ENSOLUM

March 24, 2023

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

Re: Closure Request
Zia Hills 19-1
Incident Number NAPP2216037138
Lea County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of COG Operating, LLC (COG), has prepared this *Closure Request* to an approved *Remediation Work Plan (RWP)* submitted on December 28, 2022. This *Closure Request* provides an update to the depth to groundwater determination and soil sampling activities performed at the Zia Hills 19-1 (Site). Based on the results presented in this report, COG is submitting this *Closure Request*, describing remediation that has occurred and requesting closure for Incident Number NAPP2216037138.

All of the release details regarding the incident, Site characterization, and remediation conducted can be referenced in the original *Closure Request* submitted on November 11, 2022. On November 29, 2022, NMOCD denied the original *Closure Request* for Incident Number NAPP2216037138 for the following reason:

> *Closure Report Denied.The depth to groundwater has not be adequately determined. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided in the submission. The responsible party may choose to remediate to the most stringest levels listed in Table 1 of 19.15.29 NMAC in lieu of drilling to determine the depth to groundwater. Areas SS04, SS06, SS07, & FS05 require additional delineation. Please resubmit a revised closure report to the OCD portal by December 29,2022.*

Although the denial requested submittal of a closure report, it was not possible to coordinate land access, permit a boring with the New Mexico Office of the State Engineer (NMOSE), schedule fieldwork with limited drillers' availability, then collect and analyze new data within 30 days. The *RWP* was submitted in lieu of a closure report. The *RWP* proposed installation of a boring to investigate depth to water and confirm the Closure Criteria and proposed collection of samples outside the release area for additional lateral delineation at soil samples SS04, SS06, and SS07. In regards to additional delineation at FS05, soil represented by excavation confirmation sample FS05 was removed during excavation. Removal of the soil was confirmed with collection of FS05A, collected approximately ¾-foot deeper than

FS05. Results from confirmation sample FS05A met the reclamation requirement for total petroleum hydrocarbons (TPH) and chloride.

The *RWP* was approved by NMOCD on January 24, 2023, via email with no conditions. Continuing below is a description of work completed following the approval of the *RWP*.

DELINEATION ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On February 15, 2023, Ensolum personnel were at the Site to perform lateral delineation activities as detailed in the approved *RWP.* Three delineation soil samples (SS04, SS06, and SS07) were collected around the release extent at a depth of approximately 0.5 feet bgs to assess the lateral extent of the release. Soil from the delineation samples was field screened for volatile organic compounds (VOCs) utlizing a calibrated photoionization detector (PID) and chloride utilizing Hach® chloride QuanTab® test strips. The delineation soil sample locations are depicted in Figure 2.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of the following constituents of concern (COCs): benzene, toluene ethylbenezene, and total xylenes (BTEX) following United States Environmental Protection Agency (EPA) Method 8021B; TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

Laboratory analytical results for delineation soil samples SS04, SS06, and SS07, indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria and successfully define the lateral extent of the release. Laboratory analytical results are provided on Table 1 and laboratory analytical reports are included as Appendix A.

DEPTH TO WATER DETERMINATION

On February 15, 2023, a borehole (BH01) was advanced to a depth of 110 feet bgs via air rotary drill rig. The borehole was located approximately 0.3 miles southeast of the Site and is depicted on Figure 1. A field geologist logged and described soils continuously. The borehole lithologic/soil sampling log is included in Appendix B. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed groundwater beneath the Site is greater than 100 feet bgs. The borehole was properly abandoned using hydrated bentonite chips.

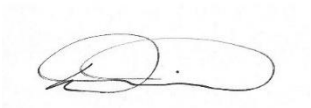
CLOSURE REQUEST

Delineation activities and depth to groundwater determination were carried out and confirmed as approved in the *RWP*. Laboratory analytical results for the delineation soil samples indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria and successfully defined the lateral extent of the release. A borehole was drilled to 110 feet bgs at the Site and did not encounter groundwater, confirming depth to groundwater is greater than 100 feet bgs. As such, COG respectfully requests closure for Incident Number NAPP2216037138. The Final C-141 is included as Appendix C.

If you have any questions or comments, please contact Ms. Kalei Jennings at 817) 683-2503 or kjennings@ensolum.com.

Sincerely,
Ensolum, LLC

Hadlie Green
Project Manager



Daniel R. Moir, PG
Senior Managing Geologist

cc: Charles Beauvais, COG Operating, LLC
Jacob Laird, COG Operating, LLC
Bureau of Land Management

Appendices:

Figure 1	Site Receptor Map
Figure 2	Delineation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix B	Lithologic / Soil Sampling Log
Appendix C	Final C-141

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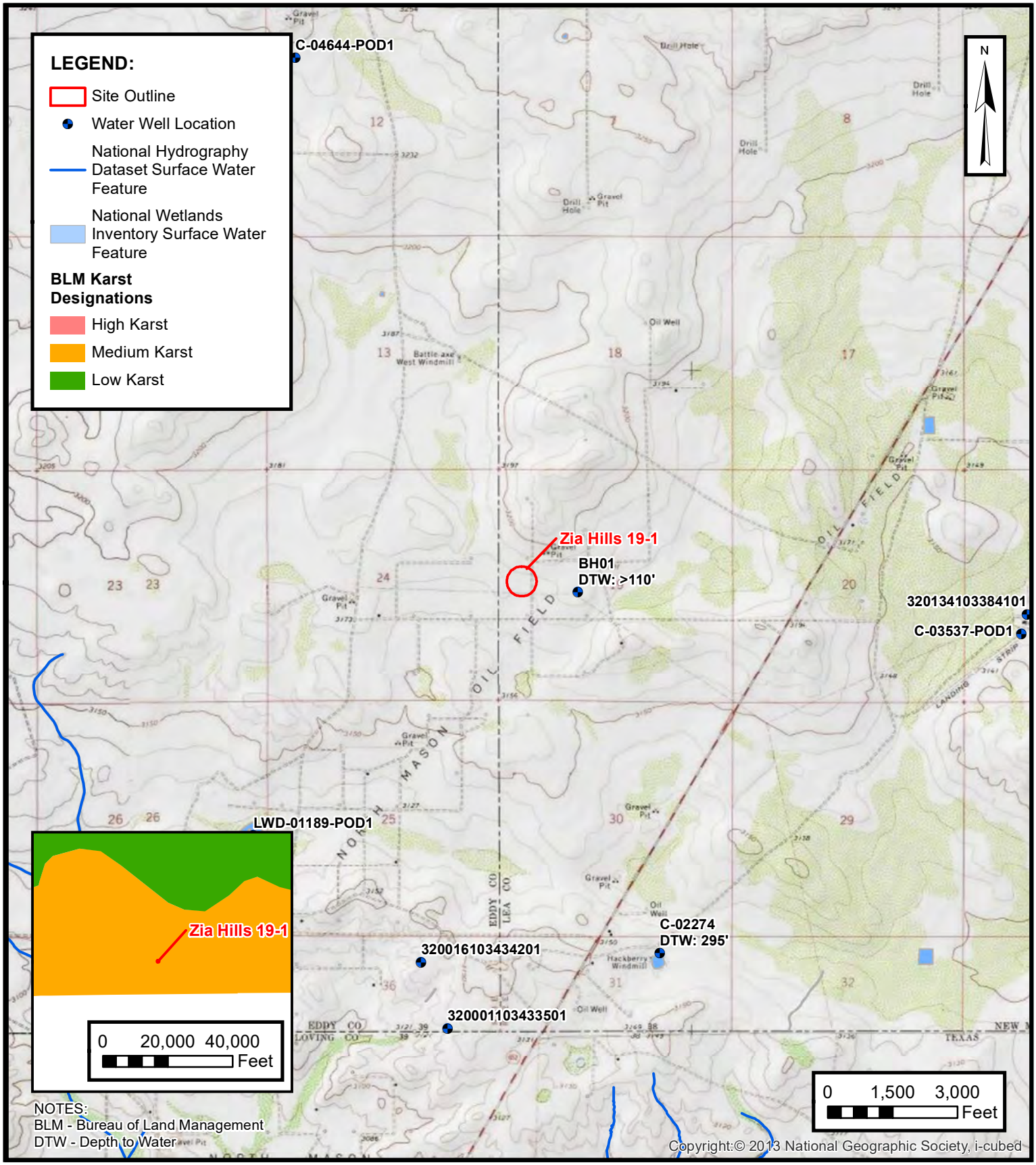
FIGURES



