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	nAB1812338789
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party WPX Energy Permian, LLC	OGRID 246289
Contact Name Jim Raley	Contact Telephone 575-689-7597
Contact email jim.raley@dvn.com	Incident # *(assigned by OCD)*
Contact mailing address 5315 Buena Vista Drive, Carlsbad, New Mexico 88220	

Location of Release Source

Latitude 32.04906 Longitude -103.87848
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Tucker Draw 9-4-4	Site Type Well Pad
Date Release Discovered 4/13/18	API# *(if applicable)* 30-015-44487

Unit Letter	Section	Township	Range	County
A	16	26S	30E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☑ Produced Water	Volume Released (bbls) 7	Volume Recovered (bbls) 5
	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) Freshwater	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A valve to the pump down tank was not closed properly which resulted in overfilling the tank. 7 bbls of produced water was spilled inside dirt SPCC containment. None of the fluids have left the location. Release contained produced water and freshwater (50/50 mix).

$$bbl\ estimate = \frac{saturated\ soil\ volume\ (ft^3)}{4.21\left(\frac{ft^3}{bbl\ equivalent}\right)} * estimated\ soil\ porosity(\%) + \text{recovered fluids (bbl)}$$

State of New Mexico
Oil Conservation Division

Incident ID	nAB1812338789
District RP	
Facility ID	
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)?

Yes, NMOCD (Crystal Weaver & Michael Bratcher, BLM Shelly Tucker via email on April 14, 2018.

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: Jim Raley Title: Environmental Professional

Signature: Jim Raley Date: 8-31-2022

email: jim.raley@dvn.com Telephone: 575-689-7597

OCD Only

Received by: _____ Date: _____

Incident ID	nAB1812338789
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	51-100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☑ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☑ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☑ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☑ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☑ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☑ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☑ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☑ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☑ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☑ No

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	nAB1812338789
District RP	
Facility ID	
Application ID	

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

Printed Name: Jim Raley Title: Environmental Professional

Signature: Jim Raley Date: 8-31-2022

email: jim.raley@dvn.com Telephone: 575-689-7597

OCD Only

Received by: _____ Date: _____

Incident ID	nAB1812338789
District RP	
Facility ID	
Application ID	

Closure

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

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

☑ 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: Jim Raley Title: Environmental Professional

Signature: Jim Raley Date: 8-31-2022

email: jim.raley@dvn.com Telephone: 575-689-7597

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: Nelson Velez Date: 12/08/2022

Printed Name: Nelson Velez Title: Environmental Specialist - Adv

ENSOLUM

CLOSURE REQUEST REPORT

Site Location:

Tucker Draw 9-4-4
Eddy County, New Mexico
Incident Number
nAB1812338789

August 29, 2022
Ensolum Project No. 03A1987046

Prepared for:

WPX Energy Permian, LLC
5315 Buena Vista Dr.
Carlsbad, NM 88220
Attention: Jim Raley

Prepared by:

Joseph S. Hernandez
Senior Geologist

Ashley Ager, MS, PG
Program Director, Geologist

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LIST OF APPENDICES

1.0 INTRODUCTION

1.1 Site Description & Background

Ensolum, LLC (Ensolum) has prepared this Closure Request Report (CRR) to document site assessment, soil sampling activities, and corrective actions performed to date by WPX Permian Energy, LLC (WPX) at the Tucker Draw 9-4-4 (hereinafter referred to as the "Site") in Unit A, Section 26, Township 26 South, Range 30 East, in Eddy County, New Mexico **(Figure 1 in Appendix A).** Based on the information provided on the Corrective Action Form (Form C-141), a valve to the pump-down tank was not closed properly resulting in approximately 7 barrels (bbls) of produced water, which also contained fresh water, to be released inside the earthen berm tank battery containment. None of the fluids left the location. The incident was assigned nAB1812338789. An updated Form C-141 (current revision August 24, 2018) is provided in this CRR.

Previous corrective actions were completed and documented in an Emergency Response Report (ERR), authored by Allied International Emergency, LLC (AIE), which was denied by the New Mexico Oil and Conservation Division (NMOCD) on June 30, 2022. All previous remediation activities and soil sample analytical results can be referenced in the original ERR. WPX respectfully submits this CRR, which summarizes additional soil sampling activities for a reportable release of produced water and freshwater and provides updated depth to groundwater data from a recently drilled boring located within 0.5 mile of the Site.

1.2 Site Characterization

Ensolum characterized the Site according to Table 1, Closure Criteria for Soils Impacted by a Release, from Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization. Potential site receptors are identified on **Figure 1 in Appendix A.**

Due to the absence of groundwater well data within 0.5 mile of the Site, WPX contracted Atkins Engineering Associates (Atkins) to advance soil boring TW-1 (New Mexico Office of State Engineer (NMOSE) File # C-04655) approximately 0.08 miles northwest of the Site, via solid stem auger to a total depth of 55 feet bgs. Atkins completed soil boring TW-1 on July 28, 2022. During drilling activities, the lithology and observed soil conditions for evidence of a water-bearing zone were documented by Atkins. Soil boring TW-1 was drilled to 55 feet bgs and was allowed to equilibrate for at least 72 hours. Groundwater measurement activities for water well C-04655 occurred on August 2, 2022. No groundwater was detected, and the soil boring was plugged. The NMOSE Well Record & Log is included in **Appendix B**.

The closest surface water or significant watercourse to the Site is an intermittent riverine, located approximately 1,022 feet south the Site. The Site is greater than 300 feet from any occupied residence, school, hospital, institution, church, or wetland and greater than 1,000 feet to a freshwater well or spring. The Site is not within a 100-year floodplain. This Site is located in a medium potential karst area.

Based on the results of the Site Characterization and recently drilled soil boring, TW-1, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg

- Total Petroleum Hydrocarbon (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- Total Petroleum Hydrocarbon (TPH): 2,500 mg/kg
- Chloride: 10,000 mg/kg

2.0 REMEDIATION SUMMARY AND SOIL SAMPLING

Based on the ERR remediation summary, 160 cubic yards of soil were excavated from the well pad to address constituents of concern (COCs) in soil exceeding the applied Table 1 Closure Criteria. Between July 20, 2022 and August 19, 2022, WPX conducted delineation soil sampling for Incident Number nAB1812338789 for the following reasons:

"Closure request rejected as explained in bullets #1 & #2 below. Future exemption & requirements also listed in bullets #3 & #4. 1. Closure confirmation sampling requirements not met per 19.15.29.12D (1, 1a, 1b, 1c). 2. Chlorides and Total Petroleum Hydrocarbons not fully delineated based on reclamation/revegetation standards established for 0 to 4 feet below grade - 19.15.29.12C (2), then to 19.15.13.D (1). See document within OCD's web site referred to as "Procedures for implementation of the Spill Rule: September 6, 2019". 3. Benzene and total BTEX will not be required for any future laboratory analysis associated with this release. 4. WPX Energy Permian has 60 days (by 08/31/2022) to provide delineation data and 90 days (by 10/03/2022) to re-submit its closure report."

2.1 Delineation Activities

Between July 20, 2022 and August 19, 2022 delineation activities were conducted by Ensolum to further characterize the subject release by verifying the presence or absence of impacted soil as compared to soil sampling events performed by AIE. Delineation samples were collected in potholes advanced with heavy equipment (samples designated PH). Delineation activites were directed by field sceening soil for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. A total of two soil samples were collected from each delineation soil sample location (PH01 through PH11): the sample with the highest observed field screening (0.5 foot bgs) and the greatest depth (1 foot bgs). The location of the delineation samples are shown in **Figure 2 in Appendix A**. Field screening results and observations for each delineation soil sample were recorded on lithologic/soil sampling logs **(Appendix C).** The soil samples were placed directly into a 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 at or below 4 degrees Celsius (°C), under strict chain-of-custody procedures, to Eurofins LLC (Eurofins) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH following EPA Method 8015M/D; and chloride following EPA Method 300.0. Photographic documentation during delineation activities is included in **Appendix D.**

3.0 SOIL SAMPLING RESULTS

Laboratory analytical results for delineation soil samples PH01 through PH11 indicated TPH and chloride were within the applicable Closure Criteria and remediation efforts documented in the AIE report appear sufficient. Laboratory analytical results are summarized in the **Table 1** in **Appendix E**. The executed chain-of-custody forms and laboratory analytical reports are provided in **Appendix F**. **Appendix G** provides correspondence email notification receipts associated with the subject release.

4.0 CLOSURE REQUEST

The primary objectives of Ensolum's scope of services were to confirm remediation and continued delineation activities performed at the Site were completed in accordance with the applicable NMOCD regulatory guidelines and to document those concentrations of COCs present in soil remaining on-Site.

Based on the results documented in this report, the following findings and conclusions regarding the release are presented:

- Laboratory analytical results for delineation soil samples PH01 through PH11 indicated TPH and chloride were within the applicable Closure Criteria based on a confirmed depth to groundwater between 51 and 100 feet bgs.
- Laboratory analytical results for delineation soil samples PH03, PH04, PH05, PH09, PH10, and PH11 indicated TPH and chloride were below the reclamation standard and provide representative lateral and vertical delineation of the remediated area of concern;
- Based on laboratory analytical results for delineation samples collected within the area of concern (PH01, PH02 and PH04 through PH09), no additional remediation efforts are required in this area, specifically the area previously excavated to address exceedances in soil samples S-3 and S-4.

Remediation, confirmation of depth to groundwater, and results of delineation soil samples documented that impacted soil had been removed during initial remediation efforts. Per the ERR, the remediated area was backfilled and restored to "as close to its original state" as possible. WPX believes the scope of work described above will meet requirements set forth in NMAC 19.15.29.13 and be protective of human health, the environment, and groundwater. As such, WPX respectfully requests approval of this CRR from NMOCD.

RECEIVED
APR 26 2018
DISTRICT II-ARTESIA O.C.D.

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

nAB18 1233 8789

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: RKI Exploration / WPX Energy 246289	Contact: Karolina Blaney
Address: 5315 Buena Vista Dr.	Telephone No. 970 589 0743
Facility Name: Tucker Draw 9-4-4	Facility Type: Well Pad

Surface Owner: ~~Federal~~ SLO	Mineral Owner: ~~Federal~~ SLO	API No. 30- 015-44487

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	16	26S	30E	260	FNL	405	FEL	Eddy

Latitude: 32.049067_ **Longitude** -103.878483 NAD83

NATURE OF RELEASE

Type of Release: Produced Water & Fresh water 50/50 mix	Volume of Release: 7 bbls	Volume Recovered 5 bbls
Source of Release: Flowback tank	Date and Hour of Occurrence 4/13/18	Date and Hour of Discovery 4/13/18 5:50 pm
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? NMOCD Crystal Weaver & Michael Bratcher, BLM Shelly Tucker	
By Whom? Karolina Blaney	Date and Hour 4/14/2018 at 12:11	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*

A valve to the pump down tank was not closed properly which resulted in overfilling the tank. 7 bbls of produced water was spilled inside dirt SPCC containment. None of the fluids have left the location.

Describe Area Affected and Cleanup Action Taken.*

The impacted area was immediately mapped with a Trimble to delineate the horizontal extent of the impacts. Any further delineation or remediation is not safe due to ongoing completion operations. Once the completion and workover operations are completed and the temporary pump down tanks are removed, WPX will conduct baseline sampling and delineation.

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

Signature: Karolina Blaney	OIL CONSERVATION DIVISION Approved by Environmental Specialist: Crystal Weaver	
Printed Name: Karolina Blaney		
Title: Environmental Specialist	Approval Date: 5/11/18	Expiration Date: N/A
E-mail Address: Karolina.blaney@wpxenergy.com	Conditions of Approval: see attached	Attached ☒ 2RP-4728
Date: 4-26-18 Phone: 970 589 0743		

* Attach Additional Sheets If Necessary

Weaver, Crystal, EMNRD

From: Blaney, Karolina <Karolina.Blaney@wpxenergy.com>
Sent: Thursday, April 26, 2018 3:12 PM
To: Weaver, Crystal, EMNRD; 'Tucker, Shelly'
Cc: Bratcher, Mike, EMNRD; Raley, Jim
Subject: RE: WPX - initial spill notification - Tucker Draw 9-4-4
Attachments: Tucker Draw 9-4-4 C-141.doc

Good afternoon,
Attached is the C-141 for the Tucker Draw 9-4-4 spill of produced water/fresh water mix.
Please let me know if you have any questions or concerns.
Thank you and have a great afternoon,

Karolina Blaney
Environmental Specialist
WPX Energy
Office: (575) 885-7514
Cell: (970) 589-0743
karolina.blaney@wpxenergy.com

From: Blaney, Karolina
Sent: Saturday, April 14, 2018 12:11 PM
To: Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>; Tucker, Shelly <stucker@blm.gov>
Cc: 'Bratcher, Mike, EMNRD' <mike.bratcher@state.nm.us>; Raley, Jim <james.raley@wpxenergy.com>
Subject: WPX - initial spill notification - Tucker Draw 9-4-1

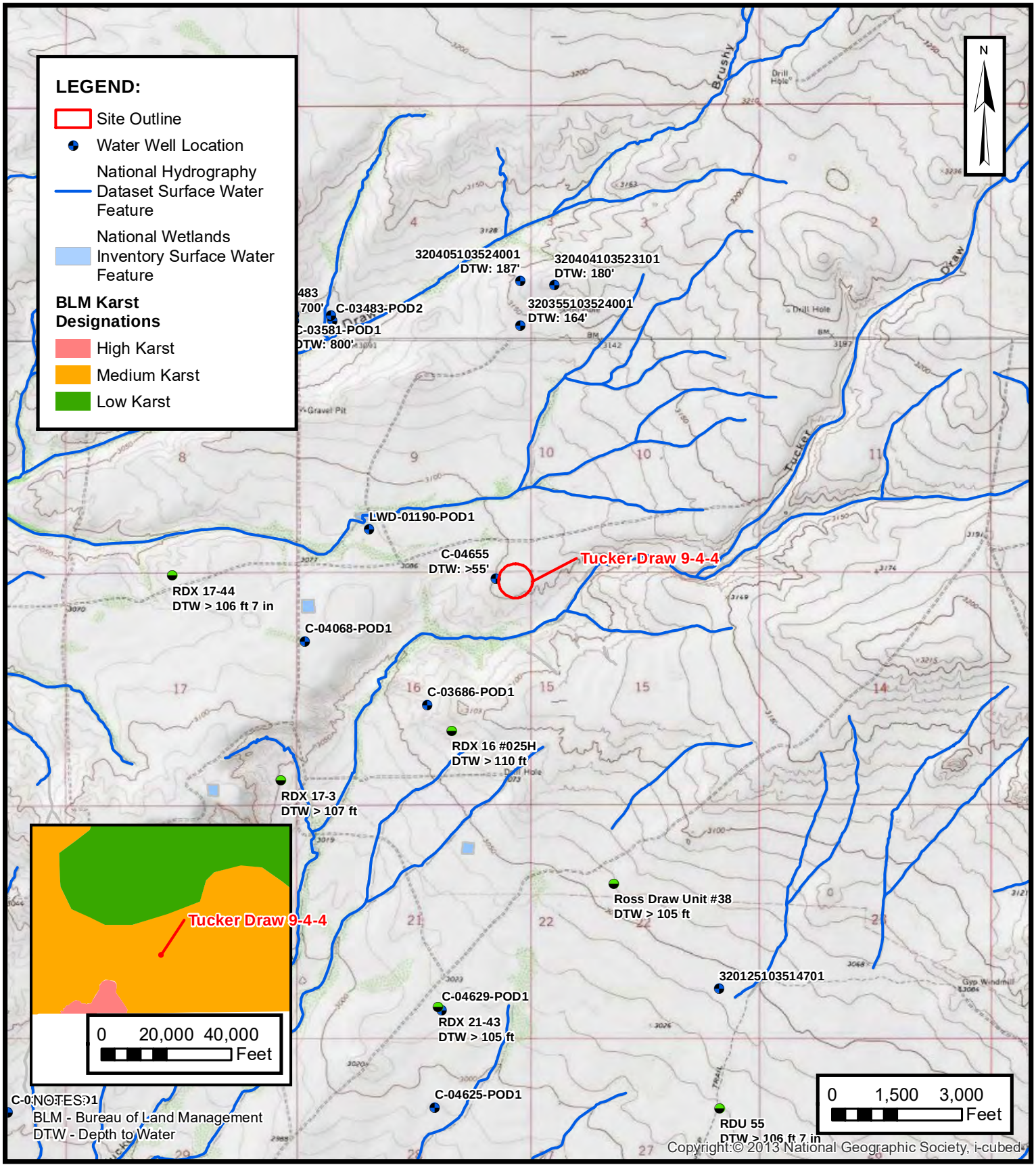
Good morning,
WPX had a small spill yesterday, 4-13-18, at 5:50 pm, at the Tucker Draw at the 9-4-1 well pad, API # 30-015-44477, B-16-26S-30E. A valve to the pump down tank was not closed properly which resulted in overfilling the tank. 7 bbls of produced water was spilled inside dirt SPCC containment. None of the fluids have left the location.
The C-141 report will be submitted within 15 days of the incident however if you have any questions, please do not hesitate to contact me.
Thank you and have a great weekend,

Karolina Blaney
Environmental Specialist
WPX Energy
Office: (575) 885-7514
Cell: (970) 589-0743
karolina.blaney@wpxenergy.com

ENSOLUM

APPENDIX A

Figures

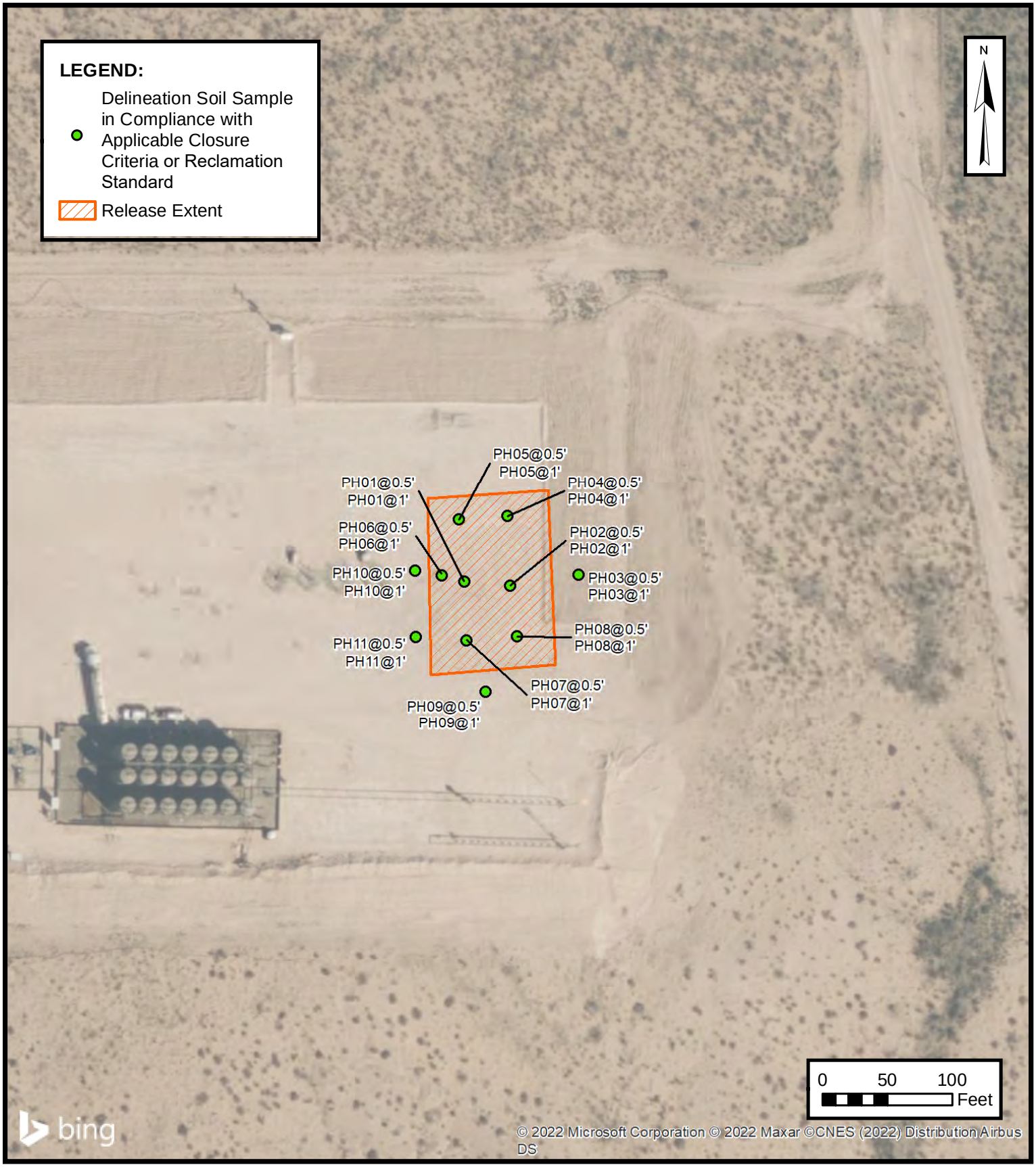


ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

SITE RECEPTOR MAP

WPX ENERGY PERMIAN, LLC
TUCKER DRAW 9-4-4
Unit A Sec 16 T26S R30E
Eddy County, New Mexico

