96.00 bbls

Location:	PLU 30 Big Sinks CTB			
Spill Date:	3/19/2022			
	Area 1			
Approximate A	rea =	1347.50	cu.ft.	
	VOLUME OF LEAK			
Total Crude Oil	=	144.00	bbls	
Total Produced	Water =	96.00	bbls	
	Area 2			
Approximate A	rea =	5696.00	sq. ft.	
Average Saturation (or depth) of spill =				
Average Porosi	ty Factor =	0.03		
	VOLUME 05 15 17			
	VOLUME OF LEAK	1 -	1	
Total Crude Oil			bbls	
Total Produced	Water =	1.01	bbls	
	TOTAL VOLUME OF LEAK			
Total Crude Oil		145.53	hhla	
		145.52		
Total Produced		97.01	צומטן	
	TOTAL VOLUME RECOVERED			
Total Crude Oil	=	144.00	bbls	

Total Produced Water =



June 28, 2024

New Mexico Oil Conservation Division 1220 South St. Francis Drive Santa Fe, New Mexico 87505

Re: Deferral Request Addendum PLU 30 Big Sinks Battery

Incident Numbers NAPP2206853301, NAPP2208351954, & NAPP2209137379

**Eddy County, New Mexico** 

#### To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared this *Deferral Request Addendum (Addendum)* to document assessment, delineation, excavation, and soil sampling activities at the PLU 30 Big Sinks Battery (Site). This Addendum details the additional remediation activities completed at the Site in response to the New Mexico Oil Conservation Division (NMOCD) denial of the original *Deferral Request* and subsequent *Deferral Request Addendum*. Based on the additional remediation activities described below, XTO is submitting this *Addendum* and requesting deferral of final remediation for Incident Numbers NAPP2206853301, NAPP2208351954, and NAPP2209137379 until the Site is reconstructed, and/or the well pad is abandoned.

#### **BACKGROUND**

The Site is located in Unit F, Section 30, Township 25 South, Range 31 East, in Eddy County, New Mexico (32.10395°, -103.82149°) and is associated with oil and gas exploration and production operations on federal land managed by the Bureau of Land Management (BLM).

#### Incident Number NAPP2206853301

On February 24, 2022, a water dump washed out on a separator, causing the skim tank to overflow and release approximately 99.23 barrels (bbls) of crude oil into lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 99 bbls of crude oil were recovered from within the lined containment. XTO reported the release to the NMOCD via email on February 25, 2022, and submitted a Release Notification Form C-141 (Form C-141) on March 9, 2022. The release was assigned Incident Number NAPP2206853301.

#### Incident Number NAPP2208351954

On March 14, 2022, a diaphragm failed on a 6-inch water dump, causing the skim tank to overflow and release approximately 64.2 bbls of crude oil and 16.05 bbls of produced water into lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 64 bbls of crude oil and 16 bbls of produced water were recovered from within the lined

Ensolum, LLC | Environmental, Engineering & Hydrogeologic Consultants 3122 National Parks Highway | Carlsbad, NM 88220 | ensolum.com

containment. XTO reported the release to the NMOCD via email on March 14, 2022, and submitted a Form C-141 on March 24, 2022. The release was assigned Incident Number NAPP2208351954.

#### Incident Number NAPP2209137379

On March 19, 2022, a diaphragm on a water dump failed, causing the skim tank to overflow and release approximately 145.52 bbls of crude oil and 97.01 bbls of produced water into lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 144 bbls of crude oil and 96 bbls of produced water were recovered from within the lined containment. XTO reported the release to the NMOCD via email on March 19, 2022, and submitted a Form C-141 on April 1, 2022. The release was assigned Incident Number NAPP2209137379.

A *Deferral Request* submitted on May 25, 2022, detailed the Site characterization according to Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the Site characterization are presented in the original *Deferral Request* included in Appendix A. Based on the results of the Site Characterization, the following NMOCD Table I Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH)- gasoline range organics (GRO) and TPH- diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

A 48-hour advance notice of liner inspection was provided via email to the NMOCD District II. A liner integrity inspection was conducted May 2, 2022. Upon inspection, the liner was determined to be competent. Photographic documentation was completed during the liner inspection and a photographic log is included in Appendix A. The release areas outside of containment overlapped for all three releases and were addressed concurrently.

Between April 2022 and May 2022, XTO conducted assessment, delineation, and excavation activities in response to the releases. An estimated 30 cubic yards of accessible impacted soil was excavated from the Site. To address residual petroleum hydrocarbon impacts left in place, a 5 percent (%) solution of Micro-Blaze® with freshwater was applied to the impacted area to promote natural attenuation of the hydrocarbons through biodegradation. Based on the remedial activities and laboratory analytical results from the soil sampling events, XTO submitted a Deferral Request on May 25, 2022, requesting to defer impacted soil immediately adjacent to and in between active production equipment until major facility reconstruction or abandonment.

On September 26, 2022, NMOCD denied the *Deferral Request* for Incident Number nAPP2209137379 for the following reasons:

• The deferral request is denied. Depth to groundwater is not adequately identified. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided. If evidence of depth to ground water within a ½ mile radius of the site cannot be provided, impacted soils will need to meet Table 1 Closure Criteria for ground



water at a depth of 50 feet or less. As much of the contaminated soil outside the secondary containment area should be removed safely with alternative methods. Delineation up against and under the containment needs to occur to define edge of release. The work will need to occur in 90 days after the report has been reviewed.

In October and November 2022 additional excavation activities were completed via hand shoveling to remove impacted soil to the maximum extent practicable (MEP). No mechanical equipment could reach the area of the impacted soil. Following excavation activities additional delineation was completed to delineate the soil as close to the secondary containment as possible. Delineation was completed with a hand auger and a rock bar; however, the maximum depth of the soil sample was 1.5 feet below ground surface (bgs) due to refusal. Following a review of the final laboratory analytical results a *Deferral Request Addendum* was submitted to NMOCD on March 6, 2023, detailing the additional remediation activities, which included installation of a depth to water boring to confirm depth to water in the region and the applicable Closure Criteria, removal of an additional 30 cubic yards of impacted soil, and further delineation soil sampling. Residual impacted soil still remained in place due to the release area being surrounded by active production equipment, tank battery containments, and surface piping which cannot be accessed mechanical equipment. Any sampling at deeper depths or additional excavation would require major facility deconstruction.

Between June 29 and July 11, 2023, XTO received three separate denials from two different regulators for differing reasons.

#### Incident Numbers nAPP2206853301 and nAPP2208351954

The *Deferral Request Addendum* was reviewed on July 10, and July 11, 2023, and the email response contained the following denial reasons:

• The Deferral Request is Denied. The "step-out" samples on pad to verify the edge of the release should only be a maximum of 1-2 feet from the observed edge of the release. Stepping out away from the release area toward the edge of the pad may tell us whether or not the release left the active well pad, but it does not tell us where the actual edge of the release is located. When equipment is located in and around the release area, samples must come from the sidewalls of the release area excavation. The OCD needs to know if the release went in, around, or under equipment/tanks/pipelines. Not having sidewall samples from the actual excavation won't give us those sampling data points that we need. On future reports, "step-out" samples should only be taken a maximum of 1-2 feet from the observed edge of the release area. "Step-out" samples should never be conducted if equipment is in the vicinity of the release area. Please conduct sidewalls in the release area excavation.

#### **Incident Number nAPP2209137379**

The same *Deferral Request Addendum* was reviewed on June 29, 2023, and the email response contained the following denial reasons:

 This deferral application is not approved. The release should be horizontally and vertically delineated to 600 mg/kg for chlorides 100 mg/kg TPH to define the edges of the release. Delineation samples must include lab tested analytical results. A scaled diagram of the release area was not included in this report.

The *Deferral Request Addendum* did not contain a copy of the original *Deferral Request*; however, historically that was not required by the NMOCD and a copy of the original *Deferral Request* is readily available and accessible on the NMOCD web portal. The *Deferral Request Addendum* is included in



Appendix A and all NMOCD correspondence is included in Appendix B of this *Addendum*. XTO proceeded to complete additional soil sampling and remediation activities. The following *Addendum* includes details of the additional remediation activities.

#### **SOIL SAMPLING ACTIVITIES**

On February 1, 2024, Ensolum personnel returned to the Site to conduct soil sampling activities to confirm the lateral extent of the release. Four delineation soil samples, SS03 through SS07, were collected at 0.5 feet bgs, no more than 1-foot to 2 feet from the edge of the excavation. In addition, two sidewalls soil samples, SW01 and SW02, were collected at depths ranging from ground surface to 1-foot bgs. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Sidewall soil sample SW01 was collected along the excavation edge immediately adjacent to the tank battery containment and sidewall soil sample SW02 was collected on the outside edge of the excavation closest to the active production equipment and surface piping. The delineation and confirmation soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride utilizing Hach® chloride QuanTab® test strips. The excavation extent, delineation soil sample, and confirmation soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation is included in Appendix C.

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

Soil was previously excavated to the MEP via hand shoveling. XTO safety policy restricts soil disturbing activities within a 2-foot radius of any on-site equipment and/or piping. Active production equipment and no mechanical equipment could access the release area, restricting the amount of soil that could be removed via hand shoveling to 1-foot bgs due to refusal. A total of approximately 60 cubic yards of impacted soil was excavated from the Site. Total TPH concentrations from confirmation samples collected in May 2022 to the October 2022 and December 2022 confirmation sampling events have reduced by an average of 62% with some areas decreasing more than 70%. Lighter end TPH in the GRO range have reduced by an average of 85% with some areas decreasing to 98%, indicating the gross impacts have been effectively remediated from the Site through excavation and the application of a bio-amendment that supports natural attenuation, which is protective of human health and the environment.

The final excavation extent measured approximately 1,075 square feet. A total of approximately 60 cubic yards of impacted soil was removed during excavation activities and was properly disposed of at the R360 Landfill Facility in Hobbs, New Mexico.

#### LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for delineation soil samples SS03 through SS07 indicated all COC concentrations are compliant with the Closure Criteria and all delineation soil samples except SS05 are compliant with the reclamation requirement confirming the lateral extent of the release, not immediately adjacent to active production equipment. Laboratory analytical results for sidewall soil samples SW01 and SW02 indicate all COCs are in compliance with Closure Criteria. Sidewall soil sample SW02 collected on the western edge of the excavation, away from the tank containment is compliant with the



reclamation requirement and laterally defines the edge of the release. Laboratory analytical results are summarized on Table 1, and the complete laboratory analytical reports are included in Appendix D.

#### **DEFERRAL REQUEST**

Due to active production equipment and process piping present in the area and prohibiting access to the release area with mechanical equipment, the remaining impacted soil could not be removed, and XTO is requesting deferral of final remediation. The remaining impacted soil is delineated vertically by delineation soil samples BH02/BH02A, BH03, and BH04 to maximum depth of 1.5 feet bgs. The estimated area of remaining impacted soil measures approximately 1,075 square feet, and an estimated total of 30 cubic yards of impacted soil remains in place, assuming a depth of 1.5 feet bgs based on laboratory analytical results from the delineation soil samples. The impacted soil is limited to the area beneath and immediately adjacent to active production equipment and surface piping where remediation would require major facility deconstruction. The release extent has been laterally delineated by delineation soil samples SS03 through SS07 and excavation sidewall soil samples SW01 and SW02. The proposed deferral area and all delineation and excavation soil samples used to define the deferral area are depicted on Figure 4. The area is further defined to the reclamation requirement by delineation soil samples SS03, SS04, SS06, and SS07 collected at 0.5 feet bgs, BH01/BH01A, and PH01/PH01A through PH03/PH03A collected at depths ranging from 0.5 feet to 2 feet bgs, and confirmation soil sample SW02 collected at depths ranging from ground surface to 1-foot bgs. An estimated 800 cubic yards of soil, exceeding the reclamation requirement, remains in place around active production equipment and piping on the active well pad across an estimated area of approximately 20,000 square feet. The area will be reclaimed during major facility reconstruction or following pad abandonment.

XTO does not believe deferment will result in imminent risk to human health, the environment, or groundwater. Depth to groundwater was determined to be greater than 110 feet bgs, and the entirety of the release remained on pad. Based on the presence of active production equipment and process piping within the release area and the complete lateral and vertical definition of impacted soil remaining in place, XTO requests deferral of final remediation for Incident Numbers NAPP2206853301, NAPP2208351954, and NAPP2209137379 until final reclamation of the well pad or major facility reconstruction, whichever comes first.

If you have any questions or comments, please contact Ms. Tacoma Morrissey at (337) 257-8307 or tmorrissey@ensolum.com.

Sincerely, **Ensolum, LLC** 

Tacoma Morrissey Associate Principal

Mourissey

Daniel R. Moir, PG (licensed in WY & TX) Senior Managing Geologist

cc: Amy Ruth, XTO

Amanda Garcia, XTO

BLM



#### Appendices:

Figure 1 Site Receptor Map

Figure 2 Delineation Soil Sample Locations Figure 3 Excavation Soil Sample Locations

Figure 4 Deferral Area Map

Table 1 Soil Sample Analytical Results

Appendix A Previous Reports: May 25, 2022 Deferral Request and March 6, 2023 Deferral Request

Addendum

Appendix B NMOCD Correspondence

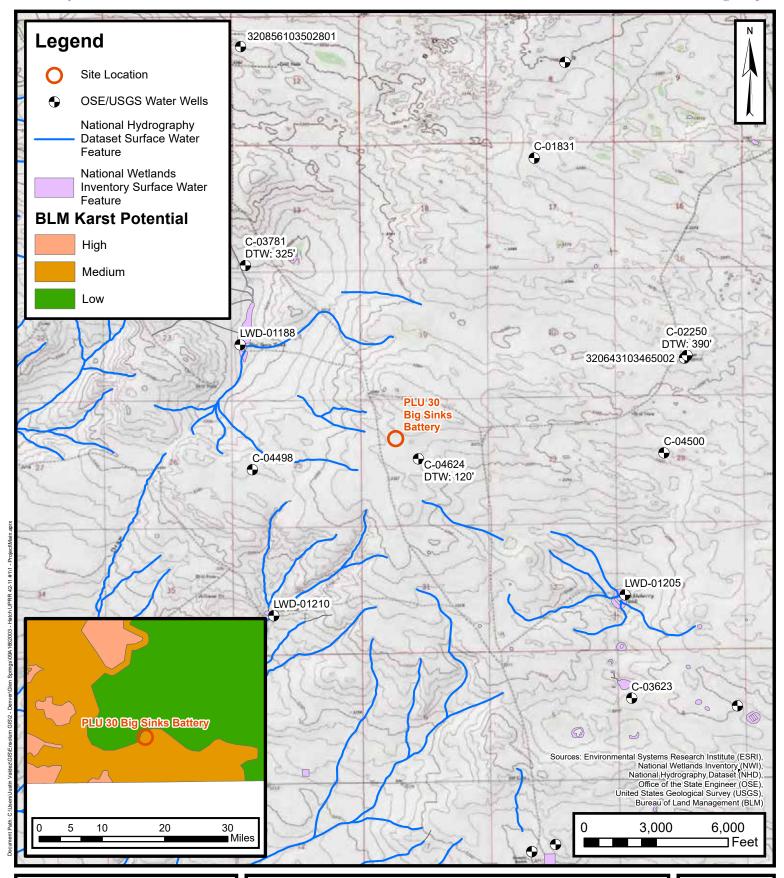
Appendix C Photographic Log

Appendix D Laboratory Analytical Reports & Chain-of-Custody Documentation





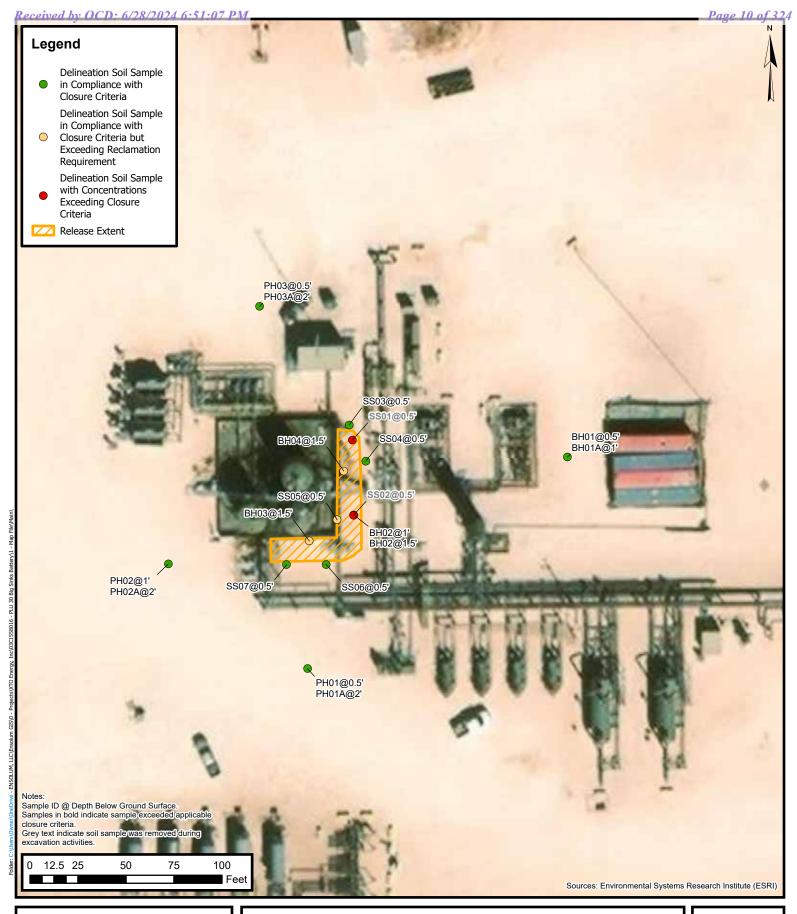
**FIGURES** 





## **Site Receptor Map**

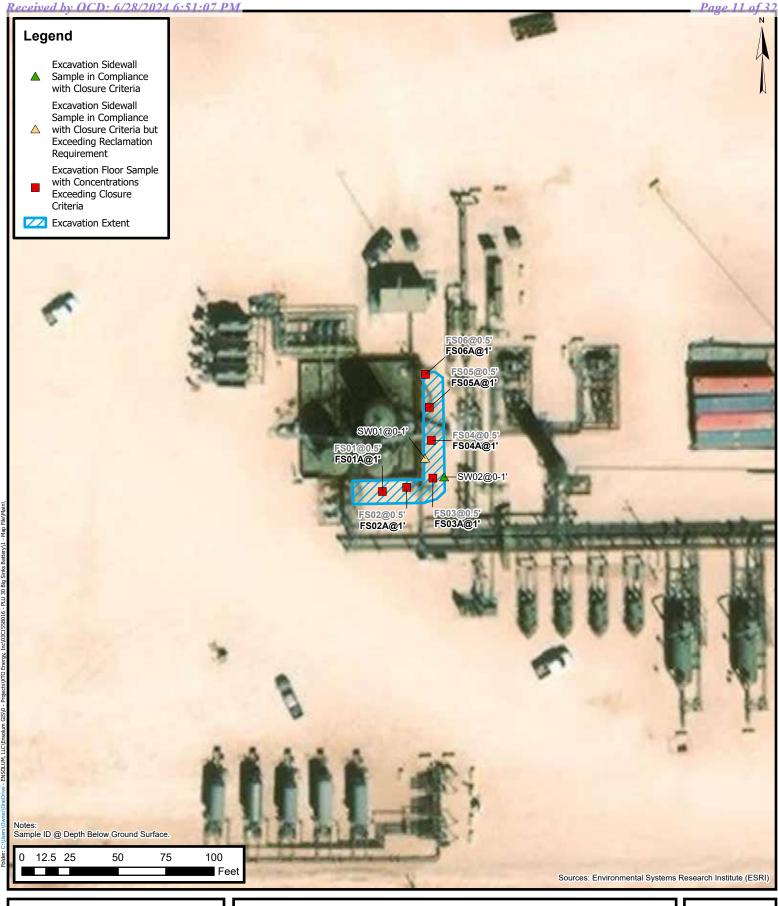
PLU 30 Big Sinks Battery XTO Energy, Inc NAPP2206853301, NAPP2208351954, NAPP2209137379 Unit F, Sec 30, T25S, R31E Eddy County, New Mexico FIGURE





