REVIEWED
By Mike Buchanan at 9:45 am, Apr 29, 2025

ENSOLUM

Review of the 2024 Annual Groundwater Monitoring Report for Aztec #9: content satisfactory.
1. OCD notes that BOS 200 was used to treat hydrocarbons in the open excavation. A soil boring and vadose zone/smear zone sampling plan will be required to be submitted once abatement closure is achieved.
2. Continue to collect groundwater samples on a quarterly schedule. Manually bail LNAPL out of MW-2, if enough has accumulated.
3. Submit the 2025 Groundwater Monitoring Report to OCD by April 1, 2026.

February 17, 2025

New Mexico Oil Conservation Division
New Mexico Energy, Minerals, and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: 2024 Annual Groundwater Monitoring Report
Aztec #9
Aztec, New Mexico
Hilcorp Energy Company
NMOCD Incident No: nAPP2307357709

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Hilcorp Energy Company (H s *2024 Annual Groundwater Monitoring Report* (Report) summarizing r sampling activities performed at the Aztec #9 natural gas production well (S d on private land in Unit M, Section 9, Township 30 North, Range 11 West o (Figure 1).

SITE BACKGROUND

On February 27, 2023, Hilcorp discovered a release of 8.35 barrels (bbls) of condensate and 3.34 bbls of produced water at the Site. Upon inspection, a hole was discovered near the bottom of the condensate aboveground storage tanks (AST) due to corrosion. The released fluids pooled immediately around the AST and stayed within the secondary containment. No released fluids were recovered; however, the remaining fluids within the AST were immediately removed via vacuum truck and transferred to another well location for storage. Hilcorp reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Form C-141 on March 14, 2023. The NMOCD has assigned the Site Incident Number nAPP2307357709.

Due to the likelihood of shallow groundwater at the Site, Hilcorp conducted initial excavation activities of impacted soil located on the well pad on March 6 and 7, 2023. Delineation activities were also conducted in March of 2023 to delineate the vertical and lateral extent of soil and groundwater impacts at the Site. Initial excavation and delineation sampling activities were summarized in the *Remediation Work Plan* prepared by Ensolum, dated June 8, 2023. The *Remediation Update Report* (dated February 28, 2024) was submitted to the NMOCD following excavation and groundwater monitoring well installation activities performed in December 2023 and January 2024.

2024 GROUNDWATER SAMPLING ACTIVITIES

Four permanent groundwater monitoring wells (MW01 through MW04) were installed in the locations indicated on Figure 2 in January 2024. Groundwater sampling at the Site was conducted in February, May, August, and November of 2024. Prior to purging and sampling, static depth to groundwater and total depth of each monitoring well was measured using a Keck® oil/water interface probe. Depth to groundwater and groundwater elevations are summarized in Table 1.

Potentiometric surface maps were developed with groundwater elevations for each quarterly event and are presented on Figures 2 through 5. Groundwater flow direction is generally to the west-southwest at the Site.

Groundwater samples were collected for laboratory analysis from all Site wells that did not contain measurable phase-separated hydrocarbons (PSH). Additionally, although PSH was present in well MW02 during the February and May 2024 sampling events, samples were collected for laboratory analysis in order to assess baseline benzene, toluene, ethylbenzene, and total xylenes (BTEX) concentrations for future monitoring events. Prior to collecting groundwater samples, Ensolum determined the casing water volume and purged a minimum of three casing volumes. Water quality parameters including pH, temperature, electrical conductivity (EC), dissolved oxygen (DO), and oxidation-reduction potential (ORP) were measured in each well using a multiparameter probe water quality field meter during purging and are summarized in Table 2. Groundwater samples were collected directly into laboratory provided sample bottles and immediately placed on ice for preservation. Samples were submitted under strict chain-of-custody protocol to Eurofins Environment Testing (Eurofins) for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8260B.

Based on the analytical results collected in 2024, benzene was detected exceeding the New Mexico Water Quality Control Commission (NMWQCC) standards in wells MW01, MW02, and MW03 during the first quarter 2024 sampling event. Additionally, toluene, ethylbenzene, and/or total xylenes were detected in well MW01 during the first and second quarters of 2024. PSH was detected in well MW02 (located within the former excavation footprint) during all four quarterly events in 2024. BTEX constituents and/or PSH were not detected in wells MW01, MW03, and MW04 above the applicable NMWQCC standards during the second, third, or fourth quarterly sampling events in 2024. Groundwater analytical results are summarized in Table 3 and on Figure 6, with complete laboratory reports included in Appendix A.

CONCLUSIONS AND RECOMMENDATIONS

Once soil excavation activities at the Site were completed in December 2023, BOS 200® remediation amendment was applied to the base of the excavation in order to further treat impacted soil within the saturated and smear zones, as well as to treat groundwater impacted by the release. Permanent groundwater monitoring wells were further installed to monitor groundwater conditions at the Site over time and monitor the attenuation of contaminants present due to the release. Based on the groundwater analytical results collected in 2024, all dissolved phase BTEX concentration initially detected at the Site have declined. At this time, only well MW02 contains measurable volumes of PSH.

Ensolum and Hilcorp propose to continue monitoring groundwater in 2025 on a quarterly basis for BTEX following EPA Method 8260 and for the presence of PSH. BOS 200® is a “Trap & Treat” remedy designed to “trap” petroleum hydrocarbons through absorption onto activated carbon, then subsequently “treat” the petroleum hydrocarbons with the addition of bacteria, nutrients, and electron acceptors designed to enhance microbial activity in the subsurface and enhance natural biodegradation of the contaminants. Because of this, it is anticipated natural microbial processes will continue to degrade the petroleum hydrocarbons absorbed onto the activated carbon, further reducing the volume of PSH and dissolved phase BTEX constituents over time. Further remedial actions are not recommended to be performed during 2025 and will be reassessed after additional quarterly sampling is completed.

We appreciate the opportunity to provide this report to the NMOCD. If you should have any questions or comments regarding this document, please contact the undersigned.

Sincerely,
Ensolum, LLC

Stuart Hyde
Senior Managing Geologist
(970) 903-1607
shyde@ensolum.com

Daniel R. Moir
Senior Managing Geologist
(303) 887-2946
dmoir@ensolum.com

Attachments:

Figure 1: Site Location Map
Figure 2: Groundwater Elevation Contours – Q1 2024
Figure 3: Groundwater Elevation Contours – Q2 2024
Figure 4: Groundwater Elevation Contours – Q3 2024
Figure 5: Groundwater Elevation Contours – Q4 2024
Figure 6: Groundwater Analytical Results

Table 1: Groundwater Elevations
Table 2: Groundwater Quality Measurements
Table 3: Groundwater Analytical Results