FIGURE
1



ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

DELINEATION SOIL SAMPLE LOCATIONS

WPX ENERGY PERMIAN, LLC
TUCKER DRAW 9-4-4
Unit A Sec 16 T26S R30E
Eddy County, New Mexico

FIGURE

2

ENSOLUM

APPENDIX B

Well Record

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO	OSE FILE NO(S).
POD 1 (TW-1)	N/A	C-4655

WELL OWNER NAME(S)	PHONE (OPTIONAL)
Devon Energy	575-748-1838

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
6488 7 Rivers Hwy	Artesia	NM	88210

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	2	58.26	N
LONGITUDE	103	52	48.37	W

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

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

NW NE NE Sec.16 T26S R30E, NMPM

2. DRILLING & CASING INFORMATION

LICENSE NO	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1249	Jackie D. Atkins	Atkins Engineering Associates, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
7/28/2022	7/28/2022	Temporary Well	±55	N/A

COMPLETED WELL IS: ☐ ARTESIAN ☑ DRY HOLE ☐ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): N/A

DATE STATIC MEASURED: 7/28/22, 8/2/22

DRILLING FLUID: ☐ AIR ☐ MUD ADDITIVES – SPECIFY:

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

CHECK HERE IF PITLESS ADAPTER IS INSTALLED ☐

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	55	±6.5	Boring-HSA	--	--	--	--

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 01/28/2022)

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

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	4	4	Sand, Fine-grained, poorly graded, Brown	Y ✓ N	
4	48	44	Sand, Fine-grained, poorly graded, with caliche Tan and white	Y ✓ N	
48	55	7	Sand, Fine-grained, poorly graded, Tan Brown	Y ✓ N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

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

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

5. TEST; RIG SUPERVISION

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

MISCELLANEOUS INFORMATION: Temporary well material removed and soil boring backfilled using drill cuttings from total depth to ten feet below ground surface(bgs), then hydrated bentonite chips ten feet bgs to surface.

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

Shane Eldridge, Cameron Pruitt

6. SIGNATURE

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

Jack Atkins — Jackie D. Atkins — 8/4/2022

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 01/28/2022)

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

PLUGGING RECORD

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

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: C-4655

Well owner: Devon Energy Phone No.: 575-748-1838

Mailing address: 6488 7 Rivers Hwy

City: Artesia State: New Mexico Zip code: 88210

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Jackie D. Atkins (Atkins Engineering Associates Inc.)

2) New Mexico Well Driller License No.: 1249 Expiration Date: 04/30/23

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Shane Eldridge, Cameron Pruitt

4) Date well plugging began: 8/2/2022 Date well plugging concluded: 8/2/2022

5) GPS Well Location: Latitude: 32 deg, 2 min, 58.26 sec
Longitude: 103 deg, 52 min, 48.37 sec, WGS 84

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

7) Static water level measured at initiation of plugging: n/a ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 7/8/2022

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

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

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
	0-10' Hydrated Bentonite	Approx. 15 gallons	15 gallons	Augers	
	10'-55' Drill Cuttings	Approx. 71 gallons	71 gallons	Boring	

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

III. SIGNATURE:

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

Jack Atkins

Signature of Well Driller

8/4/2022

Date

Version: September 8, 2009
Page 2 of 2

31_C-4655_WR-20 Well Record and Log-forsign

Final Audit Report 2022-08-04

Created:	2022-08-04
By:	Lucas Middleton (lucas@atkinseng.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAA_5o4o-wmvWNvta5TAYYJLKwG9RHyq1i5

"31_C-4655_WR-20 Well Record and Log-forsign" History

Document created by Lucas Middleton (lucas@atkinseng.com)
2022-08-04 - 9:48:16 PM GMT- IP address: 64.17.71.25

Document emailed to Jack Atkins (jack@atkinseng.com) for signature
2022-08-04 - 9:48:44 PM GMT

Email viewed by Jack Atkins (jack@atkinseng.com)
2022-08-04 - 9:48:57 PM GMT- IP address: 64.90.153.232

Document e-signed by Jack Atkins (jack@atkinseng.com)
Signature Date: 2022-08-04 - 9:49:29 PM GMT - Time Source: server- IP address: 64.90.153.232

Agreement completed.
2022-08-04 - 9:49:29 PM GMT

Adobe Acrobat Sign

ENSOLUM

APPENDIX C

Lithologic Soil Sampling Logs

ENSOLUM

	Sample Name: PH01	Date: 7/20/2022
	Site Name: Tucker Draw 9-4-4	
	Incident Number: nAB1812338789	
	Job Number: 03A1987046	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: LC	Method: Pothole
Coordinates: 32.049067, -103.878483	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
D	772.8	0.7	N	PH01	0.5	0.5	CCHE	Caliche, fine grain with cobbles, lightbrown and tan, no odor, no stain, dry, no odor, dry
D	470.4	0.1	N	PH01	1	1		SAA

Total Depth: 1 foot

ENSOLUM

	Sample Name: PH02	Date: 7/20/2022
	Site Name: Tucker Draw 9-4-4	
	Incident Number: nAB1812338789	
	Job Number: 03A1987046	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: LC	Method: Pothole
Coordinates: 32.049067, -103.878483	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
D	369.4	2.8	N	PH02	0.5	0.5	CCHE	Caliche, fine grain with cobbles, lightbrown and tan, no odor, no stain, dry, no odor, dry
D	240.8	2.5	N	PH02	1	1		SAA

Total Depth: 1 foot

ENSOLUM

	Sample Name: PH03	Date: 7/20/2022
	Site Name: Tucker Draw 9-4-4	
	Incident Number: nAB1812338789	
	Job Number: 03A1987046	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: LC	Method: Pothole
Coordinates: 32.049067, -103.878483	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
D	<168	0.8	N	PH03	0.5	0.5	SM	Silty sand with gravel, fg-mg, light brown, no stain, no odor, dry
D	<168	0.5	N	PH03	1	1		SAA

Total Depth: 1 foot

ENSOLUM

	Sample Name: PH04	Date: 7/20/2022
	Site Name: Tucker Draw 9-4-4	
	Incident Number: nAB1812338789	
	Job Number: 03A1987046	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: LC	Method: Pothole
Coordinates: 32.049067, -103.878483	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
D	<168	0.6	N	PH04	0.5	0.5	SM	Silty sand with gravel, fg-mg, light brown, no stain, no odor, dry
D	<168	0.4	N	PH04	1	1		SAA

Total Depth: 1 foot

ENSOLUM

	Sample Name: PH05	Date: 7/20/2022
	Site Name: Tucker Draw 9-4-4	
	Incident Number: nAB1812338789	
	Job Number: 03A1987046	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: LC	Method: Pothole
Coordinates: 32.049067, -103.878483	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
D	280	0.3	N	PH05	0.5	0.5	CCHE	Caliche, fine grain with cobbles, lightbrown, and tan, no odor, no stain, dry
D	240.8	0.1	N	PH05	1	1		SAA

Total Depth: 1 foot

ENSOLUM

	Sample Name: PH06	Date: 7/20/2022
	Site Name: Tucker Draw 9-4-4	
	Incident Number: nAB1812338789	
	Job Number: 03A1987046	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: LC	Method: Pothole
Coordinates: 32.049067, -103.878483	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
D	240.8	0.1	N	PH06	0.5	0.5	CCHE	Caliche, fine grain with cobbles, lightbrown, and tan, no odor, no stain, dry
D	470.8	0.3	N	PH06	1	1		SAA

Total Depth: 1 foot

ENSOLUM

	Sample Name: PH07	Date: 7/20/2022
	Site Name: Tucker Draw 9-4-4	
	Incident Number: nAB1812338789	
	Job Number: 03A1987046	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: LC	Method: Pothole
Coordinates: 32.049067, -103.878483	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
D	414.4	0.6	N	PH07	0.5	0.5	CCHE	Caliche, fine grain with cobbles, lightbrown, no odor, no stain, dry,
D	470.4	0.1	N	PH07	1	1		SAA

Total Depth: 1 foot

ENSOLUM

	Sample Name: PH08	Date: 7/20/2022
	Site Name: Tucker Draw 9-4-4	
	Incident Number: nAB1812338789	
	Job Number: 03A1987046	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: LC	Method: Pothole
Coordinates: 32.049067, -103.878483	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
D	369.6	0.1	N	PH08	0.5	0.5	CCHE	Caliche, lightbrown, no odor, no stain, dry
D	240.8	0	N	PH08	1	1		SAA

Total Depth: 1 foot

ENSOLUM

	Sample Name: PH09	Date: 8/19/2022
	Site Name: Tucker Draw 9-4-4	
	Incident Number: nAB1812338789	
	Job Number: 03A1987046	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: LC	Method: Pothole
Coordinates: 32.049067, -103.878483	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
D	<168	0.3	N	PH09	0.5	0.5	CCHE	Caliche, tan, no odor, no stain, dry.
								no odor, moist
D	<168	0.3	N	PH09	1	1		SAA

Total Depth: 1 foot

ENSOLUM

	Sample Name: PH10	Date: 8/19/2022
	Site Name: Tucker Draw 9-4-4	
	Incident Number: nAB1812338789	
	Job Number: 03A1987046	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: LC	Method: Pothole
Coordinates: 32.049067, -103.878483	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
D	<168	0.2	N	PH10	0.5	0.5	CCHE	Caliche, tan, no odor, no stain, dry.
D	<168	0	N	PH10	1	1		no odor, moist SAA

Total Depth: 1 foot

ENSOLUM

	Sample Name: PH11	Date: 8/19/2022
	Site Name: Tucker Draw 9-4-4	
	Incident Number: nAB1812338789	
	Job Number: 03A1987046	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: LC	Method: Pothole
Coordinates: 32.049067, -103.878483	Hole Diameter: N/A	Total Depth: 1'

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0		
D	280	0.3	N	PH11	0.5	0.5	CCHE	Caliche, tan, no odor, no stain, dry.
D	240.8	0.2	N	PH11	1	1		no odor, moist SAA

Total Depth: 1 foot

ENSOLUM

APPENDIX D

Photographic Log

ENSOLUM

Photographic Log
WPX Energy Permian, LLC.
Tucker Draw 9-4-4
Incident Number nAB1812338789
Ensolum Job Number: 03A1987046

Photograph 1
Date: July 20, 2022
Description: Site during delineation activities

Photograph 2
Date: July 20, 2022
Description: Site during delineation activities

Photograph 3
Date: July 20, 2022
Description: Site following delineation activities

Photograph 4
Date: August 19, 2022
Description: Site during delineation activities

ENSOLUM

APPENDIX E

Tables

ENSOLUM

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
WPX Energy Permian, LLC - Tucker Draw 9-4-4
Eddy County, New Mexico

Ensolum Project No. 03A1987046

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 1 Closure Criteria (NMAC 19.15.29)			**10**	**50**	NE	NE	NE	**1,000**	**2,500**	**10,000**
Delineation Soil Sample Analytical Results										
PH01	07/20/2022	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	763
PH01	07/20/2022	1	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	544
PH02	07/20/2022	0.5	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	<50.0	175
PH02	07/20/2022	1	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	399
PH03	07/20/2022	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	24.0
PH03	07/20/2022	1	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	53.2
PH04	07/20/2022	0.5	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	94.2
PH04	07/20/2022	1	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	270
PH05	07/20/2022	0.5	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	373
PH05	07/20/2022	1	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	454
PH06	07/20/2022	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	120
PH06	07/20/2022	1	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	<49.8	639
PH07	07/20/2022	0.5	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	1,150
PH07	07/20/2022	1	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	504
PH08	07/20/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	352
PH08	07/20/2022	1	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	301
PH09	08/19/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	182
PH09	08/19/2022	1	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	<49.8	118

ENSOLUM

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
WPX Energy Permian, LLC - Tucker Draw 9-4-4
Eddy County, New Mexico

Ensolum Project No. 03A1987046

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 1 Closure Criteria (NMAC 19.15.29)			**10**	**50**	NE	NE	NE	**1,000**	**2,500**	**10,000**
PH10	0.5	08/19/2022	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	21.9
PH10	1	08/19/2022	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	22.8
PH11	0.5	08/19/2022	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	132
PH11	1	08/19/2022	<0.00200	0.00607	<49.9	<49.9	<49.9	<49.9	<49.9	484

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

*Concentrations in **bold** exceed the NMOCD Table 1 Closure Criteria and/or Reclamation Standard for Soils Impacted by a Release*

ENSOLUM

APPENDIX F

Laboratory Analytical Reports & Chain-of-Custody Documentation

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Tel: (575)988-3199

Laboratory Job ID: 890-2605-1
Laboratory Sample Delivery Group: 03A1987046
Client Project/Site: Tucker Draw 944
Revision: 1

For:
Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Joseph Hernandez

JKramer

Authorized for release by:
7/27/2022 11:05:23 AM

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

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Ensolum
Project/Site: Tucker Draw 944

Laboratory Job ID: 890-2605-1
SDG: 03A1987046

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery 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: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Job ID: 890-2605-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2605-1

Receipt
The samples were received on 7/21/2022 9:41 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 18.1°C

Receipt Exceptions
The following samples were received at the laboratory outside the required temperature criteria: PH03 @ 0.5' (890-2605-1), PH03 @ 1' (890-2605-2), PH04 @ 0.5' (890-2605-3), PH04 @ 1' (890-2605-4), PH05 @ 0.5' (890-2605-5), PH05 @ 1' (890-2605-6), PH06 @ 0.5' (890-2605-7), PH06 @ 1' (890-2605-8), PH07 @ 0.5' (890-2605-9) and PH07 @ 1' (890-2605-10). This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to <CHOOSE_ONE> proceed with/cancel analysis. Samples received were 18.3 corrected temp of 18.1, client wants samples ran.

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-30303 and analytical batch 880-30324 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was 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 matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-30462 and analytical batch 880-30468 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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.

Job ID: 890-2609-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2609-1

Receipt
The samples were received on 7/21/2022 9:41 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 18.1°C

Receipt Exceptions
The following samples were received at the laboratory outside the required temperature criteria: PH08 @ 0.5' (890-2609-1) and PH08 @ 1' (890-2609-2). This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to <CHOOSE_ONE> proceed with/cancel analysis.Samples received out of temp range 18.3 corrected 18.1 client advised wants samples ran.

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 880-30361 and analytical batch 880-30473 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because

Case Narrative

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Job ID: 890-2609-1 (Continued)

Laboratory: Eurofins Carlsbad (Continued)

the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was 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 matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-30460 and analytical batch 880-30464 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (MB 880-30460/1-A). Evidence of matrix interferences is not obvious.

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-30398 and analytical batch 880-30435 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Client Sample ID: PH03 @ 0.5'

Date Collected: 07/20/22 10:40
Date Received: 07/21/22 09:41
Sample Depth: 0.5'

Lab Sample ID: 890-2605-1

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		07/21/22 16:45	07/22/22 18:10	1
Toluene	<0.00201	U	0.00201		mg/Kg		07/21/22 16:45	07/22/22 18:10	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		07/21/22 16:45	07/22/22 18:10	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		07/21/22 16:45	07/22/22 18:10	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		07/21/22 16:45	07/22/22 18:10	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		07/21/22 16:45	07/22/22 18:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*	*07/21/22 16:45*	*07/22/22 18:10*	*1*
1,4-Difluorobenzene (Surr)	*114*		*70 - 130*	*07/21/22 16:45*	*07/22/22 18:10*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			07/25/22 10:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/25/22 11:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 20:39	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 20:39	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 20:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*120*		*70 - 130*	*07/23/22 10:56*	*07/23/22 20:39*	*1*
o-Terphenyl	*131*	*S1+*	*70 - 130*	*07/23/22 10:56*	*07/23/22 20:39*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**24.0**		4.97		mg/Kg			07/23/22 08:29	1

Client Sample ID: PH03 @ 1'

Date Collected: 07/20/22 10:45
Date Received: 07/21/22 09:41
Sample Depth: 1'

Lab Sample ID: 890-2605-2

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 18:37	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 18:37	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 18:37	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		07/21/22 16:45	07/22/22 18:37	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 18:37	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		07/21/22 16:45	07/22/22 18:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*07/21/22 16:45*	*07/22/22 18:37*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Client Sample ID: PH03 @ 1'
Date Collected: 07/20/22 10:45
Date Received: 07/21/22 09:41
Sample Depth: 1'

Lab Sample ID: 890-2605-2
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*07/21/22 16:45*	*07/22/22 18:37*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			07/25/22 10:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/25/22 11:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 21:00	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 21:00	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 21:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*122*		*70 - 130*	*07/23/22 10:56*	*07/23/22 21:00*	*1*
o-Terphenyl	*138*	*S1+*	*70 - 130*	*07/23/22 10:56*	*07/23/22 21:00*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**53.2**		5.03		mg/Kg			07/23/22 08:39	1

Client Sample ID: PH04 @ 0.5'
Date Collected: 07/20/22 11:00
Date Received: 07/21/22 09:41
Sample Depth: 0.5'

Lab Sample ID: 890-2605-3
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 19:03	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 19:03	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 19:03	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/21/22 16:45	07/22/22 19:03	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 19:03	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/21/22 16:45	07/22/22 19:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*124*		*70 - 130*	*07/21/22 16:45*	*07/22/22 19:03*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*07/21/22 16:45*	*07/22/22 19:03*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			07/25/22 10:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/25/22 11:07	1

Client Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Client Sample ID: PH04 @ 0.5'