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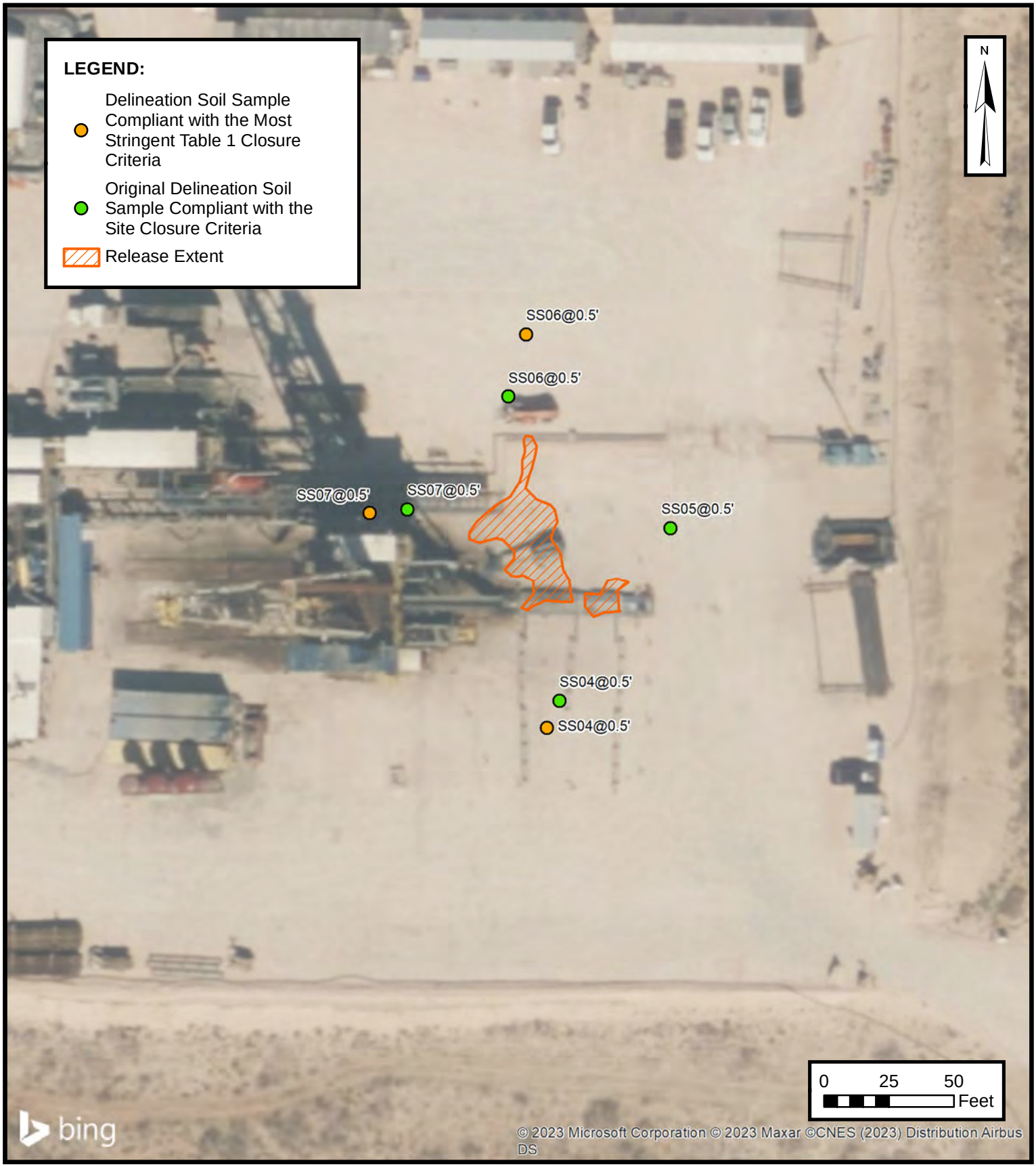
Environmental, Engineering and Hydrogeologic Consultants

SITE LOCATION MAP

COG OPERATING, LLC
ZIA HILLS 19-1
NAPP2216037138
Unit E Sec 19 T26S R32E
Lea County, New Mexico

FIGURE
1



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DELINEATION SOIL SAMPLE LOCATIONS

COG OPERATING, LLC
ZIA HILLS 19-1
NAPP2216037138
Unit E Sec 19 T26S R32E
Lea County, New Mexico

FIGURE

2

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
ZIA Hills 19-1
GOG Operating, LLC
Lea County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Delineation Soil Samples										
SS04	02/15/2023	0.5	<0.00200	<0.00400	<50.0	87.7	<50.0	87.7	87.7	363
SS06	02/15/2023	0.5	<0.00202	0.0119	<49.8	93.9	<49.8	93.9	93.9	342
SS07	02/15/2023	0.5	<0.00202	0.0183	<49.9	76.8	<49.9	76.8	76.8	355

Notes:

bgs: below ground surface
BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes
DRO: Diesel Range Organics
GRO: Gasoline Range Organics
mg/kg: milligrams per kilogram
NMAC: New Mexico Administrative Code
NMOCD: New Mexico Oil Conservation Division
ORO: Oil Range Organics
TPH: Total Petroleum Hydrocarbon

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APPENDIX A

Laboratory Analytical Reports & Chain of Custody Documentation

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Hadlie Green
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

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JOB DESCRIPTION

Zia Hills 1AB
SDG NUMBER 03D2024059

JOB NUMBER

890-4123-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

Eurofins Carlsbad

Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization

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Authorized for release by
Jessica Kramer, Project Manager
Jessica.Kramer@et.eurofinsus.com
(432)704-5440

Client: Ensolum
Project/Site: Zia Hills 1AB

Laboratory Job ID: 890-4123-1
SDG: 03D2024059

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-4123-1
Project/Site: Zia Hills 1AB SDG: 03D2024059

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
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: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4123-1
SDG: 03D2024059

Job ID: 890-4123-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4123-1

Receipt
The sample was received on 2/17/2023 8:20 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.2°C

Receipt Exceptions
The following sample was received and analyzed from an unpreserved bulk soil jar: SS07 (890-4123-1).

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-46929 and analytical batch 880-46928 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

GC Semi VOA
Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-47003 and analytical batch 880-46994 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10 and Diesel Range Organics (Over C10-C28).