Appendix A: Laboratory Analytical Reports

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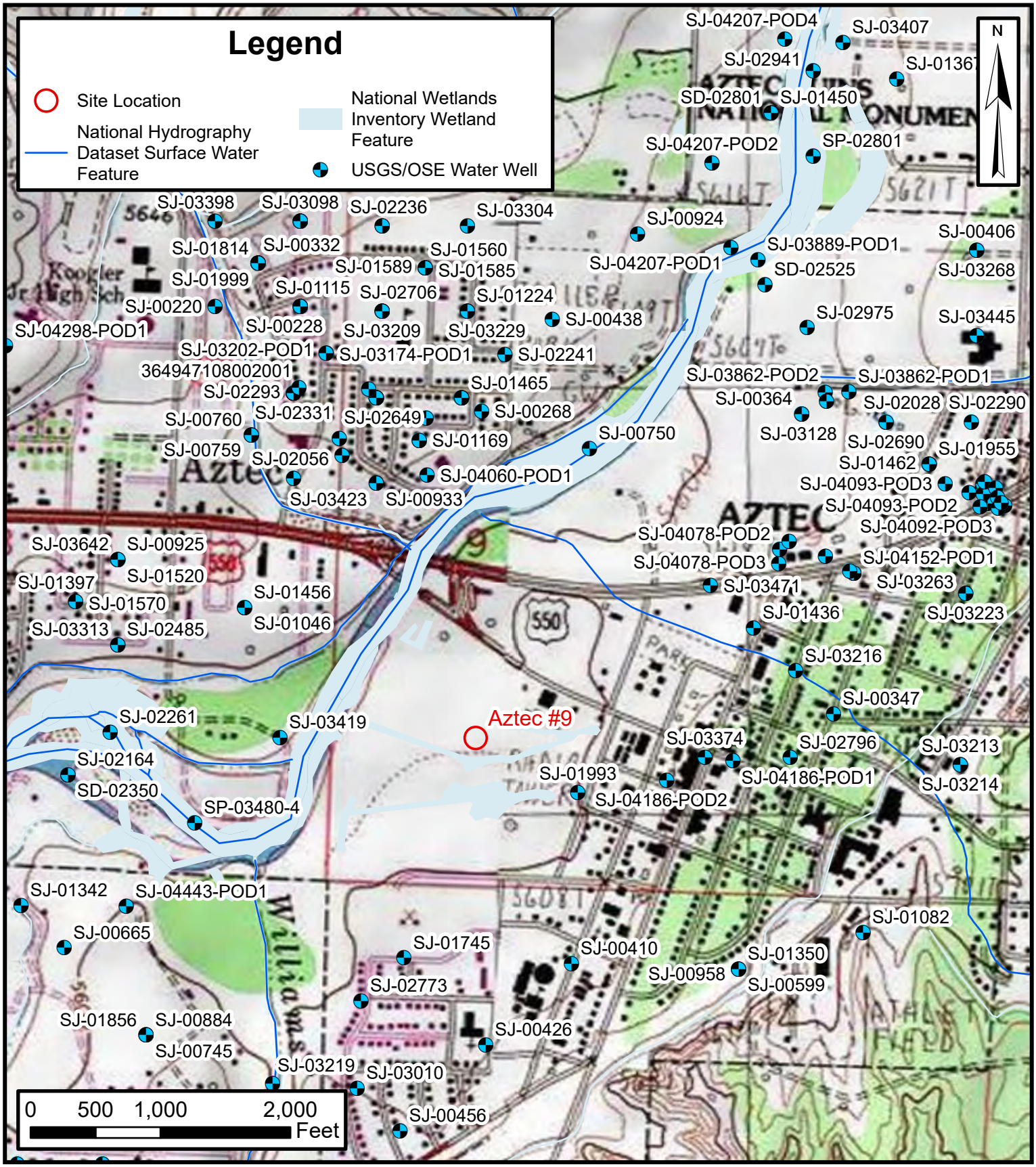
FIGURES



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Environmental, Engineering and Hydrogeologic Consultants

Site Location Map

Aztec #9
Hilcorp Energy Company
36.82245, -108.00108
San Juan County, New Mexico

FIGURE
1

Sources: Environmental Systems Research Institute (ESRI), National Geographic Society, i-cubed

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Environmental, Engineering and Hydrogeologic Consultants

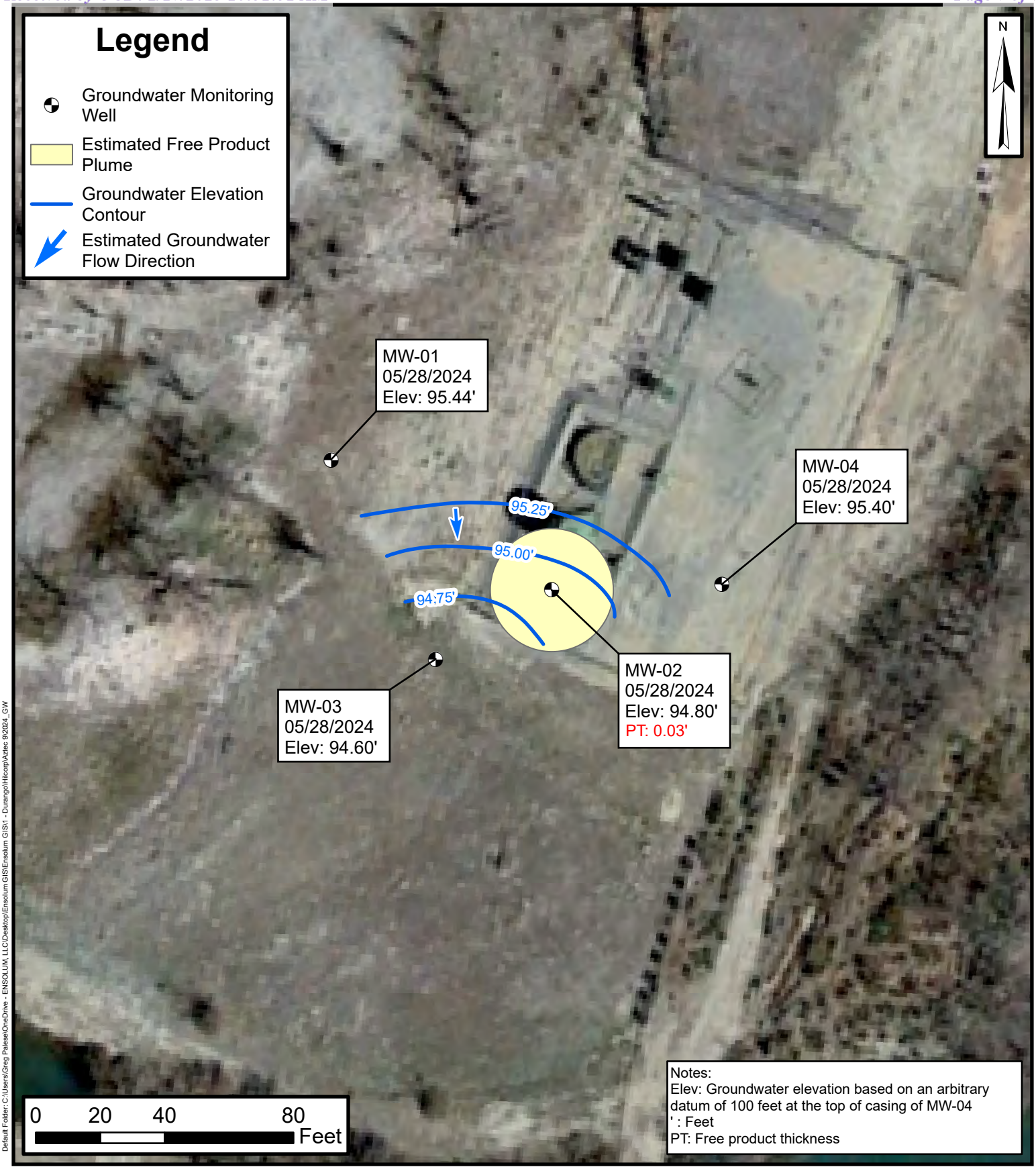
Groundwater Elevation Contours - Q1 2024