Lab Sample ID: 890-2605-3
Matrix: Solid
Date Collected: 07/20/22 11:00
Date Received: 07/21/22 09:41
Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 21:20	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 21:20	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 21:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*113*		*70 - 130*	*07/23/22 10:56*	*07/23/22 21:20*	*1*
o-Terphenyl	*120*		*70 - 130*	*07/23/22 10:56*	*07/23/22 21:20*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**94.2**		4.96		mg/Kg			07/23/22 08:48	1

Client Sample ID: PH04 @ 1'

Lab Sample ID: 890-2605-4
Matrix: Solid
Date Collected: 07/20/22 11:30
Date Received: 07/21/22 09:41
Sample Depth: 1'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 19:29	1
Toluene	<0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 19:29	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 19:29	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		07/21/22 16:45	07/22/22 19:29	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 19:29	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		07/21/22 16:45	07/22/22 19:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*07/21/22 16:45*	*07/22/22 19:29*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*07/21/22 16:45*	*07/22/22 19:29*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			07/25/22 10:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/25/22 11:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 21:41	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 21:41	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 21:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*116*		*70 - 130*	*07/23/22 10:56*	*07/23/22 21:41*	*1*
o-Terphenyl	*122*		*70 - 130*	*07/23/22 10:56*	*07/23/22 21:41*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Client Sample ID: PH04 @ 1'

Lab Sample ID: 890-2605-4
Matrix: Solid
Date Collected: 07/20/22 11:30
Date Received: 07/21/22 09:41
Sample Depth: 1'

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	270		5.00		mg/Kg			07/23/22 08:57	1

Client Sample ID: PH05 @ 0.5'

Lab Sample ID: 890-2605-5
Matrix: Solid
Date Collected: 07/20/22 11:35
Date Received: 07/21/22 09:41
Sample Depth: 0.5'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 19:56	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 19:56	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 19:56	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		07/21/22 16:45	07/22/22 19:56	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 19:56	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		07/21/22 16:45	07/22/22 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*120*		*70 - 130*	*07/21/22 16:45*	*07/22/22 19:56*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*07/21/22 16:45*	*07/22/22 19:56*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			07/25/22 10:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			07/25/22 11:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/25/22 16:23	07/26/22 12:17	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/25/22 16:23	07/26/22 12:17	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/25/22 16:23	07/26/22 12:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*103*		*70 - 130*	*07/25/22 16:23*	*07/26/22 12:17*	*1*
o-Terphenyl	*110*		*70 - 130*	*07/25/22 16:23*	*07/26/22 12:17*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	373		5.00		mg/Kg			07/24/22 13:07	1

Client Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Client Sample ID: PH05 @ 1'

Lab Sample ID: 890-2605-6
Matrix: Solid
Date Collected: 07/20/22 11:40
Date Received: 07/21/22 09:41
Sample Depth: 1'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 20:22	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 20:22	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 20:22	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/21/22 16:45	07/22/22 20:22	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 20:22	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/21/22 16:45	07/22/22 20:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*126*		*70 - 130*	*07/21/22 16:45*	*07/22/22 20:22*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*07/21/22 16:45*	*07/22/22 20:22*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			07/25/22 10:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			07/25/22 11:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/23/22 10:56	07/23/22 22:23	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/23/22 10:56	07/23/22 22:23	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/23/22 10:56	07/23/22 22:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*107*		*70 - 130*	*07/23/22 10:56*	*07/23/22 22:23*	*1*
o-Terphenyl	*113*		*70 - 130*	*07/23/22 10:56*	*07/23/22 22:23*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**454**		5.05		mg/Kg			07/23/22 09:34	1

Client Sample ID: PH06 @ 0.5'

Lab Sample ID: 890-2605-7
Matrix: Solid
Date Collected: 07/20/22 11:45
Date Received: 07/21/22 09:41
Sample Depth: 0.5'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 20:49	1
Toluene	<0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 20:49	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 20:49	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		07/21/22 16:45	07/22/22 20:49	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 20:49	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		07/21/22 16:45	07/22/22 20:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*127*		*70 - 130*	*07/21/22 16:45*	*07/22/22 20:49*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Client Sample ID: PH06 @ 0.5'

Lab Sample ID: 890-2605-7
Matrix: Solid
Date Collected: 07/20/22 11:45
Date Received: 07/21/22 09:41
Sample Depth: 0.5'

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*07/21/22 16:45*	*07/22/22 20:49*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			07/25/22 10:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/25/22 11:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 22:44	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 22:44	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/23/22 10:56	07/23/22 22:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*124*		*70 - 130*	*07/23/22 10:56*	*07/23/22 22:44*	*1*
o-Terphenyl	*133*	*S1+*	*70 - 130*	*07/23/22 10:56*	*07/23/22 22:44*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**120**		5.02		mg/Kg			07/24/22 13:16	1

Client Sample ID: PH06 @ 1'

Lab Sample ID: 890-2605-8
Matrix: Solid
Date Collected: 07/20/22 11:50
Date Received: 07/21/22 09:41
Sample Depth: 1'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 21:15	1
Toluene	<0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 21:15	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 21:15	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		07/21/22 16:45	07/22/22 21:15	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		07/21/22 16:45	07/22/22 21:15	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		07/21/22 16:45	07/22/22 21:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*129*		*70 - 130*	*07/21/22 16:45*	*07/22/22 21:15*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*07/21/22 16:45*	*07/22/22 21:15*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			07/25/22 10:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			07/25/22 11:07	1

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Client Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Client Sample ID: PH06 @ 1'

Lab Sample ID: 890-2605-8
Matrix: Solid
Date Collected: 07/20/22 11:50
Date Received: 07/21/22 09:41
Sample Depth: 1'

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		07/23/22 10:56	07/23/22 23:05	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		07/23/22 10:56	07/23/22 23:05	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		07/23/22 10:56	07/23/22 23:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*116*		*70 - 130*	*07/23/22 10:56*	*07/23/22 23:05*	*1*
o-Terphenyl	*120*		*70 - 130*	*07/23/22 10:56*	*07/23/22 23:05*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**639**		4.96		mg/Kg			07/23/22 09:52	1

Client Sample ID: PH07 @ 0.5'

Lab Sample ID: 890-2605-9
Matrix: Solid
Date Collected: 07/20/22 12:00
Date Received: 07/21/22 09:41
Sample Depth: 0.5'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		07/21/22 16:45	07/22/22 21:41	1
Toluene	<0.00201	U	0.00201		mg/Kg		07/21/22 16:45	07/22/22 21:41	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		07/21/22 16:45	07/22/22 21:41	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		07/21/22 16:45	07/22/22 21:41	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		07/21/22 16:45	07/22/22 21:41	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		07/21/22 16:45	07/22/22 21:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*124*		*70 - 130*	*07/21/22 16:45*	*07/22/22 21:41*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*07/21/22 16:45*	*07/22/22 21:41*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			07/25/22 10:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			07/25/22 11:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/23/22 10:56	07/23/22 23:27	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/23/22 10:56	07/23/22 23:27	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/23/22 10:56	07/23/22 23:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*113*		*70 - 130*	*07/23/22 10:56*	*07/23/22 23:27*	*1*
o-Terphenyl	*120*		*70 - 130*	*07/23/22 10:56*	*07/23/22 23:27*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Client Sample ID: PH07 @ 0.5'

Lab Sample ID: 890-2605-9
Matrix: Solid
Date Collected: 07/20/22 12:00
Date Received: 07/21/22 09:41
Sample Depth: 0.5'

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1150		25.0		mg/Kg			07/26/22 14:43	5

Client Sample ID: PH07 @ 1'

Lab Sample ID: 890-2605-10
Matrix: Solid
Date Collected: 07/20/22 12:10
Date Received: 07/21/22 09:41
Sample Depth: 1'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 22:08	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 22:08	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 22:08	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/21/22 16:45	07/22/22 22:08	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 22:08	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/21/22 16:45	07/22/22 22:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*129*		*70 - 130*	*07/21/22 16:45*	*07/22/22 22:08*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*07/21/22 16:45*	*07/22/22 22:08*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			07/25/22 10:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			07/25/22 11:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		07/23/22 10:56	07/23/22 23:47	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		07/23/22 10:56	07/23/22 23:47	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		07/23/22 10:56	07/23/22 23:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*118*		*70 - 130*	*07/23/22 10:56*	*07/23/22 23:47*	*1*
o-Terphenyl	*128*		*70 - 130*	*07/23/22 10:56*	*07/23/22 23:47*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	504		5.04		mg/Kg			07/24/22 13:25	1

Client Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Client Sample ID: PH08 @ 0.5'

Date Collected: 07/20/22 13:00
Date Received: 07/21/22 09:41
Sample Depth: 0.5'

Lab Sample ID: 890-2609-1

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		07/22/22 10:18	07/24/22 07:12	1
Toluene	<0.00199	U	0.00199		mg/Kg		07/22/22 10:18	07/24/22 07:12	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		07/22/22 10:18	07/24/22 07:12	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		07/22/22 10:18	07/24/22 07:12	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		07/22/22 10:18	07/24/22 07:12	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		07/22/22 10:18	07/24/22 07:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*	*07/22/22 10:18*	*07/24/22 07:12*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*07/22/22 10:18*	*07/24/22 07:12*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			07/25/22 11:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			07/25/22 09:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/23/22 10:54	07/23/22 17:24	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/23/22 10:54	07/23/22 17:24	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/23/22 10:54	07/23/22 17:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*98*		*70 - 130*	*07/23/22 10:54*	*07/23/22 17:24*	*1*
o-Terphenyl	*105*		*70 - 130*	*07/23/22 10:54*	*07/23/22 17:24*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**352**		5.03		mg/Kg			07/23/22 11:52	1

Client Sample ID: PH08 @ 1'

Date Collected: 07/20/22 13:05
Date Received: 07/21/22 09:41
Sample Depth: 1'

Lab Sample ID: 890-2609-2

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 07:32	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 07:32	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 07:32	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		07/22/22 10:18	07/24/22 07:32	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 07:32	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		07/22/22 10:18	07/24/22 07:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*120*		*70 - 130*	*07/22/22 10:18*	*07/24/22 07:32*	*1*

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Client Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Client Sample ID: PH08 @ 1'

Date Collected: 07/20/22 13:05
Date Received: 07/21/22 09:41
Sample Depth: 1'

Lab Sample ID: 890-2609-2

Matrix: Solid

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*07/22/22 10:18*	*07/24/22 07:32*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			07/25/22 11:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			07/25/22 09:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/23/22 10:54	07/23/22 17:45	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/23/22 10:54	07/23/22 17:45	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/23/22 10:54	07/23/22 17:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*112*		*70 - 130*	*07/23/22 10:54*	*07/23/22 17:45*	*1*
o-Terphenyl	*123*		*70 - 130*	*07/23/22 10:54*	*07/23/22 17:45*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**301**		5.02		mg/Kg			07/23/22 12:02	1

Surrogate Summary

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

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)
880-17239-A-1-B MS	Matrix Spike	103	102
880-17239-A-1-C MSD	Matrix Spike Duplicate	107	88
890-2605-1	PH03 @ 0.5'	114	114
890-2605-2	PH03 @ 1'	103	86
890-2605-3	PH04 @ 0.5'	124	90
890-2605-4	PH04 @ 1'	113	92
890-2605-5	PH05 @ 0.5'	120	91
890-2605-6	PH05 @ 1'	126	89
890-2605-7	PH06 @ 0.5'	127	99
890-2605-8	PH06 @ 1'	129	105
890-2605-9	PH07 @ 0.5'	124	92
890-2605-10	PH07 @ 1'	129	89
890-2609-1	PH08 @ 0.5'	114	89
890-2609-2	PH08 @ 1'	120	90
LCS 880-30303/1-A	Lab Control Sample	120	95
LCS 880-30361/1-A	Lab Control Sample	128	98
LCSD 880-30303/2-A	Lab Control Sample Dup	104	96
LCSD 880-30361/2-A	Lab Control Sample Dup	117	99
MB 880-30303/5-A	Method Blank	83	91
MB 880-30361/5-A	Method Blank	104	85
MB 880-30426/5-A	Method Blank	94	86

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)
880-17280-A-18-D MS	Matrix Spike	88	94
880-17280-A-18-E MSD	Matrix Spike Duplicate	85	92
890-2604-A-21-G MS	Matrix Spike	111	105
890-2604-A-21-H MSD	Matrix Spike Duplicate	109	100
890-2605-1	PH03 @ 0.5'	120	131 S1+
890-2605-2	PH03 @ 1'	122	138 S1+
890-2605-3	PH04 @ 0.5'	113	120
890-2605-4	PH04 @ 1'	116	122
890-2605-5	PH05 @ 0.5'	103	110
890-2605-6	PH05 @ 1'	107	113
890-2605-7	PH06 @ 0.5'	124	133 S1+
890-2605-8	PH06 @ 1'	116	120
890-2605-9	PH07 @ 0.5'	113	120
890-2605-10	PH07 @ 1'	118	128
890-2609-1	PH08 @ 0.5'	98	105
890-2609-2	PH08 @ 1'	112	123
LCS 880-30460/2-A	Lab Control Sample	119	124
LCS 880-30462/2-A	Lab Control Sample	87	87

Surrogate Summary

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

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

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

		Percent Surrogate Recovery (Acceptance Limits)									
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)								
LCS 880-30622/2-A	Lab Control Sample	102	114								
LCSD 880-30460/3-A	Lab Control Sample Dup	112	113								
LCSD 880-30462/3-A	Lab Control Sample Dup	90	90								
LCSD 880-30622/3-A	Lab Control Sample Dup	91	104								
MB 880-30460/1-A	Method Blank	161 S1+	189 S1+								
MB 880-30462/1-A	Method Blank	198 S1+	232 S1+								
MB 880-30622/1-A	Method Blank	98	110								

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-30303/5-A
Matrix: Solid
Analysis Batch: 30324

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30303

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 11:36	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 11:36	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 11:36	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/21/22 16:45	07/22/22 11:36	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/21/22 16:45	07/22/22 11:36	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/21/22 16:45	07/22/22 11:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*83*		*70 - 130*	*07/21/22 16:45*	*07/22/22 11:36*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*07/21/22 16:45*	*07/22/22 11:36*	*1*

Lab Sample ID: LCS 880-30303/1-A
Matrix: Solid
Analysis Batch: 30324

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30303

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09936		mg/Kg		99	70 - 130		
Toluene			0.100	0.09819		mg/Kg		98	70 - 130		
Ethylbenzene			0.100	0.1024		mg/Kg		102	70 - 130		
m-Xylene & p-Xylene			0.200	0.1966		mg/Kg		98	70 - 130		
o-Xylene			0.100	0.1066		mg/Kg		107	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*120*		*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: LCSD 880-30303/2-A
Matrix: Solid
Analysis Batch: 30324

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30303

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.08885		mg/Kg		89	70 - 130	11	35
Toluene			0.100	0.08775		mg/Kg		88	70 - 130	11	35
Ethylbenzene			0.100	0.09068		mg/Kg		91	70 - 130	12	35
m-Xylene & p-Xylene			0.200	0.1758		mg/Kg		88	70 - 130	11	35
o-Xylene			0.100	0.09466		mg/Kg		95	70 - 130	12	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: 880-17239-A-1-B MS
Matrix: Solid
Analysis Batch: 30324

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30303

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00201	U	0.0994	0.07405		mg/Kg		74	70 - 130		
Toluene	<0.00201	U F1	0.0994	0.06459	F1	mg/Kg		65	70 - 130		

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

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

Lab Sample ID: 880-17239-A-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 30324 — **Prep Batch: 30303**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U F1	0.0994	0.05760	F1	mg/Kg		58	70 - 130
m-Xylene & p-Xylene	<0.00402	U F1	0.199	0.1105	F1	mg/Kg		56	70 - 130
o-Xylene	<0.00201	U F1	0.0994	0.05831	F1	mg/Kg		59	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: 880-17239-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 30324 — **Prep Batch: 30303**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.0992	0.07325		mg/Kg		74	70 - 130	1	35
Toluene	<0.00201	U F1	0.0992	0.05894	F1	mg/Kg		59	70 - 130	9	35
Ethylbenzene	<0.00201	U F1	0.0992	0.04701	F1	mg/Kg		47	70 - 130	20	35
m-Xylene & p-Xylene	<0.00402	U F1	0.198	0.08792	F1	mg/Kg		44	70 - 130	23	35
o-Xylene	<0.00201	U F1	0.0992	0.04635	F1	mg/Kg		47	70 - 130	23	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*

Lab Sample ID: MB 880-30361/5-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 30473 — **Prep Batch: 30361**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/22/22 10:18	07/24/22 01:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*07/22/22 10:18*	*07/24/22 01:23*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*	*07/22/22 10:18*	*07/24/22 01:23*	*1*

Lab Sample ID: LCS 880-30361/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 30473 — **Prep Batch: 30361**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09697		mg/Kg		97	70 - 130
Toluene	0.100	0.1018		mg/Kg		102	70 - 130
Ethylbenzene	0.100	0.1105		mg/Kg		111	70 - 130
m-Xylene & p-Xylene	0.200	0.2303		mg/Kg		115	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

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

Lab Sample ID: LCS 880-30361/1-A
Matrix: Solid
Analysis Batch: 30473

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30361

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
o-Xylene			0.100	0.1290		mg/Kg		129	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*128*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 880-30361/2-A
Matrix: Solid
Analysis Batch: 30473

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30361

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.07948		mg/Kg		79	70 - 130	20	35
Toluene			0.100	0.08370		mg/Kg		84	70 - 130	20	35
Ethylbenzene			0.100	0.09040		mg/Kg		90	70 - 130	20	35
m-Xylene & p-Xylene			0.200	0.1865		mg/Kg		93	70 - 130	21	35
o-Xylene			0.100	0.1072		mg/Kg		107	70 - 130	18	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: MB 880-30426/5-A
Matrix: Solid
Analysis Batch: 30473

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30426

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/22/22 15:06	07/23/22 14:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*	*07/22/22 15:06*	*07/23/22 14:49*	*1*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*07/22/22 15:06*	*07/23/22 14:49*	*1*

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

Lab Sample ID: MB 880-30460/1-A
Matrix: Solid
Analysis Batch: 30464

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30460

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/23/22 10:54	07/23/22 12:33	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/23/22 10:54	07/23/22 12:33	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/23/22 10:54	07/23/22 12:33	1

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QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	161	S1+	70 - 130	07/23/22 10:54	07/23/22 12:33	1
o-Terphenyl	189	S1+	70 - 130	07/23/22 10:54	07/23/22 12:33	1

Lab Sample ID: LCS 880-30460/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 30464 — **Prep Batch: 30460**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1129		mg/Kg		113	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	965.7		mg/Kg		97	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	119		70 - 130
o-Terphenyl	124		70 - 130

Lab Sample ID: LCSD 880-30460/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 30464 — **Prep Batch: 30460**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1091		mg/Kg		109	70 - 130	3	20
Diesel Range Organics (Over C10-C28)			1000	925.1		mg/Kg		93	70 - 130	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	112		70 - 130
o-Terphenyl	113		70 - 130

Lab Sample ID: MB 880-30462/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 30468 — **Prep Batch: 30462**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/23/22 10:56	07/23/22 12:37	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/23/22 10:56	07/23/22 12:37	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/23/22 10:56	07/23/22 12:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	198	S1+	70 - 130	07/23/22 10:56	07/23/22 12:37	1
o-Terphenyl	232	S1+	70 - 130	07/23/22 10:56	07/23/22 12:37	1

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

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

Lab Sample ID: LCS 880-30462/2-A
Matrix: Solid
Analysis Batch: 30468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30462