## **Delineation Soil Sample Locations**

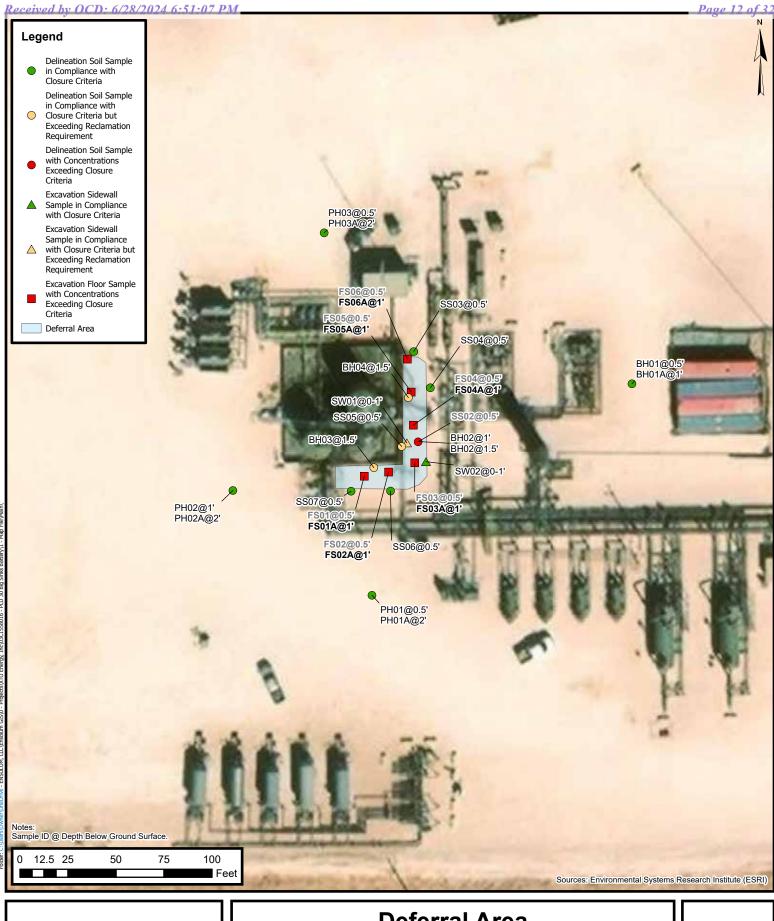
XTO Energy, Inc PLU 30 Big Sinks Battery Incident Number: NAPP2206853301, NAPP2208351954, Napp2209137379 Unit F, Sec 30, T25S, R31E Eddy County, New Mexico FIGURE 2





## **Excavation Soil Sample Locations**

XTO Energy, Inc PLU 30 Big Sinks Battery Incident Number: NAPP2206853301, NAPP2208351954, Napp2209137379 Unit F, Sec 30, T25S, R31E Eddy County, New Mexico FIGURE 3





### **Deferral Area**

XTO Energy, Inc PLU 30 Big Sinks Battery Incident Number: NAPP2206853301, NAPP2208351954, Napp2209137379 Unit F, Sec 30, T25S, R31E Eddy County, New Mexico

**FIGURE** 4



**TABLES** 

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# TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS PLU 30 BIG SINKS BATTERY XTO ENERGY, INC EDDY COUNTY, NEW MEXICO

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I C	losure Criteria (l	NMAC 19.15.29)	10	50	NE	NE	NE	1,000	2,500	20,000
				Delir	neation Soil Sa	mples				
<del>SS01</del>	04/15/2022	0.5	<0.0398	<del>158</del>	4,620	11,200	<del>&lt;250</del>	15,800	<del>15,800</del>	<del>103</del>
SS02	04/15/2022	0.5	<0.0402	<del>157</del>	2,060	7,820	<del>&lt;49.9</del>	9,880	9,880	448
SS03	02/01/2024	0.5	<0.00199	<0.00398	50.3	50.3	50.3	50.3	50.3	83.8
SS04	02/01/2024	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	78.0
SS05	02/01/2024	0.5	<0.00200	<0.00399	201	201	201	201	201	102
SS06	02/01/2024	0.5	<0.00201	<0.00402	<49.6	<49.6	<49.6	<49.6	<49.6	75.3
SS07	02/01/2024	0.5	<0.00200	<0.00401	<50.3	<50.3	<50.3	<50.3	<50.3	76.7
BH01	05/02/2022	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	46.1
BH01A	05/02/2022	1	< 0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	14.6
BH02	05/02/2022	1	<0.00200	<0.00399	<49.9	428	60.9	428	489	26.2
BH02	05/02/2022	1.5	< 0.00199	<0.00398	<50.0	110	<50.0	110	110	15.4
BH03	10/19/2022	1.5	<0.00199	<0.00398	<49.9	216	124	216	340	263
BH04	10/19/2022	1.5	<0.00200	<0.00399	63.3	377	263	440	703	201
PH01	05/02/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	85.9
PH01A	05/02/2022	2	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	17.0
PH02	05/02/2022	1	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	76.4
PH02A	05/02/2022	2	<0.00200	< 0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	52.1
PH03	05/02/2022	0.5	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	<50.0	36.9
PH03A	05/02/2022	2	< 0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	36.3

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## TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS PLU 30 BIG SINKS BATTERY XTO ENERGY, INC EDDY COUNTY, NEW MEXICO

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I C	Closure Criteria (	NMAC 19.15.29)	10	50	NE	NE	NE	1,000	2,500	20,000
				Confi	irmation Soil Sa	amples				
FS01	05/03/2022	0.5'	<0.00201	0.299	1,290	10,400	1,640	11,700	13,300	394
FS01A	10/19/2022	1'	<0.00201	0.0449	244	5,310	3,130	5,550	8,680	224
FS02	05/03/2022	0.5'	<0.00200	0.844	1,180	7,810	1,380	8,990	10,400	141
FS02A	10/19/2022	1'	< 0.00199	0.0327	204	3,150	1,730	3,350	5,080	80.0
FS03	05/03/2022	0.5'	<0.00199	45.1	2,140	11,500	1,880	<del>13,600</del>	<del>15,500</del>	723
FS03A	10/24/2022	1'	<0.00200	0.0639	321	5,750	<49.8	6,070	6,070	62.2
FS04	05/03/2022	0.5'	<0.00200	1.09	2,220	14,200	<del>2,330</del>	16,400	<del>18,800</del>	790
FS04A	10/24/2022	1'	< 0.00199	0.237	<50.0	4,540	488	4,540	5,030	107
FS05	05/03/2022	0.5'	0.00362	1.35	496	12,400	<250	12,900	12,900	528
FS05A	12/01/2022	1'	< 0.00200	0.0153	84.4	4000	<50.0	4,084	4,084	39.9
FS06	05/03/2022	0.5'	<0.400	0.177	617	<del>16,000</del>	<del>&lt;250</del>	16,600	<del>16,600</del>	106
FS06	12/01/2022	1'	< 0.00199	0.0288	107	3,740	<50.0	3,847	3,847	18.6
SW01	02/01/2024	0-1	<0.00201	<0.00402	<248	<248	<248	<248	<248	1,040
SW02	02/01/2024	0-1	<0.00200	<0.00401	<50.5	<50.5	<50.5	<50.5	<50.5	95.9

#### Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in **bold** exceed the NMOCD Table I Closure Criteria or

reclamation requirement where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

NMAC: New Mexico Administrative Code

Grey text indicates soil sample removed during excavation activities

Ensolum

2 of 2



**APPENDIX A** 

Previous Reports: May 25, 2022 Deferral Request and March 6, 2023 Deferral Request Addendum



May 25, 2022

District II New Mexico Oil Conservation Division 811 South First Street Artesia. New Mexico 88210

Re: Deferral Request

**PLU 30 Big Sinks Battery** 

Incident Numbers NAPP2206853301, NAPP2208351954, & NAPP2209137379

**Eddy County, New Mexico** 

#### To Whom It May Concern:

Ensolum, LLC (Ensolum) on behalf of XTO Energy, Inc. (XTO), has prepared this Deferral Request to document site assessment and remediation activities completed at the Poker Lake Unit (PLU) 30 Big Sinks Battery (Site). The purpose of the site assessment and remediation activities was to address impacts to soil following three separate releases of crude oil and produced water in an area of active production equipment, by excavating impacted soil to the extent possible. Based on the soil sample analytical results from the excavation and delineation activities, XTO is submitting this Deferral Request, describing remediation that has occurred and requesting deferral of final remediation for Incident Numbers NAPP2206853301, NAPP2208351954, and NAPP2209137379 until the Site is reconstructed, and/or the well pad is abandoned.

#### SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit F, Section 30, Township 25 South, Range 31 East, in Eddy County, New Mexico (32.10395° N, 103.82149°W) and is associated with oil and gas exploration and production operations on Bureau of Land Management (BLM) Federal Land.

#### Incident Number NAPP2206853301

On February 24, 2022, a water dump washed out on a separator, causing the skim tank to overflow and release approximately 99.23 barrels (bbls) of crude oil into lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 99 bbls of crude oil were recovered from within the lined containment. XTO reported the release to the New Mexico Oil Conservation Division (NMOCD) via email on February 25, 2022, and submitted a Release Notification Form C-141 (Form C-141) on March 9, 2022. The release was assigned Incident Number NAPP2206853301.

#### Incident Number NAPP2208351954

On March 14, 2022, a diaphragm failed on a 6-inch water dump, causing the skim tank to overflow and release approximately 64.2 bbls of crude oil and 16.05 bbls of produced water into lined containment

Ensolum, LLC | Environmental, Engineering & Hydrogeologic Consultants 705 W. Wadley, Suite 210 | Midland, TX 78209 | **ensolum.com** Texas PG Firm No. 50588 | Texas PE Firm No. F-21843



and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 64 bbls of crude oil and 16 bbls of produced water were recovered from within the lined containment. XTO reported the release to the NMOCD via email on March 14, 2022, and submitted a Form C-141 on March 24, 2022. The release was assigned Incident Number NAPP2208351954.

#### **Incident Number NAPP2209137379**

On March 19, 2022, a diaphragm on a water dump failed, causing the skim tank to overflow and release approximately 145.52 bbls of crude oil and 97.01 bbls of produced water into lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 144 bbls of crude oil and 96 bbls of produced water were recovered from within the lined containment. XTO reported the release to the NMOCD via email on March 19, 2022, and submitted a Form C-141 on April 1, 2022. The release was assigned Incident Number NAPP2209137379.

A 48-hour advance notice of liner inspection was provided via email to the NMOCD District II. A liner integrity inspection was conducted following fluid recovery from the third release. Upon inspection, the liner was determined to be competent (photo 3 and 4). The release areas outside of containment overlapped for all three releases and were addressed concurrently.

#### SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized according to Table 1, Closure Criteria for Soils Impacted by a Release, of 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.

Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on a recent soil boring drilled for determination of regional groundwater depth. During February 2021, a soil boring (C-4498) was drilled 1.0 mile west of the Site utilizing a track-mounted hollow-stem auger rig. Soil boring C-4498 was drilled to a depth of 110 feet bgs. A field geologist logged and described soils continuously. No moisture or groundwater was encountered during drilling activities. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater was greater than 110 feet bgs. The borehole was properly abandoned with drill cuttings and hydrated bentonite chips. An additional soil boring (C-4500) was drilled to a depth of 110 feet bgs approximately 2 miles east of the Site. No groundwater was encountered in the soil boring, which provides additional support in a different direction that groundwater beneath the Site is greater than 110 feet bgs. There are no hydrological features near the Site that would indicate shallow groundwater. The referenced well records are included in Appendix A

The closest continuously flowing or significant watercourse to the Site is a dry wash, located approximately 952 feet west of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

Based on the results of the Site Characterization, 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 hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg

TPH: 2,500 mg/kg

Chloride: 20,000 mg/kg

#### SITE ASSESSMENT ACTIVITIES

On April 15, 2022, Ensolum personnel visited the Site to evaluate the release extent and conduct site assessment activities. Two preliminary assessment soil samples were collected within the release extent from a depth of 0.5 feet bgs to assess the extent of the release. The preliminary soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and Hach® chloride QuanTab® test strips. The release extent and preliminary soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation is included in Appendix B.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported at or below 4 degrees Celsius (°C) under strict chain-of-custody (COC) procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-GRO, TPH-DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

Laboratory analytical results for preliminary soil samples SS01 and SS02 indicated that BTEX, TPH-DRO/TPH-GRO, and TPH concentrations exceeded the Closure Criteria. Based on visible staining in the release area, elevated field screening results, and laboratory analytical results for the preliminary soil samples, excavation and delineation activities were warranted.

#### **DELINEATION ACTIVITIES AND ANALYTICAL RESULTS**

On May 2, 2022, Ensolum personnel returned to the Site to complete delineation activities. Three potholes (PH01 through PH03) and two boreholes (BH01 and BH02) were advanced within and around the release extent to delineate the lateral and vertical extent of the release. Potholes PH01 through PH03 and borehole BH01 were advanced around the release extent to depths ranging from 1-foot to 2 feet bgs to confirm the lateral extent of the release. Borehole BH02 was advanced within the release extent to a depth of 1.5 feet bgs to confirm the vertical extent of the release. Two discrete soil samples were collected from each pothole and borehole at depths ranging from 0.5 feet bgs to 2 feet bgs. Soil from the potholes and boreholes was field screened for volatile aromatic hydrocarbons and chloride utilizing a calibrated PID and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for the potholes and boreholes were logged on lithologic/soil sampling logs, which are included in Appendix C. The delineation soil samples were handled and analyzed as described above. The delineation soil sample locations are depicted on Figure 2.

Laboratory analytical results for the delineation soil samples collected from potholes PH01 through PH03 and borehole BH01, advanced around the release extent, indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria and compliant with the most stringent Table 1 Closure Criteria. Laboratory analytical results for delineation soil samples collected from borehole BH02, advanced within the release extent, indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Site Closure Criteria. Based on the laboratory analytical results, the lateral and vertical extent of the impacted soil was successfully defined.



Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix D. Based on laboratory analytical results for the preliminary soil samples and field screening results from the delineation activities, excavation of impacted soil was completed to the extent possible.

#### **EXCAVATION SOIL SAMPLING ACTIVITIES AND ANALYTICAL RESULTS**

On May 2, 2022, and May 3, 2022, excavation activities were completed via hand shoveling to remove impacted soil to the extent possible as indicated by visible staining, field screening activities, and laboratory analytical results for preliminary samples SS01 and SS02. The excavation depth was limited to an approximate depth of 0.5 bgs due to refusal with hand shovels. The release area was not accessible with mechanical equipment due to the surrounding active production equipment preventing access.

Following removal of impacted soil to the extent possible, Ensolum personnel collected 5-point composite soil samples at a frequency of every 200 square feet from the floor of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples FS01 through FS06 were collected from the floor of the excavation from a depth of 0.5 feet bgs. The excavation soil samples were collected, handled, and analyzed as described above. The excavation extent and excavation soil sample locations are depicted on Figure 3.

Laboratory analytical results for excavation floor samples FS01 through FS06, collected at 0.5 feet bgs, indicated that TPH and TPH-GRO/TPH-DRO concentrations exceeded the Closure Criteria. Impacted soil was excavated to the maximum extent possible via hand shoveling. Due to the surrounding active production equipment, the release area was not accessible with mechanical equipment, including a hydrovac or skidsteer. Photographic documentation is included in Appendix B. To address the hydrocarbon impacts left in place, a 5 percent solution of Micro-Blaze® and freshwater was applied to the impacted area to promote degradation of the hydrocarbons.

The excavation measured approximately 1,200 square feet in area. Approximately 30 cubic yards of impacted soil were removed during the excavation activities. The impacted soil was transported and properly disposed of at a permitted disposal facility in Carlsbad, New Mexico.

