	CNF, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
11-12-23	11:00	soil	BH23-06 0'	1 jar	ice	013										
	11:10		BH23-06 2'			014										
	11:20		BH23-07 0'			015										
	11:30		BH23-07 2'			016										
	11:40		BH23-08 0'			017										
	11:50		BH23-08 2'			018										
	12:00		BH23-09 0'			019										
	12:10		BH23-09 2'			020										
	12:20		BH23-10 0'			021										
	12:30		BH23-10 2'			022										
	12:40		BH23-11 0'			023										
	12:50		BH23-11 2'			024										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					11/13/23	1030
Date: 11/13/23	Time: 1300	Relinquished by:	Received by:	Via: Courier	Date 11/14/23	Time 7:40

Remarks: Direct Bill to Deron
cc Kstallings@vertex.ca

Chain-of-Custody Record

Client: Vertex (Deron)

Mailing Address: on file

Phone #:

email or Fax#:

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

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

Turn-Around Time:
☑ Standard ☑ Rush 5 Day

Project Name: Todd 36 D State 2

Project #: 23E-05197

Project Manager: Kent Stallings

Sampler: Zach Englebert

On Ice: ☑ Yes ☐ No

# of Coolers: 1 Marty

Cooler Temp(including CF): 0.1-0.1=0 (°C)

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 23111675	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
11-12-23	1300	soil	BH23-08 4'	1 jar	ice	025										
↓	1310	↓	BH23-01 5'	↓	↓	026										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
					11/13/23	1080
11/13/23	1900		Courier		11/14/23	7:40

Remarks: Direct bill to Deron
cc Kstallings@vertex.ca

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

eurofins | Environment Testing

Eurofins Environment Testing South Central, LLC
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TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 06, 2023

Kent Stallings

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

RE: Todd 36 D State 002 OrderNo.: 2311C31

Dear Kent Stallings:

Eurofins Environment Testing South Central, LLC received 8 sample(s) on 11/28/2023 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 do not hesitate to contact Eurofins Albuquerque for any additional information or clarifications.

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2311C31**
Date Reported: **12/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-20 0.0'
Project: Todd 36 D State 002
Collection Date: 11/18/2023 9:00:00 AM
Lab ID: 2311C31-001 **Matrix:** SOIL
Received Date: 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	17	9.6		mg/Kg	1	12/1/2023 1:50:02 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/1/2023 1:50:02 PM
Surr: DNOP	94.5	69-147		%Rec	1	12/1/2023 1:50:02 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/29/2023 7:10:00 PM
Surr: BFB	101	15-244		%Rec	1	11/29/2023 7:10:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.023		mg/Kg	1	11/29/2023 7:10:00 PM
Toluene	ND	0.046		mg/Kg	1	11/29/2023 7:10:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	11/29/2023 7:10:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	11/29/2023 7:10:00 PM
Surr: 4-Bromofluorobenzene	93.4	39.1-146		%Rec	1	11/29/2023 7:10:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	800	60		mg/Kg	20	11/30/2023 6:01:52 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C31**
Date Reported: **12/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-20 2.0'
Project: Todd 36 D State 002
Collection Date: 11/18/2023 9:10:00 AM
Lab ID: 2311C31-002 **Matrix:** SOIL **Received Date:** 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	12/1/2023 2:11:02 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/1/2023 2:11:02 PM
Surr: DNOP	96.4	69-147		%Rec	1	12/1/2023 2:11:02 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/29/2023 7:32:00 PM
Surr: BFB	101	15-244		%Rec	1	11/29/2023 7:32:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.023		mg/Kg	1	11/29/2023 7:32:00 PM
Toluene	ND	0.047		mg/Kg	1	11/29/2023 7:32:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/29/2023 7:32:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	11/29/2023 7:32:00 PM
Surr: 4-Bromofluorobenzene	94.9	39.1-146		%Rec	1	11/29/2023 7:32:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	11/30/2023 6:14:16 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C31**
Date Reported: **12/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-21 0.0'
Project: Todd 36 D State 002
Collection Date: 11/18/2023 9:20:00 AM
Lab ID: 2311C31-003 **Matrix:** SOIL **Received Date:** 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	26000	490		mg/Kg	50	12/3/2023 12:28:31 AM
Motor Oil Range Organics (MRO)	17000	2500		mg/Kg	50	12/3/2023 12:28:31 AM
Surr: DNOP	0	69-147	S	%Rec	50	12/3/2023 12:28:31 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/29/2023 7:54:00 PM
Surr: BFB	96.0	15-244		%Rec	1	11/29/2023 7:54:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.023		mg/Kg	1	11/29/2023 7:54:00 PM
Toluene	ND	0.047		mg/Kg	1	11/29/2023 7:54:00 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/29/2023 7:54:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	11/29/2023 7:54:00 PM
Surr: 4-Bromofluorobenzene	91.0	39.1-146		%Rec	1	11/29/2023 7:54:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	11/30/2023 6:26:41 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C31**
Date Reported: **12/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-21 2.0'
Project: Todd 36 D State 002
Collection Date: 11/18/2023 9:30:00 AM
Lab ID: 2311C31-004 **Matrix:** SOIL **Received Date:** 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	12/1/2023 3:01:45 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/1/2023 3:01:45 PM
Surr: DNOP	75.8	69-147		%Rec	1	12/1/2023 3:01:45 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/29/2023 8:16:00 PM
Surr: BFB	102	15-244		%Rec	1	11/29/2023 8:16:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	11/29/2023 8:16:00 PM
Toluene	ND	0.049		mg/Kg	1	11/29/2023 8:16:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/29/2023 8:16:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	11/29/2023 8:16:00 PM
Surr: 4-Bromofluorobenzene	94.7	39.1-146		%Rec	1	11/29/2023 8:16:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	11/30/2023 6:39:06 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C31**
Date Reported: **12/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-22 0.0'
Project: Todd 36 D State 002
Collection Date: 11/18/2023 9:40:00 AM
Lab ID: 2311C31-005 **Matrix:** SOIL
Received Date: 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	7200	200		mg/Kg	20	12/1/2023 3:12:22 PM
Motor Oil Range Organics (MRO)	4700	980		mg/Kg	20	12/1/2023 3:12:22 PM
Surr: DNOP	0	69-147	S	%Rec	20	12/1/2023 3:12:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	12		mg/Kg	5	11/29/2023 10:26:00 PM
Surr: BFB	101	15-244		%Rec	5	11/29/2023 10:26:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.096		mg/Kg	5	11/29/2023 10:26:00 PM
Toluene	ND	0.096		mg/Kg	5	11/29/2023 10:26:00 PM
Ethylbenzene	ND	0.096		mg/Kg	5	11/29/2023 10:26:00 PM
Xylenes, Total	ND	0.29		mg/Kg	5	11/29/2023 10:26:00 PM
Surr: 4-Bromofluorobenzene	94.2	39.1-146		%Rec	5	11/29/2023 10:26:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	11/30/2023 6:51:30 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C31**
Date Reported: **12/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Client Sample ID: BH23-22 2.0'
Project: Todd 36 D State 002
Collection Date: 11/18/2023 9:50:00 AM
Lab ID: 2311C31-006 **Matrix:** SOIL **Received Date:** 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	260	9.9		mg/Kg	1	12/2/2023 8:32:36 PM
Motor Oil Range Organics (MRO)	490	49		mg/Kg	1	12/2/2023 8:32:36 PM
Surr: DNOP	99.0	69-147		%Rec	1	12/2/2023 8:32:36 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/30/2023 12:15:00 AM
Surr: BFB	94.0	15-244		%Rec	1	11/30/2023 12:15:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	11/30/2023 12:15:00 AM
Toluene	ND	0.048		mg/Kg	1	11/30/2023 12:15:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/30/2023 12:15:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/30/2023 12:15:00 AM
Surr: 4-Bromofluorobenzene	90.6	39.1-146		%Rec	1	11/30/2023 12:15:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	180	60		mg/Kg	20	11/30/2023 7:03:55 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C31**
Date Reported: **12/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 36 D State 002
Lab ID: 2311C31-007 **Matrix:** SOIL

Client Sample ID: BH23-23 0.0'
Collection Date: 11/18/2023 10:00:00 AM
Received Date: 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	370	96		mg/Kg	10	12/2/2023 11:41:21 PM
Motor Oil Range Organics (MRO)	930	480		mg/Kg	10	12/2/2023 11:41:21 PM
Surr: DNOP	0	69-147	S	%Rec	10	12/2/2023 11:41:21 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/30/2023 12:37:00 AM
Surr: BFB	96.5	15-244		%Rec	1	11/30/2023 12:37:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	11/30/2023 12:37:00 AM
Toluene	ND	0.048		mg/Kg	1	11/30/2023 12:37:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/30/2023 12:37:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/30/2023 12:37:00 AM
Surr: 4-Bromofluorobenzene	90.8	39.1-146		%Rec	1	11/30/2023 12:37:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	11/30/2023 7:41:07 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C31**
Date Reported: **12/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: Todd 36 D State 002
Lab ID: 2311C31-008 **Matrix:** SOIL

Client Sample ID: BH23-23 2.0'
Collection Date: 11/18/2023 10:10:00 AM
Received Date: 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	12/1/2023 11:56:01 PM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	12/1/2023 11:56:01 PM
Surr: DNOP	94.0	69-147		%Rec	1	12/1/2023 11:56:01 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/30/2023 12:58:00 AM
Surr: BFB	97.9	15-244		%Rec	1	11/30/2023 12:58:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.023		mg/Kg	1	11/30/2023 12:58:00 AM
Toluene	ND	0.047		mg/Kg	1	11/30/2023 12:58:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/30/2023 12:58:00 AM
Xylenes, Total	ND	0.093		mg/Kg	1	11/30/2023 12:58:00 AM
Surr: 4-Bromofluorobenzene	91.8	39.1-146		%Rec	1	11/30/2023 12:58:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	11/30/2023 7:53:31 PM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311C31**

06-Dec-23

Client: Devon Energy

Project: Todd 36 D State 002

Sample ID:	**MB-79069**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**79069**	RunNo:	**101524**					
Prep Date:	**11/30/2023**	Analysis Date:	**11/30/2023**	SeqNo:	**3737310**	Units:	**mg/Kg**			

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

Sample ID:	**LCS-79069**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**79069**	RunNo:	**101524**					
Prep Date:	**11/30/2023**	Analysis Date:	**11/30/2023**	SeqNo:	**3737311**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.6	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311C31**

06-Dec-23

Client: Devon Energy

Project: Todd 36 D State 002

Sample ID: **LCS-79082** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **79082** RunNo: **101534**
Prep Date: **11/30/2023** Analysis Date: **12/1/2023** SeqNo: **3738243** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	61.9	130			
Surr: DNOP	4.7		5.000		94.3	69	147			

Sample ID: **LCS-79098** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **79098** RunNo: **101534**
Prep Date: **12/1/2023** Analysis Date: **12/1/2023** SeqNo: **3738244** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.9		5.000		78.6	69	147			

Sample ID: **MB-79082** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **79082** RunNo: **101534**
Prep Date: **11/30/2023** Analysis Date: **12/1/2023** SeqNo: **3738245** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		101	69	147			

Sample ID: **MB-79098** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **79098** RunNo: **101534**
Prep Date: **12/1/2023** Analysis Date: **12/1/2023** SeqNo: **3738246** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.2		10.00		81.9	69	147			

Sample ID: **LCS-79080** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **79080** RunNo: **101534**
Prep Date: **11/30/2023** Analysis Date: **12/1/2023** SeqNo: **3738774** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.4	61.9	130			
Surr: DNOP	4.5		5.000		89.2	69	147			

Sample ID: **MB-79080** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **79080** RunNo: **101534**
Prep Date: **11/30/2023** Analysis Date: **12/1/2023** SeqNo: **3738775** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311C31**

06-Dec-23

Client: Devon Energy

Project: Todd 36 D State 002

Sample ID: **MB-79080**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **79080**	RunNo: **101534**
Prep Date: **11/30/2023**	Analysis Date: **12/1/2023**	SeqNo: **3738775** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.1		10.00		80.8	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311C31**

06-Dec-23

Client: Devon Energy

Project: Todd 36 D State 002

Sample ID: **lcs-79020**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **79020**	RunNo: **101489**							
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735681**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.6	70	130			
Surr: BFB	2100		1000		206	15	244			

Sample ID: **MB-79020**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **79020**	RunNo: **101489**							
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735682**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		100	15	244			

Sample ID: **lcs-79027**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **79027**	RunNo: **101489**							
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735705**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	86.2	70	130			
Surr: BFB	2100		1000		210	15	244			

Sample ID: **mb-79027**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **79027**	RunNo: **101489**							
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735706**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	980		1000		98.2	15	244			

Sample ID: **2311c31-005ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **BH23-22 0.0'**	Batch ID: **79027**	RunNo: **101489**							
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735708**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	24	23.95	0	105	70	130			
Surr: BFB	6000		4789		124	15	244			

Sample ID: **2311c31-005amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **BH23-22 0.0'**	Batch ID: **79027**	RunNo: **101489**							
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735709**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311C31**

06-Dec-23

Client: Devon Energy

Project: Todd 36 D State 002

Sample ID:	**2311c31-005amsd**	SampType:	**MSD**	TestCode:	**EPA Method 8015D: Gasoline Range**
Client ID:	**BH23-22 0.0'**	Batch ID:	**79027**	RunNo:	**101489**
Prep Date:	**11/28/2023**	Analysis Date:	**11/29/2023**	SeqNo:	**3735709** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	24	24.08	0	104	70	130	0.571	20	
Surr: BFB	6100		4817		126	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311C31**

06-Dec-23

Client: Devon Energy

Project: Todd 36 D State 002

Sample ID: **lcs-79020**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **79020**	RunNo: **101489**
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735824** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	95.8	70	130			
Toluene	0.96	0.050	1.000	0	96.0	70	130			
Ethylbenzene	0.97	0.050	1.000	0	97.5	70	130			
Xylenes, Total	2.9	0.10	3.000	0	96.9	70	130			
Surr: 4-Bromofluorobenzene	0.97		1.000		97.2	39.1	146			

Sample ID: **mb-79020**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **79020**	RunNo: **101489**
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735825** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		95.4	39.1	146			

Sample ID: **lcs-79027**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **79027**	RunNo: **101489**
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735851** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	94.8	70	130			
Toluene	0.95	0.050	1.000	0	95.4	70	130			
Ethylbenzene	0.97	0.050	1.000	0	96.9	70	130			
Xylenes, Total	2.9	0.10	3.000	0	96.7	70	130			
Surr: 4-Bromofluorobenzene	0.96		1.000		95.6	39.1	146			

Sample ID: **mb-79027**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **79027**	RunNo: **101489**
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735852** 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	0.93		1.000		93.4	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311C31**

06-Dec-23

Client: Devon Energy

Project: Todd 36 D State 002

Sample ID: **2311c31-006ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-22 2.0'**	Batch ID: **79027**	RunNo: **101489**
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735854** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.024	0.9699	0	101	70	130			
Toluene	1.0	0.048	0.9699	0	103	70	130			
Ethylbenzene	1.0	0.048	0.9699	0	106	70	130			
Xylenes, Total	3.1	0.097	2.910	0	105	70	130			
Surr: 4-Bromofluorobenzene	0.90		0.9699		92.9	39.1	146			