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	911.1		mg/Kg		91	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	882.7		mg/Kg		88	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*87*		*70 - 130*
o-Terphenyl	*87*		*70 - 130*

Lab Sample ID: LCSD 880-30462/3-A
Matrix: Solid
Analysis Batch: 30468

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30462

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	986.4		mg/Kg		99	70 - 130	8	20
Diesel Range Organics (Over C10-C28)			1000	924.2		mg/Kg		92	70 - 130	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*90*		*70 - 130*
o-Terphenyl	*90*		*70 - 130*

Lab Sample ID: 890-2604-A-21-G MS
Matrix: Solid
Analysis Batch: 30468

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30462

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F1	1000	1521	F1	mg/Kg		151	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	1245		mg/Kg		121	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*111*		*70 - 130*
o-Terphenyl	*105*		*70 - 130*

Lab Sample ID: 890-2604-A-21-H MSD
Matrix: Solid
Analysis Batch: 30468

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 30462

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	<50.0	U F1	999	1465	F1	mg/Kg		145	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	1177		mg/Kg		114	70 - 130	6	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*109*		*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

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

Lab Sample ID: 890-2604-A-21-H MSD
Matrix: Solid
Analysis Batch: 30468

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 30462

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	100		70 - 130

Lab Sample ID: MB 880-30622/1-A
Matrix: Solid
Analysis Batch: 30645

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30622

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/25/22 16:23	07/26/22 09:44	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/25/22 16:23	07/26/22 09:44	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/25/22 16:23	07/26/22 09:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		70 - 130	07/25/22 16:23	07/26/22 09:44	1
o-Terphenyl	110		70 - 130	07/25/22 16:23	07/26/22 09:44	1

Lab Sample ID: LCS 880-30622/2-A
Matrix: Solid
Analysis Batch: 30645

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30622

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	957.4		mg/Kg		96	70 - 130
Diesel Range Organics (Over C10-C28)	1000	926.5		mg/Kg		93	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	102		70 - 130
o-Terphenyl	114		70 - 130

Lab Sample ID: LCSD 880-30622/3-A
Matrix: Solid
Analysis Batch: 30645

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30622

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	988.4		mg/Kg		99	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	1000	863.8		mg/Kg		86	70 - 130	7	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	91		70 - 130
o-Terphenyl	104		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

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

Lab Sample ID: 880-17280-A-18-D MS
Matrix: Solid
Analysis Batch: 30645

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30622

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	1163		mg/Kg		116	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	789.8		mg/Kg		79	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*88*		*70 - 130*
o-Terphenyl	*94*		*70 - 130*

Lab Sample ID: 880-17280-A-18-E MSD
Matrix: Solid
Analysis Batch: 30645

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 30622

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	<50.0	U	999	1054		mg/Kg		106	70 - 130	10	20
Diesel Range Organics (Over C10-C28)	<50.0	U	999	773.5		mg/Kg		77	70 - 130	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*85*		*70 - 130*
o-Terphenyl	*92*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30398/1-A
Matrix: Solid
Analysis Batch: 30435

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			07/23/22 07:34	1

Lab Sample ID: LCS 880-30398/2-A
Matrix: Solid
Analysis Batch: 30435

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	263.3		mg/Kg		105	90 - 110

Lab Sample ID: LCSD 880-30398/3-A
Matrix: Solid
Analysis Batch: 30435

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	264.5		mg/Kg		106	90 - 110	0	20

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-2605-10 MS
Matrix: Solid
Analysis Batch: 30435

Client Sample ID: PH07 @ 1'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	504		252	752.9		mg/Kg		99	90 - 110

Lab Sample ID: 890-2605-10 MSD
Matrix: Solid
Analysis Batch: 30435

Client Sample ID: PH07 @ 1'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	504		252	761.7		mg/Kg		102	90 - 110	1	20

Lab Sample ID: MB 880-30597/1-A
Matrix: Solid
Analysis Batch: 30701

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			07/26/22 13:20	1

Lab Sample ID: LCS 880-30597/2-A
Matrix: Solid
Analysis Batch: 30701

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	256.4		mg/Kg		103	90 - 110

Lab Sample ID: LCSD 880-30597/3-A
Matrix: Solid
Analysis Batch: 30701

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	257.9		mg/Kg		103	90 - 110	1	20

Lab Sample ID: 880-17350-A-5-B MS
Matrix: Solid
Analysis Batch: 30701

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	227		1240	1558		mg/Kg		107	90 - 110

Lab Sample ID: 880-17350-A-5-C MSD
Matrix: Solid
Analysis Batch: 30701

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	227		1240	1555		mg/Kg		107	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

GC VOA

Prep Batch: 30303

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-1	PH03 @ 0.5'	Total/NA	Solid	5035	
890-2605-2	PH03 @ 1'	Total/NA	Solid	5035	
890-2605-3	PH04 @ 0.5'	Total/NA	Solid	5035	
890-2605-4	PH04 @ 1'	Total/NA	Solid	5035	
890-2605-5	PH05 @ 0.5'	Total/NA	Solid	5035	
890-2605-6	PH05 @ 1'	Total/NA	Solid	5035	
890-2605-7	PH06 @ 0.5'	Total/NA	Solid	5035	
890-2605-8	PH06 @ 1'	Total/NA	Solid	5035	
890-2605-9	PH07 @ 0.5'	Total/NA	Solid	5035	
890-2605-10	PH07 @ 1'	Total/NA	Solid	5035	
MB 880-30303/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30303/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30303/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17239-A-1-B MS	Matrix Spike	Total/NA	Solid	5035	
880-17239-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 30324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-1	PH03 @ 0.5'	Total/NA	Solid	8021B	30303
890-2605-2	PH03 @ 1'	Total/NA	Solid	8021B	30303
890-2605-3	PH04 @ 0.5'	Total/NA	Solid	8021B	30303
890-2605-4	PH04 @ 1'	Total/NA	Solid	8021B	30303
890-2605-5	PH05 @ 0.5'	Total/NA	Solid	8021B	30303
890-2605-6	PH05 @ 1'	Total/NA	Solid	8021B	30303
890-2605-7	PH06 @ 0.5'	Total/NA	Solid	8021B	30303
890-2605-8	PH06 @ 1'	Total/NA	Solid	8021B	30303
890-2605-9	PH07 @ 0.5'	Total/NA	Solid	8021B	30303
890-2605-10	PH07 @ 1'	Total/NA	Solid	8021B	30303
MB 880-30303/5-A	Method Blank	Total/NA	Solid	8021B	30303
LCS 880-30303/1-A	Lab Control Sample	Total/NA	Solid	8021B	30303
LCSD 880-30303/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30303
880-17239-A-1-B MS	Matrix Spike	Total/NA	Solid	8021B	30303
880-17239-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30303

Prep Batch: 30361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2609-1	PH08 @ 0.5'	Total/NA	Solid	5035	
890-2609-2	PH08 @ 1'	Total/NA	Solid	5035	
MB 880-30361/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30361/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30361/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Prep Batch: 30426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-30426/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 30473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2609-1	PH08 @ 0.5'	Total/NA	Solid	8021B	30361
890-2609-2	PH08 @ 1'	Total/NA	Solid	8021B	30361
MB 880-30361/5-A	Method Blank	Total/NA	Solid	8021B	30361

QC Association Summary

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

GC VOA (Continued)

Analysis Batch: 30473 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-30426/5-A	Method Blank	Total/NA	Solid	8021B	30426
LCS 880-30361/1-A	Lab Control Sample	Total/NA	Solid	8021B	30361
LCSD 880-30361/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30361

Analysis Batch: 30544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-1	PH03 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2605-2	PH03 @ 1'	Total/NA	Solid	Total BTEX	
890-2605-3	PH04 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2605-4	PH04 @ 1'	Total/NA	Solid	Total BTEX	
890-2605-5	PH05 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2605-6	PH05 @ 1'	Total/NA	Solid	Total BTEX	
890-2605-7	PH06 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2605-8	PH06 @ 1'	Total/NA	Solid	Total BTEX	
890-2605-9	PH07 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2605-10	PH07 @ 1'	Total/NA	Solid	Total BTEX	

Analysis Batch: 30568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2609-1	PH08 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2609-2	PH08 @ 1'	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 30460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2609-1	PH08 @ 0.5'	Total/NA	Solid	8015NM Prep	
890-2609-2	PH08 @ 1'	Total/NA	Solid	8015NM Prep	
MB 880-30460/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30460/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30460/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Prep Batch: 30462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-1	PH03 @ 0.5'	Total/NA	Solid	8015NM Prep	
890-2605-2	PH03 @ 1'	Total/NA	Solid	8015NM Prep	
890-2605-3	PH04 @ 0.5'	Total/NA	Solid	8015NM Prep	
890-2605-4	PH04 @ 1'	Total/NA	Solid	8015NM Prep	
890-2605-6	PH05 @ 1'	Total/NA	Solid	8015NM Prep	
890-2605-7	PH06 @ 0.5'	Total/NA	Solid	8015NM Prep	
890-2605-8	PH06 @ 1'	Total/NA	Solid	8015NM Prep	
890-2605-9	PH07 @ 0.5'	Total/NA	Solid	8015NM Prep	
890-2605-10	PH07 @ 1'	Total/NA	Solid	8015NM Prep	
MB 880-30462/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30462/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30462/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2604-A-21-G MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2604-A-21-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

GC Semi VOA

Analysis Batch: 30464

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2609-1	PH08 @ 0.5'	Total/NA	Solid	8015B NM	30460
890-2609-2	PH08 @ 1'	Total/NA	Solid	8015B NM	30460
MB 880-30460/1-A	Method Blank	Total/NA	Solid	8015B NM	30460
LCS 880-30460/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30460
LCSD 880-30460/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30460

Analysis Batch: 30468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-1	PH03 @ 0.5'	Total/NA	Solid	8015B NM	30462
890-2605-2	PH03 @ 1'	Total/NA	Solid	8015B NM	30462
890-2605-3	PH04 @ 0.5'	Total/NA	Solid	8015B NM	30462
890-2605-4	PH04 @ 1'	Total/NA	Solid	8015B NM	30462
890-2605-6	PH05 @ 1'	Total/NA	Solid	8015B NM	30462
890-2605-7	PH06 @ 0.5'	Total/NA	Solid	8015B NM	30462
890-2605-8	PH06 @ 1'	Total/NA	Solid	8015B NM	30462
890-2605-9	PH07 @ 0.5'	Total/NA	Solid	8015B NM	30462
890-2605-10	PH07 @ 1'	Total/NA	Solid	8015B NM	30462
MB 880-30462/1-A	Method Blank	Total/NA	Solid	8015B NM	30462
LCS 880-30462/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30462
LCSD 880-30462/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30462
890-2604-A-21-G MS	Matrix Spike	Total/NA	Solid	8015B NM	30462
890-2604-A-21-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30462

Analysis Batch: 30537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2609-1	PH08 @ 0.5'	Total/NA	Solid	8015 NM	
890-2609-2	PH08 @ 1'	Total/NA	Solid	8015 NM	

Analysis Batch: 30570

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-1	PH03 @ 0.5'	Total/NA	Solid	8015 NM	
890-2605-2	PH03 @ 1'	Total/NA	Solid	8015 NM	
890-2605-3	PH04 @ 0.5'	Total/NA	Solid	8015 NM	
890-2605-4	PH04 @ 1'	Total/NA	Solid	8015 NM	
890-2605-5	PH05 @ 0.5'	Total/NA	Solid	8015 NM	
890-2605-6	PH05 @ 1'	Total/NA	Solid	8015 NM	
890-2605-7	PH06 @ 0.5'	Total/NA	Solid	8015 NM	
890-2605-8	PH06 @ 1'	Total/NA	Solid	8015 NM	
890-2605-9	PH07 @ 0.5'	Total/NA	Solid	8015 NM	
890-2605-10	PH07 @ 1'	Total/NA	Solid	8015 NM	

Prep Batch: 30622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-5	PH05 @ 0.5'	Total/NA	Solid	8015NM Prep	
MB 880-30622/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30622/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30622/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-17280-A-18-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-17280-A-18-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

GC Semi VOA

Analysis Batch: 30645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-5	PH05 @ 0.5'	Total/NA	Solid	8015B NM	30622
MB 880-30622/1-A	Method Blank	Total/NA	Solid	8015B NM	30622
LCS 880-30622/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30622
LCSD 880-30622/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30622
880-17280-A-18-D MS	Matrix Spike	Total/NA	Solid	8015B NM	30622
880-17280-A-18-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30622

HPLC/IC

Leach Batch: 30398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-1	PH03 @ 0.5'	Soluble	Solid	DI Leach	
890-2605-2	PH03 @ 1'	Soluble	Solid	DI Leach	
890-2605-3	PH04 @ 0.5'	Soluble	Solid	DI Leach	
890-2605-4	PH04 @ 1'	Soluble	Solid	DI Leach	
890-2605-5	PH05 @ 0.5'	Soluble	Solid	DI Leach	
890-2605-6	PH05 @ 1'	Soluble	Solid	DI Leach	
890-2605-7	PH06 @ 0.5'	Soluble	Solid	DI Leach	
890-2605-8	PH06 @ 1'	Soluble	Solid	DI Leach	
890-2605-10	PH07 @ 1'	Soluble	Solid	DI Leach	
890-2609-1	PH08 @ 0.5'	Soluble	Solid	DI Leach	
890-2609-2	PH08 @ 1'	Soluble	Solid	DI Leach	
MB 880-30398/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30398/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30398/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2605-10 MS	PH07 @ 1'	Soluble	Solid	DI Leach	
890-2605-10 MSD	PH07 @ 1'	Soluble	Solid	DI Leach	

Analysis Batch: 30435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-1	PH03 @ 0.5'	Soluble	Solid	300.0	30398
890-2605-2	PH03 @ 1'	Soluble	Solid	300.0	30398
890-2605-3	PH04 @ 0.5'	Soluble	Solid	300.0	30398
890-2605-4	PH04 @ 1'	Soluble	Solid	300.0	30398
890-2605-5	PH05 @ 0.5'	Soluble	Solid	300.0	30398
890-2605-6	PH05 @ 1'	Soluble	Solid	300.0	30398
890-2605-7	PH06 @ 0.5'	Soluble	Solid	300.0	30398
890-2605-8	PH06 @ 1'	Soluble	Solid	300.0	30398
890-2605-10	PH07 @ 1'	Soluble	Solid	300.0	30398
890-2609-1	PH08 @ 0.5'	Soluble	Solid	300.0	30398
890-2609-2	PH08 @ 1'	Soluble	Solid	300.0	30398
MB 880-30398/1-A	Method Blank	Soluble	Solid	300.0	30398
LCS 880-30398/2-A	Lab Control Sample	Soluble	Solid	300.0	30398
LCSD 880-30398/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30398
890-2605-10 MS	PH07 @ 1'	Soluble	Solid	300.0	30398
890-2605-10 MSD	PH07 @ 1'	Soluble	Solid	300.0	30398

Leach Batch: 30597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-9	PH07 @ 0.5'	Soluble	Solid	DI Leach	
MB 880-30597/1-A	Method Blank	Soluble	Solid	DI Leach	

QC Association Summary

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

HPLC/IC (Continued)

Leach Batch: 30597 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-30597/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30597/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-17350-A-5-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-17350-A-5-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 30701

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2605-9	PH07 @ 0.5'	Soluble	Solid	300.0	30597
MB 880-30597/1-A	Method Blank	Soluble	Solid	300.0	30597
LCS 880-30597/2-A	Lab Control Sample	Soluble	Solid	300.0	30597
LCSD 880-30597/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30597
880-17350-A-5-B MS	Matrix Spike	Soluble	Solid	300.0	30597
880-17350-A-5-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30597

Lab Chronicle

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Client Sample ID: PH03 @ 0.5'
Date Collected: 07/20/22 10:40
Date Received: 07/21/22 09:41

Lab Sample ID: 890-2605-1
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			4.98 g	5 mL	30303	07/21/22 16:45	MR	XEN MID
Total/NA	Analysis	8021B		1			30324	07/22/22 18:10	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30462	07/23/22 10:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30468	07/23/22 20:39	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 08:29	CH	XEN MID

Client Sample ID: PH03 @ 1'
Date Collected: 07/20/22 10:45
Date Received: 07/21/22 09:41

Lab Sample ID: 890-2605-2
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			4.99 g	5 mL	30303	07/21/22 16:45	MR	XEN MID
Total/NA	Analysis	8021B		1			30324	07/22/22 18:37	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	30462	07/23/22 10:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30468	07/23/22 21:00	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 08:39	CH	XEN MID

Client Sample ID: PH04 @ 0.5'
Date Collected: 07/20/22 11:00
Date Received: 07/21/22 09:41

Lab Sample ID: 890-2605-3
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			5.01 g	5 mL	30303	07/21/22 16:45	MR	XEN MID
Total/NA	Analysis	8021B		1			30324	07/22/22 19:03	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30462	07/23/22 10:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30468	07/23/22 21:20	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 08:48	CH	XEN MID

Client Sample ID: PH04 @ 1'
Date Collected: 07/20/22 11:30
Date Received: 07/21/22 09:41

Lab Sample ID: 890-2605-4
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			5.03 g	5 mL	30303	07/21/22 16:45	MR	XEN MID
Total/NA	Analysis	8021B		1			30324	07/22/22 19:29	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID

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Lab Chronicle

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Client Sample ID: PH04 @ 1'
Date Collected: 07/20/22 11:30
Date Received: 07/21/22 09:41

Lab Sample ID: 890-2605-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	30462	07/23/22 10:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30468	07/23/22 21:41	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 08:57	CH	XEN MID

Client Sample ID: PH05 @ 0.5'
Date Collected: 07/20/22 11:35
Date Received: 07/21/22 09:41

Lab Sample ID: 890-2605-5
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			4.99 g	5 mL	30303	07/21/22 16:45	MR	XEN MID
Total/NA	Analysis	8021B		1			30324	07/22/22 19:56	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	30622	07/25/22 16:23	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30645	07/26/22 12:17	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/24/22 13:07	CH	XEN MID

Client Sample ID: PH05 @ 1'
Date Collected: 07/20/22 11:40
Date Received: 07/21/22 09:41

Lab Sample ID: 890-2605-6
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			5.01 g	5 mL	30303	07/21/22 16:45	MR	XEN MID
Total/NA	Analysis	8021B		1			30324	07/22/22 20:22	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	30462	07/23/22 10:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30468	07/23/22 22:23	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 09:34	CH	XEN MID

Client Sample ID: PH06 @ 0.5'
Date Collected: 07/20/22 11:45
Date Received: 07/21/22 09:41

Lab Sample ID: 890-2605-7
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			5.03 g	5 mL	30303	07/21/22 16:45	MR	XEN MID
Total/NA	Analysis	8021B		1			30324	07/22/22 20:49	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30462	07/23/22 10:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30468	07/23/22 22:44	AJ	XEN MID

Lab Chronicle

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Client Sample ID: PH06 @ 0.5'
Date Collected: 07/20/22 11:45
Date Received: 07/21/22 09:41

Lab Sample ID: 890-2605-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.98 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/24/22 13:16	CH	XEN MID

Client Sample ID: PH06 @ 1'
Date Collected: 07/20/22 11:50
Date Received: 07/21/22 09:41

Lab Sample ID: 890-2605-8
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			5.02 g	5 mL	30303	07/21/22 16:45	MR	XEN MID
Total/NA	Analysis	8021B		1			30324	07/22/22 21:15	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	30462	07/23/22 10:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30468	07/23/22 23:05	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 09:52	CH	XEN MID