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: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4123-1
SDG: 03D2024059

Client Sample ID: SS07

Date Collected: 02/15/23 14:30
Date Received: 02/17/23 08:20
Sample Depth: 0.5'

Lab Sample ID: 890-4123-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U F2 F1	0.00202		mg/Kg		02/22/23 09:16	02/23/23 03:12	1
Toluene	**0.00490**	**F1**	0.00202		mg/Kg		02/22/23 09:16	02/23/23 03:12	1
Ethylbenzene	**0.00362**		0.00202		mg/Kg		02/22/23 09:16	02/23/23 03:12	1
m-Xylene & p-Xylene	**0.00658**	**F1**	0.00404		mg/Kg		02/22/23 09:16	02/23/23 03:12	1
o-Xylene	**0.00316**	**F1**	0.00202		mg/Kg		02/22/23 09:16	02/23/23 03:12	1
Xylenes, Total	**0.00974**	**F1**	0.00404		mg/Kg		02/22/23 09:16	02/23/23 03:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*	*02/22/23 09:16*	*02/23/23 03:12*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*02/22/23 09:16*	*02/23/23 03:12*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0183**		0.00404		mg/Kg			02/23/23 12:18	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**76.8**		49.9		mg/Kg			02/23/23 16:21	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *1	49.9		mg/Kg		02/23/23 09:12	02/23/23 11:41	1
Diesel Range Organics (Over C10-C28)	**76.8**	***1**	49.9		mg/Kg		02/23/23 09:12	02/23/23 11:41	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		02/23/23 09:12	02/23/23 11:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*87*		*70 - 130*	*02/23/23 09:12*	*02/23/23 11:41*	*1*
o-Terphenyl	*93*		*70 - 130*	*02/23/23 09:12*	*02/23/23 11:41*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**355**		4.97		mg/Kg			02/21/23 18:22	1

Surrogate Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4123-1
SDG: 03D2024059

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)										
890-4123-1	SS07	105	103										
890-4123-1 MS	SS07	82	85										
890-4123-1 MSD	SS07	100	108										
LCS 880-46929/1-A	Lab Control Sample	92	107										
LCSD 880-46929/2-A	Lab Control Sample Dup	103	110										
MB 880-46868/5-A	Method Blank	82	104										
MB 880-46929/5-A	Method Blank	85	99										

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)										
890-4123-1	SS07	87	93										
890-4123-1 MS	SS07	107	102										
890-4123-1 MSD	SS07	95	89										
LCS 880-47003/2-A	Lab Control Sample	107	116										
LCSD 880-47003/3-A	Lab Control Sample Dup	75	85										
MB 880-47003/1-A	Method Blank	110	131 S1+										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4123-1
SDG: 03D2024059

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-46868/5-A
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 46868

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/21/23 14:34	02/22/23 11:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		02/21/23 14:34	02/22/23 11:49	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		02/21/23 14:34	02/22/23 11:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*82*		*70 - 130*	*02/21/23 14:34*	*02/22/23 11:49*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*02/21/23 14:34*	*02/22/23 11:49*	*1*

Lab Sample ID: MB 880-46929/5-A
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 46929

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/22/23 09:16	02/23/23 02:51	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		02/22/23 09:16	02/23/23 02:51	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		02/22/23 09:16	02/23/23 02:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*	*02/22/23 09:16*	*02/23/23 02:51*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*02/22/23 09:16*	*02/23/23 02:51*	*1*

Lab Sample ID: LCS 880-46929/1-A
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 46929

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1023		mg/Kg		102	70 - 130		
Toluene			0.100	0.1011		mg/Kg		101	70 - 130		
Ethylbenzene			0.100	0.09373		mg/Kg		94	70 - 130		
m-Xylene & p-Xylene			0.200	0.1915		mg/Kg		96	70 - 130		
o-Xylene			0.100	0.09836		mg/Kg		98	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: LCSD 880-46929/2-A
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 46929

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1102		mg/Kg		110	70 - 130	7	35

QC Sample Results

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4123-1
SDG: 03D2024059

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

Lab Sample ID: LCSD 880-46929/2-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 46928 — **Prep Batch: 46929**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.1089		mg/Kg		109	70 - 130	7	35
Ethylbenzene			0.100	0.1027		mg/Kg		103	70 - 130	9	35
m-Xylene & p-Xylene			0.200	0.2128		mg/Kg		106	70 - 130	11	35
o-Xylene			0.100	0.1094		mg/Kg		109	70 - 130	11	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*110*		*70 - 130*

Lab Sample ID: 890-4123-1 MS — **Client Sample ID: SS07**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 46928 — **Prep Batch: 46929**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00202	U F2 F1	0.101	0.04951	F1	mg/Kg		49	70 - 130
Toluene	0.00490	F1	0.101	0.07116	F1	mg/Kg		66	70 - 130
Ethylbenzene	0.00362		0.101	0.07403		mg/Kg		70	70 - 130
m-Xylene & p-Xylene	0.00658	F1	0.202	0.1234	F1	mg/Kg		58	70 - 130
o-Xylene	0.00316	F1	0.101	0.06386	F1	mg/Kg		60	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*82*		*70 - 130*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*

Lab Sample ID: 890-4123-1 MSD — **Client Sample ID: SS07**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 46928 — **Prep Batch: 46929**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U F2 F1	0.0992	0.09288	F2	mg/Kg		93	70 - 130	61	35
Toluene	0.00490	F1	0.0992	0.09288		mg/Kg		89	70 - 130	26	35
Ethylbenzene	0.00362		0.0992	0.08391		mg/Kg		81	70 - 130	13	35
m-Xylene & p-Xylene	0.00658	F1	0.198	0.1714		mg/Kg		83	70 - 130	33	35
o-Xylene	0.00316	F1	0.0992	0.08869		mg/Kg		86	70 - 130	33	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*

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

Lab Sample ID: MB 880-47003/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 46994 — **Prep Batch: 47003**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/23/23 09:12	02/23/23 08:36	1

QC Sample Results

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4123-1
SDG: 03D2024059

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

Lab Sample ID: MB 880-47003/1-A
Matrix: Solid
Analysis Batch: 46994

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47003

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		02/23/23 09:12	02/23/23 08:36	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/23/23 09:12	02/23/23 08:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*110*		*70 - 130*	*02/23/23 09:12*	*02/23/23 08:36*	*1*
o-Terphenyl	*131*	*S1+*	*70 - 130*	*02/23/23 09:12*	*02/23/23 08:36*	*1*

Lab Sample ID: LCS 880-47003/2-A
Matrix: Solid
Analysis Batch: 46994

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47003

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1174		mg/Kg		117	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1103		mg/Kg		110	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*107*		*70 - 130*
o-Terphenyl	*116*		*70 - 130*

Lab Sample ID: LCSD 880-47003/3-A
Matrix: Solid
Analysis Batch: 46994

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 47003

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	908.0	*1	mg/Kg		91	70 - 130	26	20
Diesel Range Organics (Over C10-C28)			1000	806.6	*1	mg/Kg		81	70 - 130	31	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*75*		*70 - 130*
o-Terphenyl	*85*		*70 - 130*

Lab Sample ID: 890-4123-1 MS
Matrix: Solid
Analysis Batch: 46994

Client Sample ID: SS07
Prep Type: Total/NA
Prep Batch: 47003

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *1	999	1211		mg/Kg		119	70 - 130		
Diesel Range Organics (Over C10-C28)	76.8	*1	999	1121		mg/Kg		105	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*107*		*70 - 130*
o-Terphenyl	*102*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4123-1
SDG: 03D2024059

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

Lab Sample ID: 890-4123-1 MSD — **Client Sample ID: SS07**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 46994 — **Prep Batch: 47003**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *1	998	986.4		mg/Kg		97	70 - 130	20	20
Diesel Range Organics (Over C10-C28)	76.8	*1	998	993.4		mg/Kg		92	70 - 130	12	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*95*		*70 - 130*
o-Terphenyl	*89*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-46828/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 46871

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			02/21/23 15:17	1

Lab Sample ID: LCS 880-46828/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 46871

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	236.5		mg/Kg		95	90 - 110		

Lab Sample ID: LCSD 880-46828/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 46871

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	243.9		mg/Kg		98	90 - 110	3	20

Lab Sample ID: 890-4120-A-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 46871

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	<4.97	U	249	240.7		mg/Kg		95	90 - 110		