Aztec #9
Hilcorp Energy Company

36.82245, -108.00108
San Juan County, New Mexico

FIGURE
2

Sources: Google Earth



Default Folder: C:\Users\Greg Pates\OneDrive - ENSOLUM, LLC\Desktop\Ensolum GIS\Ensolum GIS\1 - Durango\Hilcorp\Aztec 9\2024_GW

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Environmental, Engineering and Hydrogeologic Consultants

Groundwater Elevation Contours - Q2 2024

Aztec #9
Hilcorp Energy Company
36.82245, -108.00108
San Juan County, New Mexico

FIGURE
3

Sources: Google Earth

Default Folder: C:\Users\Greg Pates\OneDrive - ENSOLUM, LLC\Desktop\Ensolum GIS\Ensolum GIS\1 - Durango\Hilcorp\Aztec 9\2024_GW

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Environmental, Engineering and Hydrogeologic Consultants

Groundwater Elevation Contours - Q3 2024

Aztec #9
Hilcorp Energy Company
36.82245, -108.00108
San Juan County, New Mexico

FIGURE
4

Sources: Google Earth

Default Folder: C:\Users\Greg Pates\OneDrive - ENSOLUM, LLC\Desktop\Ensolum GIS\Ensolum GIS\1 - Durango\Hilcorp\Aztec 9\2024_GW

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Environmental, Engineering and Hydrogeologic Consultants

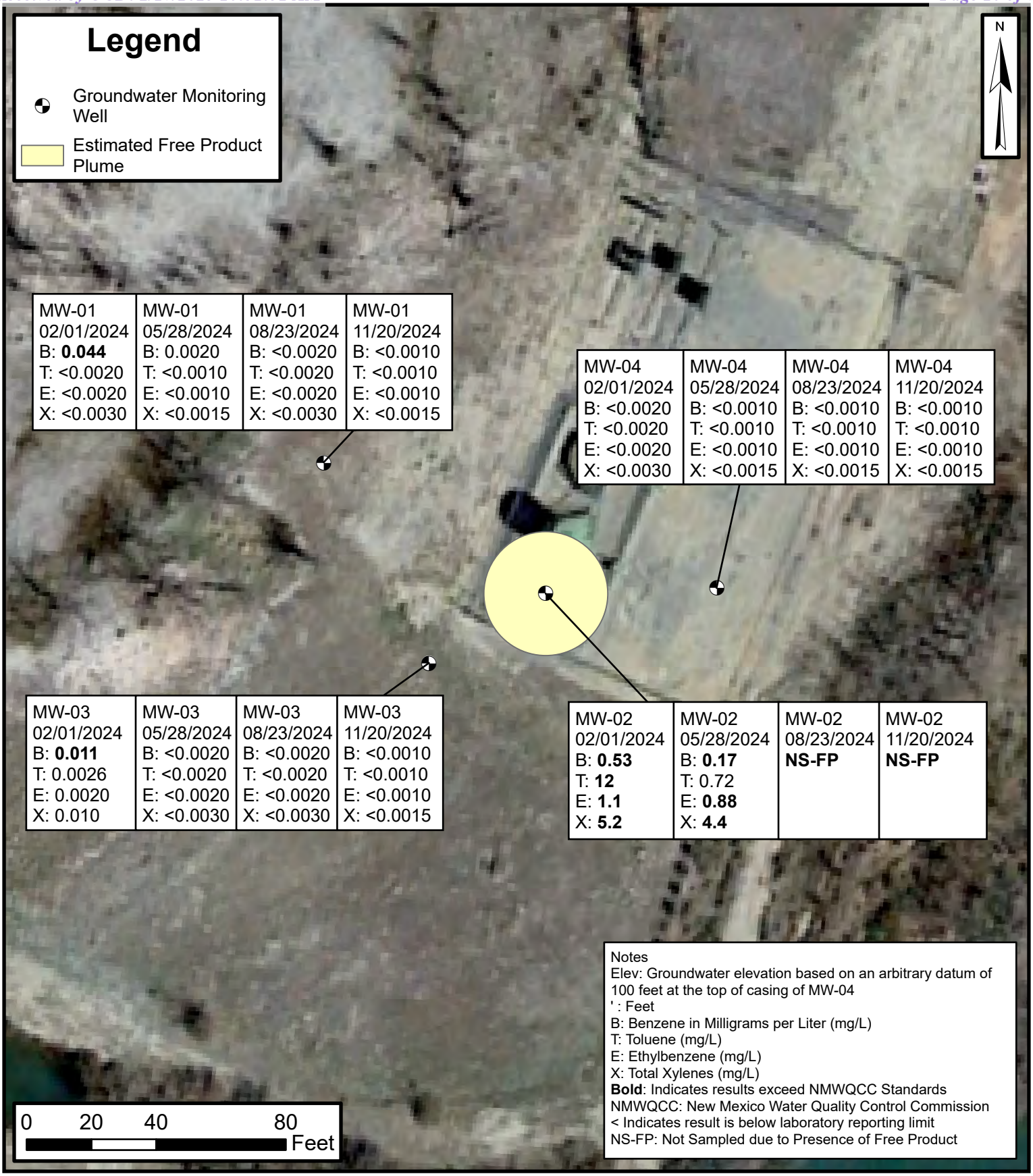
Groundwater Elevation Contours - Q4 2024

Aztec #9
Hilcorp Energy Company

36.82245, -108.00108
San Juan County, New Mexico

FIGURE
5

Sources: Google Earth



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Environmental, Engineering and Hydrogeologic Consultants

Groundwater Analytical Results

Aztec #9
Hilcorp Energy Company
36.82245, -108.00108
San Juan County, New Mexico

FIGURE
6

Sources: Google Earth

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TABLES

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TABLE 1
GROUNDWATER ELEVATIONS
Aztec #9
Hilcorp Energy Company
Aztec, New Mexico

Well ID	Top of Casing Elevation (feet)*	Total Depth (feet)	Date	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet)
MW-01	97.69	9.95	2/1/2024	2.05	--	--	95.64
		9.80	5/28/2024	2.25	--	--	95.44
		--	8/23/2024	3.71	--	--	93.98
		9.80	11/20/2024	2.21	--	--	95.48
MW-02	99.90	12.89	2/1/2024	4.08	4.07	0.01	95.84
		12.70	5/28/2024	5.15	5.12	0.03	94.80
		--	8/23/2024	5.95	5.55	0.40	94.67
		--	11/20/2024	4.51	4.00	0.51	96.31
MW-03	99.05	12.48	2/1/2024	3.41	--	--	95.64
		10.24	5/28/2024	4.45	--	--	94.60
		--	8/23/2024	4.89	--	--	94.16
		10.24	11/20/2024	3.39	--	--	95.66
MW-04	100.00	9.36	2/1/2024	3.78	--	--	96.22
		8.90	5/28/2024	4.60	--	--	95.40
		--	8/23/2024	5.35	--	--	94.65
		8.90	11/20/2024	3.70	--	--	96.30

Notes:

BTOC: Below top of casing

**: Elevations based on an arbitrary datum of 100 feet at the top of casing of MW04*

--: Indicates no measurable free product present

A product density factor if 0.8 was used to account for the presence of free product

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TABLE 2
GROUNDWATER QUALITY MEASUREMENTS
Aztec #9
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Sample Date	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)
MW-01	2/1/2024	8.40	7.69	4.25	--	--
	5/28/2024	14.22	7.00	4.54	--	--
	8/23/2024	19.80	7.27	3.10	1.75	-81.00
	11/20/2024	13.04	6.94	2.59	2.31	-36.00
MW-02	2/1/2024	9.00	7.96	4.03	--	--
	5/28/2024	13.33	6.92	4.68	--	--
	8/23/2024	--	--	--	--	--
	11/20/2024	--	--	--	--	--
MW-03	2/1/2024	8.40	7.61	4.44	--	--
	5/28/2024	14.11	6.76	4.63	--	--
	8/23/2024	18.70	7.18	3.01	1.02	-47.6
	11/20/2024	13.10	7.01	1.77	2.13	4.8
MW-04	2/1/2024	6.10	7.58	4.90	--	--
	5/28/2024	13.11	6.73	5.95	--	--
	8/23/2024	19.20	7.18	2.25	1.74	-18.50
	11/20/2024	12.08	7.15	2.85	3.46	34.6

Notes:

mS/cm: Millisiemens per centimeter
mg/L: Milligrams per liter
°C: Degrees Celsius
DO: Dissolved oxygen
mV: Millivolts
ORP: Oxidation-reduction potential
TDS: Total dissolved solids
--: Not measured

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TABLE 3
GROUNDWATER ANALYTICAL RESULTS
Aztec #9
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
NMWQCC Standards		**0.005**	**1.0**	**0.70**	**0.62**
MW-01	2/1/2024	**0.044**	<0.0020	<0.0020	<0.0030
	5/28/2024	0.0020	<0.0010	<0.0010	<0.0015
	8/23/2024	<0.0020	<0.0020	<0.0020	<0.0030
	11/20/2024	<0.0010	<0.0010	<0.0010	<0.0015
MW-02	2/1/2024	**0.53**	**12**	**1.1**	**5.2**
	5/28/2024	**0.17**	0.72	**0.88**	**4.4**
	8/23/2024	**No Sample Collected, Free Product Present**			
	11/20/2024	**No Sample Collected, Free Product Present**			
MW-03	2/1/2024	**0.011**	0.0026	0.0020	0.010
	5/28/2024	<0.0020	<0.0020	<0.0020	<0.0030
	8/23/2024	<0.0020	<0.0020	<0.0020	<0.0030
	11/20/2024	<0.0010	<0.0010	<0.0010	<0.0015
MW-04	2/1/2024	<0.0020	<0.0020	<0.0020	<0.0030
	5/28/2024	<0.0010	<0.0010	<0.0010	<0.0015
	8/23/2024	<0.0010	<0.0010	<0.0010	<0.0015
	11/20/2024	<0.0010	<0.0010	<0.0010	<0.0015

Notes:

mg/L: Milligrams per liter

NMWQCC: New Mexico Water Quality Control Commission

< : indicates result less than the stated laboratory reporting limit (PQL)

*Concentrations in **bold** and shaded exceed the New Mexico Water Quality Control Commission Standards, 20.6.2 of the New Mexico Administrative Code*

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APPENDIX A

Laboratory Analytical Reports

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

February 14, 2024

Mitch Killough
HILCORP ENERGY
PO Box 4700
Farmington, NM 87499
TEL: (505) 564-0733
FAX:

RE: Aztec 9 OrderNo.: 2402168

Dear Mitch Killough:

Eurofins Environment Testing South Central, LLC received 4 sample(s) on 2/3/2024 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 **2402168**
Date Reported: **2/14/2024**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** MW-01
Project: Aztec 9 **Collection Date:** 2/1/2024 1:32:00 PM
Lab ID: 2402168-001 **Matrix:** AQUEOUS **Received Date:** 2/3/2024 9:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **CCM**
Benzene	44	2.0		µg/L	2	2/8/2024 9:40:00 PM
Toluene	ND	2.0		µg/L	2	2/8/2024 9:40:00 PM
Ethylbenzene	ND	2.0		µg/L	2	2/8/2024 9:40:00 PM
Xylenes, Total	ND	3.0		µg/L	2	2/8/2024 9:40:00 PM
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	2	2/8/2024 9:40:00 PM
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	2	2/8/2024 9:40:00 PM
Surr: Dibromofluoromethane	106	70-130		%Rec	2	2/8/2024 9:40:00 PM
Surr: Toluene-d8	100	70-130		%Rec	2	2/8/2024 9:40:00 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	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 **2402168**
Date Reported: **2/14/2024**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** MW-02
Project: Aztec 9 **Collection Date:** 2/1/2024 12:37:00 PM
Lab ID: 2402168-002 **Matrix:** AQUEOUS **Received Date:** 2/3/2024 9:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **CCM**
Benzene	530	50	P	µg/L	50	2/9/2024 6:33:00 PM
Toluene	12000	500	P	µg/L	500	2/9/2024 6:08:00 PM
Ethylbenzene	1100	50	P	µg/L	50	2/9/2024 6:33:00 PM
Xylenes, Total	5200	75	P	µg/L	50	2/9/2024 6:33:00 PM
Surr: 1,2-Dichloroethane-d4	97.0	70-130	P	%Rec	50	2/9/2024 6:33:00 PM
Surr: 4-Bromofluorobenzene	104	70-130	P	%Rec	50	2/9/2024 6:33:00 PM
Surr: Dibromofluoromethane	93.4	70-130	P	%Rec	50	2/9/2024 6:33:00 PM
Surr: Toluene-d8	123	70-130	P	%Rec	50	2/9/2024 6:33:00 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	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 **2402168**
Date Reported: **2/14/2024**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-03
Project: Aztec 9
Collection Date: 2/1/2024 11:57:00 AM
Lab ID: 2402168-003 **Matrix:** AQUEOUS **Received Date:** 2/3/2024 9:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **CCM**
Benzene	11	2.0		µg/L	2	2/9/2024 5:19:00 PM
Toluene	2.6	2.0		µg/L	2	2/9/2024 5:19:00 PM
Ethylbenzene	2.0	2.0		µg/L	2	2/9/2024 5:19:00 PM
Xylenes, Total	10	3.0		µg/L	2	2/9/2024 5:19:00 PM
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	2	2/9/2024 5:19:00 PM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	2	2/9/2024 5:19:00 PM
Surr: Dibromofluoromethane	99.4	70-130		%Rec	2	2/9/2024 5:19:00 PM
Surr: Toluene-d8	107	70-130		%Rec	2	2/9/2024 5:19:00 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	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 **2402168**
Date Reported: **2/14/2024**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** MW-04
Project: Aztec 9 **Collection Date:** 2/1/2024 11:20:00 AM
Lab ID: 2402168-004 **Matrix:** AQUEOUS **Received Date:** 2/3/2024 9:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **CCM**
Benzene	ND	2.0	P	µg/L	2	2/9/2024 5:44:00 PM
Toluene	ND	2.0	P	µg/L	2	2/9/2024 5:44:00 PM
Ethylbenzene	ND	2.0	P	µg/L	2	2/9/2024 5:44:00 PM
Xylenes, Total	ND	3.0	P	µg/L	2	2/9/2024 5:44:00 PM
Surr: 1,2-Dichloroethane-d4	106	70-130	P	%Rec	2	2/9/2024 5:44:00 PM
Surr: 4-Bromofluorobenzene	101	70-130	P	%Rec	2	2/9/2024 5:44:00 PM
Surr: Dibromofluoromethane	104	70-130	P	%Rec	2	2/9/2024 5:44:00 PM
Surr: Toluene-d8	95.2	70-130	P	%Rec	2	2/9/2024 5:44:00 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	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#: **2402168**