Sample ID: **2311c31-006amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-22 2.0'**	Batch ID: **79027**	RunNo: **101489**
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735855** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.024	0.9615	0	98.1	70	130	3.86	20	
Toluene	0.97	0.048	0.9615	0	101	70	130	3.25	20	
Ethylbenzene	1.0	0.048	0.9615	0	104	70	130	2.88	20	
Xylenes, Total	3.0	0.096	2.885	0	104	70	130	2.31	20	
Surr: 4-Bromofluorobenzene	0.90		0.9615		93.1	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
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

eurofins | Environment Testing

Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Devon Energy | Work Order Number: 2311C31 | RcptNo: 1

Received By: Juan Rojas 11/28/2023 7:40:00 AM

Completed By: Tracy Casarrubias 11/28/2023 8:28:12 AM

Reviewed By: YM 11/28/23

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: SCM 11/28/23

Special Handling (if applicable)

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

Person Notified: Date:

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

Regarding:

Client Instructions: Mailing address,phone number and Email/Fax are missing on COC- TMC 11/28/23

16. Additional remarks:

Client did not relinquish chain of custody

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes	Morty		

Chain-of-Custody Record

Client: Devon
Direct Bill
Mailing Address:

Phone #:
email or Fax#:
QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush 5 Day
Project Name: Todd 36 D State #002
Project #: 23E-05197
Project Manager: Kent Stallings
Sampler: AH/BM
On Ice: ☑ Yes ☐ No
# of Coolers: 1
Cooler Temp (including CF): 1.1-0.1=1.0 (°C)

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2311C31	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
11-1-23	0900	Soil	BH23-20 0.0'	4oz	ICE	001	✓	✓					✓			
↓	0910	↓	BH23-20 2.0'	↓	↓	002	↓	↓					↓			
↓	0920	↓	BH23-21 0.0'	↓	↓	003	↓	↓					↓			
↓	0930	↓	BH23-21 2.0'	↓	↓	004	↓	↓					↓			
↓	0940	↓	BH23-22 0.0'	↓	↓	005	↓	↓					↓			
↓	0950	↓	BH23-22 2.0'	↓	↓	006	↓	↓					↓			
↓	1000	↓	BH23-23 0.0'	↓	↓	007	↓	↓					↓			
↓	1010	↓	BH23-23 2.0'	↓	↓	008	↓	↓					↓			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
			[signature]		11/27/23	930
11/27/23	1900	[signature]	[signature]	Courier	11/28/23	7:40

Remarks: CC: kstallings@vertex.ca
aharris@vertex.ca

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

eurofins | Environment Testing

Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 08, 2023

Kent Stallings

Vertex Resources Services, Inc.
3101 Boyd Drive
Carlsbad, NM 88220
TEL:
FAX:

RE: Todd 36 D State 002 OrderNo.: 2311C33

Dear Kent Stallings:

Eurofins Environment Testing South Central, LLC received 17 sample(s) on 11/28/2023 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 do not hesitate to contact Eurofins Albuquerque for any additional information or clarifications.

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2311C33**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-12 0'
Project: Todd 36 D State 002
Collection Date: 11/17/2023 9:00:00 AM
Lab ID: 2311C33-001 **Matrix:** SOIL
Received Date: 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	12/2/2023 7:05:36 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/2/2023 7:05:36 AM
Surr: DNOP	62.9	69-147	S	%Rec	1	12/2/2023 7:05:36 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/30/2023 3:52:00 AM
Surr: BFB	96.2	15-244		%Rec	1	11/30/2023 3:52:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	11/30/2023 3:52:00 AM
Toluene	ND	0.048		mg/Kg	1	11/30/2023 3:52:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/30/2023 3:52:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/30/2023 3:52:00 AM
Surr: 4-Bromofluorobenzene	91.9	39.1-146		%Rec	1	11/30/2023 3:52:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	89	60		mg/Kg	20	12/2/2023 11:54:13 AM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C33**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-12 2'
Project: Todd 36 D State 002
Collection Date: 11/17/2023 9:05:00 AM
Lab ID: 2311C33-002 **Matrix:** SOIL
Received Date: 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/2/2023 7:29:04 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/2/2023 7:29:04 AM
Surr: DNOP	121	69-147		%Rec	1	12/2/2023 7:29:04 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/30/2023 4:13:00 AM
Surr: BFB	98.3	15-244		%Rec	1	11/30/2023 4:13:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.025		mg/Kg	1	11/30/2023 4:13:00 AM
Toluene	ND	0.050		mg/Kg	1	11/30/2023 4:13:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/30/2023 4:13:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/30/2023 4:13:00 AM
Surr: 4-Bromofluorobenzene	92.0	39.1-146		%Rec	1	11/30/2023 4:13:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	270	60		mg/Kg	20	12/2/2023 1:09:59 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C33**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-13 0'
Project: Todd 36 D State 002
Collection Date: 11/17/2023 9:10:00 AM
Lab ID: 2311C33-003 **Matrix:** SOIL **Received Date:** 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	12/2/2023 7:52:36 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/2/2023 7:52:36 AM
Surr: DNOP	84.8	69-147		%Rec	1	12/2/2023 7:52:36 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/30/2023 4:35:00 AM
Surr: BFB	96.2	15-244		%Rec	1	11/30/2023 4:35:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.023		mg/Kg	1	11/30/2023 4:35:00 AM
Toluene	ND	0.046		mg/Kg	1	11/30/2023 4:35:00 AM
Ethylbenzene	ND	0.046		mg/Kg	1	11/30/2023 4:35:00 AM
Xylenes, Total	ND	0.092		mg/Kg	1	11/30/2023 4:35:00 AM
Surr: 4-Bromofluorobenzene	90.5	39.1-146		%Rec	1	11/30/2023 4:35:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	61		mg/Kg	20	12/2/2023 1:25:09 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C33**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-13 2'
Project: Todd 36 D State 002
Collection Date: 11/17/2023 9:15:00 AM
Lab ID: 2311C33-004 **Matrix:** SOIL **Received Date:** 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	12/2/2023 8:16:01 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/2/2023 8:16:01 AM
Surr: DNOP	118	69-147		%Rec	1	12/2/2023 8:16:01 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/30/2023 4:57:00 AM
Surr: BFB	95.1	15-244		%Rec	1	11/30/2023 4:57:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	11/30/2023 4:57:00 AM
Toluene	ND	0.048		mg/Kg	1	11/30/2023 4:57:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/30/2023 4:57:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/30/2023 4:57:00 AM
Surr: 4-Bromofluorobenzene	90.6	39.1-146		%Rec	1	11/30/2023 4:57:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	12/2/2023 1:42:52 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C33**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-14 0'
Project: Todd 36 D State 002
Collection Date: 11/17/2023 9:20:00 AM
Lab ID: 2311C33-005 **Matrix:** SOIL **Received Date:** 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/1/2023 5:23:51 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/1/2023 5:23:51 PM
Surr: DNOP	100	69-147		%Rec	1	12/1/2023 5:23:51 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/30/2023 5:18:00 AM
Surr: BFB	96.9	15-244		%Rec	1	11/30/2023 5:18:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	11/30/2023 5:18:00 AM
Toluene	ND	0.048		mg/Kg	1	11/30/2023 5:18:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/30/2023 5:18:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/30/2023 5:18:00 AM
Surr: 4-Bromofluorobenzene	90.9	39.1-146		%Rec	1	11/30/2023 5:18:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **RBC**
Chloride	ND	60		mg/Kg	20	12/2/2023 1:58:02 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C33**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-14 2'
Project: Todd 36 D State 002
Collection Date: 11/17/2023 9:25:00 AM
Lab ID: 2311C33-006 **Matrix:** SOIL **Received Date:** 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	12/1/2023 5:34:32 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/1/2023 5:34:32 PM
Surr: DNOP	107	69-147		%Rec	1	12/1/2023 5:34:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/30/2023 5:40:00 AM
Surr: BFB	98.6	15-244		%Rec	1	11/30/2023 5:40:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.023		mg/Kg	1	11/30/2023 5:40:00 AM
Toluene	ND	0.047		mg/Kg	1	11/30/2023 5:40:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/30/2023 5:40:00 AM
Xylenes, Total	ND	0.094		mg/Kg	1	11/30/2023 5:40:00 AM
Surr: 4-Bromofluorobenzene	92.4	39.1-146		%Rec	1	11/30/2023 5:40:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	12/1/2023 1:34:31 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C33**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-15 0'
Project: Todd 36 D State 002
Collection Date: 11/17/2023 9:50:00 AM
Lab ID: 2311C33-007 **Matrix:** SOIL **Received Date:** 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	2900	190		mg/Kg	20	12/1/2023 5:45:19 PM
Motor Oil Range Organics (MRO)	2100	970		mg/Kg	20	12/1/2023 5:45:19 PM
Surr: DNOP	0	69-147	S	%Rec	20	12/1/2023 5:45:19 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/30/2023 6:02:00 AM
Surr: BFB	96.3	15-244		%Rec	1	11/30/2023 6:02:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	11/30/2023 6:02:00 AM
Toluene	ND	0.048		mg/Kg	1	11/30/2023 6:02:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/30/2023 6:02:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/30/2023 6:02:00 AM
Surr: 4-Bromofluorobenzene	89.0	39.1-146		%Rec	1	11/30/2023 6:02:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	400	60		mg/Kg	20	12/1/2023 1:46:56 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C33**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-15 2'
Project: Todd 36 D State 002
Collection Date: 11/17/2023 9:55:00 AM
Lab ID: 2311C33-008 **Matrix:** SOIL **Received Date:** 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	140	9.8		mg/Kg	1	12/2/2023 9:43:08 PM
Motor Oil Range Organics (MRO)	310	49		mg/Kg	1	12/2/2023 9:43:08 PM
Surr: DNOP	124	69-147		%Rec	1	12/2/2023 9:43:08 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/30/2023 6:24:00 AM
Surr: BFB	96.9	15-244		%Rec	1	11/30/2023 6:24:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	11/30/2023 6:24:00 AM
Toluene	ND	0.048		mg/Kg	1	11/30/2023 6:24:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	11/30/2023 6:24:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	11/30/2023 6:24:00 AM
Surr: 4-Bromofluorobenzene	91.2	39.1-146		%Rec	1	11/30/2023 6:24:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	12/1/2023 2:24:08 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C33**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-15 4'
Project: Todd 36 D State 002
Collection Date: 11/17/2023 1:45:00 PM
Lab ID: 2311C33-009 **Matrix:** SOIL **Received Date:** 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/1/2023 7:05:35 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/1/2023 7:05:35 PM
Surr: DNOP	95.5	69-147		%Rec	1	12/1/2023 7:05:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/30/2023 6:45:00 AM
Surr: BFB	99.4	15-244		%Rec	1	11/30/2023 6:45:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.025		mg/Kg	1	11/30/2023 6:45:00 AM
Toluene	ND	0.050		mg/Kg	1	11/30/2023 6:45:00 AM
Ethylbenzene	ND	0.050		mg/Kg	1	11/30/2023 6:45:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	11/30/2023 6:45:00 AM
Surr: 4-Bromofluorobenzene	92.8	39.1-146		%Rec	1	11/30/2023 6:45:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	12/1/2023 3:01:22 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C33**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-16 0'
Project: Todd 36 D State 002
Collection Date: 11/17/2023 10:00:00 AM
Lab ID: 2311C33-010 **Matrix:** SOIL
Received Date: 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/1/2023 7:16:14 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/1/2023 7:16:14 PM
Surr: DNOP	87.2	69-147		%Rec	1	12/1/2023 7:16:14 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/30/2023 7:07:00 AM
Surr: BFB	98.6	15-244		%Rec	1	11/30/2023 7:07:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.024		mg/Kg	1	11/30/2023 7:07:00 AM
Toluene	ND	0.047		mg/Kg	1	11/30/2023 7:07:00 AM
Ethylbenzene	ND	0.047		mg/Kg	1	11/30/2023 7:07:00 AM
Xylenes, Total	ND	0.095		mg/Kg	1	11/30/2023 7:07:00 AM
Surr: 4-Bromofluorobenzene	92.2	39.1-146		%Rec	1	11/30/2023 7:07:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	12/1/2023 3:38:35 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C33**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-16 2'
Project: Todd 36 D State 002
Collection Date: 11/17/2023 10:05:00 AM
Lab ID: 2311C33-011 **Matrix:** SOIL
Received Date: 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	12/1/2023 10:22:07 AM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	12/1/2023 10:22:07 AM
Surr: DNOP	87.5	69-147		%Rec	1	12/1/2023 10:22:07 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/29/2023 8:20:38 PM
Surr: BFB	92.8	15-244		%Rec	1	11/29/2023 8:20:38 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/29/2023 8:20:38 PM
Toluene	ND	0.048		mg/Kg	1	11/29/2023 8:20:38 PM
Ethylbenzene	ND	0.048		mg/Kg	1	11/29/2023 8:20:38 PM
Xylenes, Total	ND	0.096		mg/Kg	1	11/29/2023 8:20:38 PM
Surr: 4-Bromofluorobenzene	92.9	39.1-146		%Rec	1	11/29/2023 8:20:38 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	12/1/2023 3:50:59 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C33**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-17 0'
Project: Todd 36 D State 002
Collection Date: 11/17/2023 10:10:00 AM
Lab ID: 2311C33-012 **Matrix:** SOIL
Received Date: 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/1/2023 10:46:40 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/1/2023 10:46:40 AM
Surr: DNOP	79.3	69-147		%Rec	1	12/1/2023 10:46:40 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/29/2023 8:44:05 PM
Surr: BFB	94.3	15-244		%Rec	1	11/29/2023 8:44:05 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	11/29/2023 8:44:05 PM
Toluene	ND	0.047		mg/Kg	1	11/29/2023 8:44:05 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/29/2023 8:44:05 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/29/2023 8:44:05 PM
Surr: 4-Bromofluorobenzene	95.5	39.1-146		%Rec	1	11/29/2023 8:44:05 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	12/1/2023 4:03:24 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C33**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-17 2'
Project: Todd 36 D State 002
Collection Date: 11/17/2023 10:15:00 AM
Lab ID: 2311C33-013 **Matrix:** SOIL
Received Date: 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/1/2023 12:48:38 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/1/2023 12:48:38 PM
Surr: DNOP	89.4	69-147		%Rec	1	12/1/2023 12:48:38 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/29/2023 9:07:30 PM
Surr: BFB	96.3	15-244		%Rec	1	11/29/2023 9:07:30 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	11/29/2023 9:07:30 PM
Toluene	ND	0.049		mg/Kg	1	11/29/2023 9:07:30 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/29/2023 9:07:30 PM
Xylenes, Total	ND	0.099		mg/Kg	1	11/29/2023 9:07:30 PM
Surr: 4-Bromofluorobenzene	98.0	39.1-146		%Rec	1	11/29/2023 9:07:30 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	12/1/2023 4:15:48 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C33**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-18 0'
Project: Todd 36 D State 002
Collection Date: 11/17/2023 10:20:00 AM
Lab ID: 2311C33-014 **Matrix:** SOIL **Received Date:** 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.2		mg/Kg	1	12/1/2023 1:12:55 PM
Motor Oil Range Organics (MRO)	ND	41		mg/Kg	1	12/1/2023 1:12:55 PM
Surr: DNOP	92.4	69-147		%Rec	1	12/1/2023 1:12:55 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/29/2023 9:30:58 PM
Surr: BFB	94.3	15-244		%Rec	1	11/29/2023 9:30:58 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/29/2023 9:30:58 PM
Toluene	ND	0.047		mg/Kg	1	11/29/2023 9:30:58 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/29/2023 9:30:58 PM
Xylenes, Total	ND	0.095		mg/Kg	1	11/29/2023 9:30:58 PM
Surr: 4-Bromofluorobenzene	95.5	39.1-146		%Rec	1	11/29/2023 9:30:58 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	12/1/2023 4:28:13 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C33**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-18 2'
Project: Todd 36 D State 002
Collection Date: 11/17/2023 10:25:00 AM
Lab ID: 2311C33-015 **Matrix:** SOIL
Received Date: 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	12/1/2023 1:37:23 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/1/2023 1:37:23 PM
Surr: DNOP	95.1	69-147		%Rec	1	12/1/2023 1:37:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/29/2023 9:54:21 PM
Surr: BFB	93.1	15-244		%Rec	1	11/29/2023 9:54:21 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.023		mg/Kg	1	11/29/2023 9:54:21 PM
Toluene	ND	0.046		mg/Kg	1	11/29/2023 9:54:21 PM
Ethylbenzene	ND	0.046		mg/Kg	1	11/29/2023 9:54:21 PM
Xylenes, Total	ND	0.092		mg/Kg	1	11/29/2023 9:54:21 PM
Surr: 4-Bromofluorobenzene	93.4	39.1-146		%Rec	1	11/29/2023 9:54:21 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	12/1/2023 4:40:38 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C33**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-19 0'
Project: Todd 36 D State 002
Collection Date: 11/17/2023 10:30:00 AM
Lab ID: 2311C33-016 **Matrix:** SOIL
Received Date: 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	12/1/2023 2:01:43 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	12/1/2023 2:01:43 PM
Surr: DNOP	93.2	69-147		%Rec	1	12/1/2023 2:01:43 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/29/2023 10:17:47 PM
Surr: BFB	97.1	15-244		%Rec	1	11/29/2023 10:17:47 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/29/2023 10:17:47 PM
Toluene	ND	0.049		mg/Kg	1	11/29/2023 10:17:47 PM
Ethylbenzene	ND	0.049		mg/Kg	1	11/29/2023 10:17:47 PM
Xylenes, Total	ND	0.098		mg/Kg	1	11/29/2023 10:17:47 PM
Surr: 4-Bromofluorobenzene	97.3	39.1-146		%Rec	1	11/29/2023 10:17:47 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	12/1/2023 4:53:02 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2311C33**
Date Reported: **12/8/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Vertex Resources Services, Inc.
Client Sample ID: BH23-19 2'
Project: Todd 36 D State 002
Collection Date: 11/17/2023 10:35:00 AM
Lab ID: 2311C33-017 **Matrix:** SOIL
Received Date: 11/28/2023 7:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	12/1/2023 2:26:16 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	12/1/2023 2:26:16 PM
Surr: DNOP	93.3	69-147		%Rec	1	12/1/2023 2:26:16 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/29/2023 10:41:08 PM
Surr: BFB	95.1	15-244		%Rec	1	11/29/2023 10:41:08 PM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	11/29/2023 10:41:08 PM
Toluene	ND	0.047		mg/Kg	1	11/29/2023 10:41:08 PM
Ethylbenzene	ND	0.047		mg/Kg	1	11/29/2023 10:41:08 PM
Xylenes, Total	ND	0.094		mg/Kg	1	11/29/2023 10:41:08 PM
Surr: 4-Bromofluorobenzene	95.6	39.1-146		%Rec	1	11/29/2023 10:41:08 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	12/1/2023 5:05:28 PM