Lab Sample ID: 890-4120-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 46871

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	<4.97	U	249	240.4		mg/Kg		95	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4123-1
SDG: 03D2024059

GC VOA

Prep Batch: 46868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-46868/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 46928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4123-1	SS07	Total/NA	Solid	8021B	46929
MB 880-46868/5-A	Method Blank	Total/NA	Solid	8021B	46868
MB 880-46929/5-A	Method Blank	Total/NA	Solid	8021B	46929
LCS 880-46929/1-A	Lab Control Sample	Total/NA	Solid	8021B	46929
LCSD 880-46929/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	46929
890-4123-1 MS	SS07	Total/NA	Solid	8021B	46929
890-4123-1 MSD	SS07	Total/NA	Solid	8021B	46929

Prep Batch: 46929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4123-1	SS07	Total/NA	Solid	5035	
MB 880-46929/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-46929/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-46929/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4123-1 MS	SS07	Total/NA	Solid	5035	
890-4123-1 MSD	SS07	Total/NA	Solid	5035	

Analysis Batch: 47041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4123-1	SS07	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 46994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4123-1	SS07	Total/NA	Solid	8015B NM	47003
MB 880-47003/1-A	Method Blank	Total/NA	Solid	8015B NM	47003
LCS 880-47003/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	47003
LCSD 880-47003/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	47003
890-4123-1 MS	SS07	Total/NA	Solid	8015B NM	47003
890-4123-1 MSD	SS07	Total/NA	Solid	8015B NM	47003

Prep Batch: 47003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4123-1	SS07	Total/NA	Solid	8015NM Prep	
MB 880-47003/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-47003/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-47003/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4123-1 MS	SS07	Total/NA	Solid	8015NM Prep	
890-4123-1 MSD	SS07	Total/NA	Solid	8015NM Prep	

Analysis Batch: 47105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4123-1	SS07	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4123-1
SDG: 03D2024059

HPLC/IC

Leach Batch: 46828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4123-1	SS07	Soluble	Solid	DI Leach	
MB 880-46828/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-46828/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-46828/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4120-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-4120-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 46871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4123-1	SS07	Soluble	Solid	300.0	46828
MB 880-46828/1-A	Method Blank	Soluble	Solid	300.0	46828
LCS 880-46828/2-A	Lab Control Sample	Soluble	Solid	300.0	46828
LCSD 880-46828/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	46828
890-4120-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	46828
890-4120-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	46828

Lab Chronicle

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4123-1
SDG: 03D2024059

Client Sample ID: SS07

Date Collected: 02/15/23 14:30
Date Received: 02/17/23 08:20

Lab Sample ID: 890-4123-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	46929	02/22/23 09:16	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46928	02/23/23 03:12	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			47041	02/23/23 12:18	AJ	EET MID
Total/NA	Analysis	8015 NM		1			47105	02/23/23 16:21	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	47003	02/23/23 09:12	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46994	02/23/23 11:41	AJ	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	46828	02/21/23 09:25	KS	EET MID
Soluble	Analysis	300.0		1			46871	02/21/23 18:22	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4123-1
SDG: 03D2024059

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

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

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4123-1
SDG: 03D2024059

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4123-1
SDG: 03D2024059

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4123-1	SS07	Solid	02/15/23 14:30	02/17/23 08:20	0.5'

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Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: _____

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Project Manager:	Hadlie Green	Bill to: (if different)	Kalei Jennings
Company Name:	Ensolum, LLC	Company Name:	Ensolum, LLC
Address:	3122 Nat'l Parks Hwy	Address:	3122 Nat'l Parks Hwy
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	432-557-8895 Email:		

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Ziatilis TAB	Turn Around	
Project Number:	03D2024059	☑ Routine ☐ Rush	
Project Location:	32.02837 -103.77221	Due Date:	
Sampler's Name:	J. Falconata	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	Thermometer
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	2.4
Total Containers:		Corrected Temperature:	2.2

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters
SS01	S	02-15-23	1430	0.5	C	1		TPH / BTEX / Chlorides

ANALYSIS REQUEST

890-4123 Chain of Custody

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2SO_4: H_2 NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Comments

NAPP2216037136

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			2/17/23 0750	2		2-17-23 0750
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4123-1
SDG Number: 03D2024059

Login Number: 4123
List Number: 1
Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4123-1
SDG Number: 03D2024059

Login Number: 4123
List Number: 2
Creator: Teel, Brianna

List Source: Eurofins Midland
List Creation: 02/21/23 08:18 AM

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Hadlie Green
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

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JOB DESCRIPTION

Zia Hills 1AB
SDG NUMBER 03D2024059

JOB NUMBER

890-4125-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

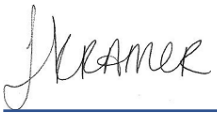
my EOL

Eurofins Carlsbad

Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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Authorized for release by
Jessica Kramer, Project Manager
Jessica.Kramer@et.eurofinsus.com
(432)704-5440

Client: Ensolum
Project/Site: Zia Hills 1AB

Laboratory Job ID: 890-4125-1
SDG: 03D2024059

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4125-1
SDG: 03D2024059

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
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: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4125-1
SDG: 03D2024059

Job ID: 890-4125-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4125-1

Receipt
The sample was received on 2/17/2023 8:20 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.2°C

Receipt Exceptions
The following sample was received and analyzed from an unpreserved bulk soil jar: SS04 (890-4125-1).

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-46929 and analytical batch 880-46928 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

GC Semi VOA
Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-47003 and analytical batch 880-46994 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10 and Diesel Range Organics (Over C10-C28).

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: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4125-1
SDG: 03D2024059

Client Sample ID: SS04

Date Collected: 02/15/23 14:50
Date Received: 02/17/23 08:20
Sample Depth: 0.5'

Lab Sample ID: 890-4125-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/22/23 09:16	02/23/23 10:46	1
Toluene	**0.00375**		0.00200		mg/Kg		02/22/23 09:16	02/23/23 10:46	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/22/23 09:16	02/23/23 10:46	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		02/22/23 09:16	02/23/23 10:46	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/22/23 09:16	02/23/23 10:46	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		02/22/23 09:16	02/23/23 10:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*02/22/23 09:16*	*02/23/23 10:46*	*1*
1,4-Difluorobenzene (Surr)	*109*		*70 - 130*	*02/22/23 09:16*	*02/23/23 10:46*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			02/23/23 12:18	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**87.7**		50.0		mg/Kg			02/23/23 16:21	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *1	50.0		mg/Kg		02/23/23 09:12	02/23/23 12:48	1
Diesel Range Organics (Over C10-C28)	**87.7**	***1**	50.0		mg/Kg		02/23/23 09:12	02/23/23 12:48	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/23/23 09:12	02/23/23 12:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*02/23/23 09:12*	*02/23/23 12:48*	*1*
o-Terphenyl	*97*		*70 - 130*	*02/23/23 09:12*	*02/23/23 12:48*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**363**		5.05		mg/Kg			02/23/23 02:15	1

Surrogate Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4125-1
SDG: 03D2024059

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-4123-A-1-B MS	Matrix Spike	82	85										
890-4123-A-1-C MSD	Matrix Spike Duplicate	100	108										
890-4125-1	SS04	102	109										
LCS 880-46929/1-A	Lab Control Sample	92	107										
LCSD 880-46929/2-A	Lab Control Sample Dup	103	110										
MB 880-46868/5-A	Method Blank	82	104										
MB 880-46929/5-A	Method Blank	85	99										

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-4123-A-1-F MS	Matrix Spike	107	102										
890-4123-A-1-G MSD	Matrix Spike Duplicate	95	89										
890-4125-1	SS04	92	97										
LCS 880-47003/2-A	Lab Control Sample	107	116										
LCSD 880-47003/3-A	Lab Control Sample Dup	75	85										
MB 880-47003/1-A	Method Blank	110	131 S1+										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4125-1
SDG: 03D2024059