Client Sample ID: PH07 @ 0.5'
Date Collected: 07/20/22 12:00
Date Received: 07/21/22 09:41

Lab Sample ID: 890-2605-9
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			4.98 g	5 mL	30303	07/21/22 16:45	MR	XEN MID
Total/NA	Analysis	8021B		1			30324	07/22/22 21:41	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	30462	07/23/22 10:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30468	07/23/22 23:27	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	30597	07/25/22 14:17	SMC	XEN MID
Soluble	Analysis	300.0		5			30701	07/26/22 14:43	CH	XEN MID

Client Sample ID: PH07 @ 1'
Date Collected: 07/20/22 12:10
Date Received: 07/21/22 09:41

Lab Sample ID: 890-2605-10
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			5.01 g	5 mL	30303	07/21/22 16:45	MR	XEN MID
Total/NA	Analysis	8021B		1			30324	07/22/22 22:08	SM	XEN MID
Total/NA	Analysis	Total BTEX		1			30544	07/25/22 10:15	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30570	07/25/22 11:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	30462	07/23/22 10:56	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30468	07/23/22 23:47	AJ	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/24/22 13:25	CH	XEN MID

Lab Chronicle

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Client Sample ID: PH08 @ 0.5'
Date Collected: 07/20/22 13:00
Date Received: 07/21/22 09:41

Lab Sample ID: 890-2609-1
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			5.03 g	5 mL	30361	07/22/22 10:18	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	30473	07/24/22 07:12	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30568	07/25/22 11:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30537	07/25/22 09:55	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	30460	07/23/22 10:54	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30464	07/23/22 17:24	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 11:52	CH	XEN MID

Client Sample ID: PH08 @ 1'
Date Collected: 07/20/22 13:05
Date Received: 07/21/22 09:41

Lab Sample ID: 890-2609-2
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			4.99 g	5 mL	30361	07/22/22 10:18	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	30473	07/24/22 07:32	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30568	07/25/22 11:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30537	07/25/22 09:55	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	30460	07/23/22 10:54	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30464	07/23/22 17:45	AJ	XEN MID
Soluble	Leach	DI Leach			4.98 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 12:02	CH	XEN MID

Laboratory References:
XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

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	T104704400-22-24	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: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

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

Protocol References:

ASTM = ASTM International
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
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:

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

Sample Summary

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2605-1
SDG: 03A1987046

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2605-1	PH03 @ 0.5'	Solid	07/20/22 10:40	07/21/22 09:41	0.5'
890-2605-2	PH03 @ 1'	Solid	07/20/22 10:45	07/21/22 09:41	1'
890-2605-3	PH04 @ 0.5'	Solid	07/20/22 11:00	07/21/22 09:41	0.5'
890-2605-4	PH04 @ 1'	Solid	07/20/22 11:30	07/21/22 09:41	1'
890-2605-5	PH05 @ 0.5'	Solid	07/20/22 11:35	07/21/22 09:41	0.5'
890-2605-6	PH05 @ 1'	Solid	07/20/22 11:40	07/21/22 09:41	1'
890-2605-7	PH06 @ 0.5'	Solid	07/20/22 11:45	07/21/22 09:41	0.5'
890-2605-8	PH06 @ 1'	Solid	07/20/22 11:50	07/21/22 09:41	1'
890-2605-9	PH07 @ 0.5'	Solid	07/20/22 12:00	07/21/22 09:41	0.5'
890-2605-10	PH07 @ 1'	Solid	07/20/22 12:10	07/21/22 09:41	1'
890-2609-1	PH08 @ 0.5'	Solid	07/20/22 13:00	07/21/22 09:41	0.5'
890-2609-2	PH08 @ 1'	Solid	07/20/22 13:05	07/21/22 09:41	1'

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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: _____

CIP-Cooling In Process

www.xenco.com Page 1 of 2

Project Manager:	Josepin Hernandez	Bill to: (if different)	Jim Raley
Company Name:	Ensolum	Company Name:	Devon
Address:	3122 Natl. Parks Hwy	Address:	5315 Buena Vista Dr.
City, State ZIP:	Carlsbad NM 88220	City, State ZIP:	Carlsbad NM 88220
Phone:	2817022329	Email:	Jhernandez@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:	Tucker Draw 9414	Turn Around	☐ Routine ☑ Rush
Project Number:	03A1987046	Due Date:	2 day
Project Location:	Eddy County	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Liz Chell		
PO #:	N/A		

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Samples Received Intact:	(Yes) No	Thermometer ID:	Thm007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	18.3
Total Containers:		Corrected Temperature:	18.1

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 Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	BTEX epa method 8021B	TPH epa method 8015 M/D	Chloride epa method 300.0	Sample Comments
PH03 @ 0.5'	S	7/20/22	1040	0.5'	G	1				Cost Center
PH03 @ 1'			1045	1'						1061255001
PH04 @ 0.5'			1100	0.5'						
PH04 @ 1'			1130	1'						incident number
PH05 @ 0.5'			1135	0.5'						nab1812338789
PH05 @ 1'			1140	1'						
PH06 @ 0.5'			1145	0.5'						
PH06 @ 1'			1150	1'						
PH07 @ 0.5'			1200	0.5'						
PH07 @ 1'			1210	1'						

890-2605 Chain of Custody

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	Kyla Vaul	Amanda Stiff	7/21/22 0941			
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2605-1
SDG Number: 03A1987046

Login Number: 2605
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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2605-1
SDG Number: 03A1987046

Login Number: 2605
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 07/22/22 10:18 AM

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

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ANALYTICAL REPORT

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Tel: (575)988-3199

Laboratory Job ID: 890-2607-1
Laboratory Sample Delivery Group: Eddy County
Client Project/Site: Tucker Draw 944

For:
Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Joseph Hernandez

JKramer

Authorized for release by:
7/25/2022 10:49:06 AM

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

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Ensolum
Project/Site: Tucker Draw 944

Laboratory Job ID: 890-2607-1
SDG: Eddy County

Table of Contents

Definitions/Glossary

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

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
*+	LCS and/or LCSD is outside acceptance limits, high biased.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
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: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

Job ID: 890-2607-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2607-1

Receipt
The samples were received on 7/21/2022 9:41 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 18.1°C

Receipt Exceptions
The following samples were received at the laboratory outside the required temperature criteria: PH01 @ 0.5' (890-2607-1), PH01 @ 1' (890-2607-2), PH02 @ 0.5' (890-2607-3) and PH02 @ 1' (890-2607-4). This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to <CHOOSE_ONE> proceed with/cancel analysis. Samples received out of temp range 18.3 corrected 18.1, client advised wants samples ran.

GC VOA
Method 8021B: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 880-30361 and analytical batch 880-30473 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was 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 matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-30432 and analytical batch 880-30368 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8015MOD_NM: The diesel range was biased high in the LCS, however since only an LCS or LCSD are required the data was qualified and reported. (LCS 880-30432/2-A)

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

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-30398 and analytical batch 880-30435 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

Client Sample ID: PH01 @ 0.5'

Lab Sample ID: 890-2607-1
Matrix: Solid
Date Collected: 07/20/22 10:20
Date Received: 07/21/22 09:41
Sample Depth: 0.5'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		07/22/22 10:18	07/24/22 03:06	1
Toluene	<0.00201	U	0.00201		mg/Kg		07/22/22 10:18	07/24/22 03:06	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		07/22/22 10:18	07/24/22 03:06	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		07/22/22 10:18	07/24/22 03:06	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		07/22/22 10:18	07/24/22 03:06	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		07/22/22 10:18	07/24/22 03:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*07/22/22 10:18*	*07/24/22 03:06*	*1*
1,4-Difluorobenzene (Surr)	*79*		*70 - 130*	*07/22/22 10:18*	*07/24/22 03:06*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			07/25/22 11:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			07/25/22 09:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		07/22/22 15:43	07/23/22 06:10	1
Diesel Range Organics (Over C10-C28)	<49.9	U *+	49.9		mg/Kg		07/22/22 15:43	07/23/22 06:10	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		07/22/22 15:43	07/23/22 06:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*101*		*70 - 130*	*07/22/22 15:43*	*07/23/22 06:10*	*1*
o-Terphenyl	*123*		*70 - 130*	*07/22/22 15:43*	*07/23/22 06:10*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**763**		49.7		mg/Kg			07/23/22 10:38	10

Client Sample ID: PH01 @ 1'

Lab Sample ID: 890-2607-2
Matrix: Solid
Date Collected: 07/20/22 10:22
Date Received: 07/21/22 09:41
Sample Depth: 1'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 03:27	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 03:27	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 03:27	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/22/22 10:18	07/24/22 03:27	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 03:27	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/22/22 10:18	07/24/22 03:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*	*07/22/22 10:18*	*07/24/22 03:27*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

Client Sample ID: PH01 @ 1'

Lab Sample ID: 890-2607-2
Matrix: Solid
Date Collected: 07/20/22 10:22
Date Received: 07/21/22 09:41
Sample Depth: 1'

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*79*		*70 - 130*	*07/22/22 10:18*	*07/24/22 03:27*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			07/25/22 11:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			07/25/22 09:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		07/22/22 15:43	07/23/22 06:31	1
Diesel Range Organics (Over C10-C28)	<49.8	U *+	49.8		mg/Kg		07/22/22 15:43	07/23/22 06:31	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		07/22/22 15:43	07/23/22 06:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*104*		*70 - 130*	*07/22/22 15:43*	*07/23/22 06:31*	*1*
o-Terphenyl	*123*		*70 - 130*	*07/22/22 15:43*	*07/23/22 06:31*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**544**		5.00		mg/Kg			07/23/22 10:48	1

Client Sample ID: PH02 @ 0.5'

Lab Sample ID: 890-2607-3
Matrix: Solid
Date Collected: 07/20/22 10:30
Date Received: 07/21/22 09:41
Sample Depth: 0.5'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		07/22/22 10:18	07/24/22 03:47	1
Toluene	<0.00202	U	0.00202		mg/Kg		07/22/22 10:18	07/24/22 03:47	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		07/22/22 10:18	07/24/22 03:47	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		07/22/22 10:18	07/24/22 03:47	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		07/22/22 10:18	07/24/22 03:47	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		07/22/22 10:18	07/24/22 03:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*	*07/22/22 10:18*	*07/24/22 03:47*	*1*
1,4-Difluorobenzene (Surr)	*84*		*70 - 130*	*07/22/22 10:18*	*07/24/22 03:47*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			07/25/22 11:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			07/25/22 09:39	1

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

Client Sample ID: PH02 @ 0.5'

Lab Sample ID: 890-2607-3
Matrix: Solid
Date Collected: 07/20/22 10:30
Date Received: 07/21/22 09:41
Sample Depth: 0.5'

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/22/22 15:43	07/23/22 06:52	1
Diesel Range Organics (Over C10-C28)	<50.0	U *+	50.0		mg/Kg		07/22/22 15:43	07/23/22 06:52	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/22/22 15:43	07/23/22 06:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*83*		*70 - 130*	*07/22/22 15:43*	*07/23/22 06:52*	*1*
o-Terphenyl	*99*		*70 - 130*	*07/22/22 15:43*	*07/23/22 06:52*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**175**		4.99		mg/Kg			07/23/22 11:16	1

Client Sample ID: PH02 @ 1'

Lab Sample ID: 890-2607-4
Matrix: Solid
Date Collected: 07/20/22 10:31
Date Received: 07/21/22 09:41
Sample Depth: 1'

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 04:08	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 04:08	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 04:08	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		07/22/22 10:18	07/24/22 04:08	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 04:08	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		07/22/22 10:18	07/24/22 04:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*07/22/22 10:18*	*07/24/22 04:08*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*07/22/22 10:18*	*07/24/22 04:08*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			07/25/22 11:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			07/25/22 09:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		07/22/22 15:43	07/23/22 07:14	1
Diesel Range Organics (Over C10-C28)	<49.8	U *+	49.8		mg/Kg		07/22/22 15:43	07/23/22 07:14	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		07/22/22 15:43	07/23/22 07:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*87*		*70 - 130*	*07/22/22 15:43*	*07/23/22 07:14*	*1*
o-Terphenyl	*102*		*70 - 130*	*07/22/22 15:43*	*07/23/22 07:14*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

Client Sample ID: PH02 @ 1'
Date Collected: 07/20/22 10:31
Date Received: 07/21/22 09:41
Sample Depth: 1'

Lab Sample ID: 890-2607-4
Matrix: Solid

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	399		4.96		mg/Kg			07/23/22 11:25	1

Surrogate Summary

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

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)
880-17260-A-15-B MS	Matrix Spike	114	94
880-17260-A-15-C MSD	Matrix Spike Duplicate	129	84
890-2607-1	PH01 @ 0.5'	118	79
890-2607-2	PH01 @ 1'	105	79
890-2607-3	PH02 @ 0.5'	111	84
890-2607-4	PH02 @ 1'	118	89
LCS 880-30361/1-A	Lab Control Sample	128	98
LCSD 880-30361/2-A	Lab Control Sample Dup	117	99
MB 880-30361/5-A	Method Blank	104	85
MB 880-30426/5-A	Method Blank	94	86

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)
890-2607-1	PH01 @ 0.5'	101	123
890-2607-2	PH01 @ 1'	104	123
890-2607-3	PH02 @ 0.5'	83	99
890-2607-4	PH02 @ 1'	87	102
890-2614-A-1-D MS	Matrix Spike	21 S1-	17 S1-
890-2614-A-1-E MSD	Matrix Spike Duplicate	11 S1-	6 S1-
LCS 880-30432/2-A	Lab Control Sample	151 S1+	179 S1+
LCSD 880-30432/3-A	Lab Control Sample Dup	123	155 S1+
MB 880-30432/1-A	Method Blank	137 S1+	182 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-30361/5-A
Matrix: Solid
Analysis Batch: 30473

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30361

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/22/22 10:18	07/24/22 01:23	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/22/22 10:18	07/24/22 01:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*07/22/22 10:18*	*07/24/22 01:23*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*	*07/22/22 10:18*	*07/24/22 01:23*	*1*

Lab Sample ID: LCS 880-30361/1-A
Matrix: Solid
Analysis Batch: 30473

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30361

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09697		mg/Kg		97	70 - 130
Toluene	0.100	0.1018		mg/Kg		102	70 - 130
Ethylbenzene	0.100	0.1105		mg/Kg		111	70 - 130
m-Xylene & p-Xylene	0.200	0.2303		mg/Kg		115	70 - 130
o-Xylene	0.100	0.1290		mg/Kg		129	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*128*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 880-30361/2-A
Matrix: Solid
Analysis Batch: 30473

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30361

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.07948		mg/Kg		79	70 - 130	20	35
Toluene	0.100	0.08370		mg/Kg		84	70 - 130	20	35
Ethylbenzene	0.100	0.09040		mg/Kg		90	70 - 130	20	35
m-Xylene & p-Xylene	0.200	0.1865		mg/Kg		93	70 - 130	21	35
o-Xylene	0.100	0.1072		mg/Kg		107	70 - 130	18	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 880-17260-A-15-B MS
Matrix: Solid
Analysis Batch: 30473

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30361

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U F2 F1	0.0998	0.07498		mg/Kg		75	70 - 130
Toluene	<0.00201	U F1	0.0998	0.07676		mg/Kg		75	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

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

Lab Sample ID: 880-17260-A-15-B MS
Matrix: Solid
Analysis Batch: 30473

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30361

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U F1	0.0998	0.07639		mg/Kg		77	70 - 130
m-Xylene & p-Xylene	<0.00402	U F1	0.200	0.1541		mg/Kg		76	70 - 130
o-Xylene	<0.00201	U F1	0.0998	0.08436		mg/Kg		85	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

Lab Sample ID: 880-17260-A-15-C MSD
Matrix: Solid
Analysis Batch: 30473

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 30361

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U F2 F1	0.100	0.04516	F2 F1	mg/Kg		45	70 - 130	50	35
Toluene	<0.00201	U F1	0.100	0.05845	F1	mg/Kg		57	70 - 130	27	35
Ethylbenzene	<0.00201	U F1	0.100	0.06139	F1	mg/Kg		61	70 - 130	22	35
m-Xylene & p-Xylene	<0.00402	U F1	0.201	0.1216	F1	mg/Kg		60	70 - 130	24	35
o-Xylene	<0.00201	U F1	0.100	0.06840	F1	mg/Kg		68	70 - 130	21	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*129*		*70 - 130*
1,4-Difluorobenzene (Surr)	*84*		*70 - 130*

Lab Sample ID: MB 880-30426/5-A
Matrix: Solid
Analysis Batch: 30473

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30426

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
Toluene	<0.00200	U	0.00200		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		07/22/22 15:06	07/23/22 14:49	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		07/22/22 15:06	07/23/22 14:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*	*07/22/22 15:06*	*07/23/22 14:49*	*1*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*07/22/22 15:06*	*07/23/22 14:49*	*1*

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

Lab Sample ID: MB 880-30432/1-A
Matrix: Solid
Analysis Batch: 30368

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30432

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		07/22/22 15:43	07/22/22 21:35	1

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

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

Lab Sample ID: MB 880-30432/1-A
Matrix: Solid
Analysis Batch: 30368

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 30432

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		07/22/22 15:43	07/22/22 21:35	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		07/22/22 15:43	07/22/22 21:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*137*	*S1+*	*70 - 130*	*07/22/22 15:43*	*07/22/22 21:35*	*1*
o-Terphenyl	*182*	*S1+*	*70 - 130*	*07/22/22 15:43*	*07/22/22 21:35*	*1*

Lab Sample ID: LCS 880-30432/2-A
Matrix: Solid
Analysis Batch: 30368

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 30432

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	952.7		mg/Kg		95	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1360	*+	mg/Kg		136	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*151*	*S1+*	*70 - 130*
o-Terphenyl	*179*	*S1+*	*70 - 130*

Lab Sample ID: LCSD 880-30432/3-A
Matrix: Solid
Analysis Batch: 30368

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 30432

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	812.0		mg/Kg		81	70 - 130	16	20
Diesel Range Organics (Over C10-C28)	1000	1147		mg/Kg		115	70 - 130	17	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*123*		*70 - 130*
o-Terphenyl	*155*	*S1+*	*70 - 130*

Lab Sample ID: 890-2614-A-1-D MS
Matrix: Solid
Analysis Batch: 30368

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 30432

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F1 F2	1000	286.3	F1	mg/Kg		26	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U *+ F1 F2	1000	173.7	F1	mg/Kg		17	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*21*	*S1-*	*70 - 130*
o-Terphenyl	*17*	*S1-*	*70 - 130*

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

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

Lab Sample ID: 890-2614-A-1-E MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 30368 — **Prep Batch: 30432**

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	<50.0	U F1 F2	999	212.0	F1 F2	mg/Kg		19	70 - 130	30	20
Diesel Range Organics (Over C10-C28)	<50.0	U *+ F1 F2	999	74.76	F1 F2	mg/Kg		7	70 - 130	80	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*11*	*S1-*	*70 - 130*
o-Terphenyl	*6*	*S1-*	*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-30398/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 30435

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			07/23/22 07:34	1

Lab Sample ID: LCS 880-30398/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 30435

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	263.3		mg/Kg		105	90 - 110

Lab Sample ID: LCSD 880-30398/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 30435

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	264.5		mg/Kg		106	90 - 110	0	20

Lab Sample ID: 890-2604-A-30-C MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 30435

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	12.4	F1	251	292.5	F1	mg/Kg		112	90 - 110