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311C33**

08-Dec-23

Client: Vertex Resources Services, Inc.

Project: Todd 36 D State 002

Sample ID: **MB-79100** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **79100** RunNo: **101545**
Prep Date: **12/1/2023** Analysis Date: **12/1/2023** SeqNo: **3738624** Units: **mg/Kg**

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

Sample ID: **LCS-79100** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **79100** RunNo: **101545**
Prep Date: **12/1/2023** Analysis Date: **12/1/2023** SeqNo: **3738625** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.1	90	110			

Sample ID: **MB-79099** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **79099** RunNo: **101539**
Prep Date: **12/1/2023** Analysis Date: **12/1/2023** SeqNo: **3739558** Units: **mg/Kg**

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

Sample ID: **LCS-79099** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **79099** RunNo: **101539**
Prep Date: **12/1/2023** Analysis Date: **12/1/2023** SeqNo: **3739559** Units: **mg/Kg**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311C33**

08-Dec-23

Client: Vertex Resources Services, Inc.

Project: Todd 36 D State 002

Sample ID: **LCS-79082** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **79082** RunNo: **101534**
Prep Date: **11/30/2023** Analysis Date: **12/1/2023** SeqNo: **3738243** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	61.9	130			
Surr: DNOP	4.7		5.000		94.3	69	147			

Sample ID: **MB-79082** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **79082** RunNo: **101534**
Prep Date: **11/30/2023** Analysis Date: **12/1/2023** SeqNo: **3738245** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		101	69	147			

Sample ID: **MB-79089** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **79089** RunNo: **101553**
Prep Date: **11/30/2023** Analysis Date: **12/1/2023** SeqNo: **3738961** 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	11		10.00		111	69	147			

Sample ID: **LCS-79089** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **79089** RunNo: **101553**
Prep Date: **11/30/2023** Analysis Date: **12/1/2023** SeqNo: **3738962** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	10	50.00	0	112	61.9	130			
Surr: DNOP	5.2		5.000		104	69	147			

Sample ID: **MB-79081** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **79081** RunNo: **101555**
Prep Date: **11/30/2023** Analysis Date: **12/2/2023** SeqNo: **3739049** 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	11		10.00		113	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311C33**

08-Dec-23

Client: Vertex Resources Services, Inc.

Project: Todd 36 D State 002

Sample ID: **LCS-79081**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **79081**	RunNo: **101555**
Prep Date: **11/30/2023**	Analysis Date: **12/2/2023**	SeqNo: **3739050** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	106	61.9	130			
Surr: DNOP	5.3		5.000		106	69	147			

Sample ID: **MB-79120**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **79120**	RunNo: **101583**
Prep Date: **12/4/2023**	Analysis Date: **12/4/2023**	SeqNo: **3740818** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		102	69	147			

Sample ID: **LCS-79120**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **79120**	RunNo: **101583**
Prep Date: **12/4/2023**	Analysis Date: **12/4/2023**	SeqNo: **3740819** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.2		5.000		104	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311C33**

08-Dec-23

Client: Vertex Resources Services, Inc.

Project: Todd 36 D State 002

Sample ID: **lcs-79033**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **79033**	RunNo: **101468**
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735523** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.7	70	130			
Surr: BFB	2000		1000		202	15	244			

Sample ID: **mb-79033**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **79033**	RunNo: **101468**
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735524** 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	940		1000		94.4	15	244			

Sample ID: **2311c33-011ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-16 2'**	Batch ID: **79033**	RunNo: **101468**
Prep Date: **11/28/2023**	Analysis Date: **11/30/2023**	SeqNo: **3735541** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.8	23.99	0	95.9	70	130			
Surr: BFB	2000		959.7		210	15	244			

Sample ID: **2311c33-011amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH23-16 2'**	Batch ID: **79033**	RunNo: **101468**
Prep Date: **11/28/2023**	Analysis Date: **11/30/2023**	SeqNo: **3735543** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.8	24.04	0	92.2	70	130	3.72	20	
Surr: BFB	1900		961.5		203	15	244	0	0	

Sample ID: **lcs-79027**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **79027**	RunNo: **101489**
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735705** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	86.2	70	130			
Surr: BFB	2100		1000		210	15	244			

Sample ID: **mb-79027**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **79027**	RunNo: **101489**
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735706** Units: **mg/Kg**

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311C33**

08-Dec-23

Client: Vertex Resources Services, Inc.

Project: Todd 36 D State 002

Sample ID: **mb-79027**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **79027**	RunNo: **101489**
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735706** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	980		1000		98.2	15	244			

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311C33**

08-Dec-23

Client: Vertex Resources Services, Inc.

Project: Todd 36 D State 002

Sample ID: **LCS-79033**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **79033**	RunNo: **101468**
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735623** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	94.2	70	130			
Toluene	0.95	0.050	1.000	0	94.8	70	130			
Ethylbenzene	0.95	0.050	1.000	0	95.1	70	130			
Xylenes, Total	2.9	0.10	3.000	0	96.0	70	130			
Surr: 4-Bromofluorobenzene	1.0		1.000		99.8	39.1	146			

Sample ID: **mb-79033**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **79033**	RunNo: **101468**
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735624** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		94.6	39.1	146			

Sample ID: **2311c33-012ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-17 0'**	Batch ID: **79033**	RunNo: **101468**
Prep Date: **11/28/2023**	Analysis Date: **11/30/2023**	SeqNo: **3735627** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.023	0.9372	0	105	70	130			
Toluene	1.0	0.047	0.9372	0	107	70	130			
Ethylbenzene	1.0	0.047	0.9372	0	107	70	130			
Xylenes, Total	3.0	0.094	2.812	0	107	70	130			
Surr: 4-Bromofluorobenzene	0.91		0.9372		97.3	39.1	146			

Sample ID: **2311c33-012amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH23-17 0'**	Batch ID: **79033**	RunNo: **101468**
Prep Date: **11/28/2023**	Analysis Date: **11/30/2023**	SeqNo: **3735628** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.023	0.9320	0	97.6	70	130	8.05	20	
Toluene	0.92	0.047	0.9320	0	98.6	70	130	8.61	20	
Ethylbenzene	0.93	0.047	0.9320	0	99.6	70	130	8.10	20	
Xylenes, Total	2.8	0.093	2.796	0	100	70	130	7.27	20	
Surr: 4-Bromofluorobenzene	0.87		0.9320		93.1	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
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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2311C33**

08-Dec-23

Client: Vertex Resources Services, Inc.

Project: Todd 36 D State 002

Sample ID: **lcs-79027**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **79027**	RunNo: **101489**
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735851** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	94.8	70	130			
Toluene	0.95	0.050	1.000	0	95.4	70	130			
Ethylbenzene	0.97	0.050	1.000	0	96.9	70	130			
Xylenes, Total	2.9	0.10	3.000	0	96.7	70	130			
Surr: 4-Bromofluorobenzene	0.96		1.000		95.6	39.1	146			

Sample ID: **mb-79027**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **79027**	RunNo: **101489**
Prep Date: **11/28/2023**	Analysis Date: **11/29/2023**	SeqNo: **3735852** 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	0.93		1.000		93.4	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

eurofins Environment Testing

Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Vertex Resources Work Order Number: 2311C33 RcptNo: 1

Received By: Juan Rojas 11/28/2023 7:40:00 AM

Completed By: Tracy Casarrubias 11/28/2023 8:32:51 AM

Reviewed By: TMC 11/28/23

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: SCM 11/28/23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: Mailing address,phone number and Email/Fax are missing on COC- TMC 11/28/23

16. Additional remarks:

Tme of client's relinquish signature does not match drivers

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0	Good	Yes	Morty		

Chain-of-Custody Record

Client: Vertex

Mailing Address: On File

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
■ Standard ☒ Rush 5 day

Project Name: Todd 36 D State #002

Project #: 23E-05197

Project Manager: Kent Stallings

Sampler: Austin Harris/Bryce Mortimer

On Ice: ☒ Yes ☐ No

# of Coolers: 1 Monty

Cooler Temp(including CF): 0.4+0.1=0.5 (°C)

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

Analysis Request

Date	Time	Matrix	Sample Name		Container Type and #	Preservative Type	HEAL No. 2311C33
11.17.23	9:00	Soil	BH23-12	0'	4oz jar	Ice	001
	9:05		BH23-12	2'			002
	9:10		BH23-13	0'			003
	9:15		BH23-13	2'			004
	9:20		BH23-14	0'			005
	9:25		BH23-14	2'			006
	9:50		BH23-15	0'			007
	9:55		BH23-15	2'			008
	13:45		BH23-15	4'			009
	10:00		BH23-16	0'			010
	10:05		BH23-16	2'			011
	10:10		BH23-17	0'			012

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

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
11.17.23		Bryce Mortimer				
11/27/23	900			courier	11/28/23	7:40

Remarks: Devon Energy Corporation

cc KStallings@vertex.ca, AHarris@vertex.ca

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

Chain-of-Custody Record

Client: Vertex

Mailing Address: On file

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
■ Standard ☒ Rush 5 Day

Project Name: Todd 36 D State #002

Project #: 23E-05197

Project Manager: Kent Stallings

Sampler: Austin Harris / Bryce Mortimer

On Ice: ☐ Yes ☐ No

# of Coolers: 1 Marty

Cooler Temp (including CF): 0.1-0.1=0 (°C)

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2311C33	BTEX / MTBE / TMB's (8021)	TPH:8015D GRO / DRO / MRO	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
11.17.23	10:15	Soil	BH23-17 2'	4oz jar	Ice	013	✓	✓					✓			
	10:20		BH23-18 0'			014										
	10:25		BH23-18 2'			015										
	10:30		BH23-19 0'			016										
↓	10:35	↓	BH23-19 2'	↓	↓	017	↓	↓					↓			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
11.17.23		Bryce Mortimer	[illegible]		11/27/23	930
11/27/23	1900	[illegible]	[illegible]	courier	11/28/23	7:40

Remarks: Devon Energy Corporation

cc KStallings@vertex.ca, AHarris@vertex.ca

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

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Kent Stallings
Vertex
3101 Boyd Dr
Carlsbad, New Mexico 88220

Generated 4/12/2024 7:39:25 AM

JOB DESCRIPTION

Todd 36 D State #002

JOB NUMBER

885-2488-1

Eurofins Albuquerque
4901 Hawkins NE
Albuquerque NM 87109

See page two for job notes and contact information.

Eurofins Albuquerque

Job Notes

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

Authorization

Generated
4/12/2024 7:39:25 AM

Authorized for release by
Andy Freeman, Business Unit Manager
andy.freeman@et.eurofinsus.com
(505)345-3975

Client: Vertex
Project/Site: Todd 36 D State #002

Laboratory Job ID: 885-2488-1

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Definitions/Glossary

Client: Vertex Job ID: 885-2488-1
Project/Site: Todd 36 D State #002

Glossary

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

Case Narrative

Client: Vertex
Project: Todd 36 D State #002

Job ID: 885-2488-1

Job ID: 885-2488-1 Eurofins Albuquerque

Job Narrative
885-2488-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 4/6/2024 11:37 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.4°C.