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-46868/5-A
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 46868

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/21/23 14:34	02/22/23 11:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		02/21/23 14:34	02/22/23 11:49	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		02/21/23 14:34	02/22/23 11:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*82*		*70 - 130*	*02/21/23 14:34*	*02/22/23 11:49*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*02/21/23 14:34*	*02/22/23 11:49*	*1*

Lab Sample ID: MB 880-46929/5-A
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 46929

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/22/23 09:16	02/23/23 02:51	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		02/22/23 09:16	02/23/23 02:51	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		02/22/23 09:16	02/23/23 02:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*	*02/22/23 09:16*	*02/23/23 02:51*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*02/22/23 09:16*	*02/23/23 02:51*	*1*

Lab Sample ID: LCS 880-46929/1-A
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 46929

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1023		mg/Kg		102	70 - 130		
Toluene			0.100	0.1011		mg/Kg		101	70 - 130		
Ethylbenzene			0.100	0.09373		mg/Kg		94	70 - 130		
m-Xylene & p-Xylene			0.200	0.1915		mg/Kg		96	70 - 130		
o-Xylene			0.100	0.09836		mg/Kg		98	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: LCSD 880-46929/2-A
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 46929

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1102		mg/Kg		110	70 - 130	7	35

QC Sample Results

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4125-1
SDG: 03D2024059

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

Lab Sample ID: LCSD 880-46929/2-A
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 46929

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.1089		mg/Kg		109	70 - 130	7	35
Ethylbenzene			0.100	0.1027		mg/Kg		103	70 - 130	9	35
m-Xylene & p-Xylene			0.200	0.2128		mg/Kg		106	70 - 130	11	35
o-Xylene			0.100	0.1094		mg/Kg		109	70 - 130	11	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*110*		*70 - 130*

Lab Sample ID: 890-4123-A-1-B MS
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 46929

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00202	U F1 F2	0.101	0.04951	F1	mg/Kg		49	70 - 130
Toluene	0.00490	F1	0.101	0.07116	F1	mg/Kg		66	70 - 130
Ethylbenzene	0.00362		0.101	0.07403		mg/Kg		70	70 - 130
m-Xylene & p-Xylene	0.00658	F1	0.202	0.1234	F1	mg/Kg		58	70 - 130
o-Xylene	0.00316	F1	0.101	0.06386	F1	mg/Kg		60	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*82*		*70 - 130*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*

Lab Sample ID: 890-4123-A-1-C MSD
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 46929

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U F1 F2	0.0992	0.09288	F2	mg/Kg		93	70 - 130	61	35
Toluene	0.00490	F1	0.0992	0.09288		mg/Kg		89	70 - 130	26	35
Ethylbenzene	0.00362		0.0992	0.08391		mg/Kg		81	70 - 130	13	35
m-Xylene & p-Xylene	0.00658	F1	0.198	0.1714		mg/Kg		83	70 - 130	33	35
o-Xylene	0.00316	F1	0.0992	0.08869		mg/Kg		86	70 - 130	33	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*

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

Lab Sample ID: MB 880-47003/1-A
Matrix: Solid
Analysis Batch: 46994

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47003

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/23/23 09:12	02/23/23 08:36	1

QC Sample Results

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4125-1
SDG: 03D2024059

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

Lab Sample ID: MB 880-47003/1-A
Matrix: Solid
Analysis Batch: 46994

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47003

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		02/23/23 09:12	02/23/23 08:36	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/23/23 09:12	02/23/23 08:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*110*		*70 - 130*	*02/23/23 09:12*	*02/23/23 08:36*	*1*
o-Terphenyl	*131*	*S1+*	*70 - 130*	*02/23/23 09:12*	*02/23/23 08:36*	*1*

Lab Sample ID: LCS 880-47003/2-A
Matrix: Solid
Analysis Batch: 46994

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47003

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1174		mg/Kg		117	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1103		mg/Kg		110	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*107*		*70 - 130*
o-Terphenyl	*116*		*70 - 130*

Lab Sample ID: LCSD 880-47003/3-A
Matrix: Solid
Analysis Batch: 46994

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 47003

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	908.0	*1	mg/Kg		91	70 - 130	26	20
Diesel Range Organics (Over C10-C28)			1000	806.6	*1	mg/Kg		81	70 - 130	31	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*75*		*70 - 130*
o-Terphenyl	*85*		*70 - 130*

Lab Sample ID: 890-4123-A-1-F MS
Matrix: Solid
Analysis Batch: 46994

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 47003

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *1	999	1211		mg/Kg		119	70 - 130		
Diesel Range Organics (Over C10-C28)	76.8	*1	999	1121		mg/Kg		105	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*107*		*70 - 130*
o-Terphenyl	*102*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4125-1
SDG: 03D2024059

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

Lab Sample ID: 890-4123-A-1-G MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 46994 — **Prep Batch: 47003**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *1	998	986.4		mg/Kg		97	70 - 130	20	20
Diesel Range Organics (Over C10-C28)	76.8	*1	998	993.4		mg/Kg		92	70 - 130	12	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*95*		*70 - 130*
o-Terphenyl	*89*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-46847/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 46985

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			02/23/23 01:57	1

Lab Sample ID: LCS 880-46847/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 46985

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	245.9		mg/Kg		98	90 - 110		

Lab Sample ID: LCSD 880-46847/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 46985

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	254.3		mg/Kg		102	90 - 110	3	20

Lab Sample ID: 890-4125-1 MS — **Client Sample ID: SS04**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 46985

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	363		253	589.7		mg/Kg		90	90 - 110		

Lab Sample ID: 890-4125-1 MSD — **Client Sample ID: SS04**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 46985

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	363		253	590.5		mg/Kg		90	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4125-1
SDG: 03D2024059

GC VOA

Prep Batch: 46868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-46868/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 46928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4125-1	SS04	Total/NA	Solid	8021B	46929
MB 880-46868/5-A	Method Blank	Total/NA	Solid	8021B	46868
MB 880-46929/5-A	Method Blank	Total/NA	Solid	8021B	46929
LCS 880-46929/1-A	Lab Control Sample	Total/NA	Solid	8021B	46929
LCSD 880-46929/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	46929
890-4123-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	46929
890-4123-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	46929

Prep Batch: 46929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4125-1	SS04	Total/NA	Solid	5035	
MB 880-46929/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-46929/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-46929/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4123-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
890-4123-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 47048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4125-1	SS04	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 46994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4125-1	SS04	Total/NA	Solid	8015B NM	47003
MB 880-47003/1-A	Method Blank	Total/NA	Solid	8015B NM	47003
LCS 880-47003/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	47003
LCSD 880-47003/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	47003
890-4123-A-1-F MS	Matrix Spike	Total/NA	Solid	8015B NM	47003
890-4123-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	47003

Prep Batch: 47003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4125-1	SS04	Total/NA	Solid	8015NM Prep	
MB 880-47003/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-47003/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-47003/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4123-A-1-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-4123-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 47106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4125-1	SS04	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4125-1
SDG: 03D2024059

HPLC/IC

Leach Batch: 46847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4125-1	SS04	Soluble	Solid	DI Leach	
MB 880-46847/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-46847/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-46847/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4125-1 MS	SS04	Soluble	Solid	DI Leach	
890-4125-1 MSD	SS04	Soluble	Solid	DI Leach	