#### **DEFFERAL REQUEST**

A total of 30 cubic yards of impacted soil was excavated from the Site via hand shoveling to a maximum depth of 0.5 feet bgs before encountering refusal. Impacted soil was left in place in the floor of the excavation, due to the release area being surrounded by active production equipment where it could not be accessed with mechanical equipment and remediation would require a major facility deconstruction. The impacted soil remaining in place is delineated vertically by delineation soil samples BH02/BH02A and laterally by delineation soil samples from borehole BH01 and potholes PH01 through PH03. A maximum of 30 cubic yards of hydrocarbon impacted soil remains in place assuming a maximum 1-foot depth based on the delineation soil samples listed above, that were compliant with the Closure Criteria. The deferral area and delineation soil samples are depicted on Figure 4.

XTO does not believe deferment will result in imminent risk to human health, the environment, or groundwater. Depth to groundwater was estimated to be greater than 100 feet bgs and no other sensitive receptors were identified near the Site. Based on the presence of active production equipment within and around the release area and the complete lateral and vertical delineation of impacted soil remaining in place, XTO requests deferral of final remediation for Incident Numbers NAPP2206853301,



NAPP2208351954, and NAPP2209137379 until final reclamation of the well pad or major construction, whichever comes first.

If you have any questions or comments, please contact Ms. Aimee Cole at (720) 384-7365 or acole@ensolum.com.

Sincerely, **Ensolum, LLC** 

Tacoma Morrissey Senior Geologist Aimee Cole Senior Managing Scientist

cc: Adrian Baker, XTO

Mouissey

Bureau of Land Management

#### Appendices:

Figure 1 Site Receptor Map Figure 2 Soil Sample Locations

Figure 3 Excavation Soil Sample Locations

Figure 4 Deferral Map

Table 1 Soil Sample Analytical Results Appendix A Referenced Well Records

Appendix B Photographic Log

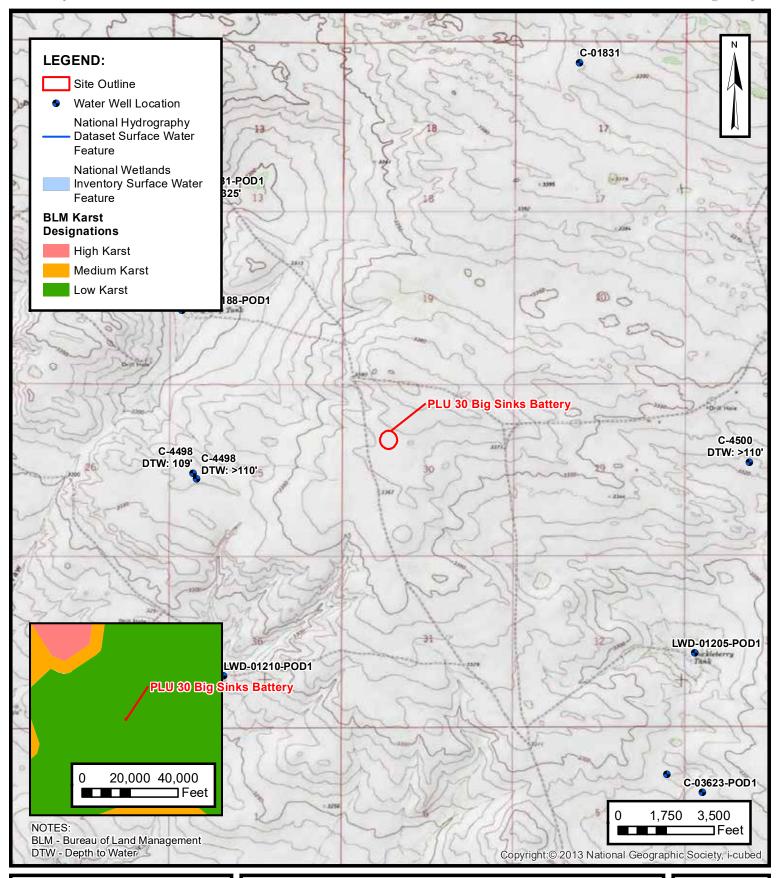
Appendix C Lithologic / Soil Sampling Logs

Appendix D Laboratory Analytical Reports & Chain-of-Custody Documentation

Appendix E NMOCD Notifications



**FIGURES** 

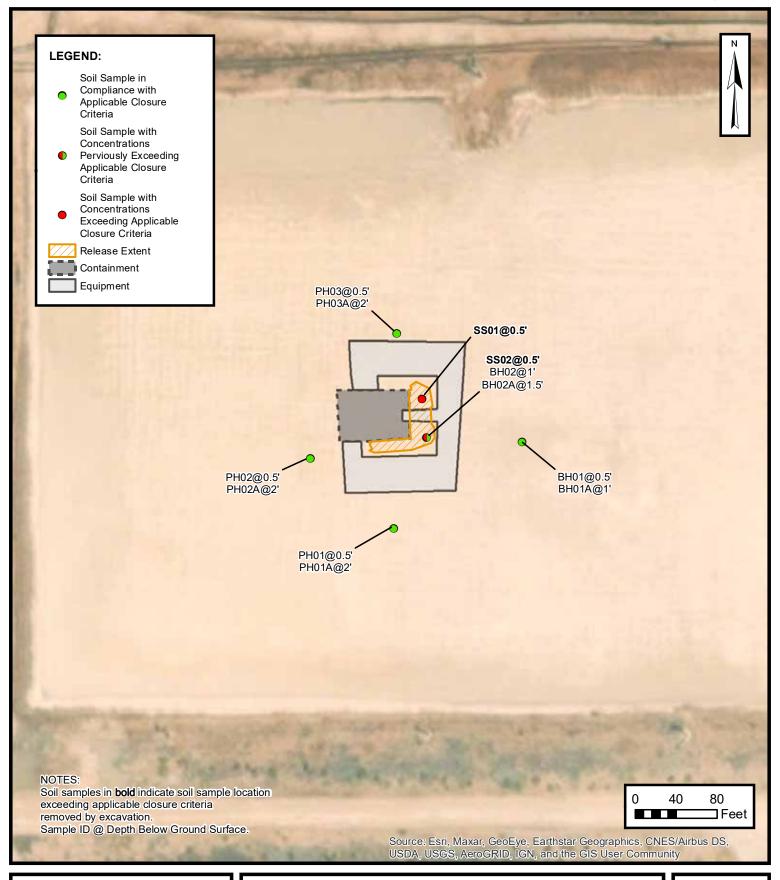




#### SITE RECEPTOR MAP

XTO ENERGY, INC
PLU 30 BIG SINKS BATTERY
NAPP2206853301, NAPP2208351954, NAPP2209137379
Unit F, Sec 30, T25S, R31E
Eddy County, New Mexico

**FIGURE** 

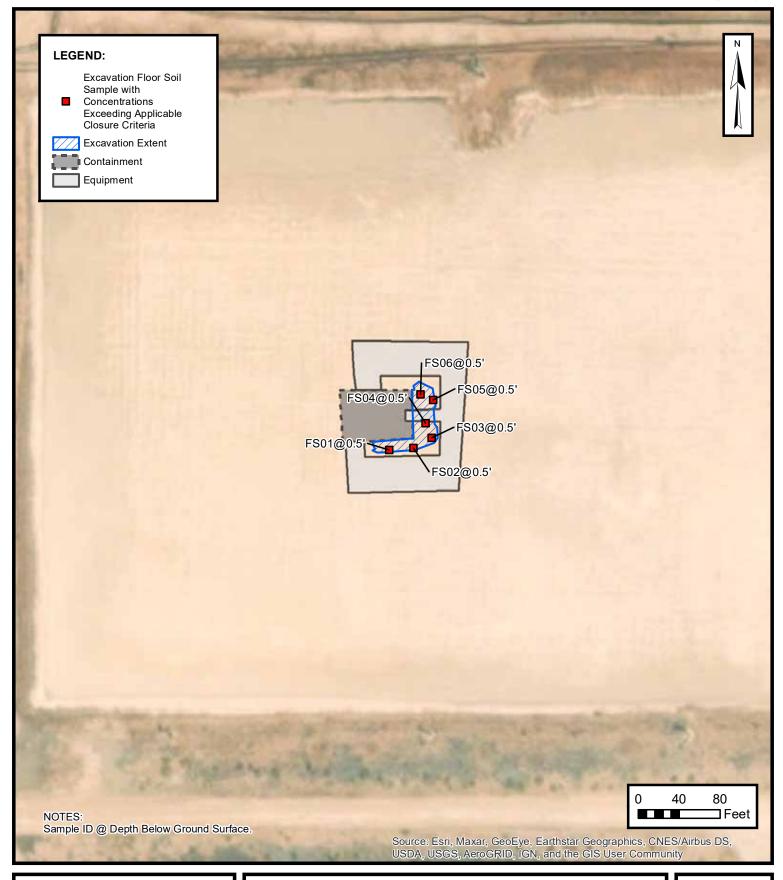




#### **SOIL SAMPLE LOCATIONS**

XTO ENERGY, INC
PLU 30 BIG SINKS BATTERY
NAPP2206853301, NAPP2208351954, NAPP2209137379
Unit F, Sec 30, T25S, R31E
Eddy County, New Mexico

**FIGURE** 

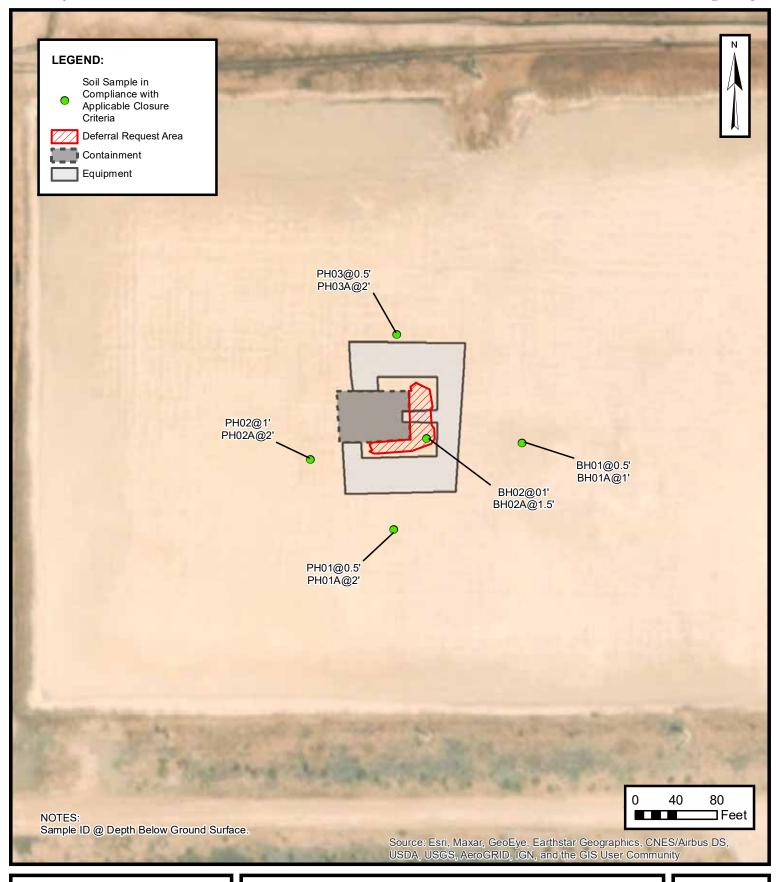




#### **EXCAVATION SOIL SAMPLE LOCATIONS**

XTO ENERGY, INC
PLU 30 BIG SINKS BATTERY
NAPP2206853301, NAPP2208351954, NAPP2209137379
Unit F, Sec 30, T25S, R31E
Eddy County, New Mexico

FIGURE





#### **DEFERRAL MAP**

XTO ENERGY, INC
PLU 30 BIG SINKS BATTERY
NAPP2206853301, NAPP2208351954, NAPP2209137379
Unit F, Sec 30, T25S, R31E
Eddy County, New Mexico

FIGURE 4

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**TABLES** 



## TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS PLU 30 Big Sinks Battery XTO Energy, Inc. Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 C	losure Criteria (l	NMAC 19.15.29)	10	50	NE	NE	NE	1,000	2,500	20,000
	Preliminary Soil Samples									
SS01	04/15/2022	0.5	<0.0398	158	4,620	11,200	<250	15,800	15,800	103
SS02	04/15/2022	0.5	<0.0402	157	2,060	7,820	<49.9	9,880	9,880	448
				Del	ineation Soil San	ples				
BH01	05/02/2022	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	46.1
BH01A	05/02/2022	1	<0.00200	< 0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	14.6
BH02	05/02/2022	1	<0.00200	< 0.00399	<49.9	428	60.9	428	489	26.2
BH02A	05/02/2022	1.5	< 0.00199	<0.00398	<50.0	110	<50.0	110	110	15.4
PH01	05/02/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	85.9
PH01A	05/02/2022	2	<0.00200	< 0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	17.0
PH02	05/02/2022	1	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	76.4
PH02A	05/02/2022	2	< 0.00200	< 0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	52.1
PH03	05/02/2022	0.5	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	<50.0	36.9
PH03A	05/02/2022	2	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	36.3
				Con	firmation Soil Sa	nples				
FS01	05/03/2022	0.5	<0.00201	0.299	1,290	10,400	1,640	11,700	13,300	394
FS02	05/03/2022	0.5	<0.00200	0.844	1,180	7,810	1,380	8,990	10,400	141
FS03	05/03/2022	0.5	<0.00199	45.1	2,140	11,500	1,880	13,600	15,500	723
FS04	05/03/2022	0.5	<0.00200	1.09	2,220	14,200	2,330	16,400	18,800	790
FS05	05/03/2022	0.5	0.00362	1.35	496	12,400	<250	12,900	12,900	528
FS06	05/03/2022	0.5	<0.400	0.177	617	16,000	<250	16,600	16,600	106

#### Notes:

bgs: below ground surface
mg/kg: milligrams per kilogram
NMOCD: New Mexico Oil Conservation Division
BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes
Concentrations in bold exceed the NMOCD Table 1 Closur

Concentrations in bold exceed the NMOCD Table 1 Closure Criteria or reclamation standard where applicable.

GRO: Gasoline Range Organics DRO: Diesel Range Organics ORO: Oil Range Organics TPH: Total Petroleum Hydrocarbon

Ensolum 1 of 1



**APPENDIX A** 

Referenced Well Records



### New Mexico Office of the State Engineer

## **Point of Diversion Summary**

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

Well Tag **POD Number** 

 $\mathbf{X}$ 

NA C 04498 POD1 Q64 Q16 Q4 Sec Tws Rng 25S 30E 3 25

3552168

609394

**Driller License:** 1249 **Driller Company:** 

ATKINS ENGINEERING ASSOC. INC.

**Driller Name:** JAKCIE D ATKINS

**Drill Start Date:** 02/24/2021 **Drill Finish Date:** 

02/24/2021

Plug Date:

03/02/2021

**Log File Date:** 

03/11/2021

**PCW Rcv Date:** 

Source:

**Pump Type:** 

Pipe Discharge Size:

Estimated Yield: 0 GPM

**Casing Size:** 

**Depth Well:** 

109 feet

Depth Water:

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

5/17/22 12:21 PM

POINT OF DIVERSION SUMMARY



## New Mexico Office of the State Engineer

## **Point of Diversion Summary**

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

Well Tag **POD Number** 

 $\mathbf{X}$ 

NA C 04500 POD1 Q64 Q16 Q4 Sec Tws Rng 25S 31E 1 28

3552380 614620

**Driller License:** 1249 **Driller Company:** 

ATKINS ENGINEERING ASSOC. INC.

**Driller Name:** 

ATKINS, JACKIE D.UELENER

03/24/2021

Plug Date:

04/27/2021

**Drill Start Date: Log File Date:** 

03/24/2021 05/05/2021 **Drill Finish Date:** 

**PCW Rcv Date:** 

**Depth Well:** 

Source:

**Pump Type:** 

Pipe Discharge Size:

**Estimated Yield:** 

**Casing Size:** 

Depth Water:

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

5/17/22 12:40 PM

POINT OF DIVERSION SUMMARY



USGS Home Contact USGS Search USGS

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

USGS Water Resources	Data Category:		Geographic Area:		
obd5 Water Resources	Groundwater	<b>~</b>	United States	~	GO

#### Click to hideNews Bulletins

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

Groundwater levels for the Nation

Important: <u>Next Generation Monitoring Location Page</u>

#### Search Results -- 1 sites found

**Agency code =** usgs **site\_no list =** • 320643103465002

#### Minimum number of levels = 1

Save file of selected sites to local disk for future upload

#### USGS 320643103465002 25S.31E.21.413314A

Available data for this site	Groundwater:	Field measurements	~	GO
Eddy County, New Mexico				
Hydrologic Unit Code 1307	'0001			
Latitude 32°06'46.0", Lon	gitude 103°	946'56.3" NAD83		
Land-surface elevation 3,3	74.00 feet	above NGVD29		
The depth of the well is 40	00 feet belov	w land surface.		

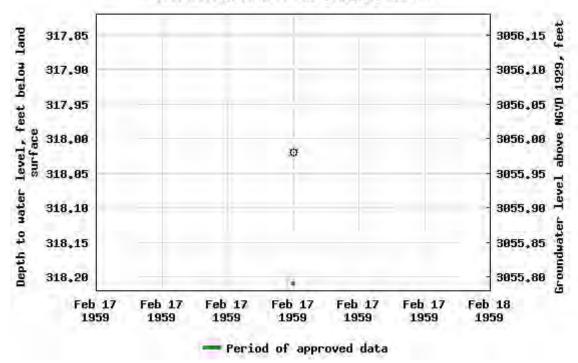
This well is completed in the Pecos River Basin alluvial aquifer (N100PCSRVR) national aquifer.

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

#### **Output formats**

Table of data
Tab-separated data
Graph of data
Reselect period

#### USGS 320643103465002 255,31E,21,413314A



Breaks in the plot represent a gap of at least one year between field measurements. <u>Download a presentation-quality graph</u>

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

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Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey

**Title: Groundwater for USA: Water Levels** 

URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: <u>USGS Water Data Support Team</u>

Page Last Modified: 2022-05-17 14:23:51 EDT

0.54 0.49 nadww01





**APPENDIX B** 

Photographic Log



#### **Photographic Log**

XTO Energy, Inc.
PLU 30 Big Sinks Battery

Incident Numbers: NAPP2206853301, NAPP2208351954, NAPP2209137379



Photograph 1 Date: Apr 15, 2022
Description: View of release extent and visible staining facing north.