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

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

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

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

Client Sample Results

Client: Vertex
Project/Site: Todd 36 D State #002

Job ID: 885-2488-1

Client Sample ID: BH24-24 0'
Date Collected: 04/04/24 09:50
Date Received: 04/06/24 11:37

Lab Sample ID: 885-2488-1
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		4.8		mg/Kg		04/08/24 15:32	04/10/24 14:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*15 - 244*	*04/08/24 15:32*	*04/10/24 14:51*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.024		mg/Kg		04/08/24 15:32	04/10/24 14:51	1
Ethylbenzene	ND		0.048		mg/Kg		04/08/24 15:32	04/10/24 14:51	1
Toluene	ND		0.048		mg/Kg		04/08/24 15:32	04/10/24 14:51	1
Xylenes, Total	ND		0.095		mg/Kg		04/08/24 15:32	04/10/24 14:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*39 - 146*	*04/08/24 15:32*	*04/10/24 14:51*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		8.9		mg/Kg		04/09/24 13:09	04/10/24 16:09	1
Motor Oil Range Organics [C28-C40]	ND		45		mg/Kg		04/09/24 13:09	04/10/24 16:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*108*		*62 - 134*	*04/09/24 13:09*	*04/10/24 16:09*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	15		5.0		mg/Kg			04/11/24 06:12	1

Client Sample Results

Client: Vertex
Project/Site: Todd 36 D State #002

Job ID: 885-2488-1

Client Sample ID: BH24-24 2'
Date Collected: 04/04/24 09:55
Date Received: 04/06/24 11:37

Lab Sample ID: 885-2488-2
Matrix: Solid

Method: SW846 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0		mg/Kg		04/08/24 15:32	04/10/24 15:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*15 - 244*	*04/08/24 15:32*	*04/10/24 15:14*	*1*

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		04/08/24 15:32	04/10/24 15:14	1
Ethylbenzene	ND		0.050		mg/Kg		04/08/24 15:32	04/10/24 15:14	1
Toluene	ND		0.050		mg/Kg		04/08/24 15:32	04/10/24 15:14	1
Xylenes, Total	ND		0.10		mg/Kg		04/08/24 15:32	04/10/24 15:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*39 - 146*	*04/08/24 15:32*	*04/10/24 15:14*	*1*

Method: SW846 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**11**		9.7		mg/Kg		04/09/24 13:09	04/10/24 16:21	1
Motor Oil Range Organics [C28-C40]	ND		48		mg/Kg		04/09/24 13:09	04/10/24 16:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*98*		*62 - 134*	*04/09/24 13:09*	*04/10/24 16:21*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**15**		5.0		mg/Kg			04/11/24 06:19	1

QC Sample Results

Client: Vertex
Project/Site: Todd 36 D State #002

Job ID: 885-2488-1

Method: 8015D - Gasoline Range Organics (GRO) (GC)

Lab Sample ID: MB 885-2924/1-A
Matrix: Solid
Analysis Batch: 3090

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 2924

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics [C6 - C10]	ND		5.0		mg/Kg		04/08/24 15:32	04/10/24 11:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*15 - 244*	*04/08/24 15:32*	*04/10/24 11:19*	*1*

Lab Sample ID: LCS 885-2924/2-A
Matrix: Solid
Analysis Batch: 3090

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 2924

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics [C6 - C10]			25.0	25.5		mg/Kg		102	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*204*		*15 - 244*

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 885-2924/1-A
Matrix: Solid
Analysis Batch: 3091

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 2924

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.025		mg/Kg		04/08/24 15:32	04/10/24 11:19	1
Ethylbenzene	ND		0.050		mg/Kg		04/08/24 15:32	04/10/24 11:19	1
Toluene	ND		0.050		mg/Kg		04/08/24 15:32	04/10/24 11:19	1
Xylenes, Total	ND		0.10		mg/Kg		04/08/24 15:32	04/10/24 11:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*39 - 146*	*04/08/24 15:32*	*04/10/24 11:19*	*1*

Lab Sample ID: LCS 885-2924/3-A
Matrix: Solid
Analysis Batch: 3091

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 2924

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			1.00	0.786		mg/Kg		79	70 - 130		
Ethylbenzene			1.00	0.804		mg/Kg		80	70 - 130		
Toluene			1.00	0.795		mg/Kg		80	70 - 130		
Xylenes, Total			3.00	2.44		mg/Kg		81	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*88*		*39 - 146*

QC Sample Results

Client: Vertex
Project/Site: Todd 36 D State #002

Job ID: 885-2488-1

Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 885-2975/1-A
Matrix: Solid
Analysis Batch: 3129

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 2975

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		10		mg/Kg		04/09/24 13:09	04/10/24 11:23	1
Motor Oil Range Organics [C28-C40]	ND		50		mg/Kg		04/09/24 13:09	04/10/24 11:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Di-n-octyl phthalate (Surr)	*117*		*62 - 134*	*04/09/24 13:09*	*04/10/24 11:23*	*1*

Lab Sample ID: LCS 885-2975/2-A
Matrix: Solid
Analysis Batch: 3129

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 2975

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Diesel Range Organics [C10-C28]			50.0	53.5		mg/Kg		107	60 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Di-n-octyl phthalate (Surr)	*124*		*62 - 134*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-77847/1-A
Matrix: Solid
Analysis Batch: 77873

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		5.0		mg/Kg			04/11/24 03:09	1

Lab Sample ID: LCS 880-77847/2-A
Matrix: Solid
Analysis Batch: 77873

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	254		mg/Kg		102	90 - 110		

Lab Sample ID: LCSD 880-77847/3-A
Matrix: Solid
Analysis Batch: 77873

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	254		mg/Kg		102	90 - 110	0	20

QC Association Summary

Client: Vertex
Project/Site: Todd 36 D State #002

Job ID: 885-2488-1

GC VOA

Prep Batch: 2924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-2488-1	BH24-24 0'	Total/NA	Solid	5030C	
885-2488-2	BH24-24 2'	Total/NA	Solid	5030C	
MB 885-2924/1-A	Method Blank	Total/NA	Solid	5030C	
LCS 885-2924/2-A	Lab Control Sample	Total/NA	Solid	5030C	
LCS 885-2924/3-A	Lab Control Sample	Total/NA	Solid	5030C	

Analysis Batch: 3090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-2488-1	BH24-24 0'	Total/NA	Solid	8015D	2924
885-2488-2	BH24-24 2'	Total/NA	Solid	8015D	2924
MB 885-2924/1-A	Method Blank	Total/NA	Solid	8015D	2924
LCS 885-2924/2-A	Lab Control Sample	Total/NA	Solid	8015D	2924

Analysis Batch: 3091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-2488-1	BH24-24 0'	Total/NA	Solid	8021B	2924
885-2488-2	BH24-24 2'	Total/NA	Solid	8021B	2924
MB 885-2924/1-A	Method Blank	Total/NA	Solid	8021B	2924
LCS 885-2924/3-A	Lab Control Sample	Total/NA	Solid	8021B	2924

GC Semi VOA

Prep Batch: 2975

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-2488-1	BH24-24 0'	Total/NA	Solid	SHAKE	
885-2488-2	BH24-24 2'	Total/NA	Solid	SHAKE	
MB 885-2975/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 885-2975/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

Analysis Batch: 3129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-2488-1	BH24-24 0'	Total/NA	Solid	8015D	2975
885-2488-2	BH24-24 2'	Total/NA	Solid	8015D	2975
MB 885-2975/1-A	Method Blank	Total/NA	Solid	8015D	2975
LCS 885-2975/2-A	Lab Control Sample	Total/NA	Solid	8015D	2975

HPLC/IC

Leach Batch: 77847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-2488-1	BH24-24 0'	Soluble	Solid	DI Leach	
885-2488-2	BH24-24 2'	Soluble	Solid	DI Leach	
MB 880-77847/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-77847/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-77847/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 77873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-2488-1	BH24-24 0'	Soluble	Solid	300.0	77847
885-2488-2	BH24-24 2'	Soluble	Solid	300.0	77847
MB 880-77847/1-A	Method Blank	Soluble	Solid	300.0	77847
LCS 880-77847/2-A	Lab Control Sample	Soluble	Solid	300.0	77847

QC Association Summary

Client: Vertex
Project/Site: Todd 36 D State #002

Job ID: 885-2488-1

HPLC/IC (Continued)

Analysis Batch: 77873 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-77847/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	77847

Lab Chronicle

Client: Vertex
Job ID: 885-2488-1
Project/Site: Todd 36 D State #002

Client Sample ID: BH24-24 0'
Lab Sample ID: 885-2488-1
Date Collected: 04/04/24 09:50
Matrix: Solid
Date Received: 04/06/24 11:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2924	JP	EET ALB	04/08/24 15:32
Total/NA	Analysis	8015D		1	3090	JP	EET ALB	04/10/24 14:51
Total/NA	Prep	5030C			2924	JP	EET ALB	04/08/24 15:32
Total/NA	Analysis	8021B		1	3091	JP	EET ALB	04/10/24 14:51
Total/NA	Prep	SHAKE			2975	PD	EET ALB	04/09/24 13:09
Total/NA	Analysis	8015D		1	3129	JU	EET ALB	04/10/24 16:09
Soluble	Leach	DI Leach			77847	SA	EET MID	04/10/24 14:45
Soluble	Analysis	300.0		1	77873	SMC	EET MID	04/11/24 06:12

Client Sample ID: BH24-24 2'
Lab Sample ID: 885-2488-2
Date Collected: 04/04/24 09:55
Matrix: Solid
Date Received: 04/06/24 11:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5030C			2924	JP	EET ALB	04/08/24 15:32
Total/NA	Analysis	8015D		1	3090	JP	EET ALB	04/10/24 15:14
Total/NA	Prep	5030C			2924	JP	EET ALB	04/08/24 15:32
Total/NA	Analysis	8021B		1	3091	JP	EET ALB	04/10/24 15:14
Total/NA	Prep	SHAKE			2975	PD	EET ALB	04/09/24 13:09
Total/NA	Analysis	8015D		1	3129	JU	EET ALB	04/10/24 16:21
Soluble	Leach	DI Leach			77847	SA	EET MID	04/10/24 14:45
Soluble	Analysis	300.0		1	77873	SMC	EET MID	04/11/24 06:19

Laboratory References:
EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Vertex Job ID: 885-2488-1
Project/Site: Todd 36 D State #002

Laboratory: Eurofins Albuquerque

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

Authority	Program	Identification Number	Expiration Date
New Mexico	State	NM9425, NM0901	02-26-25

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

Analysis Method	Prep Method	Matrix	Analyte
8015D	5030C	Solid	Gasoline Range Organics [C6 - C10]
8015D	SHAKE	Solid	Diesel Range Organics [C10-C28]
8015D	SHAKE	Solid	Motor Oil Range Organics [C28-C40]
8021B	5030C	Solid	Benzene
8021B	5030C	Solid	Ethylbenzene
8021B	5030C	Solid	Toluene
8021B	5030C	Solid	Xylenes, Total

Oregon	NELAP	NM100001	02-26-25

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

Analysis Method	Prep Method	Matrix	Analyte
8015D	5030C	Solid	Gasoline Range Organics [C6 - C10]
8015D	SHAKE	Solid	Diesel Range Organics [C10-C28]
8015D	SHAKE	Solid	Motor Oil Range Organics [C28-C40]
8021B	5030C	Solid	Benzene
8021B	5030C	Solid	Ethylbenzene
8021B	5030C	Solid	Toluene
8021B	5030C	Solid	Xylenes, Total

Laboratory: Eurofins Midland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

Chain-of-Custody Record

Client: Vertex/Devon

Mailing Address: On file

Phone #:

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☑ Standard ☐ Rush 5 Day

Project Name: Todd 36 D State #002

Project #: 23E-05197

Project Manager: Kent Stallings

Sampler: SM

On Ice: ☒ Yes ☐ No morty

# of Coolers: 1

Cooler Temp (Including CF): 1.4 ± 0 = 1.4 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 871

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

885-2488 COC

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)						
4/4/24	9:50	Soil	BH24-24 0'	4oz jar	Ice	1	✓	✓					✓									
↓	9:55	↓	BH24-24 2'	↓	↓	2	✓	✓					✓									

Date	Time	Relinquished by	Received by	Via	Date	Time
4/5/24	7:45	Steph McCarty	[signature]		4/5/24	745
4/5/24	1900	[signature]	[signature]	courier	4/6/24	11:37

Remarks: Direct bill to Devon (wo#: 1006092001)

c.c. KStallings@vertex.ca

smccarty@vertex.ca

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

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4/12/2024

Chain-of-Custody Record

Client: Vertex (XTO)

Mailing Address: On File

Phone #: On File

email or Fax#: Scartter@vertex.ca

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

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

Turn-Around Time:
☑ Standard ☑ Rush 5 Day

Project Name: Mis Amigos

Project #: 23E-05219

Project Manager: Sally Carttar

Sampler: Wyatt Wadleigh
On Ice: ☑ Yes ☐ No mostly
# of Coolers: 1
Cooler Temp(including CF): 1.4 +0 = 1.4 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 8710
Tel. 505-345-3975 Fax 505-345-4107

885-2487 COC

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
04/03/24	10:00	Soil	BES24-26 1ft	1, 4oz jar		1	X	X					X			
04/03/24	10:15	Soil	BES24-27 1ft	1, 4oz jar		2	X	X					X			
~~04/03/24~~	~~10:30~~	~~Soil~~	~~BES24-28 1ft~~	~~1, 4oz jar~~			~~X~~	~~X~~					~~X~~			
04/03/24	10:45	Soil	BES24-29 1 ft	1, 4oz jar			X	X					X			
~~04/03/24~~	~~11:00~~	~~Soil~~	~~BES24-30 1 ft~~	~~1, 4oz jar~~			~~X~~	~~X~~					~~X~~			
~~04/03/24~~	~~11:15~~	~~Soil~~	~~BES24-31 1ft~~	~~1, 4oz jar~~			~~X~~	~~X~~					~~X~~			
04/03/24	11:30	Soil	BES24-32 1 ft	1, 4oz jar			X	X					X			
~~04/03/24~~	11:45	Soil	~~BES24-33 1ft~~	~~1, 4oz jar~~			X	X					X			
04/03/24	12:00	Soil	BES24-34 1 ft	1, 4oz jar		3	X	X					X			
~~04/03/24~~	~~12:15~~	~~Soil~~	~~BES24-35 1 ft~~	~~1, 4oz jar~~			~~X~~	~~X~~					~~X~~			
04/03/24	12:30	Soil	BES24-36 1 ft	1, 4oz jar		4	X	X					X			
04/03/24	12:45	Soil	WES24-05 1 ft	1, 4oz jar		5	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
		Wyatt Wadleigh			4/5/24	745
4/5/24	930			courier	4/6/24	11:37

Remarks: Please CC wwadleigh@vertex.ca
Cost center Number: ~~1055621001~~
1055621001

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

Chain-of-Custody Record

Client Vertex (XTO)

Mailing Address On File

Phone # On File

email or Fax# Scartter@vertex.ca

QA/QC Package

☐ Standard ☐ Level 4 (Full Validation)

Accreditation ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time

☑ Standard ☑ Rush 5 Day

Project Name Mis Amigos

Project # 23E-05219

Project Manager Sally Carttar

Sampler Wyatt Wadleigh

On Ice: ☑ Yes ☐ No many

# of Coolers: 1

Cooler Temp(Including CF): 1.4+0=1.4 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www hallenvironmental com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH 8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504 1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)					
04/03/24	13 00	Soil	WES24-06 1ft	1, 4oz jar		1	X	X					X								
04/03/24	13 15	Soil	WES24-07 1 ft	1, 4oz jar		2	X	X					X								
04/03/24	13 30	Soil	WES24-11 1 ft	1, 4oz jar		3	X	X					X								

Date	Time	Relinquished by	Received by	Via	Date	Time
		Wyatt Wadleigh				
4/5/24	1900			courier	4/6/24	11:37

Remarks Please CC wwadleigh@vertex ca

Cost center Number 10556 21001

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

Login Sample Receipt Checklist

Client: Vertex Job Number: 885-2488-1

Login Number: 2488 **List Source: Eurofins Albuquerque**
List Number: 1
Creator: Casarrubias, Tracy

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

Login Sample Receipt Checklist

Client: Vertex Job Number: 885-2488-1

Login Number: 2488
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 04/10/24 01:43 PM

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

ATTACHMENT 3

Closure Criteria Determination			
Site Name: Todd 36 D State #002			
Spill Coordinates: 32.2672234, -103.7389755		X: 618767.96	Y: 3570753.80
Site Specific Conditions		Value	Unit
1	Depth to Groundwater (nearest reference)	**>55**	feet
	Distance between release and nearest DTGW reference	**1,837**	feet
		0.35	miles
	Date of nearest DTGW reference measurement	**February 6, 2024**	
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	22,257	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	25,472	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	30,858	feet
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, **or**	3,816	feet
	ii) Within 1000 feet of any fresh water well or spring	-	feet
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)
7	Within 300 feet of a wetland	13,590	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
	Distance between release and nearest registered mine	**54,524**	feet
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low
	Distance between release and nearest unstable area	34,780	feet
10	Within a 100-year Floodplain	>500	year
	Distance between release and nearest FEMA Zone A (100-year Floodplain)	**31,153**	feet
11	Soil Type	Kermit-Berino fine sands	
12	Ecological Classification	Deep sand	
13	Geology	Qep	
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	51-100'	<50' 51-100' >100'

OSE Wells 0.5 mile

4/1/2024, 10:07:52 AM

Override 1

GIS WATERS PODs

Active

Pending

Plugged

OSE District Boundary

Water Right Regulations

Closure Area

Artesian Planning Area

New Mexico State Trust Lands

Subsurface Estate

Both Estates

1:18,056

0 0.17 0.35 0.7 mi

0 0.28 0.55 1.1 km

Esri, HERE, iPC, Esri, HERE, Garmin, iPC, Maxar

Online web user

This is an unofficial map from the OSE's online application.