Analysis Batch: 46985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4125-1	SS04	Soluble	Solid	300.0	46847
MB 880-46847/1-A	Method Blank	Soluble	Solid	300.0	46847
LCS 880-46847/2-A	Lab Control Sample	Soluble	Solid	300.0	46847
LCSD 880-46847/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	46847
890-4125-1 MS	SS04	Soluble	Solid	300.0	46847
890-4125-1 MSD	SS04	Soluble	Solid	300.0	46847

Lab Chronicle

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4125-1
SDG: 03D2024059

Client Sample ID: SS04
Date Collected: 02/15/23 14:50
Date Received: 02/17/23 08:20

Lab Sample ID: 890-4125-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	46929	02/22/23 09:16	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46928	02/23/23 10:46	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			47048	02/23/23 12:18	AJ	EET MID
Total/NA	Analysis	8015 NM		1			47106	02/23/23 16:21	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	47003	02/23/23 09:12	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46994	02/23/23 12:48	AJ	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	46847	02/21/23 13:15	KS	EET MID
Soluble	Analysis	300.0		1			46985	02/23/23 02:15	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4125-1
SDG: 03D2024059

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

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

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4125-1
SDG: 03D2024059

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4125-1
SDG: 03D2024059

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4125-1	SS04	Solid	02/15/23 14:50	02/17/23 08:20	0.5'

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Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: ____________

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Project Manager:	Hadlie Green	Bill to: (if different)	Kalei Jennings
Company Name:	Ensolum, LLC	Company Name:	Ensolum, LLC
Address:	3122 Nat'l Parks Hwy	Address:	3122 Nat'l Parks Hwy
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	432-557-8895	Email:	Hgreen@ensolum.com / kjennings@ensolum.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Zia Hills 1AB	Turn Around	
Project Number:	03D2024059	☑ Routine	☐ Rush
Project Location:	32.02837, -103.72221	Due Date:	
Sampler's Name:	J. Falcomata	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Samples Received Intact:	(Yes) No	Thermometer ID:	Tnm-007
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	2.4
Total Containers:		Corrected Temperature:	2.2

ANALYSIS REQUEST (Parameters; Pres. Code)

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	TPH	BTEX	Chlorides	Sample Comments
SS04	S	2-15-23	1450	.5	C	1	✓	✓	✓	NAPP2216057138

890-4125 Chain of Custody

Preservative Codes

None: NO — DI Water: H_2O
Cool: Cool — MeOH: Me
HCL: HC — HNO_3: HN
H_2SO_4: H_2 — NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of $85.00 will be applied to each project and a charge of $5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 [signature]	[signature]	2/17/23 0750	2 [signature]	[signature]	2-17-23 0820
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4125-1
SDG Number: 03D2024059

Login Number: 4125
List Number: 1
Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4125-1
SDG Number: 03D2024059

Login Number: 4125
List Number: 2
Creator: Teel, Brianna

List Source: Eurofins Midland
List Creation: 02/21/23 08:18 AM

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Hadlie Green
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

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JOB DESCRIPTION

Zia Hills 1AB
SDG NUMBER 03D2024059

JOB NUMBER

890-4126-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

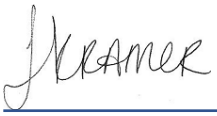
my EOL

Eurofins Carlsbad

Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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Revision 1

Authorized for release by
Jessica Kramer, Project Manager
Jessica.Kramer@et.eurofinsus.com
(432)704-5440

Client: Ensolum
Project/Site: Zia Hills 1AB

Laboratory Job ID: 890-4126-1
SDG: 03D2024059

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4126-1
SDG: 03D2024059

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
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: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4126-1
SDG: 03D2024059

Job ID: 890-4126-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-4126-1

REVISION

The report being provided is a revision of the original report sent on 2/23/2023. The report (revision 1) is being revised due to Per client email, requesting sample name edit.

Report revision history

Receipt
The sample was received on 2/17/2023 8:20 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.2°C

Receipt Exceptions
The following sample was received and analyzed from an unpreserved bulk soil jar: SS06 (890-4126-1).

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-46929 and analytical batch 880-46928 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

GC Semi VOA
Method 8015MOD_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-47003 and analytical batch 880-46994 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO)-C6-C10 and Diesel Range Organics (Over C10-C28).

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: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4126-1
SDG: 03D2024059

Client Sample ID: SS06

Date Collected: 02/15/23 14:35
Date Received: 02/17/23 08:20
Sample Depth: 0.5'

Lab Sample ID: 890-4126-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		02/22/23 09:16	02/23/23 11:07	1
Toluene	**0.00701**		0.00202		mg/Kg		02/22/23 09:16	02/23/23 11:07	1
Ethylbenzene	**0.00279**		0.00202		mg/Kg		02/22/23 09:16	02/23/23 11:07	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		02/22/23 09:16	02/23/23 11:07	1
o-Xylene	**0.00208**		0.00202		mg/Kg		02/22/23 09:16	02/23/23 11:07	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		02/22/23 09:16	02/23/23 11:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*02/22/23 09:16*	*02/23/23 11:07*	*1*
1,4-Difluorobenzene (Surr)	*109*		*70 - 130*	*02/22/23 09:16*	*02/23/23 11:07*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0119**		0.00403		mg/Kg			02/23/23 12:18	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**93.9**		49.8		mg/Kg			02/23/23 16:21	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U *1	49.8		mg/Kg		02/23/23 09:12	02/23/23 13:10	1
Diesel Range Organics (Over C10-C28)	**93.9**	***1**	49.8		mg/Kg		02/23/23 09:12	02/23/23 13:10	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		02/23/23 09:12	02/23/23 13:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*96*		*70 - 130*	*02/23/23 09:12*	*02/23/23 13:10*	*1*
o-Terphenyl	*103*		*70 - 130*	*02/23/23 09:12*	*02/23/23 13:10*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**342**		5.00		mg/Kg			02/23/23 02:33	1

Surrogate Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4126-1
SDG: 03D2024059

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-4123-A-1-B MS	Matrix Spike	82	85
890-4123-A-1-C MSD	Matrix Spike Duplicate	100	108
890-4126-1	SS06	104	109
LCS 880-46929/1-A	Lab Control Sample	92	107
LCSD 880-46929/2-A	Lab Control Sample Dup	103	110
MB 880-46868/5-A	Method Blank	82	104
MB 880-46929/5-A	Method Blank	85	99

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-4123-A-1-F MS	Matrix Spike	107	102
890-4123-A-1-G MSD	Matrix Spike Duplicate	95	89
890-4126-1	SS06	96	103
LCS 880-47003/2-A	Lab Control Sample	107	116
LCSD 880-47003/3-A	Lab Control Sample Dup	75	85
MB 880-47003/1-A	Method Blank	110	131 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4126-1
SDG: 03D2024059

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-46868/5-A
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 46868

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/21/23 14:34	02/22/23 11:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		02/21/23 14:34	02/22/23 11:49	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/21/23 14:34	02/22/23 11:49	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		02/21/23 14:34	02/22/23 11:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*82*		*70 - 130*	*02/21/23 14:34*	*02/22/23 11:49*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*02/21/23 14:34*	*02/22/23 11:49*	*1*

Lab Sample ID: MB 880-46929/5-A
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 46929

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/22/23 09:16	02/23/23 02:51	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		02/22/23 09:16	02/23/23 02:51	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/22/23 09:16	02/23/23 02:51	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		02/22/23 09:16	02/23/23 02:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*	*02/22/23 09:16*	*02/23/23 02:51*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*02/22/23 09:16*	*02/23/23 02:51*	*1*

Lab Sample ID: LCS 880-46929/1-A
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 46929

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1023		mg/Kg		102	70 - 130		
Toluene			0.100	0.1011		mg/Kg		101	70 - 130		
Ethylbenzene			0.100	0.09373		mg/Kg		94	70 - 130		
m-Xylene & p-Xylene			0.200	0.1915		mg/Kg		96	70 - 130		
o-Xylene			0.100	0.09836		mg/Kg		98	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: LCSD 880-46929/2-A
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 46929