Photograph 2 Date: Apr 15, 2022 Description: View of release extent and visible staining facing south.



Photograph 3 Date: May 2, 2022

Description: View of containment during liner inspection, facing south.



Photograph 4 Date: May 2, 2022

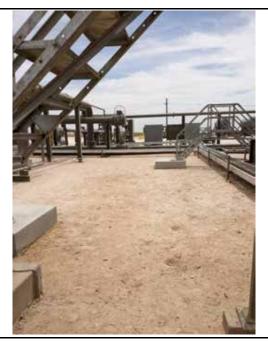
Description: View of containment during liner inspection, facing west.

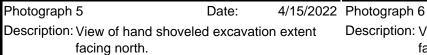


#### Photographic Log

XTO Energy, Inc.
PLU 30 Big Sinks Battery

Incident Numbers: NAPP2206853301, NAPP2208351954, NAPP2209137379





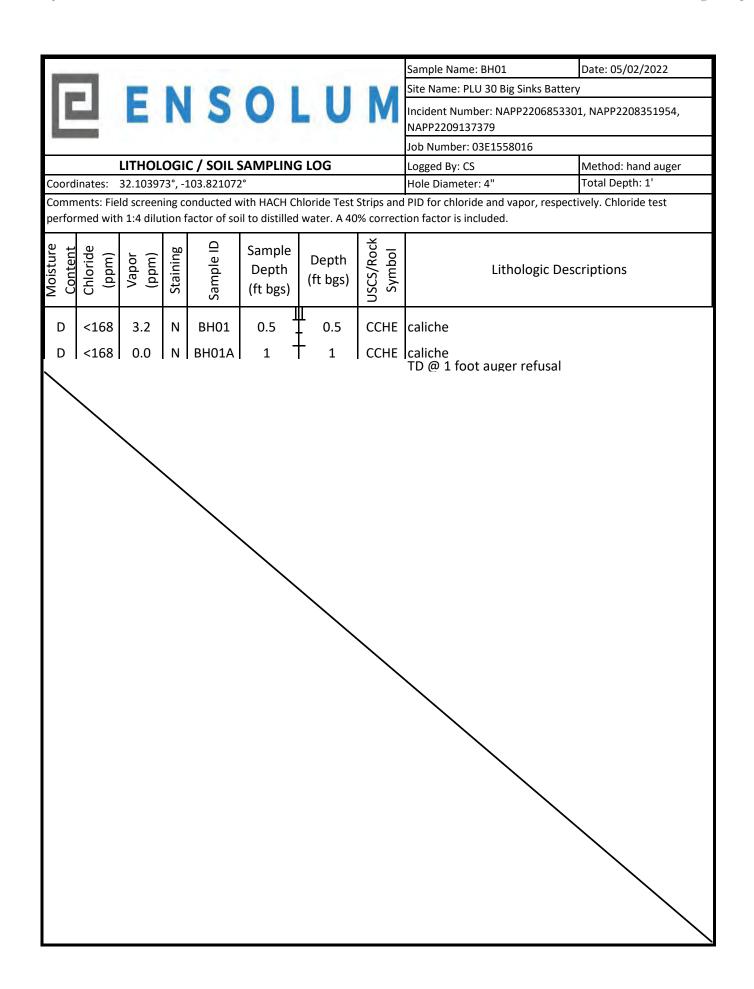


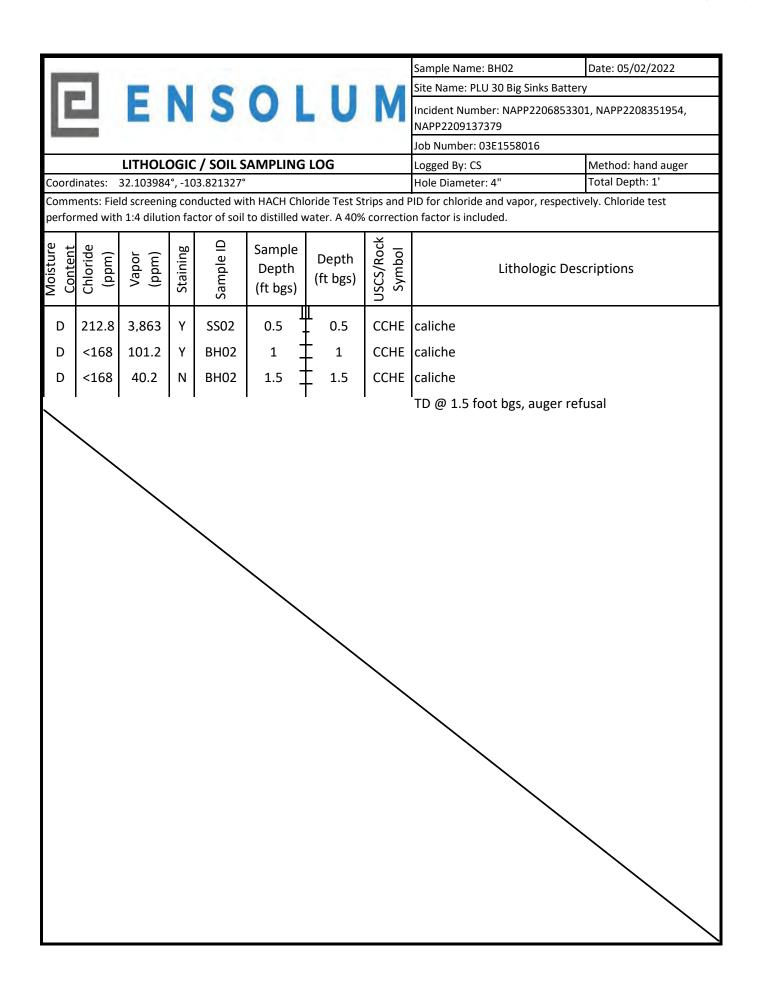
Description: View of hand shoveled excavation extent facing south.

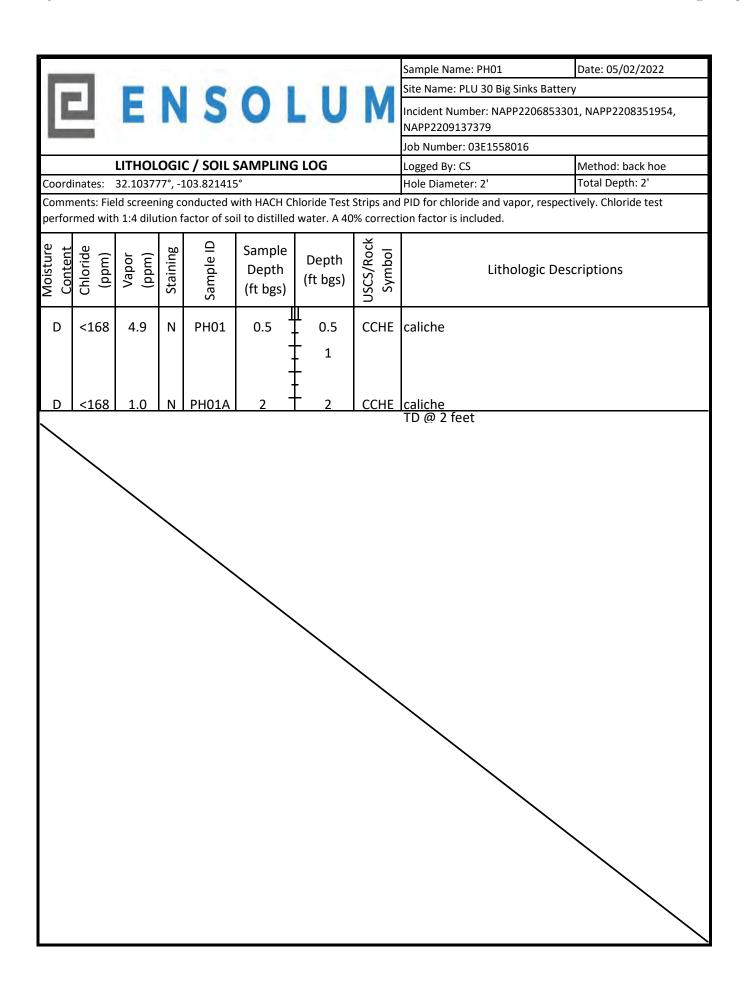


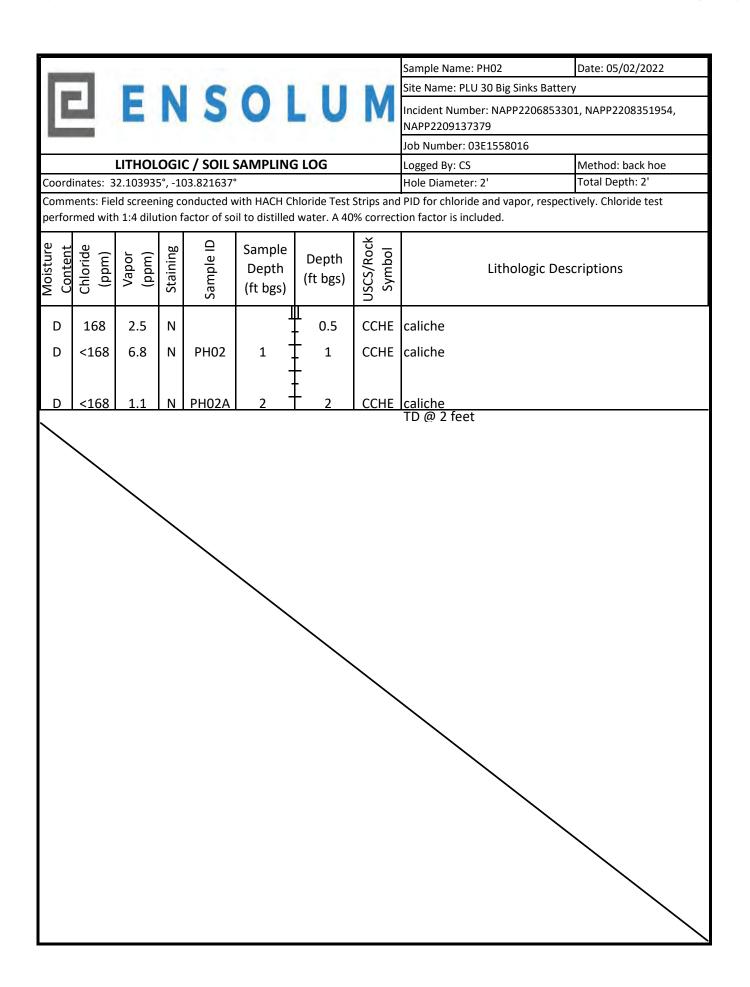
APPENDIX C

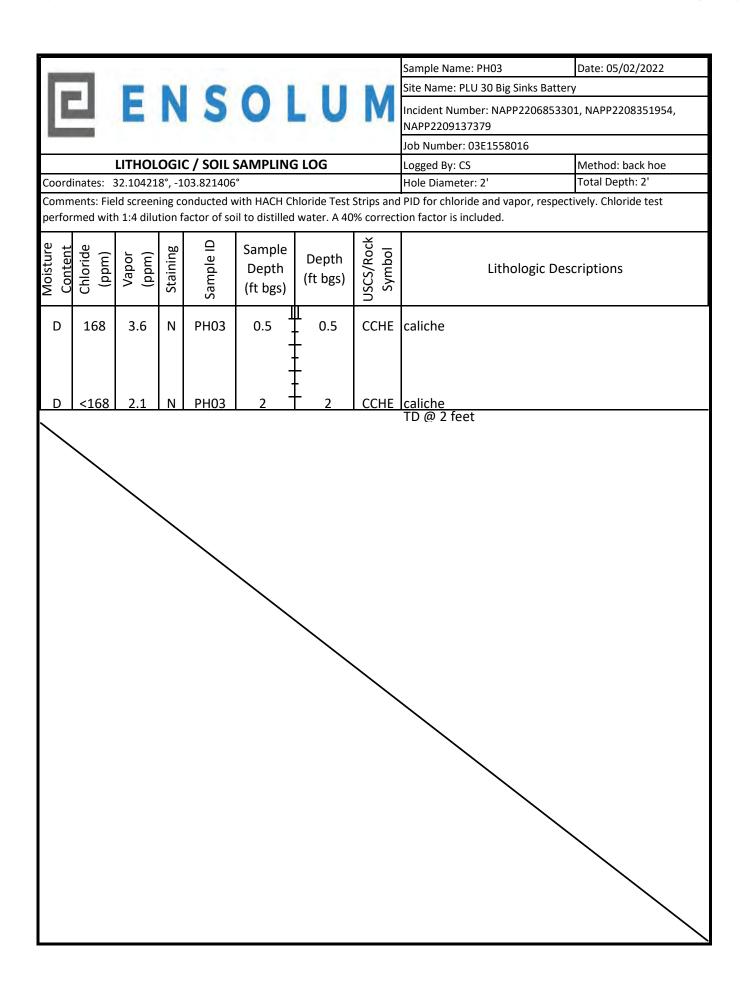
Lithologic Soil Sampling Logs













APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation



# **Environment Testing America**

## **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2195-1

Laboratory SDG: 03E1558019 03E1558020 03E1558022

Client Project/Site: PLU 30 BS

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Tacoma Morrissey

JURAMER

Authorized for release by: 4/22/2022 12:43:15 PM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

LINKS

Review your project results through

Have a Question?



Visit us at:

www.eurofinsus.com/Env

Released to Imaging: 7/15/2024 1:23:48 PM

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.

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13

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Client: Ensolum Project/Site: PLU 30 BS Laboratory Job ID: 890-2195-1 SDG: 03E1558019 03E1558020 03E1558022

# **Table of Contents**

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QC Sample Results	8
QC Association Summary	16
Lab Chronicle	19
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Method Summary	21
Sample Summary	22
Chain of Custody	23
Receipt Checklists	24

3

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40

11

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14

### **Definitions/Glossary**

Client: Ensolum Job ID: 890-2195-1 Project/Site: PLU 30 BS

SDG: 03E1558019 03E1558020 03E1558022

### **Qualifiers**

GC VOA	
Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

### **GC Semi VOA**

Qualifier	Qualifier Description
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**

RL

RPD

TEF

TEQ

TNTC

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)

**Eurofins Carlsbad** 

Reporting Limit or Requested Limit (Radiochemistry)

Toxicity Equivalent Factor (Dioxin)

Too Numerous To Count

Toxicity Equivalent Quotient (Dioxin)

Relative Percent Difference, a measure of the relative difference between two points

### **Case Narrative**

Client: Ensolum

Job ID: 890-2195-1 SDG: 03E1558019 03E1558020 03E1558022 Project/Site: PLU 30 BS

Job ID: 890-2195-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2195-1

### Receipt

The samples were received on 4/15/2022 3:41 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 3.2°C

### **GC VOA**

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-23784 and analytical batch 880-23768 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.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-23898 and analytical batch 880-23883 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: Surrogate recovery for the following sample was outside control limits: SS01 (890-2195-1). 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: SS02 (890-2195-2). 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 880-23782 and analytical batch 880-23971 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.

Matrix: Solid

Lab Sample ID: 890-2195-1

### **Client Sample Results**

Client: Ensolum Job ID: 890-2195-1 Project/Site: PLU 30 BS SDG: 03E1558019 03E1558020 03E1558022

**Client Sample ID: SS01** 

Date Collected: 04/15/22 11:00 Date Received: 04/15/22 15:41

Sample Depth: 0.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0398	U F1	0.0398	mg/Kg		04/19/22 13:14	04/20/22 01:04	20
Toluene	4.47	F1	0.0398	mg/Kg		04/19/22 13:14	04/20/22 01:04	20
Ethylbenzene	2.36	F1	0.0398	mg/Kg		04/19/22 13:14	04/20/22 01:04	20
m-Xylene & p-Xylene	149		1.98	mg/Kg		04/21/22 09:32	04/21/22 14:46	500
o-Xylene	1.87	F1	0.0398	mg/Kg		04/19/22 13:14	04/20/22 01:04	20
Xylenes, Total	183		1.98	mg/Kg		04/21/22 09:32	04/21/22 14:46	500
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	76		70 - 130			04/19/22 13:14	04/20/22 01:04	20
1,4-Difluorobenzene (Surr)	26	S1-	70 - 130			04/19/22 13:14	04/20/22 01:04	20
Method: Total BTEX - Total BTEX	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	158		1.98	mg/Kg			04/20/22 11:37	•
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	15800		250	mg/Kg			04/20/22 15:20	1
Method: 8015B NM - Diesel Rang	je Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	4620		250	mg/Kg		04/19/22 10:31	04/20/22 07:29	Ę
Diesel Range Organics (Over C10-C28)	11200		250	mg/Kg		04/19/22 10:31	04/20/22 07:29	
OII Range Organics (Over C28-C36)	<250	U	250	mg/Kg		04/19/22 10:31	04/20/22 07:29	;
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	231	S1+	70 - 130			04/19/22 10:31	04/20/22 07:29	
o-Terphenyl	96		70 - 130			04/19/22 10:31	04/20/22 07:29	
Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

**Client Sample ID: SS02** Lab Sample ID: 890-2195-2 Matrix: Solid

103

5.00

mg/Kg

Date Collected: 04/15/22 11:05 Date Received: 04/15/22 15:41

Sample Depth: 0.5

Chloride

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0402	U	0.0402	mg/Kg		04/19/22 13:14	04/20/22 01:24	20
Toluene	3.39		0.0402	mg/Kg		04/19/22 13:14	04/20/22 01:24	20
Ethylbenzene	3.17		0.0402	mg/Kg		04/19/22 13:14	04/20/22 01:24	20
m-Xylene & p-Xylene	124		1.98	mg/Kg		04/21/22 09:32	04/21/22 15:07	500
o-Xylene	26.9		0.199	mg/Kg		04/20/22 10:15	04/20/22 19:14	100
Xylenes, Total	151		1.98	mg/Kg		04/21/22 09:32	04/21/22 15:07	500
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 130			04/19/22 13:14	04/20/22 01:24	20