14-Feb-24

Client: HILCORP ENERGY

Project: Aztec 9

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSW**	Batch ID: **SL102973**	RunNo: **102973**
Prep Date:	Analysis Date: **2/8/2024**	SeqNo: **3805704** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	91.4	70	130			
Toluene	18	1.0	20.00	0	89.0	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.6		10.00		95.7	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBW**	Batch ID: **SL102973**	RunNo: **102973**
Prep Date:	Analysis Date: **2/8/2024**	SeqNo: **3805705** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.4	70	130			
Surr: Dibromofluoromethane	10		10.00		105	70	130			
Surr: Toluene-d8	9.4		10.00		93.5	70	130			

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSW**	Batch ID: **R103008**	RunNo: **103008**
Prep Date:	Analysis Date: **2/9/2024**	SeqNo: **3808062** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	89.5	70	130			
Toluene	18	1.0	20.00	0	91.9	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	9.6		10.00		95.9	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBW**	Batch ID: **R103008**	RunNo: **103008**
Prep Date:	Analysis Date: **2/9/2024**	SeqNo: **3808063** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								

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#: **2402168**

14-Feb-24

Client: HILCORP ENERGY

Project: Aztec 9

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBW**	Batch ID: **R103008**	RunNo: **103008**
Prep Date:	Analysis Date: **2/9/2024**	SeqNo: **3808063** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.9		10.00		98.9	70	130			
Surr: Toluene-d8	9.6		10.00		95.5	70	130			

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: HILCORP ENERGY Work Order Number: 2402168 RcptNo: 1

Received By: Tracy Casarrubias 2/3/2024 9:40:00 AM

Completed By: Tracy Casarrubias 2/3/2024 11:27:25 AM

Reviewed By: 2/5/24

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 ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

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

Adjusted? _____

Checked by: TMC 2/3/24

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 and phone number are missing on COC- TMC 2/3/24

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.8	Good	Yes	Morty		

Chain-of-Custody Record

Client: Hilcorp

Attn: Mitch Killough

Mailing Address:

Phone #:

email or Fax#: MKillough@Hilcorp.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: Aztec 9

Project #:

Project Manager: S. Hyde SHyde@Ensolum.com

Sampler: PA

On Ice: ☑ Yes ☐ No marty

# of Coolers: 1

Cooler Temp(Including CF): 3.8 + 0 = 3.8 (°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. 2402168	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) BTEX ONLY	8270 (Semi-VOA)	Total Coliform (Present/Absent)
2-1-24	1332	AQ	MW01	3, VOA	HCL	001								X		
↓	1237	↓	MW02	↓	↓	002								X		
↓	1157	↓	MW03	↓	↓	003								X		
↓	1120	↓	MW04	↓	↓	004								X		

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
2-2-24	0945				2/2/24	945
2/2/24	1610			courier	2/3/24	9:40

Remarks: CC: Panderson@ensolum.com

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Mitch Killough
Hilcorp Energy
PO BOX 4700
Farmington, New Mexico 87499

Generated 6/10/2024 12:18:18 PM

JOB DESCRIPTION

Aztec 9

JOB NUMBER

885-5193-1

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
6/10/2024 12:18:18 PM

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

Client: Hilcorp Energy
Project/Site: Aztec 9

Laboratory Job ID: 885-5193-1

Table of Contents

Definitions/Glossary

Client: Hilcorp Energy
Project/Site: Aztec 9

Job ID: 885-5193-1

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: Hilcorp Energy
Project: Aztec 9

Job ID: 885-5193-1

Job ID: 885-5193-1 Eurofins Albuquerque

Job Narrative
885-5193-1

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 5/29/2024 6:35 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 4.7°C.

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

Client Sample Results

Client: Hilcorp Energy
Project/Site: Aztec 9

Job ID: 885-5193-1

Client Sample ID: MW-01

Date Collected: 05/28/24 14:30
Date Received: 05/29/24 06:35

Lab Sample ID: 885-5193-1

Matrix: Water

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**2.0**		1.0		ug/L			06/05/24 15:52	1
Ethylbenzene	ND		1.0		ug/L			06/05/24 15:52	1
Toluene	ND		1.0		ug/L			06/05/24 15:52	1
Xylenes, Total	ND		1.5		ug/L			06/05/24 15:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*		*06/05/24 15:52*	*1*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*		*06/05/24 15:52*	*1*
Dibromofluoromethane (Surr)	*89*		*70 - 130*		*06/05/24 15:52*	*1*
Toluene-d8 (Surr)	*95*		*70 - 130*		*06/05/24 15:52*	*1*

Client Sample Results

Client: Hilcorp Energy
Project/Site: Aztec 9

Job ID: 885-5193-1

Client Sample ID: MW-02

Date Collected: 05/28/24 14:00
Date Received: 05/29/24 06:35

Lab Sample ID: 885-5193-2

Matrix: Water

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	170		100		ug/L			06/05/24 16:16	100
Ethylbenzene	880		100		ug/L			06/05/24 16:16	100
Toluene	720		100		ug/L			06/05/24 16:16	100
Xylenes, Total	4400		150		ug/L			06/05/24 16:16	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*70 - 130*		*06/05/24 16:16*	*100*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*		*06/05/24 16:16*	*100*
Dibromofluoromethane (Surr)	*85*		*70 - 130*		*06/05/24 16:16*	*100*
Toluene-d8 (Surr)	*102*		*70 - 130*		*06/05/24 16:16*	*100*

Client Sample Results

Client: Hilcorp Energy
Project/Site: Aztec 9

Job ID: 885-5193-1

Client Sample ID: MW-03
Date Collected: 05/28/24 14:39
Date Received: 05/29/24 06:35

Lab Sample ID: 885-5193-3
Matrix: Water

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			06/05/24 16:41	2
Ethylbenzene	ND		2.0		ug/L			06/05/24 16:41	2
Toluene	ND		2.0		ug/L			06/05/24 16:41	2
Xylenes, Total	ND		3.0		ug/L			06/05/24 16:41	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*		*06/05/24 16:41*	*2*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*		*06/05/24 16:41*	*2*
Dibromofluoromethane (Surr)	*89*		*70 - 130*		*06/05/24 16:41*	*2*
Toluene-d8 (Surr)	*94*		*70 - 130*		*06/05/24 16:41*	*2*

Client Sample Results

Client: Hilcorp Energy
Project/Site: Aztec 9

Job ID: 885-5193-1

Client Sample ID: MW-04
Date Collected: 05/28/24 13:30
Date Received: 05/29/24 06:35