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

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 04790 POD1		CUB	ED	4	4	3	25	23S	31E	619309	3570904	562	55		
C 02348		C	ED	1	4	3	26	23S	31E	617648	3571068	1163	700	430	270
C 02258		C	ED		3	2	26	23S	31E	618055	3571853*	1310	662		
C 04746 POD1		CUB	ED	3	4	3	36	23S	31E	619226	3569417	1412	105		
C 04712 POD1		CUB	LE	1	4	1	31	23S	32E	620917	3570289	2198	55		
C 02405		CUB	ED		4	1	02	24S	31E	617690	3568631*	2380	275	160	115
C 02464		C	ED	2	3	1	02	24S	31E	617645	3568581	2445	320	205	115
C 04672 POD 1		CUB	ED	2	1	4	01	24S	31E	619762	3568286	2660	110		
C 02460		C	ED			3	02	24S	31E	617496	3568022*	3013	320		
C 02460 POD2		C	ED			3	02	24S	31E	617496	3568022*	3013	320		
C 04774 POD1		CUB	ED	4	2	2	23	23S	31E	618456	3573856	3118	105		
C 04712 POD3		CUB	ED	4	1	2	24	23S	31E	619651	3573877	3246	55		
C 04712 POD4		CUB	ED	1	4	3	14	23S	31E	617535	3574316	3769	55		
C 03529 POD1		C	LE	2	4	3	29	23S	32E	622651	3571212	3910	550		
C 04775 POD1		CUB	LE	4	4	4	06	24S	32E	621789	3567860	4183	105		
C 03555 POD1		C	LE	2	2	1	05	24S	32E	622748	3569233	4260	600	380	220
C 04687 POD1		CUB	ED	4	2	3	12	24S	31E	619481	3566450	4362	110		
C 03851 POD1		CUB	LE	3	3	4	20	23S	32E	622880	3572660	4532	1392	713	679
C 04704 POD1		CUB	ED	3	2	2	13	23S	31E	619854	3575363	4735			
C 02440		C	ED		2	3	10	24S	31E	616103	3566599*	4936	350		

Average Depth to Water: **377 feet**
Minimum Depth: **160 feet**
Maximum Depth: **713 feet**

Record Count: 20

UTMNAD83 Radius Search (in meters):

Easting (X): 618767.96 **Northing (Y):** 3570753.8 **Radius:** 5000

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

New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
NA	C 04790 POD1	4	4	3	25	23S	31E	619309	3570904

Driller License: 1833 **Driller Company:** VISION RESOURCES, INC

Driller Name: JASON MALEY

Drill Start Date:	02/06/2024	**Drill Finish Date:**	02/06/2024	**Plug Date:**	02/10/2024
Log File Date:	02/26/2024	**PCW Rcv Date:**		**Source:**	
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	2.00	**Depth Well:**	55 feet	**Depth Water:**	

New Mexico Office of the State Engineer
Water Right Summary

get image list

WR File Number: C 04790 **Subbasin:** CUB **Cross Reference:** -

Primary Purpose: MON MONITORING WELL

Primary Status: PMT PERMIT

Total Acres: **Subfile:** - **Header:** -

Total Diversion: 0 **Cause/Case:** -

Owner: DEVON ENERGY RESOURCES

Contact: DALE WOODALL

Documents on File

	Trn #	Doc	File/Act	Status 1	Status 2	Transaction Desc.	From/ To	Acres	Diversion	Consumptive
get images	753931	EXPL	2023-12-11	PMT	APR	C 04790 POD1	T	0	0	

Current Points of Diversion

(NAD83 UTM in meters)

POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
C 04790 POD1	NA		4	4	3	25	23S	31E	619309	3570904	

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
C4790-POD1	C4790	C04790

WELL OWNER NAME(S)	PHONE (OPTIONAL)
Devon Energy Resources	

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
205 E Bender Road #150	Hobbs	NM	88240

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	16	6.708	N
	LONGITUDE	-103	43	59.556	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1833	Jason Maley	Vision Resources

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
2-6-24	2-6-24	55'	55'	Dry

COMPLETED WELL IS: ☐ ARTESIAN *add Centralizer info below ☑ DRY HOLE ☐ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 0'

DATE STATIC MEASURED: 2-10-24

DRILLING FLUID: ☑ AIR ☐ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

CHECK HERE IF PITLESS ADAPTER IS INSTALLED ☐

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	45'	6"	2" PVC SCH40	Thread	2"	SCH40	N/A
45'	55'	6"	2" PVC SCH40	Thread	2"	SCH40	.02

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL *(if using Centralizers for Artesian wells- indicate the spacing below)	AMOUNT (cubic feet)	METHOD OF PLACEMENT
			None Pulled and plugged		

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 09/22/2022)

FILE NO.	POD NO.	TRN NO.	
LOCATION		WELL TAG ID NO.	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	40'	40'	Red dirt with small rocks	Y ✓ N	
40'	55'	15'	Tan fine sand with small rocks	Y ✓ N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY: Dry

TOTAL ESTIMATED WELL YIELD (gpm): 0

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:

Jason Maley

SIGNATURE OF DRILLER / PRINT SIGNEE NAME

9/21/24

DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 09/22/2022)

FILE NO.	POD NO.	TRN NO.	
LOCATION		WELL TAG ID NO.	PAGE 2 OF 2

PLUGGING RECORD

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

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: C-4790-POD1

Well owner: Devon Energy Resources Phone No.: _____

Mailing address: 205 E Bender Road #150

City: Hobbs State: NM Zip code: 88240

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Vision Resources

2) New Mexico Well Driller License No.: 1833 Expiration Date: 10-7-25

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Jason Maley

4) Date well plugging began: 2-10-24 Date well plugging concluded: 2-10-24

5) GPS Well Location: Latitude: 32 deg, 16 min, 6.708 sec
Longitude: -103 deg, 43 min, 59.556 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 55' ft below ground level (bgl), by the following manner: Tape

7) Static water level measured at initiation of plugging: 0 ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 12-6-23

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

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

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0		77.50	77.50	Tremie pipe Open Hole	
	Wyoming Bentonite				
55'					

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

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

Signature of Well Driller — Date: 2/2/24

Version: September 8, 2009
Page 2 of 2

U.S. Fish and Wildlife Service
National Wetlands Inventory

Todd 36 D State 2 - Watercourse 22,257' away (4.22 mi)

January 9, 2024 **Wetlands**

- 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.

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

U.S. Fish and Wildlife Service
National Wetlands Inventory

Todd 36 D State #2 Lake 25,472 ft

December 14, 2023

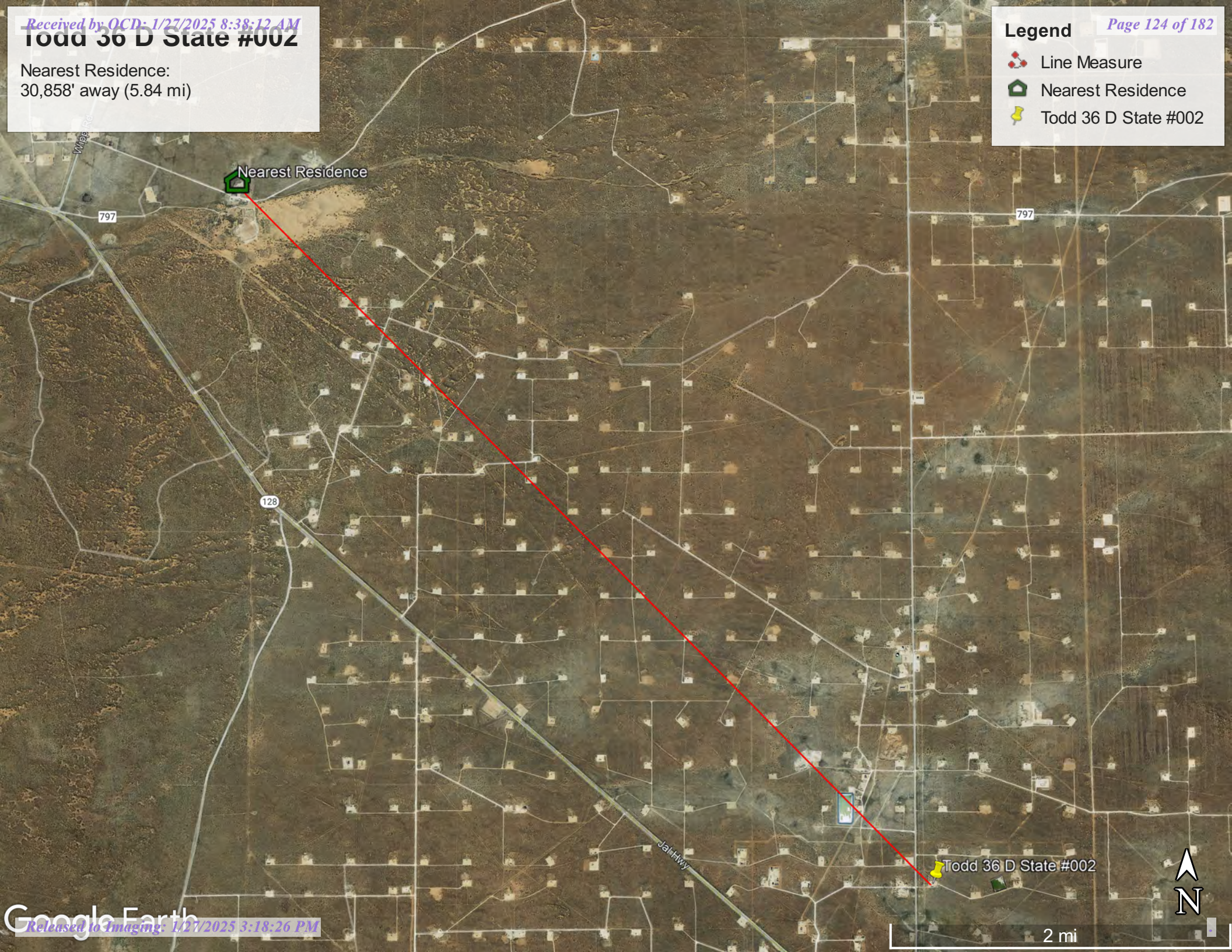
Wetlands

- 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.

Todd 36 D State #002

Nearest Residence:
30,858' away (5.84 mi)



New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(acre ft per annum)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q q q 6416 4	Sec	Tws	Rng	X	Y	Distance
C 02602	C	SAN	0	POGO PRODUCING COMPANY	ED	C 02602					2 2	35	23S	31E	618471	3570650*	314
C 04790	CUB	MON	0	DEVON ENERGY RESOURCES	ED	C 04790 POD1	NA				4 4 3	25	23S	31E	619309	3570904	562
C 02348	C	STK	3	NGL NORTH RANCH LLC A TEXAS LIMITED LIABILITY CO	ED	C 02348				Shallow	1 4 3	26	23S	31E	617647	3571068	1163
C 02258	C	PRO	0	DEVON ENERGY CORP.(NEVADA)	ED	C 02258					3 2	26	23S	31E	618055	3571853*	1310
C 04746	CUB	MON	0	DEVON ENERGY RESOURCES	ED	C 04746 POD1	NA				3 4 3	36	23S	31E	619225	3569417	1412

Record Count: 5

UTMNAD83 Radius Search (in meters):

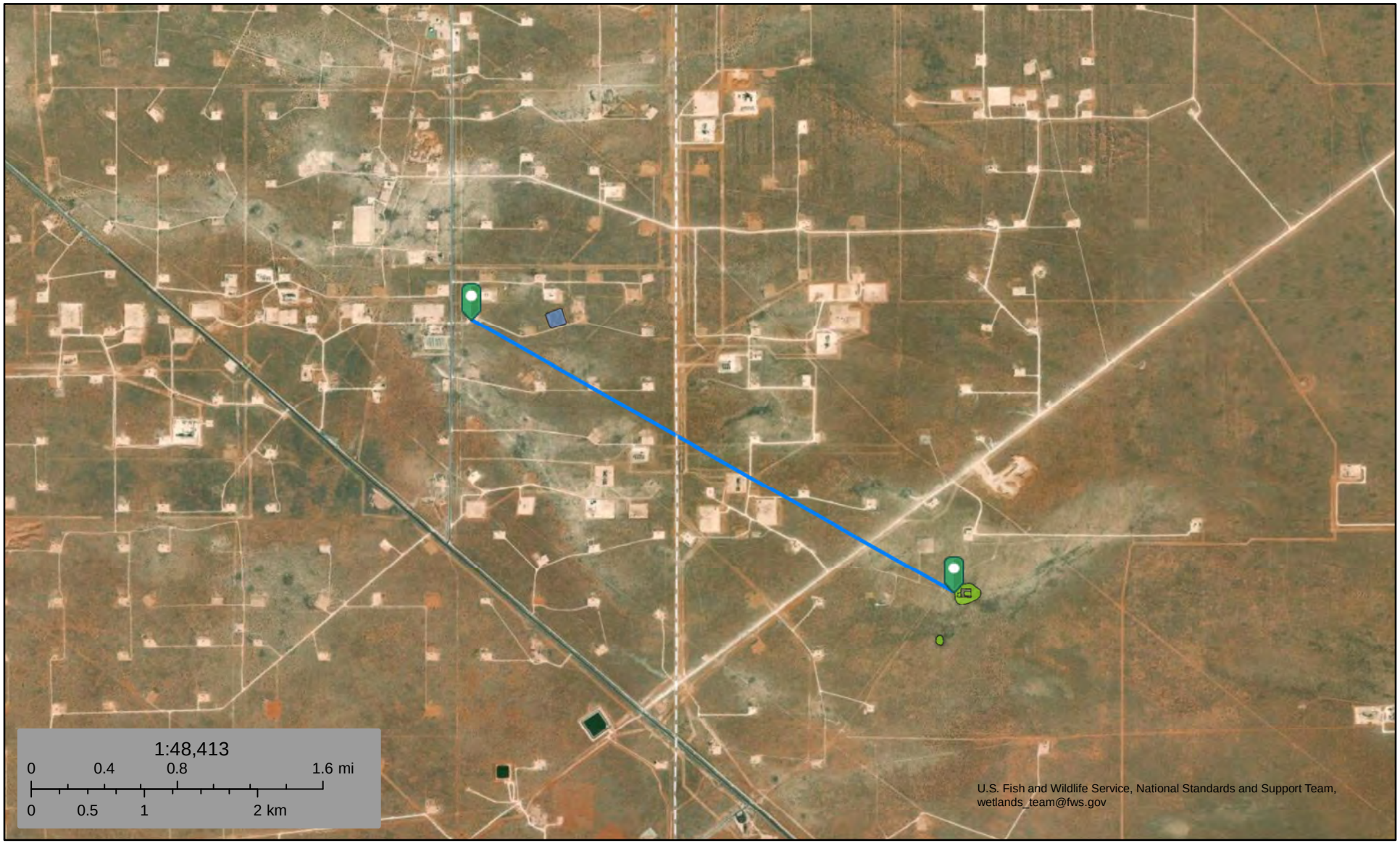
Easting (X): 618767.96 **Northing (Y):** 3570753.8 **Radius:** 1610