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04/22/22 01:41

### **Client Sample Results**

Job ID: 890-2195-1 Client: Ensolum Project/Site: PLU 30 BS

SDG: 03E1558019 03E1558020 03E1558022

**Client Sample ID: SS02** Date Collected: 04/15/22 11:05 Lab Sample ID: 890-2195-2

Date Received: 04/15/22 15:41

Matrix: Solid

Sample Depth: 0.5

Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	2	S1-	70 - 130			04/19/22 13:14	04/20/22 01:24	20
Method: Total BTEX - Total BTEX	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	157		1.98	mg/Kg			04/20/22 11:37	1
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	9880		49.9	mg/Kg			04/20/22 15:20	1
Method: 8015B NM - Diesel Rang	e Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics GRO)-C6-C10	2060		49.9	mg/Kg		04/19/22 10:31	04/20/22 03:40	1
Diesel Range Organics (Over C10-C28)	7820		49.9	mg/Kg		04/19/22 10:31	04/20/22 03:40	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		04/19/22 10:31	04/20/22 03:40	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
I-Chlorooctane	147	S1+	70 - 130			04/19/22 10:31	04/20/22 03:40	1
p-Terphenyl	141	S1+	70 - 130			04/19/22 10:31	04/20/22 03:40	1
Method: 300.0 - Anions, Ion Chro	matography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

### **Surrogate Summary**

 Client: Ensolum
 Job ID: 890-2195-1

 Project/Site: PLU 30 BS
 SDG: 03E1558019 03E1558020 03E1558022

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
_ab Sample ID	Client Sample ID	(70-130)	(70-130)	
380-13843-A-3-F MS	Matrix Spike	100	107	
380-13843-A-3-G MSD	Matrix Spike Duplicate	94	104	
380-13935-A-1-G MS	Matrix Spike	99	85	
380-13935-A-1-H MSD	Matrix Spike Duplicate	103	99	
390-2195-1	SS01	76	26 S1-	
390-2195-1 MS	SS01	24 S1-	11 S1-	
390-2195-1 MSD	SS01	25 S1-	2 S1-	
390-2195-2	SS02	94	2 S1-	
_CS 880-23784/1-A	Lab Control Sample	95	103	
CS 880-23824/1-A	Lab Control Sample	102	108	
_CS 880-23898/1-A	Lab Control Sample	100	101	
_CSD 880-23784/2-A	Lab Control Sample Dup	94	103	
_CSD 880-23824/2-A	Lab Control Sample Dup	97	106	
_CSD 880-23898/2-A	Lab Control Sample Dup	100	101	
MB 880-23779/5-A	Method Blank	97	102	
MB 880-23784/5-A	Method Blank	96	102	
MB 880-23824/5-A	Method Blank	96	103	
MB 880-23898/5-A	Method Blank	101	97	
Surrogate Legend				

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1001	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-13850-A-21-B MS	Matrix Spike	82	90	
880-13850-A-21-C MSD	Matrix Spike Duplicate	77	81	
890-2195-1	SS01	231 S1+	96	
890-2195-2	SS02	147 S1+	141 S1+	
Surrogate Legend				
1CO = 1-Chlorooctane				
OTPH = o-Terphenyl				

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1CO2	OTPH2	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
LCS 880-23780/2-A	Lab Control Sample	92	108	
LCSD 880-23780/3-A	Lab Control Sample Dup	100	116	
MB 880-23780/1-A	Method Blank	98	120	
Surrogate Legend				
1CO = 1-Chlorooctane				
OTPH = o-Terphenyl				

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Client: Ensolum Job ID: 890-2195-1 Project/Site: PLU 30 BS

SDG: 03E1558019 03E1558020 03E1558022

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

Lab Sample ID: MB 880-23779/5-A

**Matrix: Solid** 

Analysis Batch: 23768

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

Prep Batch: 23779

	MB	MR						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		04/19/22 10:22	04/19/22 12:24	1
Toluene	<0.00200	U	0.00200	mg/Kg		04/19/22 10:22	04/19/22 12:24	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		04/19/22 10:22	04/19/22 12:24	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		04/19/22 10:22	04/19/22 12:24	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		04/19/22 10:22	04/19/22 12:24	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		04/19/22 10:22	04/19/22 12:24	1
	MP	MD						

MB MB

MD MD

Sui	rrogate	6Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-B	Promofluorobenzene (Surr)	97	70 - 130	04/19/22 10:22	04/19/22 12:24	1
1,4	-Difluorobenzene (Surr)	102	70 - 130	04/19/22 10:22	04/19/22 12:24	1

Lab Sample ID: MB 880-23784/5-A

**Matrix: Solid** 

Analysis Batch: 23768

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

Prep Batch: 23784

MB MB

Analyte	Result (	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		04/19/22 13:14	04/20/22 00:35	1
Toluene	<0.00200 U	U	0.00200	mg/Kg		04/19/22 13:14	04/20/22 00:35	1
Ethylbenzene	<0.00200 U	U	0.00200	mg/Kg		04/19/22 13:14	04/20/22 00:35	1
m-Xylene & p-Xylene	<0.00400 \	U	0.00400	mg/Kg		04/19/22 13:14	04/20/22 00:35	1
o-Xylene	<0.00200 U	U	0.00200	mg/Kg		04/19/22 13:14	04/20/22 00:35	1
Xylenes, Total	<0.00400 U	U	0.00400	mg/Kg		04/19/22 13:14	04/20/22 00:35	1

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Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96	70 - 130	04/19/22 13:14	04/20/22 00:35	1
1,4-Difluorobenzene (Surr)	102	70 - 130	04/19/22 13:14	04/20/22 00:35	1

Lab Sample ID: LCS 880-23784/1-A

**Matrix: Solid** 

**Analysis Batch: 23768** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA Prep Batch: 23784

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1185		mg/Kg		118	70 - 130	
Toluene	0.100	0.1239		mg/Kg		124	70 - 130	
Ethylbenzene	0.100	0.1119		mg/Kg		112	70 - 130	
m-Xylene & p-Xylene	0.200	0.2319		mg/Kg		116	70 - 130	
o-Xylene	0.100	0.1098		mg/Kg		110	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifie	er Limits
4-Bromofluorobenzene (Surr)	95	70 - 130
1.4-Difluorobenzene (Surr)	103	70 - 130

Lab Sample ID: LCSD 880-23784/2-A

Matrix: Solid

Analysis Batch: 23768

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
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Prep Batch: 23784

	Spike	LCSD LCSI	D			%Rec		RPD
Analyte	Added	Result Qual	ifier Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1199	mg/Kg		120	70 - 130	1	35

Client: Ensolum Job ID: 890-2195-1 Project/Site: PLU 30 BS

SDG: 03E1558019 03E1558020 03E1558022

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

Lab Sample ID: LCSD 880-23784/2-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid** Prep Type: Total/NA Analysis Batch: 23768 Prep Batch: 23784

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Toluene	0.100	0.1189		mg/Kg		119	70 - 130	4	35
Ethylbenzene	0.100	0.1069		mg/Kg		107	70 - 130	5	35
m-Xylene & p-Xylene	0.200	0.2204		mg/Kg		110	70 - 130	5	35
o-Xylene	0.100	0.1044		mg/Kg		104	70 - 130	5	35

LCSD LCSD %Recovery Qualifier Limits Surrogate 70 - 130 4-Bromofluorobenzene (Surr) 94 1,4-Difluorobenzene (Surr) 103 70 - 130

Lab Sample ID: 890-2195-1 MS **Client Sample ID: SS01 Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 23768 Prep Batch: 23784

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	<0.0398	U F1	0.100	<0.0401	U F1	mg/Kg		0	70 - 130
Toluene	4.47	F1	0.100	2.004	F1	mg/Kg		1777	70 - 130
Ethylbenzene	2.36	F1	0.100	1.189	F1	mg/Kg		1069	70 - 130
m-Xylene & p-Xylene	23.3	E	0.200	10.24	4	mg/Kg		4527	70 - 130
o-Xylene	1.87	F1	0.100	0.6170	F1	mg/Kg		522	70 - 130

MS MS %Recovery Qualifier Limits Surrogate 70 - 130 4-Bromofluorobenzene (Surr) 24 S1-1,4-Difluorobenzene (Surr) 11 S1-70 - 130

**Client Sample ID: SS01** Lab Sample ID: 890-2195-1 MSD Prep Type: Total/NA **Matrix: Solid** 

Prep Batch: 23784 **Analysis Batch: 23768** 

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.0398	U F1	0.0998	<0.0399	U F1	mg/Kg		0	70 - 130	NC	35
Toluene	4.47	F1	0.0998	2.017	F1	mg/Kg		1797	70 - 130	1	35
Ethylbenzene	2.36	F1	0.0998	1.198	F1	mg/Kg		1082	70 - 130	1	35
m-Xylene & p-Xylene	23.3	Е	0.200	10.10	4	mg/Kg		4476	70 - 130	1	35
o-Xylene	1.87	F1	0.0998	0.6504	F1	mg/Kg		558	70 - 130	5	35
	Benzene Toluene Ethylbenzene m-Xylene & p-Xylene	Analyte         Result           Benzene         <0.0398	Analyte         Result         Qualifier           Benzene         <0.0398	Analyte         Result         Qualifier         Added           Benzene         <0.0398	Analyte         Result Benzene         Qualifier          Added Added          Result Result            Tolluene         4.47 F1         0.0998         2.017           Ethylbenzene         2.36 F1         0.0998         1.198           m-Xylene & p-Xylene         23.3 E         0.200         10.10	Analyte         Result         Qualifier         Added         Result         Qualifier           Benzene         <0.0398	Analyte         Result         Qualifier         Added         Result         Qualifier         Unit           Benzene         <0.0398	Analyte         Result         Qualifier         Added         Result         Qualifier         Unit         D           Benzene         <0.0398	Analyte         Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec           Benzene         <0.0398	Analyte         Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec         Limits           Benzene         <0.0398	Analyte         Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec         Limits         RPD           Benzene         <0.0398

MSD MSD Surrogate I imits %Recovery Qualifier 4-Bromofluorobenzene (Surr) 70 - 130 25 S1-2 S1-70 - 130 1,4-Difluorobenzene (Surr)

Lab Sample ID: MB 880-23824/5-A Client Sample ID: Method Blank

**Matrix: Solid** Prep Type: Total/NA **Analysis Batch: 23822** Prep Batch: 23824 мв мв

Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac <0.00200 U 04/20/22 10:15 04/20/22 13:02 Benzene 0.00200 mg/Kg 04/20/22 13:02 Toluene <0.00200 U 0.00200 mg/Kg 04/20/22 10:15 Ethylbenzene <0.00200 U 0.00200 mg/Kg 04/20/22 10:15 04/20/22 13:02 <0.00400 U 0.00400 04/20/22 13:02 m-Xylene & p-Xylene mg/Kg 04/20/22 10:15

Client: Ensolum Job ID: 890-2195-1 Project/Site: PLU 30 BS

SDG: 03E1558019 03E1558020 03E1558022

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

Lab Sample ID: MB 880-23824/5-A **Matrix: Solid** 

Analysis Batch: 23822

Client Sample ID: Method Blank

**Prep Type: Total/NA** Prep Batch: 23824

IVID	IVID						
Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
<0.00200	U	0.00200	mg/Kg		04/20/22 10:15	04/20/22 13:02	1
<0.00400	U	0.00400	mg/Kg		04/20/22 10:15	04/20/22 13:02	1
	Result   <0.00200	Result   Qualifier	Result         Qualifier         RL           <0.00200	<0.00200 U 0.00200 mg/Kg	Result   Qualifier   RL   Unit   D	Result         Qualifier         RL         Unit         D         Prepared           <0.00200	Result         Qualifier         RL         Unit         D         Prepared         Analyzed           <0.00200

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	==				
Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96	70 - 130	04/20/22 10:15	04/20/22 13:02	1
1,4-Difluorobenzene (Surr)	103	70 - 130	04/20/22 10:15	04/20/22 13:02	1

**Client Sample ID: Lab Control Sample** 

Lab Sample ID: LCS 880-23824/1-A **Matrix: Solid** 

Lab Sample ID: LCSD 880-23824/2-A

Matrix: Solid

**Analysis Batch: 23822** 

Prep Type: Total/NA

Prep Batch: 23824

	Spike	LCS LCS				%Rec
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits
Benzene	0.100	0.1042	mg/Kg		104	70 - 130
Toluene	0.100	0.1178	mg/Kg		118	70 - 130
Ethylbenzene	0.100	0.1206	mg/Kg		121	70 - 130
m-Xylene & p-Xylene	0.200	0.2411	mg/Kg		121	70 - 130
o-Xylene	0.100	0.1174	mg/Kg		117	70 - 130

LCS LCS

Surrogate	%Recovery Qualifi	er Limits
4-Bromofluorobenzene (Surr)	102	70 - 130
1,4-Difluorobenzene (Surr)	108	70 - 130

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analysis Batch: 23822							Prep	Batch:	23824
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1277		mg/Kg		128	70 - 130	20	35
Toluene	0.100	0.1308	*+	mg/Kg		131	70 - 130	10	35
Ethylbenzene	0.100	0.1194		mg/Kg		119	70 - 130	1	35
m-Xylene & p-Xylene	0.200	0.2455		mg/Kg		123	70 - 130	2	35
o-Xylene	0.100	0.1150		mg/Kg		115	70 - 130	2	35

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	97	70 - 130
1.4-Difluorobenzene (Surr)	106	70 <sub>-</sub> 130

Client Sample ID: Matrix Spike Lab Sample ID: 880-13843-A-3-F MS

Matrix: Solid

Analysis Batch: 23822

Prep Type: Total/NA Prep Batch: 23824

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	0.0457	F1	0.0998	0.1336		mg/Kg		88	70 - 130
Toluene	0.214	*+ F1 F2	0.0998	0.1427	F1	mg/Kg		-72	70 - 130
Ethylbenzene	0.0551		0.0998	0.1311		mg/Kg		76	70 - 130
m-Xylene & p-Xylene	0.151	F1	0.200	0.2704	F1	mg/Kg		60	70 - 130
o-Xylene	0.0492		0.0998	0.1263		mg/Kg		77	70 - 130

Limits

70 - 130

70 - 130

Client: Ensolum

Job ID: 890-2195-1

SDG: 03E1558019 03E1558020 03E1558022

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

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Lab Sample ID: 880-13843-A-3-F MS

**Matrix: Solid** 

**Analysis Batch: 23822** 

Project/Site: PLU 30 BS

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 23824

MS MS Surrogate %Recovery Qualifier 4-Bromofluorobenzene (Surr) 100

Lab Sample ID: 880-13843-A-3-G MSD

**Matrix: Solid** 

**Analysis Batch: 23822** 

1,4-Difluorobenzene (Surr)

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA

Prep Batch: 23824

_	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.0457	F1	0.0996	0.1898	F1	mg/Kg		145	70 - 130	35	35
Toluene	0.214	*+ F1 F2	0.0996	0.3655	F1 F2	mg/Kg		152	70 - 130	88	35
Ethylbenzene	0.0551		0.0996	0.1663		mg/Kg		112	70 - 130	24	35
m-Xylene & p-Xylene	0.151	F1	0.199	0.3680		mg/Kg		109	70 - 130	31	35
o-Xylene	0.0492		0.0996	0.1563		mg/Kg		108	70 - 130	21	35

MSD MSD

%Recovery Qualifier Limits Surrogate 4-Bromofluorobenzene (Surr) 94 70 - 130 70 - 130 1,4-Difluorobenzene (Surr) 104

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 23898

Lab Sample ID: MB 880-23898/5-A

**Matrix: Solid** 

**Analysis Batch: 23883** 

	мв	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		04/21/22 09:32	04/21/22 11:41	1
Toluene	<0.00200	U	0.00200	mg/Kg		04/21/22 09:32	04/21/22 11:41	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		04/21/22 09:32	04/21/22 11:41	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		04/21/22 09:32	04/21/22 11:41	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		04/21/22 09:32	04/21/22 11:41	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		04/21/22 09:32	04/21/22 11:41	1

мв мв

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130	04/21/22 09:32	04/21/22 11:41	1
1,4-Difluorobenzene (Surr)	97		70 - 130	04/21/22 09:32	04/21/22 11:41	1

Lab Sample ID: LCS 880-23898/1-A

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**Matrix: Solid** 

**Analysis Batch: 23883** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 23898

	<b>Spike</b>	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	0.100	0.1186		mg/Kg		119	70 - 130
Toluene	0.100	0.1257		mg/Kg		126	70 - 130
Ethylbenzene	0.100	0.1111		mg/Kg		111	70 - 130
m-Xylene & p-Xylene	0.200	0.2368		mg/Kg		118	70 - 130
o-Xylene	0.100	0.1103		mg/Kg		110	70 - 130

LCS LCS

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene (Surr) 70 - 130 100

Client: Ensolum

Job ID: 890-2195-1

SDG: 03E1558019 03E1558020 03E1558022

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

Lab Sample ID: LCS 880-23898/1-A

**Matrix: Solid** 

**Analysis Batch: 23883** 

Project/Site: PLU 30 BS

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 23898

LCS LCS

Limits Surrogate %Recovery Qualifier 1,4-Difluorobenzene (Surr) 101 70 - 130

Lab Sample ID: LCSD 880-23898/2-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid** 

**Analysis Batch: 23883** 

Prep Type: Total/NA

Prep Batch: 23898

	Spike	LCSD LCSD			%Rec		RPD
Analyte	Added	Result Qualifier	Unit	D %Rec	Limits	RPD	Limit
Benzene	0.100	0.1153	mg/Kg	115	70 - 130	3	35
Toluene	0.100	0.1219	mg/Kg	122	70 - 130	3	35
Ethylbenzene	0.100	0.1082	mg/Kg	108	70 - 130	3	35
m-Xylene & p-Xylene	0.200	0.2279	mg/Kg	114	70 - 130	4	35
o-Xylene	0.100	0.1087	mg/Kg	109	70 - 130	1	35
Toluene Ethylbenzene m-Xylene & p-Xylene	0.100 0.100 0.200	0.1219 0.1082 0.2279	mg/Kg mg/Kg mg/Kg	122 108 114	70 - 130 70 - 130 70 - 130	3	3 3