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1102		mg/Kg		110	70 - 130	7	35

QC Sample Results

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4126-1
SDG: 03D2024059

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

Lab Sample ID: LCSD 880-46929/2-A
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 46929

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.1089		mg/Kg		109	70 - 130	7	35
Ethylbenzene			0.100	0.1027		mg/Kg		103	70 - 130	9	35
m-Xylene & p-Xylene			0.200	0.2128		mg/Kg		106	70 - 130	11	35
o-Xylene			0.100	0.1094		mg/Kg		109	70 - 130	11	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*110*		*70 - 130*

Lab Sample ID: 890-4123-A-1-B MS
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 46929

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00202	U F1 F2	0.101	0.04951	F1	mg/Kg		49	70 - 130
Toluene	0.00490	F1	0.101	0.07116	F1	mg/Kg		66	70 - 130
Ethylbenzene	0.00362		0.101	0.07403		mg/Kg		70	70 - 130
m-Xylene & p-Xylene	0.00658	F1	0.202	0.1234	F1	mg/Kg		58	70 - 130
o-Xylene	0.00316	F1	0.101	0.06386	F1	mg/Kg		60	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*82*		*70 - 130*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*

Lab Sample ID: 890-4123-A-1-C MSD
Matrix: Solid
Analysis Batch: 46928

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 46929

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U F1 F2	0.0992	0.09288	F2	mg/Kg		93	70 - 130	61	35
Toluene	0.00490	F1	0.0992	0.09288		mg/Kg		89	70 - 130	26	35
Ethylbenzene	0.00362		0.0992	0.08391		mg/Kg		81	70 - 130	13	35
m-Xylene & p-Xylene	0.00658	F1	0.198	0.1714		mg/Kg		83	70 - 130	33	35
o-Xylene	0.00316	F1	0.0992	0.08869		mg/Kg		86	70 - 130	33	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*

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

Lab Sample ID: MB 880-47003/1-A
Matrix: Solid
Analysis Batch: 46994

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47003

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/23/23 09:12	02/23/23 08:36	1

QC Sample Results

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4126-1
SDG: 03D2024059

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

Lab Sample ID: MB 880-47003/1-A
Matrix: Solid
Analysis Batch: 46994

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 47003

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		02/23/23 09:12	02/23/23 08:36	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/23/23 09:12	02/23/23 08:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*110*		*70 - 130*	*02/23/23 09:12*	*02/23/23 08:36*	*1*
o-Terphenyl	*131*	*S1+*	*70 - 130*	*02/23/23 09:12*	*02/23/23 08:36*	*1*

Lab Sample ID: LCS 880-47003/2-A
Matrix: Solid
Analysis Batch: 46994

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 47003

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1174		mg/Kg		117	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1103		mg/Kg		110	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*107*		*70 - 130*
o-Terphenyl	*116*		*70 - 130*

Lab Sample ID: LCSD 880-47003/3-A
Matrix: Solid
Analysis Batch: 46994

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 47003

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	908.0	*1	mg/Kg		91	70 - 130	26	20
Diesel Range Organics (Over C10-C28)			1000	806.6	*1	mg/Kg		81	70 - 130	31	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*75*		*70 - 130*
o-Terphenyl	*85*		*70 - 130*

Lab Sample ID: 890-4123-A-1-F MS
Matrix: Solid
Analysis Batch: 46994

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 47003

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *1	999	1211		mg/Kg		119	70 - 130		
Diesel Range Organics (Over C10-C28)	76.8	*1	999	1121		mg/Kg		105	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*107*		*70 - 130*
o-Terphenyl	*102*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4126-1
SDG: 03D2024059

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

Lab Sample ID: 890-4123-A-1-G MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 46994 — **Prep Batch: 47003**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *1	998	986.4		mg/Kg		97	70 - 130	20	20
Diesel Range Organics (Over C10-C28)	76.8	*1	998	993.4		mg/Kg		92	70 - 130	12	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*95*		*70 - 130*
o-Terphenyl	*89*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-46847/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 46985

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			02/23/23 01:57	1

Lab Sample ID: LCS 880-46847/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 46985

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	245.9		mg/Kg		98	90 - 110		

Lab Sample ID: LCSD 880-46847/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 46985

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	254.3		mg/Kg		102	90 - 110	3	20

Lab Sample ID: 890-4125-A-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 46985

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	363		253	589.7		mg/Kg		90	90 - 110		

Lab Sample ID: 890-4125-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 46985

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	363		253	590.5		mg/Kg		90	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4126-1
SDG: 03D2024059

GC VOA

Prep Batch: 46868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-46868/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 46928

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4126-1	SS06	Total/NA	Solid	8021B	46929
MB 880-46868/5-A	Method Blank	Total/NA	Solid	8021B	46868
MB 880-46929/5-A	Method Blank	Total/NA	Solid	8021B	46929
LCS 880-46929/1-A	Lab Control Sample	Total/NA	Solid	8021B	46929
LCSD 880-46929/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	46929
890-4123-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	46929
890-4123-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	46929

Prep Batch: 46929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4126-1	SS06	Total/NA	Solid	5035	
MB 880-46929/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-46929/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-46929/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-4123-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
890-4123-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 47049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4126-1	SS06	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 46994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4126-1	SS06	Total/NA	Solid	8015B NM	47003
MB 880-47003/1-A	Method Blank	Total/NA	Solid	8015B NM	47003
LCS 880-47003/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	47003
LCSD 880-47003/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	47003
890-4123-A-1-F MS	Matrix Spike	Total/NA	Solid	8015B NM	47003
890-4123-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	47003

Prep Batch: 47003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4126-1	SS06	Total/NA	Solid	8015NM Prep	
MB 880-47003/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-47003/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-47003/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-4123-A-1-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-4123-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 47107

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4126-1	SS06	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4126-1
SDG: 03D2024059

HPLC/IC

Leach Batch: 46847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4126-1	SS06	Soluble	Solid	DI Leach	
MB 880-46847/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-46847/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-46847/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-4125-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-4125-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 46985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-4126-1	SS06	Soluble	Solid	300.0	46847
MB 880-46847/1-A	Method Blank	Soluble	Solid	300.0	46847
LCS 880-46847/2-A	Lab Control Sample	Soluble	Solid	300.0	46847
LCSD 880-46847/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	46847
890-4125-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	46847
890-4125-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	46847

Lab Chronicle

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4126-1
SDG: 03D2024059

Client Sample ID: SS06
Date Collected: 02/15/23 14:35
Date Received: 02/17/23 08:20

Lab Sample ID: 890-4126-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	46929	02/22/23 09:16	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	46928	02/23/23 11:07	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			47049	02/23/23 12:18	AJ	EET MID
Total/NA	Analysis	8015 NM		1			47107	02/23/23 16:21	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	47003	02/23/23 09:12	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	46994	02/23/23 13:10	AJ	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	46847	02/21/23 13:15	KS	EET MID
Soluble	Analysis	300.0		1			46985	02/23/23 02:33	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4126-1
SDG: 03D2024059

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-22-25	06-30-23

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

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4126-1
SDG: 03D2024059

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

ASTM = ASTM International
EPA = US Environmental Protection Agency
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Ensolum
Project/Site: Zia Hills 1AB

Job ID: 890-4126-1
SDG: 03D2024059

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-4126-1	SS06	Solid	02/15/23 14:35	02/17/23 08:20	0.5'

eurofins | Environment Testing Xenco

Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: ____________

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Project Manager:	HADLIE GREEN	Bill to: (if different)	Kalei Jennings
Company Name:	Ensolum, LLC	Company Name:	Ensolum, LLC
Address:	3122 Nat'l Parks Hwy	Address:	3122 Nat'l Parks Hwy
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	432-557-8895	Email:	