Lab Sample ID: 890-2604-A-30-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 30435

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	12.4	F1	251	294.3	F1	mg/Kg		112	90 - 110	1	20

QC Association Summary

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

GC VOA

Prep Batch: 30361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-1	PH01 @ 0.5'	Total/NA	Solid	5035	
890-2607-2	PH01 @ 1'	Total/NA	Solid	5035	
890-2607-3	PH02 @ 0.5'	Total/NA	Solid	5035	
890-2607-4	PH02 @ 1'	Total/NA	Solid	5035	
MB 880-30361/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-30361/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-30361/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-17260-A-15-B MS	Matrix Spike	Total/NA	Solid	5035	
880-17260-A-15-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Prep Batch: 30426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-30426/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 30473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-1	PH01 @ 0.5'	Total/NA	Solid	8021B	30361
890-2607-2	PH01 @ 1'	Total/NA	Solid	8021B	30361
890-2607-3	PH02 @ 0.5'	Total/NA	Solid	8021B	30361
890-2607-4	PH02 @ 1'	Total/NA	Solid	8021B	30361
MB 880-30361/5-A	Method Blank	Total/NA	Solid	8021B	30361
MB 880-30426/5-A	Method Blank	Total/NA	Solid	8021B	30426
LCS 880-30361/1-A	Lab Control Sample	Total/NA	Solid	8021B	30361
LCSD 880-30361/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	30361
880-17260-A-15-B MS	Matrix Spike	Total/NA	Solid	8021B	30361
880-17260-A-15-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	30361

Analysis Batch: 30565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-1	PH01 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2607-2	PH01 @ 1'	Total/NA	Solid	Total BTEX	
890-2607-3	PH02 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2607-4	PH02 @ 1'	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 30368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-1	PH01 @ 0.5'	Total/NA	Solid	8015B NM	30432
890-2607-2	PH01 @ 1'	Total/NA	Solid	8015B NM	30432
890-2607-3	PH02 @ 0.5'	Total/NA	Solid	8015B NM	30432
890-2607-4	PH02 @ 1'	Total/NA	Solid	8015B NM	30432
MB 880-30432/1-A	Method Blank	Total/NA	Solid	8015B NM	30432
LCS 880-30432/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	30432
LCSD 880-30432/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	30432
890-2614-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	30432
890-2614-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	30432

Prep Batch: 30432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-1	PH01 @ 0.5'	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

GC Semi VOA (Continued)

Prep Batch: 30432 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-2	PH01 @ 1'	Total/NA	Solid	8015NM Prep	
890-2607-3	PH02 @ 0.5'	Total/NA	Solid	8015NM Prep	
890-2607-4	PH02 @ 1'	Total/NA	Solid	8015NM Prep	
MB 880-30432/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-30432/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-30432/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2614-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2614-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 30528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-1	PH01 @ 0.5'	Total/NA	Solid	8015 NM	
890-2607-2	PH01 @ 1'	Total/NA	Solid	8015 NM	
890-2607-3	PH02 @ 0.5'	Total/NA	Solid	8015 NM	
890-2607-4	PH02 @ 1'	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 30398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-1	PH01 @ 0.5'	Soluble	Solid	DI Leach	
890-2607-2	PH01 @ 1'	Soluble	Solid	DI Leach	
890-2607-3	PH02 @ 0.5'	Soluble	Solid	DI Leach	
890-2607-4	PH02 @ 1'	Soluble	Solid	DI Leach	
MB 880-30398/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-30398/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-30398/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2604-A-30-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2604-A-30-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 30435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2607-1	PH01 @ 0.5'	Soluble	Solid	300.0	30398
890-2607-2	PH01 @ 1'	Soluble	Solid	300.0	30398
890-2607-3	PH02 @ 0.5'	Soluble	Solid	300.0	30398
890-2607-4	PH02 @ 1'	Soluble	Solid	300.0	30398
MB 880-30398/1-A	Method Blank	Soluble	Solid	300.0	30398
LCS 880-30398/2-A	Lab Control Sample	Soluble	Solid	300.0	30398
LCSD 880-30398/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	30398
890-2604-A-30-C MS	Matrix Spike	Soluble	Solid	300.0	30398
890-2604-A-30-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	30398

Lab Chronicle

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

Client Sample ID: PH01 @ 0.5'

Lab Sample ID: 890-2607-1
Matrix: Solid
Date Collected: 07/20/22 10:20
Date Received: 07/21/22 09:41

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	30361	07/22/22 10:18	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	30473	07/24/22 03:06	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30565	07/25/22 11:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30528	07/25/22 09:39	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	30432	07/22/22 15:43	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30368	07/23/22 06:10	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		10			30435	07/23/22 10:38	CH	XEN MID

Client Sample ID: PH01 @ 1'

Lab Sample ID: 890-2607-2
Matrix: Solid
Date Collected: 07/20/22 10:22
Date Received: 07/21/22 09:41

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	30361	07/22/22 10:18	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	30473	07/24/22 03:27	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30565	07/25/22 11:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30528	07/25/22 09:39	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	30432	07/22/22 15:43	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30368	07/23/22 06:31	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 10:48	CH	XEN MID

Client Sample ID: PH02 @ 0.5'

Lab Sample ID: 890-2607-3
Matrix: Solid
Date Collected: 07/20/22 10:30
Date Received: 07/21/22 09:41

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	30361	07/22/22 10:18	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	30473	07/24/22 03:47	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30565	07/25/22 11:06	SM	XEN MID
Total/NA	Analysis	8015 NM		1			30528	07/25/22 09:39	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	30432	07/22/22 15:43	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30368	07/23/22 06:52	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 11:16	CH	XEN MID

Client Sample ID: PH02 @ 1'

Lab Sample ID: 890-2607-4
Matrix: Solid
Date Collected: 07/20/22 10:31
Date Received: 07/21/22 09:41

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	30361	07/22/22 10:18	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	30473	07/24/22 04:08	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			30565	07/25/22 11:06	SM	XEN MID

Eurofins Carlsbad

Lab Chronicle

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

Client Sample ID: PH02 @ 1'

Date Collected: 07/20/22 10:31
Date Received: 07/21/22 09:41

Lab Sample ID: 890-2607-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			30528	07/25/22 09:39	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	30432	07/22/22 15:43	DM	XEN MID
Total/NA	Analysis	8015B NM		1			30368	07/23/22 07:14	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	30398	07/22/22 11:43	SMC	XEN MID
Soluble	Analysis	300.0		1			30435	07/23/22 11:25	CH	XEN MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

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	T104704400-22-24	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: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

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

Protocol References:

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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:

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

Sample Summary

Client: Ensolum
Project/Site: Tucker Draw 944

Job ID: 890-2607-1
SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2607-1	PH01 @ 0.5'	Solid	07/20/22 10:20	07/21/22 09:41	0.5'
890-2607-2	PH01 @ 1'	Solid	07/20/22 10:22	07/21/22 09:41	1'
890-2607-3	PH02 @ 0.5'	Solid	07/20/22 10:30	07/21/22 09:41	0.5'
890-2607-4	PH02 @ 1'	Solid	07/20/22 10:31	07/21/22 09:41	1'

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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: _____

CIP - cooling in Process

www.xenco.com Page 1 of 1

Project Manager:	Joseph Hernandez	Bill to: (if different)	Jim Raley
Company Name:	Ensolum	Company Name:	Devon
Address:	3122 Nati. Parks Hwy	Address:	5315 Buena Vista Dr.
City, State ZIP:	Carlsbad NM 88220	City, State ZIP:	Carlsbad NM 88220
Phone:	2817022329 Email:	Email:	jhernandez@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:	Tucker Draw 9444	Turn Around	
Project Number:	03A1987046	☐ Routine ☒ Rush	
Project Location:	Eddy County	Due Date:	2 day
Sampler's Name:	Liz Cheli	TAT starts the day received by the lab, if received by 4:30pm	
PO #:	N/A		

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:	18.3
Total Containers:		Corrected Temperature:	18.1

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 Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: Btex epa method 8021B	Tph epa method 8015M	Chloride epa method 300.0
PH01 @ 0.5'	S	7/20/22	1020	0.5'	G	1				
PH01 @ 1'			1022	1'						
PH02 @ 0.5'			1030	0.5'						
PH02 @ 1'			1031	1'						

890-2607 Chain of Custody

Sample Comments

Cost Center:
1061255001

Incident number
nab1812338789

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	Kyla Stout		7/21/22 0941			
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2607-1
SDG Number: Eddy County

Login Number: 2607
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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2607-1
SDG Number: Eddy County

Login Number: 2607
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 07/22/22 10:18 AM

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

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ANALYTICAL REPORT

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Tel: (575)988-3199

Laboratory Job ID: 890-2787-1
Laboratory Sample Delivery Group: Eddy County NM
Client Project/Site: Tucker Draw 9-4-4

For:
Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Joseph Hernandez

JKramer

Authorized for release by:
8/24/2022 3:58:27 PM

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

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Laboratory Job ID: 890-2787-1
SDG: Eddy County NM

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-2787-1
Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
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: Tucker Draw 9-4-4

Job ID: 890-2787-1
SDG: Eddy County NM

Job ID: 890-2787-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2787-1

Receipt
The samples were received on 8/19/2022 1:46 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 25.4°C

GC VOA
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 matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-32606 and analytical batch 880-32588 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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: Tucker Draw 9-4-4

Job ID: 890-2787-1
SDG: Eddy County NM

Client Sample ID: PH09 @ 0.5'

Lab Sample ID: 890-2787-1
Matrix: Solid
Date Collected: 08/19/22 09:00
Date Received: 08/19/22 13:46
Sample Depth: 0.5

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		08/22/22 08:59	08/22/22 16:18	1
Toluene	<0.00199	U	0.00199		mg/Kg		08/22/22 08:59	08/22/22 16:18	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		08/22/22 08:59	08/22/22 16:18	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		08/22/22 08:59	08/22/22 16:18	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		08/22/22 08:59	08/22/22 16:18	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		08/22/22 08:59	08/22/22 16:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*08/22/22 08:59*	*08/22/22 16:18*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*08/22/22 08:59*	*08/22/22 16:18*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			08/22/22 18:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			08/23/22 14:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		08/22/22 09:29	08/22/22 14:27	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		08/22/22 09:29	08/22/22 14:27	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		08/22/22 09:29	08/22/22 14:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*98*		*70 - 130*	*08/22/22 09:29*	*08/22/22 14:27*	*1*
o-Terphenyl	*89*		*70 - 130*	*08/22/22 09:29*	*08/22/22 14:27*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**182**		30.8		mg/Kg			08/24/22 10:01	5

Client Sample ID: PH09 @ 1'

Lab Sample ID: 890-2787-2
Matrix: Solid
Date Collected: 08/19/22 09:05
Date Received: 08/19/22 13:46
Sample Depth: 1

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 16:38	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 16:38	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 16:38	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		08/22/22 08:59	08/22/22 16:38	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 16:38	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		08/22/22 08:59	08/22/22 16:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*	*08/22/22 08:59*	*08/22/22 16:38*	*1*

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Client Sample Results

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2787-1
SDG: Eddy County NM

Client Sample ID: PH09 @ 1'

Date Collected: 08/19/22 09:05
Date Received: 08/19/22 13:46
Sample Depth: 1

Lab Sample ID: 890-2787-2

Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*08/22/22 08:59*	*08/22/22 16:38*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			08/22/22 18:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			08/23/22 14:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		08/22/22 09:29	08/22/22 14:49	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		08/22/22 09:29	08/22/22 14:49	1
OII Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		08/22/22 09:29	08/22/22 14:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*103*		*70 - 130*	*08/22/22 09:29*	*08/22/22 14:49*	*1*
o-Terphenyl	*93*		*70 - 130*	*08/22/22 09:29*	*08/22/22 14:49*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**118**		5.02		mg/Kg			08/24/22 10:10	1

Surrogate Summary

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2787-1
SDG: Eddy County NM

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)
890-2787-1	PH09 @ 0.5'	97	99
890-2787-1 MS	PH09 @ 0.5'	105	107
890-2787-1 MSD	PH09 @ 0.5'	102	103
890-2787-2	PH09 @ 1'	94	101
LCS 880-32594/1-A	Lab Control Sample	105	100
LCSD 880-32594/2-A	Lab Control Sample Dup	102	106
MB 880-32594/5-A	Method Blank	78	117

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)
880-18312-A-12-E MS	Matrix Spike	92	83
880-18312-A-12-F MSD	Matrix Spike Duplicate	90	82
890-2787-1	PH09 @ 0.5'	98	89
890-2787-2	PH09 @ 1'	103	93
LCS 880-32606/2-A	Lab Control Sample	92	82
LCSD 880-32606/3-A	Lab Control Sample Dup	109	107
MB 880-32606/1-A	Method Blank	104	101

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2787-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-32594/5-A
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32594

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/22/22 08:59	08/22/22 15:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*70 - 130*	*08/22/22 08:59*	*08/22/22 15:49*	*1*
1,4-Difluorobenzene (Surr)	*117*		*70 - 130*	*08/22/22 08:59*	*08/22/22 15:49*	*1*

Lab Sample ID: LCS 880-32594/1-A
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32594

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1035		mg/Kg		104	70 - 130
Toluene	0.100	0.1152		mg/Kg		115	70 - 130
Ethylbenzene	0.100	0.1166		mg/Kg		117	70 - 130
m-Xylene & p-Xylene	0.200	0.2172		mg/Kg		109	70 - 130
o-Xylene	0.100	0.1148		mg/Kg		115	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 880-32594/2-A
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 32594

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1131		mg/Kg		113	70 - 130	9	35
Toluene	0.100	0.1109		mg/Kg		111	70 - 130	4	35
Ethylbenzene	0.100	0.1069		mg/Kg		107	70 - 130	9	35
m-Xylene & p-Xylene	0.200	0.1993		mg/Kg		100	70 - 130	9	35
o-Xylene	0.100	0.1077		mg/Kg		108	70 - 130	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*

Lab Sample ID: 890-2787-1 MS
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: PH09 @ 0.5'
Prep Type: Total/NA
Prep Batch: 32594

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0998	0.1080		mg/Kg		108	70 - 130
Toluene	<0.00199	U	0.0998	0.1089		mg/Kg		109	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2787-1
SDG: Eddy County NM

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

Lab Sample ID: 890-2787-1 MS
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: PH09 @ 0.5'
Prep Type: Total/NA
Prep Batch: 32594

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0998	0.1075		mg/Kg		108	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1968		mg/Kg		99	70 - 130
o-Xylene	<0.00199	U	0.0998	0.1049		mg/Kg		105	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: 890-2787-1 MSD
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: PH09 @ 0.5'
Prep Type: Total/NA
Prep Batch: 32594

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.100	0.08519		mg/Kg		85	70 - 130	24	35
Toluene	<0.00199	U	0.100	0.09638		mg/Kg		96	70 - 130	12	35
Ethylbenzene	<0.00199	U	0.100	0.09512		mg/Kg		95	70 - 130	12	35
m-Xylene & p-Xylene	<0.00398	U	0.201	0.1754		mg/Kg		87	70 - 130	11	35
o-Xylene	<0.00199	U	0.100	0.09507		mg/Kg		95	70 - 130	10	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

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

Lab Sample ID: MB 880-32606/1-A
Matrix: Solid
Analysis Batch: 32588

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32606

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		08/22/22 09:29	08/22/22 11:08	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		08/22/22 09:29	08/22/22 11:08	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		08/22/22 09:29	08/22/22 11:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*104*		*70 - 130*	*08/22/22 09:29*	*08/22/22 11:08*	*1*
o-Terphenyl	*101*		*70 - 130*	*08/22/22 09:29*	*08/22/22 11:08*	*1*

Lab Sample ID: LCS 880-32606/2-A
Matrix: Solid
Analysis Batch: 32588

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32606

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	928.5		mg/Kg		93	70 - 130
Diesel Range Organics (Over C10-C28)	1000	891.9		mg/Kg		89	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2787-1
SDG: Eddy County NM

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

Lab Sample ID: LCS 880-32606/2-A
Matrix: Solid
Analysis Batch: 32588

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32606

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	92		70 - 130
o-Terphenyl	82		70 - 130

Lab Sample ID: LCSD 880-32606/3-A
Matrix: Solid
Analysis Batch: 32588

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 32606

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1038		mg/Kg		104	70 - 130	11	20
Diesel Range Organics (Over C10-C28)			1000	1035		mg/Kg		104	70 - 130	15	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	109		70 - 130
o-Terphenyl	107		70 - 130

Lab Sample ID: 880-18312-A-12-E MS
Matrix: Solid
Analysis Batch: 32588

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 32606

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.0	U F1	997	1593	F1	mg/Kg		157	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.0	U F1	997	1603	F1	mg/Kg		159	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	92		70 - 130
o-Terphenyl	83		70 - 130

Lab Sample ID: 880-18312-A-12-F MSD
Matrix: Solid
Analysis Batch: 32588

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 32606

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	<50.0	U F1	995	1760	F1	mg/Kg		174	70 - 130	10	20
Diesel Range Organics (Over C10-C28)	<50.0	U F1	995	1588	F1	mg/Kg		158	70 - 130	1	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	90		70 - 130
o-Terphenyl	82		70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2787-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-32580/1-A
Matrix: Solid
Analysis Batch: 32762

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			08/24/22 07:34	1

Lab Sample ID: LCS 880-32580/2-A
Matrix: Solid
Analysis Batch: 32762

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	237.4		mg/Kg		95	90 - 110		

Lab Sample ID: LCSD 880-32580/3-A
Matrix: Solid
Analysis Batch: 32762

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	231.4		mg/Kg		93	90 - 110	3	20

Lab Sample ID: 890-2787-2 MS
Matrix: Solid
Analysis Batch: 32762

Client Sample ID: PH09 @ 1'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	118		251	357.7		mg/Kg		96	90 - 110		

Lab Sample ID: 890-2787-2 MSD
Matrix: Solid
Analysis Batch: 32762

Client Sample ID: PH09 @ 1'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	118		251	357.3		mg/Kg		95	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2787-1
SDG: Eddy County NM

GC VOA

Prep Batch: 32594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2787-1	PH09 @ 0.5'	Total/NA	Solid	5035	
890-2787-2	PH09 @ 1'	Total/NA	Solid	5035	
MB 880-32594/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-32594/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-32594/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2787-1 MS	PH09 @ 0.5'	Total/NA	Solid	5035	
890-2787-1 MSD	PH09 @ 0.5'	Total/NA	Solid	5035	

Analysis Batch: 32625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2787-1	PH09 @ 0.5'	Total/NA	Solid	8021B	32594
890-2787-2	PH09 @ 1'	Total/NA	Solid	8021B	32594
MB 880-32594/5-A	Method Blank	Total/NA	Solid	8021B	32594
LCS 880-32594/1-A	Lab Control Sample	Total/NA	Solid	8021B	32594
LCSD 880-32594/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	32594
890-2787-1 MS	PH09 @ 0.5'	Total/NA	Solid	8021B	32594
890-2787-1 MSD	PH09 @ 0.5'	Total/NA	Solid	8021B	32594

Analysis Batch: 32716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2787-1	PH09 @ 0.5'	Total/NA	Solid	Total BTEX	
890-2787-2	PH09 @ 1'	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 32588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2787-1	PH09 @ 0.5'	Total/NA	Solid	8015B NM	32606
890-2787-2	PH09 @ 1'	Total/NA	Solid	8015B NM	32606
MB 880-32606/1-A	Method Blank	Total/NA	Solid	8015B NM	32606
LCS 880-32606/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	32606
LCSD 880-32606/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	32606
880-18312-A-12-E MS	Matrix Spike	Total/NA	Solid	8015B NM	32606
880-18312-A-12-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	32606