LCSD LCSD

Surrogate 4-Bromofluorobenzene (Surr)	%Recovery Q	ualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

Client Sample ID: Matrix Spike Lab Sample ID: 880-13935-A-1-G MS

**Matrix: Solid** 

**Analysis Batch: 23883** 

Prep Type: Total/NA Prep Batch: 23898

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	<0.00200	U F1 F2	0.100	0.01409	F1	mg/Kg		14	70 - 130
Toluene	<0.00200	U F1	0.100	0.01879	F1	mg/Kg		19	70 - 130
Ethylbenzene	<0.00200	U F1	0.100	0.01667	F1	mg/Kg		17	70 - 130
m-Xylene & p-Xylene	< 0.00399	U F1	0.200	0.03234	F1	mg/Kg		16	70 - 130
o-Xylene	<0.00200	U F1	0.100	0.01595	F1	mg/Kg		16	70 - 130

MS MS

Sample Sample

<0.00200 U F1 F2

<0.00200 UF1

<0.00200 UF1

<0.00399 UF1

<0.00200 UF1

Result Qualifier

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	99	70 - 130
1.4-Difluorobenzene (Surr)	85	70 - 130

Lab Sample ID: 880-13935-A-1-H MSD Client Sample ID: Matrix Spike Duplicate

Spike

Added

0.100

0.100

0.100

0.201

0.100

MSD MSD

0.02589 F1 F2

0.02168 F1

0.01789 F1

0.03600 F1

0.01774 F1

Result Qualifier

Unit

mg/Kg

mg/Kg

mg/Kg

mg/Kg

mg/Kg

**Matrix: Solid** 

Analyte

Benzene

Toluene

o-Xylene

Ethylbenzene

m-Xylene & p-Xylene

**Analysis Batch: 23883** 

Prep Type: Total/NA

18

18

Prep Batch: 23898 RPD %Rec

11

11

35

35

%Rec Limits **RPD** Limit 70 - 130 26 59 35 22 70 - 130 14 35 18 70 - 130 7 35

70 - 130

70 - 130

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

Client: Ensolum Job ID: 890-2195-1 Project/Site: PLU 30 BS

SDG: 03E1558019 03E1558020 03E1558022

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

Lab Sample ID: MB 880-23780/1-A

Lab Sample ID: LCS 880-23780/2-A

Lab Sample ID: LCSD 880-23780/3-A

**Matrix: Solid** 

**Matrix: Solid** 

**Matrix: Solid** 

Analysis Batch: 23761

Analysis Batch: 23761

Analysis Batch: 23761

Client Sam	ple	ID:	Metho	d	Blank
	_			_	

Prep Type: Total/NA

Prep Batch: 23780

	MB	MR						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		04/19/22 10:31	04/19/22 19:58	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		04/19/22 10:31	04/19/22 19:58	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		04/19/22 10:31	04/19/22 19:58	1

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	98	70 - 130	04/19/22 10:31	04/19/22 19:58	1
o-Terphenyl	120	70 - 130	04/19/22 10:31	04/19/22 19:58	1

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 23780

LCS LCS Spike Added Result Qualifier Analyte Unit %Rec Limits Gasoline Range Organics 1000 1036 104 70 - 130 mg/Kg (GRO)-C6-C10 1000 835.6 Diesel Range Organics (Over mg/Kg 84 70 - 130 C10-C28)

LCS LCS

Surrogate	%Recovery	Qualifier	Limits	
1-Chlorooctane	92		70 - 130	
o-Terphenyl	108		70 - 130	

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 23780

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	1000	1010		mg/Kg		101	70 - 130	2	20
(GRO)-C6-C10									
Diesel Range Organics (Over	1000	840.2		mg/Kg		84	70 - 130	1	20
C10-C28)									

LCSD LCSD

Surrogate	%Recovery Quality	fier Limits
1-Chlorooctane	100	70 - 130
o-Terphenyl	116	70 - 130

Lab Sample ID: 880-13850-A-21-B MS Client Sample ID: Matrix Spike

Ma

An

Matrix: Solid				Prep Type: Total/NA
nalysis Batch: 23761				Prep Batch: 23780
	Sample Sample	Spike	MS MS	%Rec

Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics	<49.9	U	1000	866.7		mg/Kg		84	70 - 130
(GRO)-C6-C10									
Diesel Range Organics (Over	<49.9	U	1000	812.9		mg/Kg		79	70 - 130
C10-C28)									

Project/Site: PLU 30 BS

Client: Ensolum

Job ID: 890-2195-1

SDG: 03E1558019 03E1558020 03E1558022

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

Lab Sample ID: 880-13850-A-21-B MS Client Sample ID: Matrix Spike

**Matrix: Solid** Analysis Batch: 23761

MS MS

Prep Type: Total/NA

Prep Batch: 23780

Surrogate %Recovery Qualifier Limits 1-Chlorooctane 82 70 - 130 o-Terphenyl 90 70 - 130

Lab Sample ID: 880-13850-A-21-C MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

Analysis Batch: 23761

Prep Type: Total/NA

Prep Batch: 23780 RPD

Sample Sample Spike MSD MSD %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit <49.9 U 998 802.0 70 - 1308 20 Gasoline Range Organics mg/Kg 78 (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 998 745.7 73 mg/Kg 70 - 1309 20

C10-C28)

A ...........

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	77		70 - 130
o-Terphenyl	81		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-23782/1-A Client Sample ID: Method Blank

**Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 23971

MB MB

Desuit Ouslities

Analyte	Result	Quaimer	KL	Unit	U	Prepared	Analyzeu	DII Fac
Chloride	<5.00	U	5.00	mg/Kg			04/21/22 23:59	1

Lab Sample ID: LCS 880-23782/2-A Client Sample ID: Lab Control Sample **Matrix: Solid** 

**Analysis Batch: 23971** 

	<b>Бріке</b>	LCS LCS				%Rec
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits
Chloride	250	233.1	mg/Kg		93	90 - 110

Lab Sample ID: LCSD 880-23782/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 23971** 

Spike LCSD LCSD %Rec Added Result Qualifier Analyte Unit %Rec Limits RPD Limit Chloride 250 247.0 90 - 110 mg/Kg

Lab Sample ID: 880-13850-A-21-E MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

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Analysis Batch: 23971

7 mary 5.6 Datom 2007	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Chloride	476	F1	252	759.6	F1	mg/Kg		113	90 - 110

**Eurofins Carlsbad** 

**Prep Type: Soluble** 

Dil Fac

RPD

**Prep Type: Soluble** 

Client: Ensolum Job ID: 890-2195-1 Project/Site: PLU 30 BS

SDG: 03E1558019 03E1558020 03E1558022

125

90 - 110

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-13850-A-21-F MSD Client Sample ID: Matrix Spike Duplicate **Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 23971

Chloride

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	476	F1	252	714.8		mg/Kg		95	90 - 110	6	20

Client Sample ID: Matrix Spike Lab Sample ID: 890-2196-A-1-D MS

**Matrix: Solid Prep Type: Soluble** 

10210 F1

mg/Kg

**Analysis Batch: 23971** 

Sample Sample Spike MS MS %Rec Result Qualifier Added Analyte Result Qualifier Unit %Rec Limits

2480

Lab Sample ID: 890-2196-A-1-D MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid Prep Type: Soluble** 

Analysis Batch: 23971 MSD MSD

7110 F1

%Rec RPD Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit Limits **RPD** Limit 7110 F1 2480 9834 90 - 110 20 Chloride mg/Kg 110

### **QC Association Summary**

Job ID: 890-2195-1 Client: Ensolum Project/Site: PLU 30 BS SDG: 03E1558019 03E1558020 03E1558022

### **GC VOA**

### Analysis Batch: 23768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Total/NA	Solid	8021B	23784
890-2195-2	SS02	Total/NA	Solid	8021B	23784
MB 880-23779/5-A	Method Blank	Total/NA	Solid	8021B	23779
MB 880-23784/5-A	Method Blank	Total/NA	Solid	8021B	23784
LCS 880-23784/1-A	Lab Control Sample	Total/NA	Solid	8021B	23784
LCSD 880-23784/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	23784
890-2195-1 MS	SS01	Total/NA	Solid	8021B	23784
890-2195-1 MSD	SS01	Total/NA	Solid	8021B	23784

### Prep Batch: 23779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-23779/5-A	Method Blank	Total/NA	Solid	5035	

### Prep Batch: 23784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Total/NA	Solid	5035	
890-2195-2	SS02	Total/NA	Solid	5035	
MB 880-23784/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-23784/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-23784/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2195-1 MS	SS01	Total/NA	Solid	5035	
890-2195-1 MSD	SS01	Total/NA	Solid	5035	

### Analysis Batch: 23822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-2	SS02	Total/NA	Solid	8021B	23824
MB 880-23824/5-A	Method Blank	Total/NA	Solid	8021B	23824
LCS 880-23824/1-A	Lab Control Sample	Total/NA	Solid	8021B	23824
LCSD 880-23824/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	23824
880-13843-A-3-F MS	Matrix Spike	Total/NA	Solid	8021B	23824
880-13843-A-3-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	23824

### Prep Batch: 23824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-2	SS02	Total/NA	Solid	5035	
MB 880-23824/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-23824/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-23824/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-13843-A-3-F MS	Matrix Spike	Total/NA	Solid	5035	
880-13843-A-3-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 23834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Total/NA	Solid	Total BTEX	
890-2195-2	SS02	Total/NA	Solid	Total BTEX	

Analysis Batch: 23883

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Total/NA	Solid	8021B	23898
890-2195-2	SS02	Total/NA	Solid	8021B	23898
MB 880-23898/5-A	Method Blank	Total/NA	Solid	8021B	23898

### **QC Association Summary**

Client: Ensolum Job ID: 890-2195-1 Project/Site: PLU 30 BS SDG: 03E1558019 03E1558020 03E1558022

**GC VOA (Continued)** 

### **Analysis Batch: 23883 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-23898/1-A	Lab Control Sample	Total/NA	Solid	8021B	23898
LCSD 880-23898/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	23898
880-13935-A-1-G MS	Matrix Spike	Total/NA	Solid	8021B	23898
880-13935-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	23898

Prep Batch: 23898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Total/NA	Solid	5035	
890-2195-2	SS02	Total/NA	Solid	5035	
MB 880-23898/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-23898/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-23898/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-13935-A-1-G MS	Matrix Spike	Total/NA	Solid	5035	
880-13935-A-1-H MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### **GC Semi VOA**

### Analysis Batch: 23761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Total/NA	Solid	8015B NM	23780
890-2195-2	SS02	Total/NA	Solid	8015B NM	23780
MB 880-23780/1-A	Method Blank	Total/NA	Solid	8015B NM	23780
LCS 880-23780/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	23780
LCSD 880-23780/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	23780
880-13850-A-21-B MS	Matrix Spike	Total/NA	Solid	8015B NM	23780
880-13850-A-21-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	23780

### Prep Batch: 23780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Total/NA	Solid	8015NM Prep	
890-2195-2	SS02	Total/NA	Solid	8015NM Prep	
MB 880-23780/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-23780/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-23780/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-13850-A-21-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-13850-A-21-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 23854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Total/NA	Solid	8015 NM	
890-2195-2	SS02	Total/NA	Solid	8015 NM	

### HPLC/IC

### Leach Batch: 23782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Soluble	Solid	DI Leach	
890-2195-2	SS02	Soluble	Solid	DI Leach	
MB 880-23782/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-23782/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-23782/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-13850-A-21-E MS	Matrix Spike	Soluble	Solid	DI Leach	

### **QC Association Summary**

Client: Ensolum Job ID: 890-2195-1 Project/Site: PLU 30 BS SDG: 03E1558019 03E1558020 03E1558022

### **HPLC/IC** (Continued)

Leach Batch: 23782 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13850-A-21-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-2196-A-1-D MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2196-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 23971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2195-1	SS01	Soluble	Solid	300.0	23782
890-2195-2	SS02	Soluble	Solid	300.0	23782
MB 880-23782/1-A	Method Blank	Soluble	Solid	300.0	23782
LCS 880-23782/2-A	Lab Control Sample	Soluble	Solid	300.0	23782
LCSD 880-23782/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	23782
880-13850-A-21-E MS	Matrix Spike	Soluble	Solid	300.0	23782
880-13850-A-21-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	23782
890-2196-A-1-D MS	Matrix Spike	Soluble	Solid	300.0	23782
890-2196-A-1-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	23782

### **Lab Chronicle**

Client: Ensolum Job ID: 890-2195-1 Project/Site: PLU 30 BS SDG: 03E1558019 03E1558020 03E1558022

**Client Sample ID: SS01** 

Lab Sample ID: 890-2195-1

Matrix: Solid

Date Collected: 04/15/22 11:00 Date Received: 04/15/22 15:41

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	23784	04/19/22 13:14	MR	XEN MID
Total/NA	Analysis	8021B		20			23768	04/20/22 01:04	MR	XEN MID
Total/NA	Prep	5035			5.04 g	5 mL	23898	04/21/22 09:32	MR	XEN MID
Total/NA	Analysis	8021B		500			23883	04/21/22 14:46	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			23834	04/20/22 11:37	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			23854	04/20/22 15:20	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	23780	04/19/22 10:31	DM	XEN MID
Total/NA	Analysis	8015B NM		5			23761	04/20/22 07:29	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	23782	04/19/22 11:57	CH	XEN MID
Soluble	Analysis	300.0		1			23971	04/22/22 01:41	CH	XEN MID

**Client Sample ID: SS02** Lab Sample ID: 890-2195-2

Date Collected: 04/15/22 11:05 Matrix: Solid

Date Received: 04/15/22 15:41

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	23784	04/19/22 13:14	MR	XEN MID
Total/NA	Analysis	8021B		20			23768	04/20/22 01:24	MR	XEN MID
Total/NA	Prep	5035			5.03 g	5 mL	23824	04/20/22 10:15	MR	XEN MID
Total/NA	Analysis	8021B		100			23822	04/20/22 19:14	AJ	XEN MID
Total/NA	Prep	5035			5.05 g	5 mL	23898	04/21/22 09:32	MR	XEN MID
Total/NA	Analysis	8021B		500			23883	04/21/22 15:07	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			23834	04/20/22 11:37	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			23854	04/20/22 15:20	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	23780	04/19/22 10:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			23761	04/20/22 03:40	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	23782	04/19/22 11:57	СН	XEN MID
Soluble	Analysis	300.0		1			23971	04/22/22 02:06	СН	XEN MID

Laboratory References:

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

### **Accreditation/Certification Summary**

Client: Ensolum Job ID: 890-2195-1 Project/Site: PLU 30 BS

SDG: 03E1558019 03E1558020 03E1558022

### **Laboratory: Eurofins Midland**

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

Authority	Pr	ogram	Identification Number	<b>Expiration Date</b>
Texas	NE	ELAP	T104704400-21-22	06-30-22
The following analytes	are included in this report by	it the laboratory is not certifi	ed by the governing authority. This list ma	v include analytes for
the agency does not of	•	it the laboratory to not contin	ed by the governing additionty. This list the	ay include analytes for
	•	Matrix	Analyte	ay include analytes for
the agency does not of	fer certification.	•		my moldde analytes for

### **Method Summary**

Client: Ensolum Job ID: 890-2195-1 SDG: 03E1558019 03E1558020 03E1558022 Project/Site: PLU 30 BS

XEN MID

ASTM

Method **Method Description** Protocol Laboratory 8021B Volatile Organic Compounds (GC) SW846 XEN MID **Total BTEX Calculation** TAL SOP XEN MID Total BTEX 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 SW846 XEN MID Closed System Purge and Trap 8015NM Prep Microextraction SW846 XEN MID

### **Protocol References:**

DI Leach

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

**Deionized Water Leaching Procedure** 

### Laboratory References:

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

**Eurofins Carlsbad** 

Released to Imaging: 7/15/2024 1:23:48 PM

### Sample Summary

Client: Ensolum

Project/Site: PLU 30 BS

Job ID: 890-2195-1

SDG: 03E1558019 03E1558020 03E1558022

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2195-1	SS01	Solid	04/15/22 11:00	04/15/22 15:41	0.5
890-2195-2	SS02	Solid	04/15/22 11:05	04/15/22 15:41	0.5