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Zia Hills LAB	Turn Around	
Project Number:	03D2024059	☑ Routine	☐ Rush
Project Location:	32.02837,-103.77221	Due Date:	
Sampler's Name:	J Falcomata	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT	Temp Blank: (Yes) No	Wet Ice: (Yes) No
Samples Received Intact:	(Yes) No	Thermometer ID: TM-007
Cooler Custody Seals:	Yes No (N/A)	Correction Factor: -0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading: 2.4
Total Containers:		Corrected Temperature: 2.2

ANALYSIS REQUEST — Pres. Code; Parameters

890-4126 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	TPH	BTEX	Chlorides	Sample Comments
SS05	S	2-15-23	1435	.5	C	1	✓	✓	✓	NAPP2216037138

Preservative Codes

None: NO	DI Water: H_2O
Cool: Cool	MeOH: Me
HCL: HC	HNO_3: HN
H_2SO_4: H_2	NaOH: Na
H_3PO_4: HP	
$NaHSO_4$: NABIS	
$Na_2S_2O_3$: $NaSO_3$	
Zn Acetate+NaOH: Zn	
NaOH+Ascorbic Acid: SAPC	

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time		Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	[signature]	[signature]	2/17/23 0750	2	[signature]	[signature]	2-17-23 0820
3				4			
5				6			

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4126-1
SDG Number: 03D2024059

Login Number: 4126
List Number: 1
Creator: Stutzman, Amanda

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-4126-1
SDG Number: 03D2024059

Login Number: 4126
List Number: 2
Creator: Teel, Brianna

List Source: Eurofins Midland
List Creation: 02/21/23 08:18 AM

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

ENSOLUM

APPENDIX B

Lithologic / Soil Sampling Logs

ENSOLUM

	Sample Name: BH01	Date: 02/15/2023
	Site Name: Zia Hills 19-1	
	Incident Number:	
	Job Number: 03D2024049	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: J. Falcomata	Method: Air Rotary
Coordinates: 32.027844, -103.717185	Hole Diameter: 6"	Total Depth: 110'

Comments: Soil boring was advanced to a total depth of 110' bgs. No water was observed within the soil boring after at least 72 hours. On 11/14/2022 the soil boring was plugged and abandoned using hydrated bentonite chips.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
D	-	-	N	-	-	10	GW	WELL GRADED GRAVEL W/ SAND: very coarse to coarse to medium grained, tan to light brown, no odor.
D	-	-	N	-	-	20	SM	SILTY SAND W/ GRAVEL: very fine to fine to medium grained, tan to slightly reddish brown, no odor.
D	-	-	N	-	-	30	SM	SILTY SAND: very fine to fine grained, tan to light brown, no odor.
M	-	-	N	-	-	40	SM	SILTY SAND: very fine to fine grained, tan to light brown, slightly damp, no odor.
M	-	-	N	-	-	50	SM	SILTY SAND: very fine to fine grained, tan to light brown, slightly damp, no odor.
D	-	-	N	-	-	60	SM	SILTY SAND: very fine to fine grained, tan to very light brown, dry, no odor.
M	-	-	N	-	-	70	SM	SILTY SAND: very fine to fine grained, light brown to medium brown, dry, no odor.
M	-	-	N	-	-	80	SP-SC	POORLY GRADED SAND W/ CLAY: very fine grained, medium to dark brown, slightly damp, no odor.
M	-	-	N	-	-	90	SC	CLAYEY SAND: very fine grained, medium brown, damp, no odor.
M	-	-	N	-	-	100	SC	CLAYEY SAND: very fine grained, medium brown, damp, no odor.
M	-	-	N	-	-	110	SC	CLAYEY SAND: very fine grained, medium brown, damp, no odor.

Total Depth @ 110 feet bgs

ENSOLUM

APPENDIX C

Final C-141

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

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NAPP2216037138
District RP	
Facility ID	fAPP2129428702
Application ID	

Release Notification

Responsible Party

Responsible Party	ConocoPhillips Company	OGRID	217817
Contact Name	Charles Beauvais	Contact Telephone	(575) 988-2043
Contact email	Charles.R.Beauvais@ConocoPhillips.com	Incident # *(assigned by OCD)*	NAPP2216037138
Contact mailing address	600 West Illinois Avenue, Midland, Texas 79701		

Location of Release Source

Latitude 32.02837 Longitude -103.72221

(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Zia Hills 19-1	Site Type	Tank Battery
Date Release Discovered	May 27, 2022	API# *(if applicable)*	

Unit Letter	Section	Township	Range	County
E	19	26S	32E	Lea

Surface Owner: ☐ State ■ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

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

■ Crude Oil	Volume Released (bbls) 6.45	Volume Recovered (bbls) 0
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
The release was caused by a leaking flow line due to corrosion.
This release was on the pad.

State of New Mexico
Oil Conservation Division

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Facility ID	fAPP2129428702
Application ID	

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

Initial Response

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

- ■ The source of the release has been stopped.
- ■ The impacted area has been secured to protect human health and the environment.
- ■ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
- ■ All free liquids and recoverable materials have been removed and managed appropriately.

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

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

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

Printed Name: Brittany N. Esparza Title: Environmental Technician

Signature: Brittany Esparza Date: 6/9/2022

email: Brittany.Esparza@ConocoPhillips.com Telephone: (432) 221-0398

OCD Only

Received by: Jocelyn Harimon Date: 06/09/2022

L48 Spill Volume Estimate Form

Incident Number:	Zia Hills 1B/A BTF
Asset Area:	Delaware East
Release Discovery Date & Time:	27 MAY 2022 10:29AM
Release Type:	Oil
Provide any known details about the event:	

NAPP2216037138

Spill Calculation - On Pad Surface Pool Spill

Convert Irregular shape into a series of rectangles	Length (ft.)	Width (ft.)	Deepest point in each of the areas (in.)	No. of boundaries of "shore" in each area	Estimated *Pool* Area (sq. ft.)	Estimated Average Depth (ft.)	Estimated volume of each pool area (bbl.)	Penetration allowance (ft.)	Total Estimated Volume of Spill (bbl.)
Rectangle A	21.0	37.0	2.00	4	777.000	0.042	5.763	0.002	5.775
Rectangle B	9.0	18.0	0.50	4	162.000	0.010	0.300	0.001	0.301
Rectangle C	7.0	29.0	0.50	4	203.000	0.010	0.376	0.001	0.377
Rectangle D					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rectangle E					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rectangle F					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rectangle G					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rectangle H					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rectangle I					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Rectangle J					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
								Total Volume Release:	6.452

District I
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District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Operator: CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	OGRID: 217817
	Action Number: 115399
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	6/9/2022

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2216037138
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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?	>100 feet 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
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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: __Jacob Laird_____ Title: _Environmental Engineer_____

Signature: Jacob Laird Date: _____3/24/2023_____

email: __Jacob.Laird@conocophillips.com_____ Telephone: ___575-703-5482_____

OCD Only

Received by: Jocelyn Harimon Date: 03/27/2023

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2216037138
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Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

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

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

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

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Jacob Laird Title: Environmental Engineer

Signature: Jacob Laird Date: 3/24/2023

email: Jacob.Laird@conocophillips.com Telephone: 575-703-5482

OCD Only

Received by: Jocelyn Harimon Date: 03/27/2023

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

Closure Approved by: Jennifer Nobui Date: 04/27/2023

Printed Name: Jennifer Nobui Title: Environmental Specialist A

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Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 200643

CONDITIONS

Operator: CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	OGRID: 217817
	Action Number: 200643
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Closure Report Approved.	4/27/2023