Lab Sample ID: 885-5193-4
Matrix: Water

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			06/05/24 17:06	1
Ethylbenzene	ND		1.0		ug/L			06/05/24 17:06	1
Toluene	ND		1.0		ug/L			06/05/24 17:06	1
Xylenes, Total	ND		1.5		ug/L			06/05/24 17:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*		*06/05/24 17:06*	*1*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*		*06/05/24 17:06*	*1*
Dibromofluoromethane (Surr)	*90*		*70 - 130*		*06/05/24 17:06*	*1*
Toluene-d8 (Surr)	*94*		*70 - 130*		*06/05/24 17:06*	*1*

QC Sample Results

Client: Hilcorp Energy
Project/Site: Aztec 9

Job ID: 885-5193-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 885-6262/3
Matrix: Water
Analysis Batch: 6262

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			06/05/24 12:11	1
Ethylbenzene	ND		1.0		ug/L			06/05/24 12:11	1
Toluene	ND		1.0		ug/L			06/05/24 12:11	1
Xylenes, Total	ND		1.5		ug/L			06/05/24 12:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 130*		*06/05/24 12:11*	*1*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*		*06/05/24 12:11*	*1*
Dibromofluoromethane (Surr)	*90*		*70 - 130*		*06/05/24 12:11*	*1*
Toluene-d8 (Surr)	*96*		*70 - 130*		*06/05/24 12:11*	*1*

Lab Sample ID: STOBLK 885-6262/11
Matrix: Water
Analysis Batch: 6262

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

Analyte	STOBLK Result	STOBLK Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			06/05/24 15:27	1
Ethylbenzene	ND		1.0		ug/L			06/05/24 15:27	1
Toluene	ND		1.0		ug/L			06/05/24 15:27	1
Xylenes, Total	ND		1.5		ug/L			06/05/24 15:27	1

Surrogate	*STOBLK %Recovery*	*STOBLK Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*		*06/05/24 15:27*	*1*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*		*06/05/24 15:27*	*1*
Dibromofluoromethane (Surr)	*91*		*70 - 130*		*06/05/24 15:27*	*1*
Toluene-d8 (Surr)	*93*		*70 - 130*		*06/05/24 15:27*	*1*

Lab Sample ID: LCS 885-6262/2
Matrix: Water
Analysis Batch: 6262

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			20.1	19.5		ug/L		97	70 - 130		
Toluene			20.2	20.7		ug/L		103	70 - 130		
Trichloroethene (TCE)			20.2	18.0		ug/L		89	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 130*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*
Dibromofluoromethane (Surr)	*87*		*70 - 130*
Toluene-d8 (Surr)	*96*		*70 - 130*

QC Association Summary

Client: Hilcorp Energy
Project/Site: Aztec 9

Job ID: 885-5193-1

GC/MS VOA

Analysis Batch: 6262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-5193-1	MW-01	Total/NA	Water	8260B	
885-5193-2	MW-02	Total/NA	Water	8260B	
885-5193-3	MW-03	Total/NA	Water	8260B	
885-5193-4	MW-04	Total/NA	Water	8260B	
MB 885-6262/3	Method Blank	Total/NA	Water	8260B	
STOBLK 885-6262/11	Method Blank	Total/NA	Water	8260B	
LCS 885-6262/2	Lab Control Sample	Total/NA	Water	8260B	

Lab Chronicle

Client: Hilcorp Energy
Project/Site: Aztec 9

Job ID: 885-5193-1

Client Sample ID: MW-01
Date Collected: 05/28/24 14:30
Date Received: 05/29/24 06:35

Lab Sample ID: 885-5193-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	6262	CM	EET ALB	06/05/24 15:52

Client Sample ID: MW-02
Date Collected: 05/28/24 14:00
Date Received: 05/29/24 06:35

Lab Sample ID: 885-5193-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		100	6262	CM	EET ALB	06/05/24 16:16

Client Sample ID: MW-03
Date Collected: 05/28/24 14:39
Date Received: 05/29/24 06:35

Lab Sample ID: 885-5193-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		2	6262	CM	EET ALB	06/05/24 16:41

Client Sample ID: MW-04
Date Collected: 05/28/24 13:30
Date Received: 05/29/24 06:35

Lab Sample ID: 885-5193-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	6262	CM	EET ALB	06/05/24 17:06

Laboratory References:

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

Accreditation/Certification Summary

Client: Hilcorp Energy
Project/Site: Aztec 9

Job ID: 885-5193-1

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
8260B		Water	Benzene
8260B		Water	Ethylbenzene
8260B		Water	Toluene
8260B		Water	Xylenes, Total

Oregon	NELAP	NM100001	02-26-25

Chain-of-Custody Record

Client: HEC

Attn: Mitch Killough

Mailing Address:

Phone #:

email or Fax#: MKillough@hilcop.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 day

☑ Standard ☐ Rush

Project Name: AZTEC 9

Project #:

Project Manager: Stuart Hyde Shyde@ensolum.com

Sampler: PA

On Ice: ☑ Yes ☐ No

# of Coolers: 1 40g

Cooler Temp(Including CF): 4.7 0=4.7 (°C)

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

885-5193 COC

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)
5/28	1430	GW	MW-01	VOA, 3	HCl	1	X									
	1400		MW-02			2										
	1439		MW-03			3										
	1330		MW-04	5		4										

Date	Time	Relinquished by	Received by	Via	Date	Time
5/28	1600	Peter Anderson			5/28/24	1600
5/28/24	1724			courier	5/29/24	6:35

Remarks: PLZ CC: Pandreson@ensolum.com

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

Login Sample Receipt Checklist

Client: Hilcorp Energy Job Number: 885-5193-1

Login Number: 5193 **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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mitch Killough
Hilcorp Energy
PO BOX 4700
Farmington, New Mexico 87499

Generated 8/30/2024 4:44:19 PM

JOB DESCRIPTION

Aztec #9

JOB NUMBER

885-10542-1

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
8/30/2024 4:44:19 PM

Authorized for release by
Michelle Garcia, Project Manager
michelle.garcia@et.eurofinsus.com
(505)345-3975

Client: Hilcorp Energy
Project/Site: Aztec #9

Laboratory Job ID: 885-10542-1

Table of Contents

Definitions/Glossary

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-10542-1

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: Hilcorp Energy
Project: Aztec #9

Job ID: 885-10542-1

Job ID: 885-10542-1 Eurofins Albuquerque

Job Narrative
885-10542-1

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 and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided 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 8/24/2024 6:25 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 4.1°C.