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# Chain of Custody

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		Environ Xenco	Environment Testing Xenco	sting	- m	l Paso, TX lobbs, NM	(432) 704 X (915) 58 (575) 392	5440, San 5-3443, Li 2-7550, Ca	Mdland, 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	(210) 509-33 06) 794-129 75) 988-319	2 2		Work	Work Order No:	No:	1 or 1
Project Manager:	Tacoma Morrissey	ssey			Bill to: (if different)	erent)	Adrian Baker	Baker					٧	/ork Ord	on lo	of .
	Ensolum LLC				Company Name:	ame:	XTOE	XTO Energy, Inc	2			Program: L	JST/PST	PRP B	rownfields .	Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
					Address:		3104 E	3104 E. Green Stree	street			State of Project:	oject:			P226
City, State ZIP:					City, State ZIP:	P.	Carlsb	Carlsbad, NM 88220	8220			Reporting:	evel II DL	wei III 🗆	PST/UST	Reporting: Level II   Level III   PST/UST   TRRP   Level IV
	337.257.8307			Email:		solum.co	mo					Deliverables: EDD	s: EDD		ADaPT	Other:
Project Name:	2	PLU 30 BS		Turn	Turn Around		- 6			ANALYS		S REQUEST	4		Pres	Preservative Codes
ň	03E1558016, 03E1558020, 03E1558022	E1558020.	03E1558022	☑ Routine	□ Rush	Code									None: NO	DI Water: H <sub>2</sub> O
	API: 30	API: 30-015-46934	934	Due Date:											Coot: Cool	of MeOH: Me
Sampler's Name:	Con	Conner Shore	Φ	TAT starts th	TAT starts the day received by	by					-	_	-	_	HCL: HC	HNO: HN
PO#:	300	CC: 2037891001	)1	the lab, if rec	the lab, if received by 4:30pm	11		-							H2SO4: H2	2 NaOH: Na
SAMPLE RECEIPT		Temp Blank:	Teg No	Wet los:	(Ye) No	nete	.0)								H₃PO4: HP	Ō
Samples Received Intact:			Thermometer ID:	ar ID: IN	100 m		300								NaHSO4: NABIS	NABIS
Cooler Custody Seals:	Yes	NO (N/A)	Correction Factor:	actor	2,0-	RVE	PA		ļ	8 =	3106.0	hair of Custon			Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>	NaSO <sub>3</sub>
Sample Custody Seals:	s: Yes No	*	Temperature Reading:	Reading:	1.	L	S (E			.09	0.51800	990-7190 Citation Common	4		Zn Acetat	Zn Acetate+NaOH: Zn
Total Containers:	-	1	Collected reinperature.	Time.	9	Gmb/ # of	ORID	(801) X (80				-				
Sample Identification	trication	машх	Sampled	Sampled	Ce	Comp Cont		-				F			00	Campia Comments
SS01		co.	4/15/2022	1100	0.5	9	×	×								
\$802	2	cs	4/15/2022	1105	0.5'	9 1	×	×				000				
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Total 200.7 / 6010 200.8 / 6020:	10 200.8 / 6020:	6020: be analyz		8RCRA 13PPM Texas 11 AI Sb As Ba Be B Cd Ca Cr Co Cu I	PLP 6010:	8 11 AI	Sb As	Ba Be	B Cd Ca	Cr Co C	Fe Pt	TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Mo Ni K	NIK Se Ag	Ag SiO Hg: 16	lg SiO₂ Na Sr Tl Sn U V Zi Hg: 1631 / 245.1 / 7470 / 7471	Sn U V Zn 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	ocument and relin	quishment o	of samples con	stitutes a valid	purchase order	from clien	t company	to Eurofins	Xenco, its aff	liates and sub	contractor	s. It assigns stan	dard terms an	conditions		
of service. Eurofins Xanco 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 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 Xanco, but not analyzed. The	o will be liable only mum charge of \$8	for the cos	t of samples ar applied to each	project and a c	ume any responsible for \$5 for	each samp	ole submitt	ed to Eurofi	es incurred by	Xenco, but not analyzed.	These terms will	se terms will be enforced unless previously negotiat	be enforced unless previously negotiated	usly negoti	ated.	
Relinquished by: (Signature)	(Signature)	5	Receive	Received by: (Signature)	sture)		Date/Time	Time	Relin	Relinquished by: (	y: (Signature)	ature)	Received by: (Signature)	by: (Sign	nature)	Date/Time
7			les C.			2	4.16.23	151	1)2							
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### **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2195-1

SDG Number: 03E1558019 03E1558020 03E1558022

Login Number: 2195 List Source: Eurofins Carlsbad

List Number: 1 Creator: Clifton, Cloe

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	

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### **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2195-1

SDG Number: 03E1558019 03E1558020 03E1558022

Login Number: 2195 **List Source: Eurofins Midland** List Number: 2 List Creation: 04/19/22 11:38 AM

Creator: Rodriguez, Leticia

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	N/A	

<6mm (1/4").



# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2267-1

Laboratory Sample Delivery Group: 03E1558016

Client Project/Site: PLU 30 Big Sinks CTB

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Kalei Jennings

LAMER

Authorized for release by: 5/13/2022 9:43:20 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

LINKS .....

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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: PLU 30 Big Sinks CTB
Laboratory Job ID: 890-2267-1
SDG: 03E1558016

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### **Definitions/Glossary**

Job ID: 890-2267-1 Client: Ensolum Project/Site: PLU 30 Big Sinks CTB

SDG: 03E1558016

### **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** 

LCS and/or LCSD is outside acceptance limits, high biased. \*1 LCS/LCSD RPD exceeds control limits.

Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier **Qualifier Description** 

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

DFR 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

Decision Level Concentration (Radiochemistry) DLC

**EDL** Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

EPA recommended "Maximum Contaminant Level" MCL MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

Method Detection Limit MDL 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

Toxicity Equivalent Factor (Dioxin) TEF Toxicity Equivalent Quotient (Dioxin) TEQ

**TNTC** Too Numerous To Count

### Case Narrative

Client: Ensolum

Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1

SDG: 03E1558016

Job ID: 890-2267-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2267-1

### Receipt

The samples were received on 5/3/2022 8:13 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 2.0°C

### **Receipt Exceptions**

One or more containers for the following samples were received broken or leaking: PH01 (890-2267-1), PH01A (890-2267-2), PH02 (890-2267-3), PH02A (890-2267-4), PH03 (890-2267-5), PH03A (890-2267-6), BH01 (890-2267-7), BH01A (890-2267-8), BH02 (890-2267-9) and BH02 (890-2267-10).

Sample jars #3 & #6 became broken while transporting into the cooler- we were able to save the samples and put in new jars

### GC VOA

Method 8021B: The matrix spike (MS) recoveries for preparation batch 880-25279 and analytical batch 880-25476 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.

### GC Semi VOA

Method 8015MOD NM: The laboratory control sample (LCS) associated with preparation batch 880-24835 and analytical batch 880-24860 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

Method 8015MOD\_NM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 880-24835 and analytical batch 880-24860 recovered outside control limits for the following analytes: <AffectedAnalytes>.

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**

Job ID: 890-2267-1 Client: Ensolum Project/Site: PLU 30 Big Sinks CTB SDG: 03E1558016

Client Sample ID: PH01

Date Received: 05/03/22 08:13

Sample Depth: 0.5'

Lab Sample ID: 890-2267-1 Date Collected: 05/02/22 10:40 Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC) Result Qualifier RL Unit D Prepared Analyzed Dil Fac Analyte 05/12/22 21:57 Benzene <0.00199 U 0.00199 mg/Kg 05/10/22 13:49 Toluene <0.00199 U 0.00199 mg/Kg 05/10/22 13:49 05/12/22 21:57 Ethylbenzene <0.00199 U 0.00199 05/10/22 13:49 05/12/22 21:57 mg/Kg m-Xylene & p-Xylene <0.00398 U 0.00398 05/10/22 13:49 05/12/22 21:57 mg/Kg o-Xylene <0.00199 U 0.00199 mg/Kg 05/10/22 13:49 05/12/22 21:57 Xylenes, Total <0.00398 U 0.00398 mg/Kg 05/10/22 13:49 05/12/22 21:57 Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 05/12/22 21:57 4-Bromofluorobenzene (Surr) 103 70 - 130 05/10/22 13:49 70 - 130 05/10/22 13:49 05/12/22 21:57 1,4-Difluorobenzene (Surr) 108 **Method: Total BTEX - Total BTEX Calculation** Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac Total BTEX <0.00398 U 0.00398 mg/Kg 05/13/22 10:27 Method: 8015 NM - Diesel Range Organics (DRO) (GC) Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac Total TPH 50.0 05/09/22 11:48 mg/Kg Method: 8015B NM - Diesel Range Organics (DRO) (GC) Result Qualifier RL Unit D Analyte Prepared Analyzed Dil Fac Gasoline Range Organics <50.0 U \*+ \*1 50.0 mg/Kg 05/04/22 15:21 05/05/22 12:01 (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U \*1 50.0 mg/Kg 05/04/22 15:21 05/05/22 12:01 C10-C28) 50.0 Oll Range Organics (Over C28-C36) <50.0 U 05/04/22 15:21 05/05/22 12:01 mg/Kg %Recovery Qualifier Limits Prepared Dil Fac Surrogate Analyzed 70 - 130 05/04/22 15:21 05/05/22 12:01 1-Chlorooctane 106 70 - 130 05/04/22 15:21 05/05/22 12:01 o-Terphenyl 104

85.9 Client Sample ID: PH01A

Result Qualifier

Date Collected: 05/02/22 13:40 Date Received: 05/03/22 08:13

Method: 300.0 - Anions, Ion Chromatography - Soluble

Sample Depth: 2'

Analyte

Chloride

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/12/22 22:18	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/12/22 22:18	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/12/22 22:18	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		05/10/22 13:49	05/12/22 22:18	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/12/22 22:18	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		05/10/22 13:49	05/12/22 22:18	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130			05/10/22 13:49	05/12/22 22:18	1

RL

5.00

Unit

mg/Kg

D

Prepared

**Eurofins Carlsbad** 

Dil Fac

Matrix: Solid

Analyzed

05/05/22 23:10

Lab Sample ID: 890-2267-2

Client: Ensolum Job ID: 890-2267-1

Project/Site: PLU 30 Big Sinks CTB SDG: 03E1558016

Client Sample ID: PH01A Lab Sample ID: 890-2267-2 Date Collected: 05/02/22 13:40

Matrix: Solid Date Received: 05/03/22 08:13 Sample Depth: 2'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	106		70 - 130	05/10/22 13:49	05/12/22 22:18	1

**Method: Total BTEX - Total BTEX Calculation** 

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			05/13/22 10:27	1

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

Analyte	•	Result	Qualifier	RL	. Unit	: D	Prepare	ed Analyzed	Dil Fac
Total TPH		<49.9	U	49.9		Kg		05/09/22 11:48	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *+ *1	49.9	mg/Kg		05/04/22 15:21	05/05/22 13:02	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9	mg/Kg		05/04/22 15:21	05/05/22 13:02	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/04/22 15:21	05/05/22 13:02	1

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	107	70 - 130	05/04/22 15:21	05/05/22 13:02	1
o-Terphenyl	109	70 - 130	05/04/22 15:21	05/05/22 13:02	1

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17.0	5.02	mg/Kg			05/05/22 23:38	1

**Client Sample ID: PH02** Lab Sample ID: 890-2267-3 **Matrix: Solid** 

Date Collected: 05/02/22 13:35 Date Received: 05/03/22 08:13

Sample Depth: 1'

Method: 8021B - V	olatile Organic	Compounds	(GC)
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Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		05/10/22 13:49	05/12/22 22:39	1
Toluene	<0.00199	U	0.00199	mg/Kg		05/10/22 13:49	05/12/22 22:39	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		05/10/22 13:49	05/12/22 22:39	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		05/10/22 13:49	05/12/22 22:39	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		05/10/22 13:49	05/12/22 22:39	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		05/10/22 13:49	05/12/22 22:39	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130			05/10/22 13:49	05/12/22 22:39	1
1,4-Difluorobenzene (Surr)	102		70 - 130			05/10/22 13:49	05/12/22 22:39	1

Method:	Total F	RTFY -	Total	RTFY	Calculation

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398 U	0.00398	ma/Ka			05/13/22 10:27	1

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

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0 U	50.0	mg/Kg			05/09/22 11:48	1

# **Client Sample Results**

Client: Ensolum Job ID: 890-2267-1 Project/Site: PLU 30 Big Sinks CTB SDG: 03E1558016

Client Sample ID: PH02

Sample Depth: 1'

Client Sample ID: PH02	Lab Sample ID: 890-2267-3
Pate Collected: 05/02/22 13:35	Matrix: Solid
Date Received: 05/03/22 08:13	

Method: 8015B NM - Diesel Rang	, ,	, , ,			_			D:: -
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0	U *+ *1	50.0	mg/Kg		05/04/22 15:21	05/05/22 13:23	•
(GRO)-C6-C10								
Diesel Range Organics (Over	<50.0	U *1	50.0	mg/Kg		05/04/22 15:21	05/05/22 13:23	•
C10-C28)								
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/04/22 15:21	05/05/22 13:23	,
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	98		70 - 130			05/04/22 15:21	05/05/22 13:23	
o-Terphenyl	102		70 - 130			05/04/22 15:21	05/05/22 13:23	:
Method: 300.0 - Anions, Ion Chro	matography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	76.4		4.99	mg/Kg			05/05/22 23:47	

Lab Sample ID: 890-2267-4 Client Sample ID: PH02A Date Collected: 05/02/22 13:40 Matrix: Solid

Date Received: 05/03/22 08:13

Sample Depth: 2'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/12/22 22:59	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/12/22 22:59	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/12/22 22:59	1
m-Xylene & p-Xylene	< 0.00399	U	0.00399	mg/Kg		05/10/22 13:49	05/12/22 22:59	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/12/22 22:59	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		05/10/22 13:49	05/12/22 22:59	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130			05/10/22 13:49	05/12/22 22:59	1
1,4-Difluorobenzene (Surr)	107		70 - 130			05/10/22 13:49	05/12/22 22:59	1
Method: Total BTEX - Total BTEX	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			05/13/22 10:27	1
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9	mg/Kg			05/09/22 11:48	1
Method: 8015B NM - Diesel Rang	e Organics (D	RO) (GC)						
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *+ *1	49.9	mg/Kg		05/04/22 15:21	05/05/22 13:43	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9	mg/Kg		05/04/22 15:21	05/05/22 13:43	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/04/22 15:21	05/05/22 13:43	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	99		70 - 130			05/04/22 15:21	05/05/22 13:43	1
o-Terphenyl	102		70 - 130			05/04/22 15:21	05/05/22 13:43	1

Lab Sample ID: 890-2267-4

# **Client Sample Results**

Client: Ensolum Job ID: 890-2267-1
Project/Site: PLU 30 Big Sinks CTB SDG: 03E1558016

Client Sample ID: PH02A

Date Collected: 05/02/22 13:40 Date Received: 05/03/22 08:13

Sample Depth: 2'

Method: 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac		
Chloride	52.1	4.96	mg/Kg			05/05/22 23:56	1		

Client Sample ID: PH03

Lab Sample ID: 890-2267-5

Date Collected: 05/02/22 10:30

Matrix: Solid

Date Collected: 05/02/22 10:30 Date Received: 05/03/22 08:13

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198	mg/Kg		05/10/22 13:49	05/13/22 00:23	1
Toluene	<0.00198	U	0.00198	mg/Kg		05/10/22 13:49	05/13/22 00:23	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		05/10/22 13:49	05/13/22 00:23	1
m-Xylene & p-Xylene	<0.00396	U	0.00396	mg/Kg		05/10/22 13:49	05/13/22 00:23	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		05/10/22 13:49	05/13/22 00:23	1
Xylenes, Total	<0.00396	U	0.00396	mg/Kg		05/10/22 13:49	05/13/22 00:23	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		70 - 130			05/10/22 13:49	05/13/22 00:23	1
1,4-Difluorobenzene (Surr)	103		70 - 130			05/10/22 13:49	05/13/22 00:23	1
Method: Total BTEX - Total BTEX	( Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396	mg/Kg			05/13/22 10:27	1
Method: 8015 NM - Diesel Range	•	, ,						
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			05/09/22 11:48	1
Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U *+ *1	50.0	mg/Kg		05/04/22 15:21	05/05/22 14:04	1
Diesel Range Organics (Over C10-C28)	<50.0	U *1	50.0	mg/Kg		05/04/22 15:21	05/05/22 14:04	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/04/22 15:21	05/05/22 14:04	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	97		70 - 130			05/04/22 15:21	05/05/22 14:04	1
o-Terphenyl	102		70 - 130			05/04/22 15:21	05/05/22 14:04	1
Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	36.9		5.03	mg/Kg			05/06/22 11:38	1

Lab Sample ID: 890-2267-6

# **Client Sample Results**

 Client: Ensolum
 Job ID: 890-2267-1

 Project/Site: PLU 30 Big Sinks CTB
 SDG: 03E1558016

Client Sample ID: PH03A

Date Collected: 05/02/22 14:35 Date Received: 05/03/22 08:13

Sample Depth: 2'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 00:44	
Toluene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 00:44	
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 00:44	
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		05/10/22 13:49	05/13/22 00:44	
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 00:44	
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		05/10/22 13:49	05/13/22 00:44	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	98		70 - 130			05/10/22 13:49	05/13/22 00:44	
1,4-Difluorobenzene (Surr)	105		70 - 130			05/10/22 13:49	05/13/22 00:44	
Method: Total BTEX - Total BTEX	X Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	<0.00401	U	0.00401	mg/Kg			05/13/22 10:27	-
Mother COAS NM Discal Danse	Organics (DB)	O) (GC)						
Method: 8015 NM - Diesel Range Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
•	•	Qualifier	<b>RL</b> 49.9	Unit mg/Kg	D	Prepared	<b>Analyzed</b> 05/09/22 11:48	
Analyte		Qualifier U			D	Prepared	<u>-</u>	
Analyte Total TPH	Result <49.9	Qualifier U			D	Prepared Prepared	<u>-</u>	
Analyte Total TPH  Method: 8015B NM - Diesel Rang	Result <49.9 ge Organics (DI Result	Qualifier U RO) (GC)	49.9	mg/Kg			05/09/22 11:48	Dil Fa
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result <49.9 ge Organics (DI Result	Qualifier U  RO) (GC) Qualifier U *+ *1	49.9 <b>RL</b>	mg/Kg <b>Unit</b>		Prepared	05/09/22 11:48  Analyzed	Dil Fa
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10	Result <49.9  ge Organics (Di Result <49.9	Qualifier U  RO) (GC) Qualifier U *+ *1 U *1	49.9 RL 49.9	mg/Kg  Unit  mg/Kg		Prepared 05/04/22 15:21	05/09/22 11:48  Analyzed  05/05/22 14:26	Dil Fa
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result <49.9  ge Organics (Di Result <49.9  <49.9	Qualifier U  RO) (GC) Qualifier U *+ *1 U *1	49.9 RL 49.9 49.9	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 05/04/22 15:21 05/04/22 15:21	05/09/22 11:48  Analyzed 05/05/22 14:26 05/05/22 14:26	Dil Fa
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result	Qualifier U  RO) (GC) Qualifier U *+ *1 U *1	49.9 RL 49.9 49.9 49.9	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 05/04/22 15:21 05/04/22 15:21	05/09/22 11:48  Analyzed 05/05/22 14:26 05/05/22 14:26	Dil Fa
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	Result <49.9  ge Organics (Di Result <49.9  <49.9  <49.9  %Recovery	Qualifier U  RO) (GC) Qualifier U *+ *1 U *1	49.9  RL 49.9  49.9  49.9  Limits	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 05/04/22 15:21 05/04/22 15:21 05/04/22 15:21 Prepared	Analyzed 05/05/22 14:26 05/05/22 14:26 05/05/22 14:26 Analyzed	Dil Fa
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	Result	Qualifier U  RO) (GC) Qualifier U *+ *1 U *1 U  Qualifier	49.9  RL 49.9  49.9  49.9  Limits 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 05/04/22 15:21 05/04/22 15:21 05/04/22 15:21  Prepared 05/04/22 15:21	05/09/22 11:48  Analyzed 05/05/22 14:26 05/05/22 14:26  Analyzed 05/05/22 14:26	Dil Fac
Analyte Total TPH  Method: 8015B NM - Diesel Rang Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	Result <49.9  ge Organics (D) Result <49.9 <49.9 <49.9  %Recovery 111 113  omatography -	Qualifier U  RO) (GC) Qualifier U *+ *1 U *1 U  Qualifier	49.9  RL 49.9  49.9  49.9  Limits 70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 05/04/22 15:21 05/04/22 15:21 05/04/22 15:21  Prepared 05/04/22 15:21	05/09/22 11:48  Analyzed 05/05/22 14:26 05/05/22 14:26  Analyzed 05/05/22 14:26	Dil Fac