Sorted by: Distance

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

U.S. Fish and Wildlife Service
National Wetlands Inventory

Todd 36 D State #2 Wetland 13,590 ft



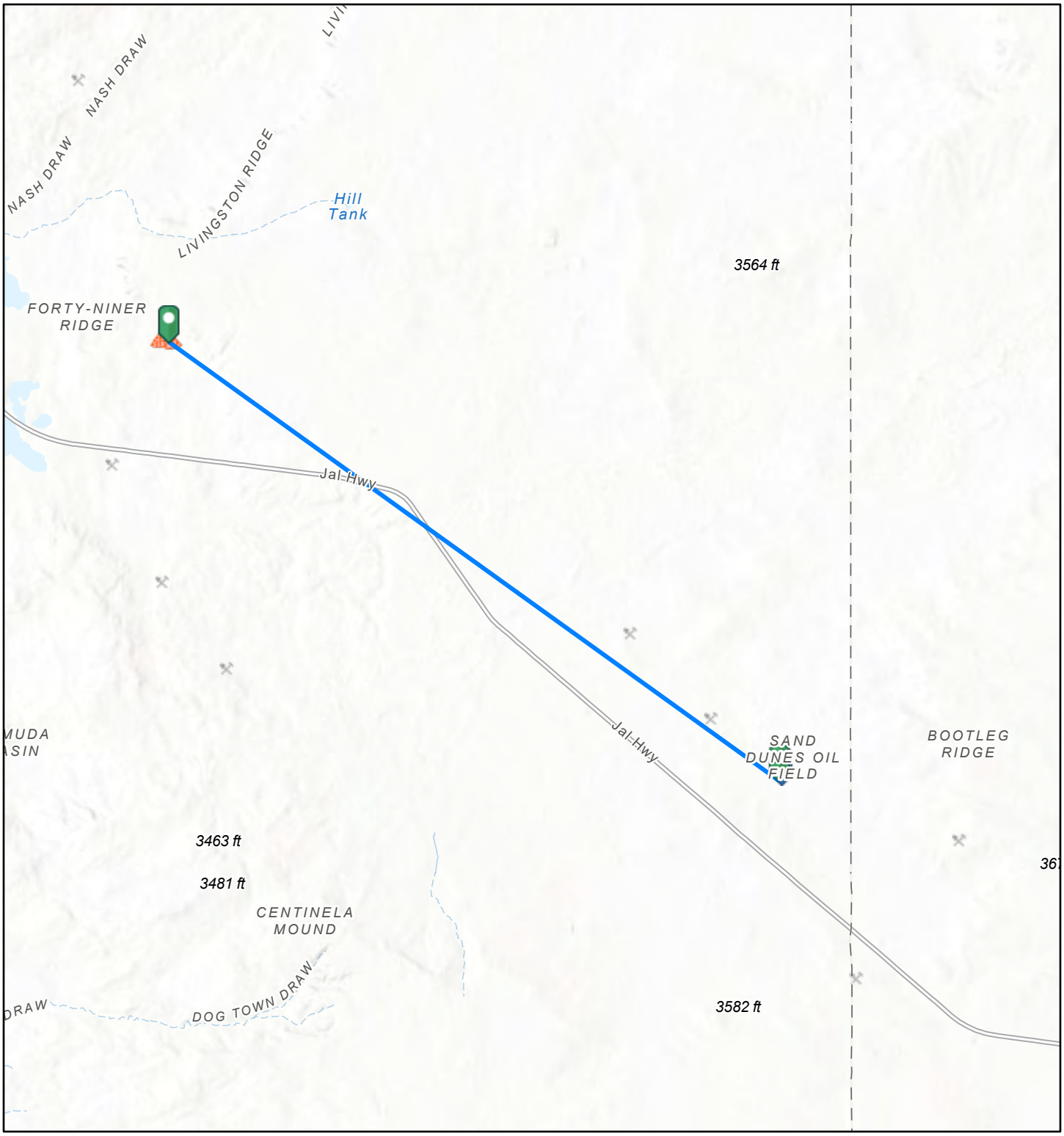
December 14, 2023

Wetlands

- 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.

Todd 36 D State #002 Mine 54,254ft



3/12/2024, 7:34:16 AM

1:144,448

0 1 2 4 mi

0 1.5 3 6 km

Registered Mines

- Aggregate, Stone etc.
- Aggregate, Stone etc.
- Potash

Esri, NASA, NGA, USGS, Texas Parks & Wildlife, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS

EMNRD MMD GIS Coordinator

NM EMNRD, Mining and Mineral Resources Department (http://nm-emnrd.maps.arcgis.com/apps/webappviewer/index.html?id=1b5e577974664d689b47790897ca2795)

Karst Potential

- Critical
- High
- Medium
- Low

Site Location

Site Buffer (1,000 ft)

Overview Map

0 0.5 1 2 mi

Detail Map

0 150 300 600 ft

VERTEX

Map Center:
Lat/Long: 32.276849, -103.743627

NAD 1983 UTM Zone 13N
Date: Mar 13/24

N

Karst Potential Map
Todd 36 D State #002

FIGURE:
X

devon

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: Inset Map, Esri 2022; Overview Map: Esri World Topographic. Karst potential data sourced from Roswell Field Office, Bureau of Land Management, 2020 or United States Department of the Interior, Bureau of Land Management. (2018). Karst Potential.

VERSATILITY. EXPERTISE.

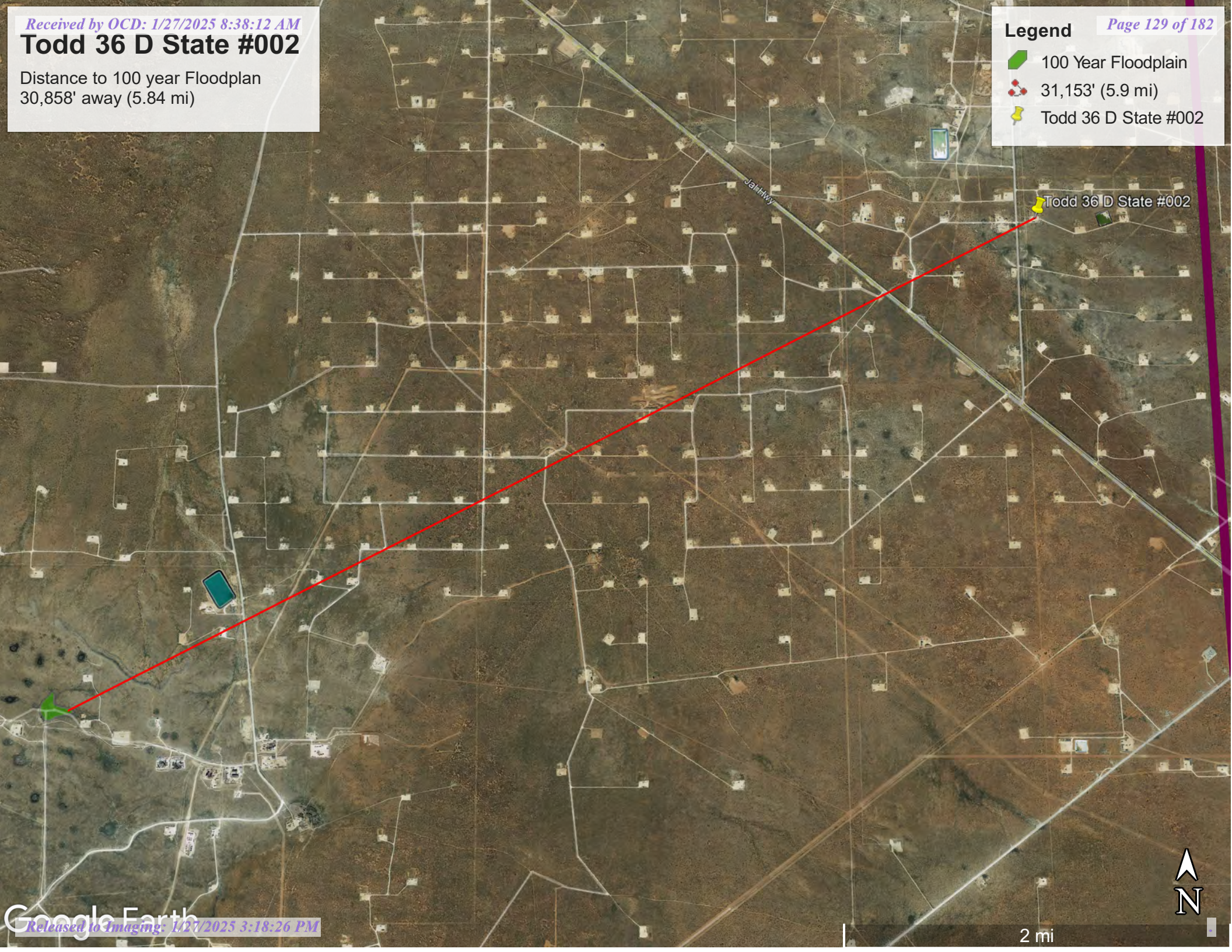
Document Path: S:\04 - Geomatics\1-Projects_US PROJECTS\Devon Energy Corporation\2023\23E-05197 - Todd 36 D State #002\Figure X Karst Potential Map (23E-05197).mxd

Todd 36 D State #002

Distance to 100 year Floodplan
30,858' away (5.84 mi)

Legend

- 100 Year Floodplain
- 31,153' (5.9 mi)
- Todd 36 D State #002



National Flood Hazard Layer FIRMette

FEMA

103°44'39"W 32°16'17"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

103°44'2"W 32°15'47"N

Basemap Imagery Source: USGS National Map 2023

Legend

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

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 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 Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 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
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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 9/17/2023 at 3:34 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.

United States Department of Agriculture

NRCS

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

September 17, 2023

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.

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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.

Custom Soil Resource Report
Soil Map

Map Scale: 1:512 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 5 10 20 30

Feet
0 20 40 80 120

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- 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
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

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: Feb 7, 2020—May 12, 2020

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
KM	Kermit-Berino fine sands, 0 to 3 percent slopes	1.2	100.0%
Totals for Area of Interest		**1.2**	**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

KM—Kermit-Berino fine sands, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1w4q
Elevation: 3,100 to 4,200 feet
Mean annual precipitation: 10 to 14 inches
Mean annual air temperature: 60 to 64 degrees F
Frost-free period: 190 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

Kermit and similar soils: 50 percent
Berino and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kermit

Setting

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

Typical profile

H1 - 0 to 7 inches: fine sand
H2 - 7 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very high (20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R070BD005NM - Deep Sand
Hydric soil rating: No

Description of Berino

Setting

Landform: Plains, fan piedmonts
Landform position (three-dimensional): Riser

Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 17 inches: fine sand
H2 - 17 to 50 inches: fine sandy loam
H3 - 50 to 58 inches: loamy sand

Properties and qualities

Slope: 0 to 3 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 slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R070BD003NM - Loamy Sand
Hydric soil rating: No

Minor Components

Active dune land

Percent of map unit: 15 percent
Hydric soil rating: No

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USDA Natural Resources Conservation Service

Ecological site R070BD005NM
Deep Sand

Accessed: 12/14/2023

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 terraces, Piedmonts, dunes fields, or upland plains. Parent material consists of eolian deposits and alluvium derived from sandstone. Slopes range from 0 to 15 percent, usually less than 5 percent. Low, stabilized hummocks or dunes frequently occur. Elevations range from 2,842 to 4,500 feet.

Table 2. Representative physiographic features

Landforms	(1) Dune (2) Parna dune (3) Terrace
Flooding frequency	None
Ponding frequency	None
Elevation	2,842–4,500 ft
Slope	0–15%
Aspect	Aspect is not a significant factor

Climatic features

The average annual precipitation ranges from 8 to 13 inches. Variations of 5 inches, more or less, are common. Over 80 percent of the precipitation falls from April through October. Most of the summer precipitation comes in the form of high intensity – short duration thunderstorms.

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

The average frost-free season is 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.

Both temperature and moisture favor warm season perennial plant growth. During years of abundant winter and early spring moisture, cool season growth and annual forbs, make up an important component of this site. Strong winds blow from the west from January through June, which accelerates soil drying during a critical period 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 from water from wetlands or streams.

Soil features

Soils are deep or very deep. Surface textures are sand loam, fine sand or loamy fine sand, Underlying material textures are loamy fine sand, fine sand, sand or fine sandy loam. Because of the coarse textures and rapid drying of the surface, the soil, if unprotected by plant cover and organic residue, becomes windblown and low hummocks or dunes are formed around shrubs.

Characteristic soils are:
Anthony
Aguena
Kermit
Likes
Pintura
Bluepoint

Table 4. Representative soil features

Surface texture	(1) Sand (2) Fine sand (3) Loamy fine sand
Family particle size	(1) Sandy
Drainage class	Well drained to excessively drained
Permeability class	Moderate to very rapid
Soil depth	60–72 in
Surface fragment cover <=3"	0–5%
Surface fragment cover >3"	0%
Available water capacity (0-40in)	3–5 in
Calcium carbonate equivalent (0-40in)	5–15%
Electrical conductivity (0-40in)	0–4 mmhos/cm
Sodium adsorption ratio (0-40in)	0–2
Soil reaction (1:1 water) (0-40in)	6.6–7.8

Subsurface fragment volume <=3" (Depth not specified)	5–10%
Subsurface fragment volume >3" (Depth not specified)	0%