Prep Batch: 32606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2787-1	PH09 @ 0.5'	Total/NA	Solid	8015NM Prep	
890-2787-2	PH09 @ 1'	Total/NA	Solid	8015NM Prep	
MB 880-32606/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-32606/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-32606/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-18312-A-12-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-18312-A-12-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 32785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2787-1	PH09 @ 0.5'	Total/NA	Solid	8015 NM	
890-2787-2	PH09 @ 1'	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2787-1
SDG: Eddy County NM

HPLC/IC

Leach Batch: 32580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2787-1	PH09 @ 0.5'	Soluble	Solid	DI Leach	
890-2787-2	PH09 @ 1'	Soluble	Solid	DI Leach	
MB 880-32580/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-32580/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-32580/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2787-2 MS	PH09 @ 1'	Soluble	Solid	DI Leach	
890-2787-2 MSD	PH09 @ 1'	Soluble	Solid	DI Leach	

Analysis Batch: 32762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2787-1	PH09 @ 0.5'	Soluble	Solid	300.0	32580
890-2787-2	PH09 @ 1'	Soluble	Solid	300.0	32580
MB 880-32580/1-A	Method Blank	Soluble	Solid	300.0	32580
LCS 880-32580/2-A	Lab Control Sample	Soluble	Solid	300.0	32580
LCSD 880-32580/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	32580
890-2787-2 MS	PH09 @ 1'	Soluble	Solid	300.0	32580
890-2787-2 MSD	PH09 @ 1'	Soluble	Solid	300.0	32580

Lab Chronicle

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2787-1
SDG: Eddy County NM

Client Sample ID: PH09 @ 0.5'

Date Collected: 08/19/22 09:00
Date Received: 08/19/22 13:46

Lab Sample ID: 890-2787-1

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			5.03 g	5 mL	32594	08/22/22 08:59	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32625	08/22/22 16:18	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32716	08/22/22 18:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			32785	08/23/22 14:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	32606	08/22/22 09:29	AM	EET MID
Total/NA	Analysis	8015B NM		1			32588	08/22/22 14:27	SM	EET MID
Soluble	Leach	DI Leach			4.06 g	50 mL	32580	08/21/22 19:02	SMC	EET MID
Soluble	Analysis	300.0		5			32762	08/24/22 10:01	SMC	EET MID

Client Sample ID: PH09 @ 1'

Date Collected: 08/19/22 09:05
Date Received: 08/19/22 13:46

Lab Sample ID: 890-2787-2

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			5.01 g	5 mL	32594	08/22/22 08:59	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32625	08/22/22 16:38	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32716	08/22/22 18:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			32785	08/23/22 14:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	32606	08/22/22 09:29	AM	EET MID
Total/NA	Analysis	8015B NM		1			32588	08/22/22 14:49	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	32580	08/21/22 19:02	SMC	EET MID
Soluble	Analysis	300.0		1			32762	08/24/22 10:10	SMC	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: Tucker Draw 9-4-4

Job ID: 890-2787-1
SDG: Eddy County NM

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	T104704400-22-24	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: Tucker Draw 9-4-4

Job ID: 890-2787-1
SDG: Eddy County NM

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	MCAWW	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

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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: Tucker Draw 9-4-4

Job ID: 890-2787-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2787-1	PH09 @ 0.5'	Solid	08/19/22 09:00	08/19/22 13:46	0.5
890-2787-2	PH09 @ 1'	Solid	08/19/22 09:05	08/19/22 13:46	1

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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

www.xenco.com

Work Order No: _____

Page 1 of 1

Project Manager:	Joseph Hernandez	Bill to: (if different)	Jim Raley
Company Name:	Ensolum	Company Name:	Devon
Address:	3122 National Parks Hwy.	Address:	5315 Buena Vista Dr.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	2817022329	Email:	jhernandez@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:	Tucker Draw 9-4-4	Turn Around	
Project Number:	03A1987046	☑ Routine ☐ Rush	
Project Location:	Eddy County, NM	Due Date: 24HR	
Sampler's Name:	LC	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:	TAMUSD	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	25.4	
Total Containers:		Corrected Temperature:	25.4	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)	Pres. Code
PH09 @ 0.5'	S	8/19/22	900	0.5'	Grab/	1	x	x	x	
PH09 @ 1'	S	8/19/22	905	1'	Grab/	1	x	x	x	

Parameters

890-2787 Chain of Custody

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2S0_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

Incident ID: NAB1812338789

Cost Center: 1061255 01

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	Amanda Stegh	8/19/22 1345	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2787-1
SDG Number: Eddy County NM

Login Number: 2787
List Number: 1
Creator: Clifton, Cloe

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.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2787-1
SDG Number: Eddy County NM

Login Number: 2787
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 08/22/22 08:49 AM

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

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ANALYTICAL REPORT

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Tel: (575)988-3199

Laboratory Job ID: 890-2788-1
Laboratory Sample Delivery Group: Eddy County NM
Client Project/Site: Tucker Draw 9-4-4

For:
Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Joseph Hernandez

JKramer

Authorized for release by:
8/24/2022 3:58:56 PM

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

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-2788-1
Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
S1-	Surrogate recovery exceeds control limits, low 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: Tucker Draw 9-4-4

Job ID: 890-2788-1
SDG: Eddy County NM

Job ID: 890-2788-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2788-1

Receipt
The samples were received on 8/19/2022 1:46 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 25.4°C

GC VOA
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: Surrogate recovery for the following samples were outside control limits: (890-2789-A-1-E), (890-2789-A-1-F MS) and (890-2789-A-1-G MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: PH10 @ 0.5 (890-2788-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-32608 and analytical batch 880-32586 was outside the upper control limits.

Method 8015MOD_NM: The matrix spike duplicate (MSD) recoveries for preparation batch 880-32608 and analytical batch 880-32586 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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: Tucker Draw 9-4-4

Job ID: 890-2788-1
SDG: Eddy County NM

Client Sample ID: PH10 @ 0.5

Date Collected: 08/19/22 09:10
Date Received: 08/19/22 13:46

Lab Sample ID: 890-2788-1
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		08/22/22 08:59	08/22/22 16:59	1
Toluene	<0.00199	U	0.00199		mg/Kg		08/22/22 08:59	08/22/22 16:59	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		08/22/22 08:59	08/22/22 16:59	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		08/22/22 08:59	08/22/22 16:59	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		08/22/22 08:59	08/22/22 16:59	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		08/22/22 08:59	08/22/22 16:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*08/22/22 08:59*	*08/22/22 16:59*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*08/22/22 08:59*	*08/22/22 16:59*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			08/22/22 18:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			08/23/22 11:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		08/22/22 09:31	08/22/22 13:44	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		08/22/22 09:31	08/22/22 13:44	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		08/22/22 09:31	08/22/22 13:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*66*	*S1-*	*70 - 130*	*08/22/22 09:31*	*08/22/22 13:44*	*1*
o-Terphenyl	*70*		*70 - 130*	*08/22/22 09:31*	*08/22/22 13:44*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**21.9**		4.96		mg/Kg			08/24/22 10:38	1

Client Sample ID: PH10 @ 1

Date Collected: 08/19/22 09:15
Date Received: 08/19/22 13:46

Lab Sample ID: 890-2788-2
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		08/22/22 08:59	08/22/22 17:19	1
Toluene	<0.00199	U	0.00199		mg/Kg		08/22/22 08:59	08/22/22 17:19	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		08/22/22 08:59	08/22/22 17:19	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		08/22/22 08:59	08/22/22 17:19	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		08/22/22 08:59	08/22/22 17:19	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		08/22/22 08:59	08/22/22 17:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*08/22/22 08:59*	*08/22/22 17:19*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*08/22/22 08:59*	*08/22/22 17:19*	*1*

Client Sample Results

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2788-1
SDG: Eddy County NM

Client Sample ID: PH10 @ 1

Date Collected: 08/19/22 09:15
Date Received: 08/19/22 13:46

Lab Sample ID: 890-2788-2

Matrix: Solid

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			08/22/22 18:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			08/23/22 11:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		08/22/22 09:31	08/22/22 14:05	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		08/22/22 09:31	08/22/22 14:05	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		08/22/22 09:31	08/22/22 14:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*82*		*70 - 130*	*08/22/22 09:31*	*08/22/22 14:05*	*1*
o-Terphenyl	*84*		*70 - 130*	*08/22/22 09:31*	*08/22/22 14:05*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**22.8**		4.95		mg/Kg			08/24/22 10:47	1

Surrogate Summary

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2788-1
SDG: Eddy County NM

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)
890-2787-A-1-F MS	Matrix Spike	105	107
890-2787-A-1-G MSD	Matrix Spike Duplicate	102	103
890-2788-1	PH10 @ 0.5	100	100
890-2788-2	PH10 @ 1	98	97
LCS 880-32594/1-A	Lab Control Sample	105	100
LCSD 880-32594/2-A	Lab Control Sample Dup	102	106
MB 880-32594/5-A	Method Blank	78	117

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)
890-2788-1	PH10 @ 0.5	66 S1-	70
890-2788-2	PH10 @ 1	82	84
890-2789-A-1-F MS	Matrix Spike	72	67 S1-
890-2789-A-1-G MSD	Matrix Spike Duplicate	62 S1-	58 S1-
LCS 880-32608/2-A	Lab Control Sample	72	74
LCSD 880-32608/3-A	Lab Control Sample Dup	86	91
MB 880-32608/1-A	Method Blank	63 S1-	68 S1-

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2788-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-32594/5-A
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32594

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/22/22 08:59	08/22/22 15:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*70 - 130*	*08/22/22 08:59*	*08/22/22 15:49*	*1*
1,4-Difluorobenzene (Surr)	*117*		*70 - 130*	*08/22/22 08:59*	*08/22/22 15:49*	*1*

Lab Sample ID: LCS 880-32594/1-A
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32594

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1035		mg/Kg		104	70 - 130
Toluene	0.100	0.1152		mg/Kg		115	70 - 130
Ethylbenzene	0.100	0.1166		mg/Kg		117	70 - 130
m-Xylene & p-Xylene	0.200	0.2172		mg/Kg		109	70 - 130
o-Xylene	0.100	0.1148		mg/Kg		115	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 880-32594/2-A
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 32594

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1131		mg/Kg		113	70 - 130	9	35
Toluene	0.100	0.1109		mg/Kg		111	70 - 130	4	35
Ethylbenzene	0.100	0.1069		mg/Kg		107	70 - 130	9	35
m-Xylene & p-Xylene	0.200	0.1993		mg/Kg		100	70 - 130	9	35
o-Xylene	0.100	0.1077		mg/Kg		108	70 - 130	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*

Lab Sample ID: 890-2787-A-1-F MS
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 32594

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0998	0.1080		mg/Kg		108	70 - 130
Toluene	<0.00199	U	0.0998	0.1089		mg/Kg		109	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2788-1
SDG: Eddy County NM

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

Lab Sample ID: 890-2787-A-1-F MS
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 32594

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0998	0.1075		mg/Kg		108	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1968		mg/Kg		99	70 - 130
o-Xylene	<0.00199	U	0.0998	0.1049		mg/Kg		105	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: 890-2787-A-1-G MSD
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 32594

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.100	0.08519		mg/Kg		85	70 - 130	24	35
Toluene	<0.00199	U	0.100	0.09638		mg/Kg		96	70 - 130	12	35
Ethylbenzene	<0.00199	U	0.100	0.09512		mg/Kg		95	70 - 130	12	35
m-Xylene & p-Xylene	<0.00398	U	0.201	0.1754		mg/Kg		87	70 - 130	11	35
o-Xylene	<0.00199	U	0.100	0.09507		mg/Kg		95	70 - 130	10	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

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

Lab Sample ID: MB 880-32608/1-A
Matrix: Solid
Analysis Batch: 32586

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32608

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		08/22/22 09:31	08/22/22 11:08	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		08/22/22 09:31	08/22/22 11:08	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		08/22/22 09:31	08/22/22 11:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*63*	*S1-*	*70 - 130*	*08/22/22 09:31*	*08/22/22 11:08*	*1*
o-Terphenyl	*68*	*S1-*	*70 - 130*	*08/22/22 09:31*	*08/22/22 11:08*	*1*

Lab Sample ID: LCS 880-32608/2-A
Matrix: Solid
Analysis Batch: 32586

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32608

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	708.2		mg/Kg		71	70 - 130
Diesel Range Organics (Over C10-C28)	1000	764.5		mg/Kg		76	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2788-1
SDG: Eddy County NM

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

Lab Sample ID: LCS 880-32608/2-A
Matrix: Solid
Analysis Batch: 32586

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32608

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	72		70 - 130
o-Terphenyl	74		70 - 130

Lab Sample ID: LCSD 880-32608/3-A
Matrix: Solid
Analysis Batch: 32586

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 32608

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	744.7		mg/Kg		74	70 - 130	5	20
Diesel Range Organics (Over C10-C28)			1000	846.7		mg/Kg		85	70 - 130	10	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	86		70 - 130
o-Terphenyl	91		70 - 130

Lab Sample ID: 890-2789-A-1-F MS
Matrix: Solid
Analysis Batch: 32586

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 32608

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	999	862.4		mg/Kg		86	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U F1	999	712.0		mg/Kg		71	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	72		70 - 130
o-Terphenyl	67	S1-	70 - 130

Lab Sample ID: 890-2789-A-1-G MSD
Matrix: Solid
Analysis Batch: 32586

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 32608

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	998	747.4		mg/Kg		75	70 - 130	14	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	998	626.3	F1	mg/Kg		63	70 - 130	13	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	62	S1-	70 - 130
o-Terphenyl	58	S1-	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2788-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-32580/1-A
Matrix: Solid
Analysis Batch: 32762

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			08/24/22 07:34	1

Lab Sample ID: LCS 880-32580/2-A
Matrix: Solid
Analysis Batch: 32762

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	237.4		mg/Kg		95	90 - 110		

Lab Sample ID: LCSD 880-32580/3-A
Matrix: Solid
Analysis Batch: 32762

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	231.4		mg/Kg		93	90 - 110	3	20

Lab Sample ID: 890-2787-A-2-D MS
Matrix: Solid
Analysis Batch: 32762

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	118		251	357.7		mg/Kg		96	90 - 110		

Lab Sample ID: 890-2787-A-2-E MSD
Matrix: Solid
Analysis Batch: 32762

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	118		251	357.3		mg/Kg		95	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2788-1
SDG: Eddy County NM

GC VOA

Prep Batch: 32594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2788-1	PH10 @ 0.5	Total/NA	Solid	5035	
890-2788-2	PH10 @ 1	Total/NA	Solid	5035	
MB 880-32594/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-32594/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-32594/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2787-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
890-2787-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 32625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2788-1	PH10 @ 0.5	Total/NA	Solid	8021B	32594
890-2788-2	PH10 @ 1	Total/NA	Solid	8021B	32594
MB 880-32594/5-A	Method Blank	Total/NA	Solid	8021B	32594
LCS 880-32594/1-A	Lab Control Sample	Total/NA	Solid	8021B	32594
LCSD 880-32594/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	32594
890-2787-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	32594
890-2787-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	32594

Analysis Batch: 32717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2788-1	PH10 @ 0.5	Total/NA	Solid	Total BTEX	
890-2788-2	PH10 @ 1	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 32586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2788-1	PH10 @ 0.5	Total/NA	Solid	8015B NM	32608
890-2788-2	PH10 @ 1	Total/NA	Solid	8015B NM	32608
MB 880-32608/1-A	Method Blank	Total/NA	Solid	8015B NM	32608
LCS 880-32608/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	32608
LCSD 880-32608/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	32608
890-2789-A-1-F MS	Matrix Spike	Total/NA	Solid	8015B NM	32608
890-2789-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	32608

Prep Batch: 32608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2788-1	PH10 @ 0.5	Total/NA	Solid	8015NM Prep	
890-2788-2	PH10 @ 1	Total/NA	Solid	8015NM Prep	
MB 880-32608/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-32608/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-32608/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2789-A-1-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2789-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 32776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2788-1	PH10 @ 0.5	Total/NA	Solid	8015 NM	
890-2788-2	PH10 @ 1	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2788-1
SDG: Eddy County NM

HPLC/IC

Leach Batch: 32580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2788-1	PH10 @ 0.5	Soluble	Solid	DI Leach	
890-2788-2	PH10 @ 1	Soluble	Solid	DI Leach	
MB 880-32580/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-32580/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-32580/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2787-A-2-D MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2787-A-2-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 32762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2788-1	PH10 @ 0.5	Soluble	Solid	300.0	32580
890-2788-2	PH10 @ 1	Soluble	Solid	300.0	32580
MB 880-32580/1-A	Method Blank	Soluble	Solid	300.0	32580
LCS 880-32580/2-A	Lab Control Sample	Soluble	Solid	300.0	32580
LCSD 880-32580/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	32580
890-2787-A-2-D MS	Matrix Spike	Soluble	Solid	300.0	32580
890-2787-A-2-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	32580

Lab Chronicle

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2788-1
SDG: Eddy County NM

Client Sample ID: PH10 @ 0.5

Date Collected: 08/19/22 09:10
Date Received: 08/19/22 13:46

Lab Sample ID: 890-2788-1
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			5.02 g	5 mL	32594	08/22/22 08:59	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32625	08/22/22 16:59	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32717	08/22/22 18:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			32776	08/23/22 11:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	32608	08/22/22 09:31	AM	EET MID
Total/NA	Analysis	8015B NM		1			32586	08/22/22 13:44	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	32580	08/21/22 19:02	SMC	EET MID
Soluble	Analysis	300.0		1			32762	08/24/22 10:38	SMC	EET MID

Client Sample ID: PH10 @ 1

Date Collected: 08/19/22 09:15
Date Received: 08/19/22 13:46

Lab Sample ID: 890-2788-2
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			5.03 g	5 mL	32594	08/22/22 08:59	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32625	08/22/22 17:19	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32717	08/22/22 18:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			32776	08/23/22 11:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	32608	08/22/22 09:31	AM	EET MID
Total/NA	Analysis	8015B NM		1			32586	08/22/22 14:05	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	32580	08/21/22 19:02	SMC	EET MID
Soluble	Analysis	300.0		1			32762	08/24/22 10:47	SMC	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: Tucker Draw 9-4-4

Job ID: 890-2788-1
SDG: Eddy County NM

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	T104704400-22-24	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: Tucker Draw 9-4-4

Job ID: 890-2788-1
SDG: Eddy County NM

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	MCAWW	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

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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: Tucker Draw 9-4-4

Job ID: 890-2788-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
890-2788-1	PH10 @ 0.5	Solid	08/19/22 09:10	08/19/22 13:46
890-2788-2	PH10 @ 1	Solid	08/19/22 09:15	08/19/22 13:46

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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:	Joseph Hernandez	Bill to: (if different)	Jim Raley
Company Name:	Ensolum	Company Name:	Devon
Address:	3122 National Parks Hwy.	Address:	5315 Buena Vista Dr.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	2817022329	Email:	jhernandez@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:	Tucker Draw 9-4-4	Turn Around	☑ Routine ☐ Rush
Project Number:	03A1987046	Due Date:	24HR
Project Location:	Eddy County, NM	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	LC		
PO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	THM-EC	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	25.6	
Total Containers:		Corrected Temperature:	25.4	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021
PH10 @ 0.5'	S	8/19/22	910	0.5'	Grab/	1		x	x	x
PH10 @ 1'	S	8/19/22	915	1'	Grab/	1		x	x	x

890-2788 Chain of Custody

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2S0_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

Incident ID: NAB1812338789
Cost Center: 1061255001

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	Amanda Estep	8/19/22 1346	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2788-1
SDG Number: Eddy County NM

Login Number: 2788
List Number: 1
Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2788-1
SDG Number: Eddy County NM

Login Number: 2788
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 08/22/22 08:49 AM

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

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ANALYTICAL REPORT

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Tel: (575)988-3199

Laboratory Job ID: 890-2789-1
Laboratory Sample Delivery Group: Eddy County NM
Client Project/Site: Tucker Draw 9-4-4

For:
Ensolum
705 W. Wadley
Suite 210
Midland, Texas 79701

Attn: Joseph Hernandez

JKramer

Authorized for release by:
8/24/2022 3:59:27 PM

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

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Laboratory Job ID: 890-2789-1
SDG: Eddy County NM

Table of Contents

Definitions/Glossary

Client: Ensolum Job ID: 890-2789-1
Project/Site: Tucker Draw 9-4-4 SDG: Eddy County NM

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
S1-	Surrogate recovery exceeds control limits, low 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: Tucker Draw 9-4-4

Job ID: 890-2789-1
SDG: Eddy County NM

Job ID: 890-2789-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative
890-2789-1

Receipt
The samples were received on 8/19/2022 1:46 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 25.4°C

GC VOA
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: Surrogate recovery for the following samples were outside control limits: PH11 @ 0.5 (890-2789-1), (890-2789-A-1-F MS) and (890-2789-A-1-G MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-32608 and analytical batch 880-32586 was outside the upper control limits.