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

Client Sample Results

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-10542-1

Client Sample ID: MW-01

Date Collected: 08/23/24 12:50
Date Received: 08/24/24 06:25

Lab Sample ID: 885-10542-1

Matrix: Water

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			08/30/24 14:26	2
Ethylbenzene	ND		2.0		ug/L			08/30/24 14:26	2
Toluene	ND		2.0		ug/L			08/30/24 14:26	2
Xylenes, Total	ND		3.0		ug/L			08/30/24 14:26	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*70 - 130*		*08/30/24 14:26*	*2*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*08/30/24 14:26*	*2*
Dibromofluoromethane (Surr)	*101*		*70 - 130*		*08/30/24 14:26*	*2*
Toluene-d8 (Surr)	*93*		*70 - 130*		*08/30/24 14:26*	*2*

Client Sample Results

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-10542-1

Client Sample ID: MW-03

Date Collected: 08/23/24 12:30
Date Received: 08/24/24 06:25

Lab Sample ID: 885-10542-2

Matrix: Water

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			08/30/24 15:39	2
Ethylbenzene	ND		2.0		ug/L			08/30/24 15:39	2
Toluene	ND		2.0		ug/L			08/30/24 15:39	2
Xylenes, Total	ND		3.0		ug/L			08/30/24 15:39	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*		*08/30/24 15:39*	*2*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*08/30/24 15:39*	*2*
Dibromofluoromethane (Surr)	*102*		*70 - 130*		*08/30/24 15:39*	*2*
Toluene-d8 (Surr)	*94*		*70 - 130*		*08/30/24 15:39*	*2*

Client Sample Results

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-10542-1

Client Sample ID: MW-04

Date Collected: 08/23/24 11:45
Date Received: 08/24/24 06:25

Lab Sample ID: 885-10542-3

Matrix: Water

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			08/30/24 16:03	1
Ethylbenzene	ND		1.0		ug/L			08/30/24 16:03	1
Toluene	ND		1.0		ug/L			08/30/24 16:03	1
Xylenes, Total	ND		1.5		ug/L			08/30/24 16:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*		*08/30/24 16:03*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*08/30/24 16:03*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 130*		*08/30/24 16:03*	*1*
Toluene-d8 (Surr)	*93*		*70 - 130*		*08/30/24 16:03*	*1*

QC Sample Results

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-10542-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 885-11404/5
Matrix: Water
Analysis Batch: 11404

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			08/30/24 12:24	1
Ethylbenzene	ND		1.0		ug/L			08/30/24 12:24	1
Toluene	ND		1.0		ug/L			08/30/24 12:24	1
Xylenes, Total	ND		1.5		ug/L			08/30/24 12:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 130*		*08/30/24 12:24*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*08/30/24 12:24*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 130*		*08/30/24 12:24*	*1*
Toluene-d8 (Surr)	*94*		*70 - 130*		*08/30/24 12:24*	*1*

Lab Sample ID: LCS 885-11404/4
Matrix: Water
Analysis Batch: 11404

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			20.1	22.2		ug/L		110	70 - 130		
Toluene			20.2	19.5		ug/L		97	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 130*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*
Dibromofluoromethane (Surr)	*100*		*70 - 130*
Toluene-d8 (Surr)	*93*		*70 - 130*

Lab Sample ID: 885-10542-1 MS
Matrix: Water
Analysis Batch: 11404

Client Sample ID: MW-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	ND		40.2	44.4		ug/L		110	70 - 130		
Toluene	ND		40.3	38.3		ug/L		95	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
Dibromofluoromethane (Surr)	*102*		*70 - 130*
Toluene-d8 (Surr)	*94*		*70 - 130*

Lab Sample ID: 885-10542-1 MSD
Matrix: Water
Analysis Batch: 11404

Client Sample ID: MW-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	ND		40.2	43.8		ug/L		109	70 - 130	1	20
Toluene	ND		40.3	36.9		ug/L		92	70 - 130	4	20

QC Sample Results

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-10542-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 885-10542-1 MSD
Matrix: Water
Analysis Batch: 11404

Client Sample ID: MW-01
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 130
4-Bromofluorobenzene (Surr)	104		70 - 130
Dibromofluoromethane (Surr)	105		70 - 130
Toluene-d8 (Surr)	94		70 - 130

QC Association Summary

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-10542-1

GC/MS VOA

Analysis Batch: 11404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-10542-1	MW-01	Total/NA	Water	8260B	
885-10542-2	MW-03	Total/NA	Water	8260B	
885-10542-3	MW-04	Total/NA	Water	8260B	
MB 885-11404/5	Method Blank	Total/NA	Water	8260B	
LCS 885-11404/4	Lab Control Sample	Total/NA	Water	8260B	
885-10542-1 MS	MW-01	Total/NA	Water	8260B	
885-10542-1 MSD	MW-01	Total/NA	Water	8260B	

Lab Chronicle

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-10542-1

Client Sample ID: MW-01
Date Collected: 08/23/24 12:50
Date Received: 08/24/24 06:25

Lab Sample ID: 885-10542-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		2	11404	CM	EET ALB	08/30/24 14:26

Client Sample ID: MW-03
Date Collected: 08/23/24 12:30
Date Received: 08/24/24 06:25

Lab Sample ID: 885-10542-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		2	11404	CM	EET ALB	08/30/24 15:39

Client Sample ID: MW-04
Date Collected: 08/23/24 11:45
Date Received: 08/24/24 06:25

Lab Sample ID: 885-10542-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	11404	CM	EET ALB	08/30/24 16:03

Laboratory References:

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

Accreditation/Certification Summary

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-10542-1

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
8260B		Water	Benzene
8260B		Water	Ethylbenzene
8260B		Water	Toluene
8260B		Water	Xylenes, Total

Oregon	NELAP	NM100001	02-26-25

Chain-of-Custody Record

Client: AEC

Attn: Mitch Killough

Mailing Address:

Phone #:

email or Fax#: MKillough@hilcorp.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5day

☑ Standard ☐ Rush

Project Name: Aztec #9

Project #:

Project Manager: Stuart Hyde Shyde@ensolum.com

Sampler: PA

On Ice: ☑ Yes ☐ No checking

# of Coolers: 1

Cooler Temp(including CF): 3.9+0.2=4.1 (°C)

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

885-10542 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) Btex only	8270 (Semi-VOA)	Total Coliform (Present/Absent)
8/23	1250	GW	MW-01	3, VOA	Hg Cl/Cool	1								X		
↓	1230		MW-03			2								X		
↓	1145	↓	MW-04	↓	↓	3								X		

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
8/23	1350		Chris Waele		8/23/24	1350
8/23/24	1714	Chris Waele		Courier	8/24/24	6:25

Remarks: PST CC: Panderson@ensolum.com Jcook@ensolum.com

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

Login Sample Receipt Checklist

Client: Hilcorp Energy Job Number: 885-10542-1

Login Number: 10542 **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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Mitch Killough
Hilcorp Energy
PO BOX 4700
Farmington, New Mexico 87499

Generated 11/26/2024 10:58:44 AM

JOB DESCRIPTION

Aztec #9

JOB NUMBER

885-15690-1

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
11/26/2024 10:58:44 AM

Authorized for release by
Michelle Garcia, Project Manager
michelle.garcia@et.eurofinsus.com
(505)345-3975

Client: Hilcorp Energy
Project/Site: Aztec #9

Laboratory Job ID: 885-15690-1

Table of Contents

Definitions/Glossary

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-15690-1

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: Hilcorp Energy
Project: Aztec #9

Job ID: 885-15690-1

Job ID: 885-15690-1 Eurofins Albuquerque

Job Narrative
885-15690-1

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 and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided 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 11/21/2024 6:35 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 0.9°C.