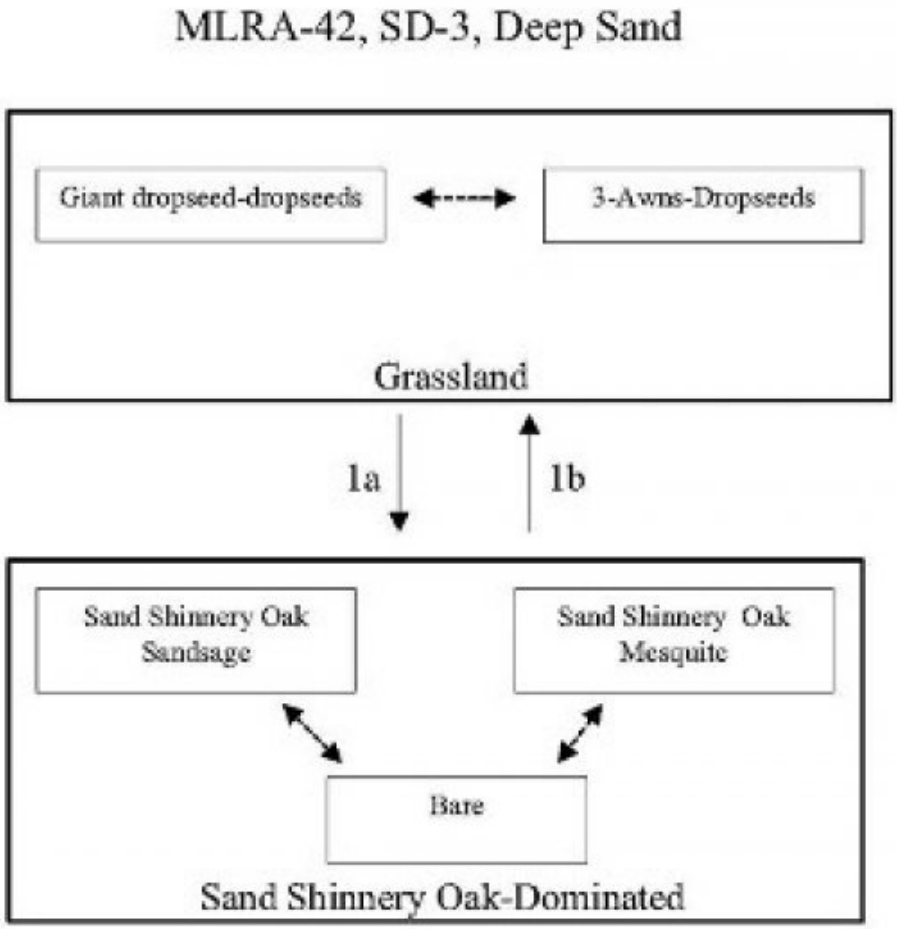
Ecological dynamics

Overview

The Deep Sand site occurs adjacent to and/or intergraded with the Sandhills and Sandy sites (SD-3). The Deep Sand site can be distinguished by slopes less than eight percent (approximately five percent) and textural changes at depths greater than 40 inches. The Deep Sand site has well drained soils with a surface texture of sand or loamy fine sand. The Sandhills site has slopes greater than eight percent and textural depths greater than 60 inches. Conversely, the Sandy site has slopes less than five percent and depths to textural change commonly around 20 inches. The historic plant community of the Deep Sand site is dominated primarily by giant dropseed (*Sporobolus giganteus*) and other dropseeds (*S. flexuosus*, *S. contractus*, *S. cryptandrus*), with scattered shinnery oak (*Quercus havardii*) and soapweed yucca (*Yucca glauca*). Other herbaceous species include threeawns (Aristida spp.), bluestems (*Schizachyrium scoparium* and *Andropogon hallii*), and annual and perennial forbs distributed relative to precipitation occurrences. Bare ground and litter compose a significant proportion of ground cover while grasses are the remainder. Shinnery oak will increase with an associated decrease in dropseed and bluestem abundance possibly due to climatic change, fire suppression, interspecific competition, and excessive grazing. Continued grass cover loss may result in a transition to a shinnery oak dominated state with increases in sand sage (*Artemisia filifolia*) and honey mesquite (*Prosopis glandulosa*). However, brush management may restore the grassland component and reverse the shinnery oak state back toward the historic plant community.

State and transition model

Plant Communities and Transitional Pathways (diagram)



1.a Climate, fire suppression, competition, over grazing

1.b Brush control, Prescribed grazing

State 1
Historic Climax Plant Community

Community 1.1
Historic Climax Plant Community

State Containing Historic Plant Community Grassland: The historic plant community is dominated by giant dropseed, other dropseeds, threeawns, and bluestems. Dominant woody plants include shinnery oak and soapweed yucca. Forb abundance and distribution varies and is dependent on annual rainfall. The Deep Sand site typically exists in sandy plains and dunes (Sosebee 1983). Grass dominance stabilizes the potentially erosive sandy soils. Historical fire suppression, however, may have contributed to increased woody plant abundance, which has reduced grass species. Further, drought conditions compounded with excessive grazing likely has driven most grass species out of competition with shrubs which has resulted in a shinnery oak dominated state with sand sage and mesquite (Young et al. 1948). Diagnosis: Grassland dominated by dropseeds, threeawns, and bluestems. Small shrubs, such as shinnery oak and soapweed yucca, and subshrubs are dispersed throughout the grassland. Other grasses that could appear on this site would include: flatsedge, almejita signalgrass, big bluestem, Indiangrass, fall witchgrass, hairy grama and red lovegrass Other shrubs include: fourwing saltbush, mesquite, ephedra and broom snakeweed. Other forbs include: wooly and scarlet gaura, wooly dalea, phlox heliotrope, scorpionweed, deerstongue, fleabane, nama, hoffmanseggia, lemon beebalm and stickleaf.

Table 5. Annual production by plant type

Plant Type	Low (Lb/Acre)	Representative Value (Lb/Acre)	High (Lb/Acre)
Grass/Grasslike	396	858	1320
Shrub/Vine	108	234	360
Forb	96	208	320
Total	**600**	**1300**	**2000**

Table 6. Ground cover

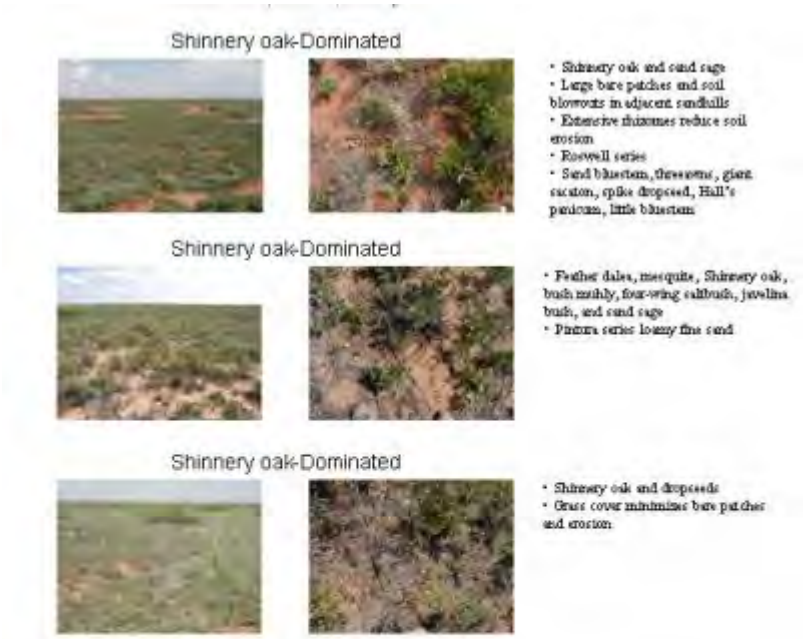
Tree foliar cover	0%
Shrub/vine/liana foliar cover	0%
Grass/grasslike foliar cover	15-20%
Forb foliar cover	0%
Non-vascular plants	0%
Biological crusts	0%
Litter	35-40%
Surface fragments >0.25" and <=3"	0%
Surface fragments >3"	0%
Bedrock	0%
Water	0%
Bare ground	35-40%

Figure 5. Plant community growth curve (percent production by month). NM2805, HCPC. SD-3 Deep Sand - Warm season plant community .

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

State 2
Shinnery Oak Dominated

Community 2.1
Shinnery Oak Dominated



Shinnery Oak Dominated: This state is dominated by shinnery oak with subdominants of sand sage or mesquite. Bare ground is a significant component in this state as well. shinnery oak is characterized by dense stands in sandy soils; however, as clay percentage increases, shinnery oak decreases. Shinnery oak abundance and distribution increase with disturbances, such as excessive grazing and fire, due to an aggressive rhizome system. As shinnery oak abundance increases, an associated increase of mesquite, sand sage, and soapweed yucca also occurs. Shinnery oak's extensive root system allows the oak to competitively exclude grasses and forbs. Sand sage, however, stabilizes light sandy soils from wind erosion and can co-exist with herbaceous species by protecting them in heavily grazed conditions (Davis and Bonham 1979). Shinnery oak has been found primarily in very deep, excessively drained, and rapidly permeable soils. Shinnery oak is associated with landforms which are gently undulating to rolling uplands, very gently sloping to moderately steep slopes, and upland plains, alluvial fans and valley sideslopes. Shinnery oak and sand sage can be controlled with herbicide if applied in the spring with a subsequent rest from grazing (Herbel et al. 1979, Pettit 1986). In addition, repetitive seasons of goat browsing can also reduce shinnery oak abundance. Patches should be maintained during brush control, however, to prevent erosion and to provide wildlife cover and forage. Further, as shinnery oak and other shrubs increase, bare patches and erosion will increase due to a lack of herbaceous ground cover. Diagnosis: Shinnery oak dominated with subdominant sand sage, honey mesquite, and soapweed yucca with increasing frequency and size of bare patches. Transition to Shinnery oak dominated state (1a): The historic plant community begins to shift toward the shinnery oak dominated state as drivers such as climate change, fire suppression, interspecific competition, and excessive grazing contribute to alterations in soil properties and herbaceous cover. Cover loss and surface soil erosion are initial indicators of transition followed by an increase of shrub species abundance and bare patch expansion. Key indicators of approach to transition: • Loss of grass and forb cover • Surface soil erosion • Bare patch expansion • Increased shrub species abundance and composition Transition to Historic Plant Community (1b): The shinnery oak dominated state may transition back toward the historic plant community as new drivers are introduced such as prescribed grazing, brush control, and discontinued drought conditions.

Additional community tables

Table 7. Community 1.1 plant community composition

Group	Common Name	Symbol	Scientific Name	Annual Production (Lb/Acre)	Foliar Cover (%)

Grass/Grasslike					
1	**Warm Season**			450–585	
	spike dropseed	SPCO4	*Sporobolus contractus*	450–585	–
	sand dropseed	SPCR	*Sporobolus cryptandrus*	450–585	–
	mesa dropseed	SPFL2	*Sporobolus flexuosus*	450–585	–
	giant dropseed	SPGI	*Sporobolus giganteus*	450–585	–
2	**Warm Season**			65–104	
	sand bluestem	ANHA	*Andropogon hallii*	65–104	–
	little bluestem	SCSC	*Schizachyrium scoparium*	65–104	–
3	**Warm Season**			39–91	
	threeawn	ARIST	*Aristida*	39–91	–
4	**Warm Season**			13–39	
	thin paspalum	PASE5	*Paspalum setaceum*	13–39	–
5	**Warm Season**			13–39	
	black grama	BOER4	*Bouteloua eriopoda*	13–39	–
6	**Warm Season**			13–39	
	mat sandbur	CELO3	*Cenchrus longispinus*	13–39	–
7	**Warm Season**			13–39	
	Havard's panicgrass	PAHA2	*Panicum havardii*	13–39	–
8	**Warm Season**			13–65	
	plains bristlegrass	SEVU2	*Setaria vulpiseta*	13–65	–
9	**Other Annual Grasses**			13–65	
	Grass, annual	2GA	*Grass, annual*	13–65	–
Shrub/Vine					
10	**Shrub**			65–130	
	Havard oak	QUHA3	*Quercus havardii*	65–130	–
11	**Shrub**			13–39	
	sand sagebrush	ARFI2	*Artemisia filifolia*	13–39	–
12	**Shrub**			65–130	
	yucca	YUCCA	*Yucca*	65–130	–
13	**Shrub**			13–39	
	rabbitbrush	CHRYS9	*Chrysothamnus*	13–39	–
14	**Other Shrubs**			13–39	
	Shrub (>.5m)	2SHRUB	*Shrub (>.5m)*	13–39	–
Forb					
15	**Forb**			39–91	
	croton	CROTO	*Croton*	39–91	–
	Indian blanket	GAPU	*Gaillardia pulchella*	39–91	–
16	**Forb**			39–91	
	aster	ASTER	*Aster*	39–91	–
	whitest evening primrose	OEAL	*Oenothera albicaulis*	39–91	–
	beardtongue	PENST	*Penstemon*	39–91	–
17	**Forb**			39–91	
	touristplant	DIWI2	*Dimorphocarpa wislizeni*	39–91	–

	[illegible]	[illegible]	[illegible]	[illegible]	
	buckwheat	ERIOG	*Eriogonum*	39–91	–
	sunflower	HELIA3	*Helianthus*	39–91	–
	spiny false fiddleleaf	HYSP	*Hydrolea spinosa*	39–91	–
	threadleaf ragwort	SEFLF	*Senecio flaccidus var. flaccidus*	39–91	–
18	**Other Forbs**			13–65	
	Forb (herbaceous, not grass nor grass-like)	2FORB	*Forb (herbaceous, not grass nor grass-like)*	13–65	–

Animal community

This site provides habitat which supports a resident animal population characterized by pronghorn, antelope, black-tailed jackrabbit, spotted ground squirrel, Ord's kangaroo rat, northern grasshopper mouse, southern plains woodrat, badger, meadowlark, roadrunner, white-necked raven, cactus wren, lesser prairie chicken, morning dove, scaled quail, Harris hawk, side blotched lizard, marbled whiptail, Texas horned lizard, western diamondback rattlesnake and ornate box turtle. In the area called Mescalero Sands, there are white-tailed and mule deer.

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
Anthony B
Bluepoint A
Kermit A
Aguena A
Likes A
Pintura A

Recreational uses

This site offers limited recreation potential for hiking, horseback riding, nature observation and photography; game bird, predator, antelope, and deer hunting.

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. Shinnery oak is toxic in the late bud or early leaf stage. Shinnery oak will increase, as will sand sagebrush following drought. Changes in the fire return interval have also favored an increase in shrub cover. The dropseeds and bluestem will decrease. This site responds very well to brush manangement and deferment. This site is well suited to a grazing system that rotates the season of use. Nesting habitat for lesser prairie chicken can be improved by providing residual cover that is at least 14 inches high.

Other information

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index Ac/AUM
100 - 76 2.0 – 3.8
75 – 51 3.0 – 6.0

50 – 26 5.0 – 10.0
25 – 0 10.1 +

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 Chaves County.

Other references

Literature Cited

Davis, Joseph H., III and Bonham, Charles D. 1979. Interference of sand sagebrush canopy with needleandthread. Journal of Range Management 32(5):384-386.

Herbel, C. H, Steger, R, Gould, W. L. 1974. Managing semidesert ranges of the Southwest. Circular 456. Las Cruces, NM: New Mexico State University, Cooperative Extension Service. 48 p.

Pettit, Russell D. 1986. Sand shinnery oak: control and management. Management Note 8. Lubbock, TX: Texas Tech University, College of Agricultural Sciences, Department of Range and Wildlife Management. 5 p.

Sosebee, Ronald E. 1983. Physiological, phenological, and environmental considerations in brush and weed control. In: McDaniel, Kirk C., ed. Proceedings--brush management symposium; 1983 February 16; Albuquerque, NM. Denver, CO: Society for Range Management: 27-43.

Young, Vernon A., Anderwald, Frank R.,McCully, Wayne G. 1948. Brush problems on Texas ranges. Miscellaneous Publication 21. College Station, TX: Texas Agricultural Experiment Station. 19 p.