Method 8015MOD_NM: The matrix spike duplicate (MSD) recoveries for preparation batch 880-32608 and analytical batch 880-32586 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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: Tucker Draw 9-4-4

Job ID: 890-2789-1
SDG: Eddy County NM

Client Sample ID: PH11 @ 0.5

Date Collected: 08/19/22 09:30
Date Received: 08/19/22 13:46
Sample Depth: 0.5

Lab Sample ID: 890-2789-1
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		08/22/22 08:59	08/22/22 17:39	1
Toluene	<0.00201	U	0.00201		mg/Kg		08/22/22 08:59	08/22/22 17:39	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		08/22/22 08:59	08/22/22 17:39	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		08/22/22 08:59	08/22/22 17:39	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		08/22/22 08:59	08/22/22 17:39	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		08/22/22 08:59	08/22/22 17:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*08/22/22 08:59*	*08/22/22 17:39*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*08/22/22 08:59*	*08/22/22 17:39*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			08/22/22 18:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			08/23/22 11:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		08/22/22 09:31	08/22/22 12:18	1
Diesel Range Organics (Over C10-C28)	<49.9	U F1	49.9		mg/Kg		08/22/22 09:31	08/22/22 12:18	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		08/22/22 09:31	08/22/22 12:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*67*	*S1-*	*70 - 130*	*08/22/22 09:31*	*08/22/22 12:18*	*1*
o-Terphenyl	*71*		*70 - 130*	*08/22/22 09:31*	*08/22/22 12:18*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**132**		24.8		mg/Kg			08/24/22 11:15	5

Client Sample ID: PH11 @ 1

Date Collected: 08/19/22 09:35
Date Received: 08/19/22 13:46
Sample Depth: 1

Lab Sample ID: 890-2789-2
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 18:00	1
Toluene	**0.00607**		0.00200		mg/Kg		08/22/22 08:59	08/22/22 18:00	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 18:00	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		08/22/22 08:59	08/22/22 18:00	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 18:00	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		08/22/22 08:59	08/22/22 18:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*	*08/22/22 08:59*	*08/22/22 18:00*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2789-1
SDG: Eddy County NM

Client Sample ID: PH11 @ 1

Date Collected: 08/19/22 09:35
Date Received: 08/19/22 13:46
Sample Depth: 1

Lab Sample ID: 890-2789-2

Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*08/22/22 08:59*	*08/22/22 18:00*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.00607**		0.00401		mg/Kg			08/22/22 18:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			08/23/22 11:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		08/22/22 09:31	08/22/22 13:22	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		08/22/22 09:31	08/22/22 13:22	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		08/22/22 09:31	08/22/22 13:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*77*		*70 - 130*	*08/22/22 09:31*	*08/22/22 13:22*	*1*
o-Terphenyl	*75*		*70 - 130*	*08/22/22 09:31*	*08/22/22 13:22*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**484**		5.00		mg/Kg			08/24/22 11:24	1

Surrogate Summary

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2789-1
SDG: Eddy County NM

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)
890-2787-A-1-F MS	Matrix Spike	105	107
890-2787-A-1-G MSD	Matrix Spike Duplicate	102	103
890-2789-1	PH11 @ 0.5	96	103
890-2789-2	PH11 @ 1	89	101
LCS 880-32594/1-A	Lab Control Sample	105	100
LCSD 880-32594/2-A	Lab Control Sample Dup	102	106
MB 880-32594/5-A	Method Blank	78	117

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)
890-2789-1	PH11 @ 0.5	67 S1-	71
890-2789-1 MS	PH11 @ 0.5	72	67 S1-
890-2789-1 MSD	PH11 @ 0.5	62 S1-	58 S1-
890-2789-2	PH11 @ 1	77	75
LCS 880-32608/2-A	Lab Control Sample	72	74
LCSD 880-32608/3-A	Lab Control Sample Dup	86	91
MB 880-32608/1-A	Method Blank	63 S1-	68 S1-

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2789-1
SDG: Eddy County NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-32594/5-A
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32594

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
Toluene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		08/22/22 08:59	08/22/22 15:49	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		08/22/22 08:59	08/22/22 15:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*70 - 130*	*08/22/22 08:59*	*08/22/22 15:49*	*1*
1,4-Difluorobenzene (Surr)	*117*		*70 - 130*	*08/22/22 08:59*	*08/22/22 15:49*	*1*

Lab Sample ID: LCS 880-32594/1-A
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32594

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1035		mg/Kg		104	70 - 130
Toluene	0.100	0.1152		mg/Kg		115	70 - 130
Ethylbenzene	0.100	0.1166		mg/Kg		117	70 - 130
m-Xylene & p-Xylene	0.200	0.2172		mg/Kg		109	70 - 130
o-Xylene	0.100	0.1148		mg/Kg		115	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 880-32594/2-A
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 32594

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1131		mg/Kg		113	70 - 130	9	35
Toluene	0.100	0.1109		mg/Kg		111	70 - 130	4	35
Ethylbenzene	0.100	0.1069		mg/Kg		107	70 - 130	9	35
m-Xylene & p-Xylene	0.200	0.1993		mg/Kg		100	70 - 130	9	35
o-Xylene	0.100	0.1077		mg/Kg		108	70 - 130	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*

Lab Sample ID: 890-2787-A-1-F MS
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 32594

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0998	0.1080		mg/Kg		108	70 - 130
Toluene	<0.00199	U	0.0998	0.1089		mg/Kg		109	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2789-1
SDG: Eddy County NM

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

Lab Sample ID: 890-2787-A-1-F MS
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 32594

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0998	0.1075		mg/Kg		108	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1968		mg/Kg		99	70 - 130
o-Xylene	<0.00199	U	0.0998	0.1049		mg/Kg		105	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: 890-2787-A-1-G MSD
Matrix: Solid
Analysis Batch: 32625

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 32594

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.100	0.08519		mg/Kg		85	70 - 130	24	35
Toluene	<0.00199	U	0.100	0.09638		mg/Kg		96	70 - 130	12	35
Ethylbenzene	<0.00199	U	0.100	0.09512		mg/Kg		95	70 - 130	12	35
m-Xylene & p-Xylene	<0.00398	U	0.201	0.1754		mg/Kg		87	70 - 130	11	35
o-Xylene	<0.00199	U	0.100	0.09507		mg/Kg		95	70 - 130	10	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

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

Lab Sample ID: MB 880-32608/1-A
Matrix: Solid
Analysis Batch: 32586

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 32608

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		08/22/22 09:31	08/22/22 11:08	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		08/22/22 09:31	08/22/22 11:08	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		08/22/22 09:31	08/22/22 11:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*63*	*S1-*	*70 - 130*	*08/22/22 09:31*	*08/22/22 11:08*	*1*
o-Terphenyl	*68*	*S1-*	*70 - 130*	*08/22/22 09:31*	*08/22/22 11:08*	*1*

Lab Sample ID: LCS 880-32608/2-A
Matrix: Solid
Analysis Batch: 32586

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32608

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	708.2		mg/Kg		71	70 - 130
Diesel Range Organics (Over C10-C28)	1000	764.5		mg/Kg		76	70 - 130

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QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2789-1
SDG: Eddy County NM

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

Lab Sample ID: LCS 880-32608/2-A
Matrix: Solid
Analysis Batch: 32586

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 32608

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	72		70 - 130
o-Terphenyl	74		70 - 130

Lab Sample ID: LCSD 880-32608/3-A
Matrix: Solid
Analysis Batch: 32586

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 32608

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	744.7		mg/Kg		74	70 - 130	5	20
Diesel Range Organics (Over C10-C28)			1000	846.7		mg/Kg		85	70 - 130	10	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	86		70 - 130
o-Terphenyl	91		70 - 130

Lab Sample ID: 890-2789-1 MS
Matrix: Solid
Analysis Batch: 32586

Client Sample ID: PH11 @ 0.5
Prep Type: Total/NA
Prep Batch: 32608

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	999	862.4		mg/Kg		86	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U F1	999	712.0		mg/Kg		71	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	72		70 - 130
o-Terphenyl	67	S1-	70 - 130

Lab Sample ID: 890-2789-1 MSD
Matrix: Solid
Analysis Batch: 32586

Client Sample ID: PH11 @ 0.5
Prep Type: Total/NA
Prep Batch: 32608

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	998	747.4		mg/Kg		75	70 - 130	14	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	998	626.3	F1	mg/Kg		63	70 - 130	13	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	62	S1-	70 - 130
o-Terphenyl	58	S1-	70 - 130

QC Sample Results

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2789-1
SDG: Eddy County NM

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-32580/1-A
Matrix: Solid
Analysis Batch: 32762

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			08/24/22 07:34	1

Lab Sample ID: LCS 880-32580/2-A
Matrix: Solid
Analysis Batch: 32762

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	237.4		mg/Kg		95	90 - 110		

Lab Sample ID: LCSD 880-32580/3-A
Matrix: Solid
Analysis Batch: 32762

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	231.4		mg/Kg		93	90 - 110	3	20

Lab Sample ID: 890-2787-A-2-D MS
Matrix: Solid
Analysis Batch: 32762

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	118		251	357.7		mg/Kg		96	90 - 110		

Lab Sample ID: 890-2787-A-2-E MSD
Matrix: Solid
Analysis Batch: 32762

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	118		251	357.3		mg/Kg		95	90 - 110	0	20

QC Association Summary

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2789-1
SDG: Eddy County NM

GC VOA

Prep Batch: 32594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2789-1	PH11 @ 0.5	Total/NA	Solid	5035	
890-2789-2	PH11 @ 1	Total/NA	Solid	5035	
MB 880-32594/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-32594/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-32594/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2787-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
890-2787-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 32625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2789-1	PH11 @ 0.5	Total/NA	Solid	8021B	32594
890-2789-2	PH11 @ 1	Total/NA	Solid	8021B	32594
MB 880-32594/5-A	Method Blank	Total/NA	Solid	8021B	32594
LCS 880-32594/1-A	Lab Control Sample	Total/NA	Solid	8021B	32594
LCSD 880-32594/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	32594
890-2787-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	32594
890-2787-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	32594

Analysis Batch: 32718

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2789-1	PH11 @ 0.5	Total/NA	Solid	Total BTEX	
890-2789-2	PH11 @ 1	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 32586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2789-1	PH11 @ 0.5	Total/NA	Solid	8015B NM	32608
890-2789-2	PH11 @ 1	Total/NA	Solid	8015B NM	32608
MB 880-32608/1-A	Method Blank	Total/NA	Solid	8015B NM	32608
LCS 880-32608/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	32608
LCSD 880-32608/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	32608
890-2789-1 MS	PH11 @ 0.5	Total/NA	Solid	8015B NM	32608
890-2789-1 MSD	PH11 @ 0.5	Total/NA	Solid	8015B NM	32608

Prep Batch: 32608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2789-1	PH11 @ 0.5	Total/NA	Solid	8015NM Prep	
890-2789-2	PH11 @ 1	Total/NA	Solid	8015NM Prep	
MB 880-32608/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-32608/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-32608/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2789-1 MS	PH11 @ 0.5	Total/NA	Solid	8015NM Prep	
890-2789-1 MSD	PH11 @ 0.5	Total/NA	Solid	8015NM Prep	

Analysis Batch: 32775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2789-1	PH11 @ 0.5	Total/NA	Solid	8015 NM	
890-2789-2	PH11 @ 1	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2789-1
SDG: Eddy County NM

HPLC/IC

Leach Batch: 32580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2789-1	PH11 @ 0.5	Soluble	Solid	DI Leach	
890-2789-2	PH11 @ 1	Soluble	Solid	DI Leach	
MB 880-32580/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-32580/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-32580/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2787-A-2-D MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2787-A-2-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 32762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2789-1	PH11 @ 0.5	Soluble	Solid	300.0	32580
890-2789-2	PH11 @ 1	Soluble	Solid	300.0	32580
MB 880-32580/1-A	Method Blank	Soluble	Solid	300.0	32580
LCS 880-32580/2-A	Lab Control Sample	Soluble	Solid	300.0	32580
LCSD 880-32580/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	32580
890-2787-A-2-D MS	Matrix Spike	Soluble	Solid	300.0	32580
890-2787-A-2-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	32580

Lab Chronicle

Client: Ensolum
Project/Site: Tucker Draw 9-4-4

Job ID: 890-2789-1
SDG: Eddy County NM

Client Sample ID: PH11 @ 0.5

Date Collected: 08/19/22 09:30
Date Received: 08/19/22 13:46

Lab Sample ID: 890-2789-1

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			4.97 g	5 mL	32594	08/22/22 08:59	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32625	08/22/22 17:39	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32718	08/22/22 18:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			32775	08/23/22 11:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	32608	08/22/22 09:31	AM	EET MID
Total/NA	Analysis	8015B NM		1			32586	08/22/22 12:18	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	32580	08/21/22 19:02	SMC	EET MID
Soluble	Analysis	300.0		5			32762	08/24/22 11:15	SMC	EET MID

Client Sample ID: PH11 @ 1

Date Collected: 08/19/22 09:35
Date Received: 08/19/22 13:46

Lab Sample ID: 890-2789-2

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			4.99 g	5 mL	32594	08/22/22 08:59	MR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	32625	08/22/22 18:00	MR	EET MID
Total/NA	Analysis	Total BTEX		1			32718	08/22/22 18:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			32775	08/23/22 11:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	32608	08/22/22 09:31	AM	EET MID
Total/NA	Analysis	8015B NM		1			32586	08/22/22 13:22	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	32580	08/21/22 19:02	SMC	EET MID
Soluble	Analysis	300.0		1			32762	08/24/22 11:24	SMC	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: Tucker Draw 9-4-4

Job ID: 890-2789-1
SDG: Eddy County NM

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	T104704400-22-24	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: Tucker Draw 9-4-4

Job ID: 890-2789-1
SDG: Eddy County NM

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	MCAWW	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

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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: Tucker Draw 9-4-4

Job ID: 890-2789-1
SDG: Eddy County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2789-1	PH11 @ 0.5	Solid	08/19/22 09:30	08/19/22 13:46	0.5
890-2789-2	PH11 @ 1	Solid	08/19/22 09:35	08/19/22 13:46	1

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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

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Work Order No: _____

Page 1 of 1

Project Manager:	Joseph Hernandez	Bill to: (if different)	Jim Raley
Company Name:	Ensolum	Company Name:	Devon
Address:	3122 National Parks Hwy.	Address:	5315 Buena Vista Dr.
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	2817022329	Email:	jhernandez@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:

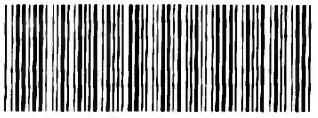
Project Name:	Tucker Draw 9-4-4	Turn Around	☑ Routine ☐ Rush
Project Number:	03A1987046	Due Date:	24 HR
Project Location:	Eddy County, NM	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	LC		
PO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	TDM-007	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	25.6	
Total Containers:		Corrected Temperature:	25.4	

ANALYSIS REQUEST

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	CHLORIDES (EPA: 300.0)	TPH (8015)	BTEX (8021)
PH11 @ 0.5'	S	8/19/22	930	0.5'	Grab/	1		x	x	x
PH11 @ 1'	S	8/19/22	935	1'	Grab/	1		x	x	x

Parameters



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

Incident ID: NAB1812338789

Cost Center: 1061255001

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	Amanda Stuff	8/19/22 1345	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2789-1
SDG Number: Eddy County NM

Login Number: 2789
List Number: 1
Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Ensolum

Job Number: 890-2789-1
SDG Number: Eddy County NM

Login Number: 2789
List Number: 2
Creator: Rodriguez, Leticia

List Source: Eurofins Midland
List Creation: 08/22/22 08:49 AM

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

ENSOLUM

APPENDIX G

Email Correspondence

From: Joseph Hernandez
To: ocd.enviro@state.nm.us; "CFO_Spill, BLM_NM"
Cc: Raley, Jim; Devon-Team
Subject: WPX Site Sampling Activity Update (7/18-7/22/22)
Date: Friday, July 15, 2022 9:01:00 AM
Attachments: image001.png
image002.png
image003.png
image004.png

Good morning,

WPX anticipates conducting final confirmation soil sampling activities at the following sites between July 18 through July 22, 2022:

Site: RDX Federal 21 #044
API: 30-015-41193
Incident Number: nAPP2115533694

Site: Tucker Draw 9-4-4
API: 30-015-44487
Incident Number: nAB1812338789

Site: C-17 State #001H
API: 30-015-44534
Incident Number: NRM2003533617

Joseph Hernandez
Senior Geologist
281-702-2329
Ensolum, LLC

From: Joseph Hernandez
To: ocd.enviro@state.nm.us; "CFO_Spill, BLM_NM"
Cc: Raley, Jim; Devon-Team
Subject: WPX Site Sampling Activity Update (8/16-8/19/22)
Date: Monday, August 15, 2022 8:51:00 AM
Attachments: image001.png
image002.png
image003.png
image004.png

Good morning,

WPX anticipates conducting confirmation soil sampling activities at the following sites between August 16 through August 19, 2022:

Site: Tucker Draw 9-4-4
API: 30-015-44487
Incident Number: nAB1812338789

Site: EP USA #005
API: 30-015-25020
Incident Number: NMAP1826970471

Joseph S. Hernandez
Senior Geologist
281-702-2329
Ensolum, LLC

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

COMMENTS

Action 139987

COMMENTS

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID: 246289
	Action Number: 139987
	Action Type: [C-141] Release Corrective Action (C-141)

COMMENTS

Created By	Comment	Comment Date
nvelez	Variance request would be the proper alternative method to apply for closure under the current conditions.	12/8/2022

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
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CONDITIONS

Action 139987

CONDITIONS

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID: 246289
	Action Number: 139987
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	See "OCD approval was based on the following;" within the incident event details.	12/8/2022