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

Client Sample Results

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-15690-1

Client Sample ID: MW-01

Date Collected: 11/20/24 12:50
Date Received: 11/21/24 06:35

Lab Sample ID: 885-15690-1

Matrix: Water

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			11/25/24 15:56	1
Ethylbenzene	ND		1.0		ug/L			11/25/24 15:56	1
Toluene	ND		1.0		ug/L			11/25/24 15:56	1
Xylenes, Total	ND		1.5		ug/L			11/25/24 15:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 130*		*11/25/24 15:56*	*1*
Toluene-d8 (Surr)	*112*		*70 - 130*		*11/25/24 15:56*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*11/25/24 15:56*	*1*
Dibromofluoromethane (Surr)	*108*		*70 - 130*		*11/25/24 15:56*	*1*

Client Sample Results

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-15690-1

Client Sample ID: MW-03

Date Collected: 11/20/24 12:35
Date Received: 11/21/24 06:35

Lab Sample ID: 885-15690-2

Matrix: Water

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			11/25/24 16:24	1
Ethylbenzene	ND		1.0		ug/L			11/25/24 16:24	1
Toluene	ND		1.0		ug/L			11/25/24 16:24	1
Xylenes, Total	ND		1.5		ug/L			11/25/24 16:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 130*		*11/25/24 16:24*	*1*
Toluene-d8 (Surr)	*111*		*70 - 130*		*11/25/24 16:24*	*1*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*11/25/24 16:24*	*1*
Dibromofluoromethane (Surr)	*109*		*70 - 130*		*11/25/24 16:24*	*1*

Client Sample Results

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-15690-1

Client Sample ID: MW-04

Date Collected: 11/20/24 11:55
Date Received: 11/21/24 06:35

Lab Sample ID: 885-15690-3

Matrix: Water

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			11/25/24 16:53	1
Ethylbenzene	ND		1.0		ug/L			11/25/24 16:53	1
Toluene	ND		1.0		ug/L			11/25/24 16:53	1
Xylenes, Total	ND		1.5		ug/L			11/25/24 16:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*		*11/25/24 16:53*	*1*
Toluene-d8 (Surr)	*114*		*70 - 130*		*11/25/24 16:53*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*		*11/25/24 16:53*	*1*
Dibromofluoromethane (Surr)	*108*		*70 - 130*		*11/25/24 16:53*	*1*

QC Sample Results

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-15690-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 885-16616/4
Matrix: Water
Analysis Batch: 16616

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			11/25/24 14:31	1
Ethylbenzene	ND		1.0		ug/L			11/25/24 14:31	1
Toluene	ND		1.0		ug/L			11/25/24 14:31	1
Xylenes, Total	ND		1.5		ug/L			11/25/24 14:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 130*		*11/25/24 14:31*	*1*
Toluene-d8 (Surr)	*111*		*70 - 130*		*11/25/24 14:31*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*11/25/24 14:31*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 130*		*11/25/24 14:31*	*1*

Lab Sample ID: LCS 885-16616/3
Matrix: Water
Analysis Batch: 16616

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			20.1	20.3		ug/L		101	70 - 130		
Toluene			20.2	22.4		ug/L		111	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 130*
Toluene-d8 (Surr)	*112*		*70 - 130*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*
Dibromofluoromethane (Surr)	*105*		*70 - 130*

Lab Sample ID: 885-15690-1 MS
Matrix: Water
Analysis Batch: 16616

Client Sample ID: MW-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	ND		20.1	21.0		ug/L		105	70 - 130		
Toluene	ND		20.2	22.5		ug/L		112	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 130*
Toluene-d8 (Surr)	*112*		*70 - 130*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
Dibromofluoromethane (Surr)	*105*		*70 - 130*

Lab Sample ID: 885-15690-1 MSD
Matrix: Water
Analysis Batch: 16616

Client Sample ID: MW-01
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	ND		20.1	21.4		ug/L		107	70 - 130	2	20
Toluene	ND		20.2	21.1		ug/L		105	70 - 130	7	20

QC Sample Results

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-15690-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 885-15690-1 MSD
Matrix: Water
Analysis Batch: 16616

Client Sample ID: MW-01
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 130
Toluene-d8 (Surr)	110		70 - 130
4-Bromofluorobenzene (Surr)	95		70 - 130
Dibromofluoromethane (Surr)	110		70 - 130

QC Association Summary

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-15690-1

GC/MS VOA

Analysis Batch: 16616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-15690-1	MW-01	Total/NA	Water	8260B	
885-15690-2	MW-03	Total/NA	Water	8260B	
885-15690-3	MW-04	Total/NA	Water	8260B	
MB 885-16616/4	Method Blank	Total/NA	Water	8260B	
LCS 885-16616/3	Lab Control Sample	Total/NA	Water	8260B	
885-15690-1 MS	MW-01	Total/NA	Water	8260B	
885-15690-1 MSD	MW-01	Total/NA	Water	8260B	

Lab Chronicle

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-15690-1

Client Sample ID: MW-01
Date Collected: 11/20/24 12:50
Date Received: 11/21/24 06:35

Lab Sample ID: 885-15690-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	16616	RA	EET ALB	11/25/24 15:56

Client Sample ID: MW-03
Date Collected: 11/20/24 12:35
Date Received: 11/21/24 06:35

Lab Sample ID: 885-15690-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	16616	RA	EET ALB	11/25/24 16:24

Client Sample ID: MW-04
Date Collected: 11/20/24 11:55
Date Received: 11/21/24 06:35

Lab Sample ID: 885-15690-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	16616	RA	EET ALB	11/25/24 16:53

Laboratory References:

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

Accreditation/Certification Summary

Client: Hilcorp Energy
Project/Site: Aztec #9

Job ID: 885-15690-1

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
8260B		Water	Benzene
8260B		Water	Ethylbenzene
8260B		Water	Toluene
8260B		Water	Xylenes, Total

Oregon	NELAP	NM100001	02-26-25

Chain-of-Custody Record

Client: Hilcorp

ATTN: Mitch Killough

Mailing Address: mkillough@hilcorp.com

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Aztec #9

Project #:

Project Manager: Shuart Hyde
shyde@ensolum.com

Sampler: Nicole Pottala

On Ice: ☒ Yes ☐ No

# of Coolers: 1 1oz

Cooler Temp (Including CF): 0.6+0.3=0.9 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORA
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 8710
Tel. 505-345-3975 Fax 505-345-4107
885-15690 COC

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	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) BTEX only	8270 (Semi-VOA)	Total Coliform (Present/Absent)
11/20	1250	GW	MW-01	3voa	Cool	1							X		
11/20	1235	GW	MW-03	↓	↓	2							X		
11/20	1155	GW	MW-04	↓	↓	3							X		

Date	Time:	Relinquished by:	Received by:	Via.	Date	Time
11/20	1332	N Pottala			11/20/24	1332
Date: 11/20/24	Time. 1727	Relinquished by: Ernest Walker	Received by	Via: Courier	Date: 11/21/24	Time: 6:35

Remarks: *COC*
npottala@ensolum.com
non preservative vocs used

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: Hilcorp Energy Job Number: 885-15690-1

Login Number: 15690 **List Source: Eurofins Albuquerque**
List Number: 1
Creator: McQuiston, Steven

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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

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

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 432621
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Review of the 2024 Annual Groundwater Monitoring Report for Aztec #9: content satisfactory. 1. OCD notes that BOS 200 was used to treat hydrocarbons in the open excavation. A soil boring and vadose zone/smear zone sampling plan will be required to be submitted once abatement closure is achieved. 2. Continue to collect groundwater samples on a quarterly schedule. Manually bail LNAPL out of MW-2, if enough has accumulated. 3. Submit the 2025 Groundwater Monitoring Report to OCD by April 1, 2026.	4/29/2025