Contributors

Don Sylvester
Quinn Hodgson

Rangeland health reference sheet

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

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

Indicators

1. **Number and extent of rills:**

2. **Presence of water flow patterns:**

3. **Number and height of erosional pedestals or terracettes:**

4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

5. **Number of gullies and erosion associated with gullies:**

6. **Extent of wind scoured, blowouts and/or depositional areas:**

7. **Amount of litter movement (describe size and distance expected to travel):**

8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

    Dominant:

    Sub-dominant:

    Other:

    Additional:

13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or**

decadence):

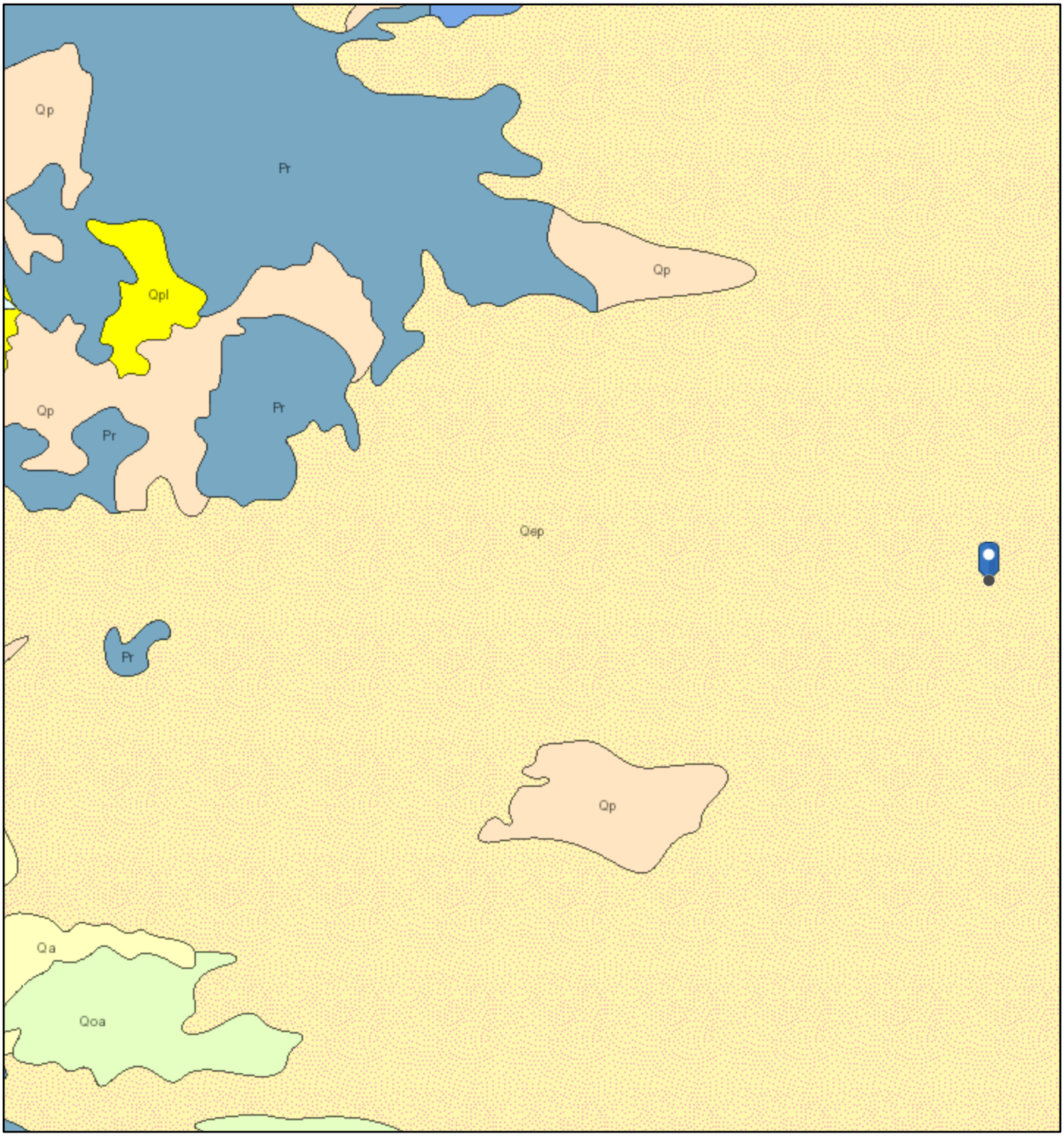
14. **Average percent litter cover (%) and depth (in):**

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage 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:**

Todd 36 D State #002 Geology



3/12/2024, 7:24:55 AM

1:144,448

0 1 2 4 mi

0 1.5 3 6 km

Lithologic Units

- Playa—Alluvium and evaporite deposits (Holocene)
- Water—Perenial standing water
- Qa—Alluvium (Holocene to upper Pleistocene)

Esri, NASA, NGA, USGS, NMBGMR, USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS

ArcGIS Web AppBuilder

USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National

ATTACHMENT 4

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	11/12/2023
Site Location Name:	Todd 36 D State #002	Report Run Date:	11/12/2023 11:42 PM
Client Contact Name:	Dale Woodall	API #:	30-015-27365
Client Contact Phone #:	405-318-4697		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	11/12/2023 8:00 AM
Departed Site	11/12/2023 3:30 PM

Field Notes

13:12 Completed safety paperwork and initial line locate upon arrival to site

13:13 Beginning delineation inside berrmed containment where historical release occurred near separator

15:11 Obtained BH23-01 to 11 all at 0 and 2’ depths.
BH23-01 taken to 4 and 5’ depths.
BH23-03 taken to 4’ depth.
BH23-08 taken to 4’ depth.

15:11 Area of historic release is quite dirty at surface. Step outs may end up outside earth berm containment.

Next Steps & Recommendations

1 Update 811 locate to further delineation efforts.

2 Upon 811 confirmation, continue delineating.

Daily Site Visit Report

Site Photos

Viewing Direction: South

BH23-01 north side of horizontal separator

Viewing Direction: West

BH23-02 immediately east of horizontal separator

Viewing Direction: North

BH23-03 immediately south of horizontal separator

Viewing Direction: East

BH23-04 immediately west of separator

Daily Site Visit Report

Viewing Direction: East	**Viewing Direction**: North
	
BH23-05 north step out from 01	BH23-06 east step out from 02
Viewing Direction: Northeast	**Viewing Direction**: East
	
BH23-07 South of 03	BH23-08 step out west from 04

Daily Site Visit Report

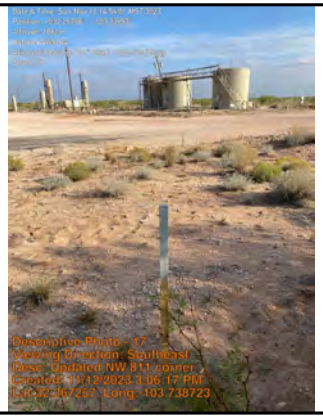
Viewing Direction: West	**Viewing Direction**: North
	
BH23-09 step out east from 06	BH23-10 South of 07
Viewing Direction: East	**Viewing Direction**: Southeast
	
BH23-11 west of 08	Release area inside berm and around equipment east of separator

Daily Site Visit Report

Viewing Direction: Southwest	**Viewing Direction**: North
	
Release area inside berm and around equipment west of separator	Corroded flow line that has eroded pasture to immediate south of lease
Viewing Direction: South	**Viewing Direction**: Northeast
	
Corroded flow line	Updated SW 811 corner

Daily Site Visit Report

Viewing Direction: Southeast



Updated NW 811 corner

Viewing Direction: Southwest

Updated NE 811 corner

Viewing Direction: Northwest

Updated SE 811 corner

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Austin Harris

Signature: 

Signature

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	4/4/2024
Site Location Name:	Todd 36 D State #002	Report Run Date:	4/4/2024 8:58 PM
Client Contact Name:	Dale Woodall	API #:	30-015-27365
Client Contact Phone #:	405-318-4697		
Unique Project ID		Project Owner:	
Project Reference #		Project Manager:	

Summary of Times

Arrived at Site	4/4/2024 9:30 AM
Departed Site	4/4/2024 12:50 PM

Field Notes

9:55 Arrived on site, examined site for hazards and completed safety assessment for job and documents.
Established borehole locations.

12:48 College BH24-25 at 0 and 2 foot.
Field screened for TPH with Dexsil petroflag and chlorides with silver nitrate titration.
Samples screened below delineation criteria.

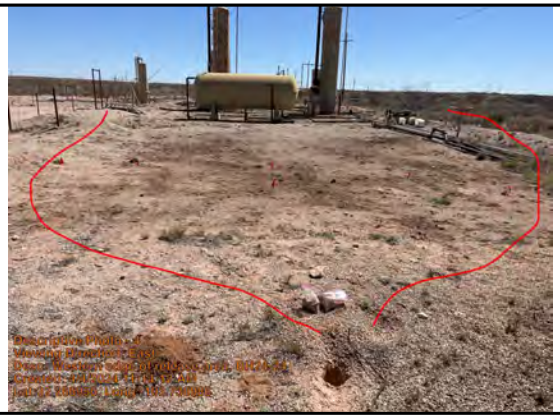
12:48 Prepared samples for lab and preserved on ice.

Next Steps & Recommendations

1 Submit samples to lab

Daily Site Visit Report

Site Photos

Viewing Direction: Southeast	**Viewing Direction**: East
	
BH24-24 at 0 and 2 ft	Site information placard
Viewing Direction: Southeast	**Viewing Direction**: East
	
Western edge of release area	Western edge of release area, BH24-24

Daily Site Visit Report

Viewing Direction: South	**Viewing Direction**: West
	
Pasture area of delineation to south	Eastern side of delineation

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Stephanie McCartyM

Signature: 

ATTACHMENT 5

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

State of New Mexico
Energy Minerals and Natural Resources

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

RECEIVED
MAY 23 2018
DISTRICT II-ARTESIA O.C.D.

Form C-141
Revised April 3, 2017
Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

NAB1815052591

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Devon Energy Production Company 10137	Contact Merle Lewis, Production Foreman
Address 6488 Seven Rivers Hwy Artesia, NM 88210	Telephone No. 575-748-3371
Facility Name Todd 36D State 2 Battery	Facility Type Battery

Surface Owner Federal	Mineral Owner State	API No. 30-015-27365

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	36	23S	31E	330'	FNL	330'	FWL	Eddy

Latitude_32.2672234_ **Longitude**_103.7389755_ NAD83

NATURE OF RELEASE

Type of Release Oil & produced water	Volume of Release 1bbl oil & 8bbls produced water	Volume Recovered .5bbls oil & 7.5bbls produced water
Source of Release Vent line off of 2 phase separator	Date and Hour of Occurrence May 10, 2018 @ 11:00 Am	Date and Hour of Discovery May 10, 2018 @ 11:00 AM
Was Immediate Notice Given? ☐ Yes ☐ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*
Two-phase separator dump stuck closed forcing fluid over the top causing it to go down the vent line to the water tank to the poly line which developed a leak.

Describe Area Affected and Cleanup Action Taken.*
Approximately 1bbl oil & 8bbls produced water was released inside dirt containment. The vessel was isolated and production was turned into other vessels to stop the release.

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

Signature: Sheila Fisher	OIL CONSERVATION DIVISION
Printed Name: Sheila Fisher	Approved by Environmental Specialist: Signed By Mike Bratcher
Title: Field Admin Support	Approval Date: 5/29/18 Expiration Date: N/A
E-mail Address: Sheila.Fisher@dvn.com	Conditions of Approval: See attached Attached ☐
Date: 5/14/18 Phone: 575.748.1829	

* Attach Additional Sheets If Necessary

State of New Mexico
Oil Conservation Division

Incident ID	NAB1815052591
District RP	2RP-2773
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?	**51-100** (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☒ Yes ☐ No

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NAB1815052591
District RP	2RP-2773
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: Date:

email: dale.woodall@dvn.com Telephone: 575-748-1838

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	NAB1815052591
District RP	2RP-2773
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be 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 confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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Printed Name: Dale Woodall Title: Environmental Professional

Signature: _____ Date: _____

email: dale.woodall@dvn.com Telephone: 575-748-1838

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

Sante Fe Main Office
Phone: (505) 476-3441

General Information
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Online Phone Directory
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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

QUESTIONS

Action 424827

QUESTIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 424827
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAB1815052591**
Incident Name	**NAB1815052591 TODD 36 D STATE #002 @ 30-015-27365**
Incident Type	**Produced Water Release**
Incident Status	**Remediation Plan Received**
Incident Well	**[30-015-27365] TODD 36 D STATE #002**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	TODD 36 D STATE #002
Date Release Discovered	05/10/2018
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Cause: Equipment Failure | Separator | Crude Oil | Released: 1 BBL | Recovered: 0 BBL | Lost: 1 BBL.
Produced Water Released (bbls) Details	Cause: Equipment Failure | Separator | Produced Water | Released: 8 BBL | Recovered: 7 BBL | Lost: 1 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	*Not answered.*

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QUESTIONS (continued)

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	Action Number: 424827
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**No, according to supplied volumes this does not appear to be a "gas only" report.**
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	**No**
Reasons why this would be considered a submission for a notification of a major release	*Unavailable.*
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response	
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	*Not answered.*
Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.	

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.

I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dvn.com Date: 01/27/2025

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QUESTIONS (continued)

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	Action Number: 424827
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). 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 in feet below ground surface (ft bgs)	Between 51 and 75 (ft.)
What method was used to determine the depth to ground water	Direct Measurement
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Between 1 and 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between ½ and 1 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	2400
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	43000
GRO+DRO (EPA SW-846 Method 8015M)	26000
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
On what estimated date will the remediation commence	03/24/2025
On what date will (or did) the final sampling or liner inspection occur	06/24/2025
On what date will (or was) the remediation complete(d)	06/24/2025
What is the estimated surface area (in square feet) that will be reclaimed	431
What is the estimated volume (in cubic yards) that will be reclaimed	28
What is the estimated surface area (in square feet) that will be remediated	1900
What is the estimated volume (in cubic yards) that will be remediated	90
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.	
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

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QUESTIONS

Remediation Plan (continued)	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
(Select all answers below that apply.)	
(Ex Situ) Excavation and **off-site** disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for **off-site** disposal	HALFWAY DISPOSAL AND LANDFILL [fEEM0112334510]
OR which OCD approved well (API) will be used for **off-site** disposal	*Not answered.*
OR is the **off-site** disposal site, to be used, out-of-state	*Not answered.*
OR is the **off-site** disposal site, to be used, an NMED facility	*Not answered.*
(Ex Situ) Excavation and **on-site** remediation (i.e. On-Site Land Farms)	*Not answered.*
(In Situ) Soil Vapor Extraction	*Not answered.*
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	*Not answered.*
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	*Not answered.*
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	*Not answered.*
Ground Water Abatement pursuant to 19.15.30 NMAC	*Not answered.*
OTHER (Non-listed remedial process)	*Not answered.*
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
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.	
I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dvn.com Date: 01/27/2025
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

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	Action Number: 424827
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QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS (continued)

Operator:	OGRID:
DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	6137
	Action Number: 424827
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	*{Unavailable.}*

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	No

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CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 424827
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
bhall	Remediation plan conditionally approved.	1/27/2025
bhall	OCD will not approve the excavation depths or extents as the excavations must meet the most stringent closure criteria for the upper 4 feet of the areas of B23-10 and BH23-15 and must meet the site closure requirements for the remainder of the samples located in the areas reasonably needed for production and subsequent drilling activities. If contamination is found beyond what is illustrated on the attached figures or at deeper depths, the excavations must be advanced further.	1/27/2025
bhall	OCD is requiring in the next submittal that the square footage and cubic yardage of the areas to be reclaimed in the remediation plan section be updated to correctly reflect the amount of soil that must be reclaimed once the site is no longer reasonably needed for production and subsequent drilling activities. The number in the section currently (431 sq. ft. and 28 cubic yards) appears to only reflect the amount of soil that must be reclaimed at time of remediation at the locations of BS23-10 and BS23-15. These numbers in the remediation plan section must reflect the entirety of the soils that must be reclaimed which must include the sample locations that returned results below the closure criteria but above the reclamation requirements (BS23-01, BS23-07, BS23-09, and BS23-20). These sections located in the remediation closure report must correctly reflect how much soil was reclaimed at time of remediation.	1/27/2025
bhall	Submit a complete and accurate report through the OCD Permitting website by 4/25/2025.	1/27/2025