Client Sample ID: BH01

Date Collected: 05/02/22 10:35

Lab Sample ID: 890-2267-7

Matrix: Solid

Date Collected: 05/02/22 10:35 Date Received: 05/03/22 08:13

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		05/10/22 13:49	05/13/22 01:05	1
Toluene	<0.00201	U	0.00201	mg/Kg		05/10/22 13:49	05/13/22 01:05	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		05/10/22 13:49	05/13/22 01:05	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		05/10/22 13:49	05/13/22 01:05	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		05/10/22 13:49	05/13/22 01:05	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		05/10/22 13:49	05/13/22 01:05	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130			05/10/22 13:49	05/13/22 01:05	1

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### **Client Sample Results**

Client: Ensolum Job ID: 890-2267-1 Project/Site: PLU 30 Big Sinks CTB SDG: 03E1558016

**Client Sample ID: BH01** Lab Sample ID: 890-2267-7 Date Collected: 05/02/22 10:35 Date Received: 05/03/22 08:13

Sample Depth: 0.5'

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

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	105	70 - 130	05/10/22 13:49	05/13/22 01:05	1

Method: Total	BTEX - Total	BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			05/13/22 10:27	1

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

Analyte	•	Result	Qualifier	RL	. Unit	: D	Prepare	ed Analyzed	Dil Fac
Total TPH		<49.9	U	49.9		Kg		05/09/22 11:48	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *+ *1	49.9	mg/Kg		05/04/22 15:21	05/05/22 14:47	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9	mg/Kg		05/04/22 15:21	05/05/22 14:47	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/04/22 15:21	05/05/22 14:47	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil
1-Chlorooctane	92		70 - 130	05/04/22 15:21	05/05/22 14:47	
o-Terphenyl	93		70 - 130	05/04/22 15:21	05/05/22 14:47	

#### Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	46.1	5.02	mg/Kg			05/06/22 00:42	1

Lab Sample ID: 890-2267-8 Client Sample ID: BH01A

Date Collected: 05/02/22 14:40 Date Received: 05/03/22 08:13

Sample Depth: 1'

Method: 8021B - '	Volatila	Organic	Compounds	(GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 01:26	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 01:26	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 01:26	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		05/10/22 13:49	05/13/22 01:26	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 01:26	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		05/10/22 13:49	05/13/22 01:26	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		70 - 130			05/10/22 13:49	05/13/22 01:26	1
1,4-Difluorobenzene (Surr)	100		70 - 130			05/10/22 13:49	05/13/22 01:26	1

#### **Method: Total BTEX - Total BTEX Calculation**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	< 0.00399	U	0.00399	mg/Kg			05/13/22 10:27	1

Analyte		Qualifier RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9 U	J 49.9	mg/Kg			05/09/22 11:48	1

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**Matrix: Solid** 

Lab Sample ID: 890-2267-8

# **Client Sample Results**

Client: Ensolum Job ID: 890-2267-1 Project/Site: PLU 30 Big Sinks CTB SDG: 03E1558016

Client Sample ID: BH01A

Date Collected: 05/02/22 14:40 Date Received: 05/03/22 08:13

Sample Depth: 1'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U *+ *1	49.9	mg/Kg		05/04/22 15:21	05/05/22 15:08	1
Diesel Range Organics (Over C10-C28)	<49.9	U *1	49.9	mg/Kg		05/04/22 15:21	05/05/22 15:08	1
Oll Range Organics (Over C28-C36)	<49.9	U	49.9	mg/Kg		05/04/22 15:21	05/05/22 15:08	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	94		70 - 130			05/04/22 15:21	05/05/22 15:08	1
o-Terphenyl	96		70 - 130			05/04/22 15:21	05/05/22 15:08	1
Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	Result							

**Client Sample ID: BH02** Lab Sample ID: 890-2267-9 Date Collected: 05/02/22 13:17 Matrix: Solid

Date Received: 05/03/22 08:13

Sample Depth: 1'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		05/10/22 13:49	05/13/22 01:46	1
Toluene	<0.00199	U	0.00199	mg/Kg		05/10/22 13:49	05/13/22 01:46	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		05/10/22 13:49	05/13/22 01:46	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		05/10/22 13:49	05/13/22 01:46	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		05/10/22 13:49	05/13/22 01:46	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		05/10/22 13:49	05/13/22 01:46	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130			05/10/22 13:49	05/13/22 01:46	1
1,4-Difluorobenzene (Surr)	106		70 - 130			05/10/22 13:49	05/13/22 01:46	1
Method: Total BTEX - Total BTEX	( Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
•						•		
Total BTEX	<0.00398	U	0.00398	mg/Kg		<u>.</u>	05/13/22 10:27	1
	<0.00398	U	0.00398	mg/Kg			05/13/22 10:27	1
	Organics (DR	O) (GC)	0.00398	mg/Kg			05/13/22 10:27	1
Total BTEX	Organics (DR		0.00398 <b>RL</b>	mg/Kg	D	Prepared	05/13/22 10:27  Analyzed	1 Dil Fac
Total BTEX  Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)			D	· · · · · · · · · · · · · · · · · · ·		
Total BTEX  Method: 8015 NM - Diesel Range Analyte	Organics (DR) Result	O) (GC) Qualifier	RL	Unit	D	· · · · · · · · · · · · · · · · · · ·	Analyzed	Dil Fac
Total BTEX  Method: 8015 NM - Diesel Range Analyte  Total TPH	e Organics (DR) Result 110 ge Organics (DI)	O) (GC) Qualifier	RL	Unit	D	· · · · · · · · · · · · · · · · · · ·	Analyzed	Dil Fac
Total BTEX  Method: 8015 NM - Diesel Range Analyte  Total TPH  Method: 8015B NM - Diesel Range	e Organics (DR) Result 110 ge Organics (DI) Result	O) (GC) Qualifier RO) (GC)	<b>RL</b> 50.0	<b>Unit</b> mg/Kg		Prepared	<b>Analyzed</b> 05/09/22 11:48	Dil Fac
Total BTEX  Method: 8015 NM - Diesel Range Analyte Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics	e Organics (DR) Result 110 ge Organics (DI) Result	Qualifier  RO) (GC) Qualifier  U *+ *1	RL 50.0	Unit mg/Kg Unit		Prepared Prepared	Analyzed 05/09/22 11:48 Analyzed	Dil Fac
Total BTEX  Method: 8015 NM - Diesel Range Analyte  Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	e Organics (DR) Result 110 ge Organics (DI) Result <50.0	Qualifier  RO) (GC) Qualifier  U *+ *1	RL 50.0 RL 50.0	Unit mg/Kg  Unit mg/Kg		Prepared  Prepared  05/04/22 15:21  05/04/22 15:21	Analyzed 05/09/22 11:48  Analyzed 05/05/22 15:29 05/05/22 15:29	Dil Fac  Dil Fac
Total BTEX  Method: 8015 NM - Diesel Range Analyte  Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	e Organics (DR) Result 110 ge Organics (DI) Result <50.0	Qualifier  RO) (GC) Qualifier  U*+*1	RL 50.0	Unit mg/Kg  Unit mg/Kg		Prepared  Prepared  05/04/22 15:21	Analyzed 05/09/22 11:48  Analyzed 05/05/22 15:29	Dil Fac  Dil Fac
Total BTEX  Method: 8015 NM - Diesel Range Analyte  Total TPH  Method: 8015B NM - Diesel Range Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	e Organics (DR) Result 110 ge Organics (DI) Result <50.0	Qualifier  RO) (GC) Qualifier  U*+*1  *1	RL 50.0 RL 50.0	Unit mg/Kg  Unit mg/Kg  mg/Kg		Prepared  Prepared  05/04/22 15:21  05/04/22 15:21	Analyzed 05/09/22 11:48  Analyzed 05/05/22 15:29 05/05/22 15:29	Dil Fac  Dil Fac  1
Total BTEX  Method: 8015 NM - Diesel Range Analyte  Total TPH  Method: 8015B NM - Diesel Range Analyte  Gasoline Range Organics (GRO)-C6-C10  Diesel Range Organics (Over C10-C28)  Oll Range Organics (Over C28-C36)	ge Organics (DR) Result  110  Ge Organics (DI) Result  <50.0  110  <50.0	Qualifier  RO) (GC) Qualifier  U*+*1  *1	RL 50.0 RL 50.0 50.0	Unit mg/Kg  Unit mg/Kg  mg/Kg		Prepared  05/04/22 15:21  05/04/22 15:21	Analyzed 05/09/22 11:48  Analyzed 05/05/22 15:29 05/05/22 15:29	Dil Fac  Dil Fac  1  1

Lab Sample ID: 890-2267-9

## **Client Sample Results**

 Client: Ensolum
 Job ID: 890-2267-1

 Project/Site: PLU 30 Big Sinks CTB
 SDG: 03E1558016

Client Sample ID: BH02

Date Collected: 05/02/22 13:17 Date Received: 05/03/22 08:13

Sample Depth: 1'

 Method: 300.0 - Anions, Ion Chromatography - Soluble

 Analyte
 Result
 Qualifier
 RL
 Unit
 D
 Prepared
 Analyzed
 Dil Fac

 Chloride
 15.4
 4.95
 mg/Kg
 05/06/22 01:00
 1

Client Sample ID: BH02

Lab Sample ID: 890-2267-10

Matrix: Solid

Date Collected: 05/02/22 14:00 Date Received: 05/03/22 08:13

Sample Depth: 1.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 02:07	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 02:07	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 02:07	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		05/10/22 13:49	05/13/22 02:07	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/13/22 02:07	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		05/10/22 13:49	05/13/22 02:07	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130			05/10/22 13:49	05/13/22 02:07	1
1,4-Difluorobenzene (Surr)	106		70 - 130			05/10/22 13:49	05/13/22 02:07	1

Total BTEX	<0.00399	U	0.00399	mg/Kg			05/13/22 10:27	1
Method: 8015 N	M - Diesel Range Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	489		49.9	mg/Kg			05/09/22 11:48	1
Method: 8015B	NM - Diesel Range Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Orga	anics <49.9	U *+ *1	49.9	mg/Kg		05/04/22 15:21	05/05/22 15:50	1
(GRO)-C6-C10								

o-Terphenyl	104	70 - 130		05/04/22 15:21	05/05/22 15:50	1
1-Chlorooctane	103	70 - 130		05/04/22 15:21	05/05/22 15:50	1
Surrogate	%Recovery Qualifier	Limits		Prepared	Analyzed	Dil Fac
C28-C36)						
C10-C28) Oll Range Organics (Over	60.9	49.9	mg/Kg	05/04/22 15:21	05/05/22 15:50	1
Diesel Range Organics (Over	428 *1	49.9	mg/Kg	05/04/22 15:21	05/05/22 15:50	1
(GRO)-C6-C10			99			

Method: 300.0 - Anions, Ion Chromatography - Soluble								
	Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Chloride	26.2	5.03	mg/Kg			05/06/22 01:10	1

# **Surrogate Summary**

 Client: Ensolum
 Job ID: 890-2267-1

 Project/Site: PLU 30 Big Sinks CTB
 SDG: 03E1558016

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)	
880-14390-A-4-E MS	Matrix Spike	114	98	
880-14390-A-4-F MSD	Matrix Spike Duplicate	92	106	
890-2267-1	PH01	103	108	
890-2267-2	PH01A	99	106	
890-2267-3	PH02	97	102	
890-2267-4	PH02A	96	107	
890-2267-5	PH03	90	103	
890-2267-6	PH03A	98	105	
890-2267-7	BH01	108	105	
890-2267-8	BH01A	110	100	
890-2267-9	BH02	107	106	
890-2267-10	BH02	101	106	
LCS 880-25279/1-A	Lab Control Sample	105	104	
LCSD 880-25279/2-A	Lab Control Sample Dup	105	102	
MB 880-25279/5-A	Method Blank	93	98	
Surrogate Legend				
BFB = 4-Bromofluorober	nzene (Surr)			

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

Matrix: Solid Prep Type: Total/NA

Matrix: Solid				Prep Type. Total/N/
				Percent Surrogate Recovery (Acceptance Limits)
		1001	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2267-1	PH01	106	104	
890-2267-1 MS	PH01	82	73	
890-2267-1 MSD	PH01	83	74	
890-2267-2	PH01A	107	109	
890-2267-3	PH02	98	102	
890-2267-4	PH02A	99	102	
390-2267-5	PH03	97	102	
890-2267-6	PH03A	111	113	
890-2267-7	BH01	92	93	
390-2267-8	BH01A	94	96	
890-2267-9	BH02	118	121	
390-2267-10	BH02	103	104	
_CS 880-24835/2-A	Lab Control Sample	121	119	
LCSD 880-24835/3-A	Lab Control Sample Dup	106	99	
MB 880-24835/1-A	Method Blank	116	126	
Surrogate Legend				
1CO = 1-Chlorooctane				
OTPH = o-Terphenyl				

## QC Sample Results

Client: Ensolum Job ID: 890-2267-1 Project/Site: PLU 30 Big Sinks CTB SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-25279/5-A

**Matrix: Solid** 

Analysis Batch: 25476

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 25279

	MB	MR						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/12/22 19:31	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/12/22 19:31	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/12/22 19:31	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		05/10/22 13:49	05/12/22 19:31	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/10/22 13:49	05/12/22 19:31	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		05/10/22 13:49	05/12/22 19:31	1

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93	70 - 130	05/10/22 13:49	05/12/22 19:31	1
1,4-Difluorobenzene (Surr)	98	70 - 130	05/10/22 13:49	05/12/22 19:31	1

Lab Sample ID: LCS 880-25279/1-A

**Matrix: Solid** 

Analysis Batch: 25476

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 25279

	<b>Бріке</b>	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09308		mg/Kg		93	70 - 130	
Toluene	0.100	0.09346		mg/Kg		93	70 - 130	
Ethylbenzene	0.100	0.1022		mg/Kg		102	70 - 130	
m-Xylene & p-Xylene	0.200	0.2154		mg/Kg		108	70 - 130	
o-Xylene	0.100	0.1053		mg/Kg		105	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	105	70 - 130
1,4-Difluorobenzene (Surr)	104	70 - 130

Lab Sample ID: LCSD 880-25279/2-A

**Matrix: Solid** 

**Analysis Batch: 25476** 

Prep Type: Total/NA

Prep Batch: 25279

LCSD LCSD RPD Spike %Rec Analyte Added Result Qualifier Unit %Rec Limits Limit Benzene 0.100 0.08522 mg/Kg 85 70 - 130 9 35 Toluene 0.100 0.08397 mg/Kg 84 70 - 130 11 35 Ethylbenzene 0.100 0.08828 mg/Kg 88 70 - 130 15 35 0.200 m-Xylene & p-Xylene 0.1875 mg/Kg 94 70 - 130 14 35 0.100 0.09295 70 - 130 12 o-Xylene mg/Kg 35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: 880-14390-A-4-E MS

**Matrix: Solid** 

Analysis Batch: 25476

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

Prep Batch: 25279

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	<0.00200	U F1	0.0998	0.06525	F1	mg/Kg		65	70 - 130
Toluene	<0.00200	U	0.0998	0.07114		mg/Kg		71	70 - 130

## QC Sample Results

Client: Ensolum Job ID: 890-2267-1 Project/Site: PLU 30 Big Sinks CTB SDG: 03E1558016

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

Lab Sample ID: 880-14390-A-4-E MS Client Sample ID: Matrix Spike

**Matrix: Solid** Prep Type: Total/NA Analysis Batch: 25476 Prep Batch: 25279 Snike MS MS Sample Sample

		•	•						70Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Ethylbenzene	<0.00200	U	0.0998	0.07910		mg/Kg		79	70 - 130
m-Xylene & p-Xylene	<0.00401	U	0.200	0.1707		mg/Kg		86	70 - 130
o-Xylene	<0.00200	U	0.0998	0.08545		mg/Kg		86	70 - 130
	Ethylbenzene m-Xylene & p-Xylene	Ethylbenzene <0.00200 m-Xylene & p-Xylene <0.00401	Ethylbenzene         <0.00200	Ethylbenzene         <0.00200         U         0.0998           m-Xylene & p-Xylene         <0.00401	Ethylbenzene         <0.00200         U         0.0998         0.07910           m-Xylene & p-Xylene         <0.00401	Ethylbenzene         <0.00200         U         0.0998         0.07910           m-Xylene & p-Xylene         <0.00401	Ethylbenzene         <0.00200         U         0.0998         0.07910         mg/Kg           m-Xylene & p-Xylene         <0.00401	Ethylbenzene         <0.00200         U         0.0998         0.07910         mg/Kg           m-Xylene & p-Xylene         <0.00401	Ethylbenzene         <0.00200         U         0.0998         0.07910         mg/Kg         79           m-Xylene & p-Xylene         <0.00401

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	114		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: 880-14390-A-4-F MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

Analysis Batch: 25476

Prep Batch: 25279 Sample Sample Spike MSD MSD Result Qualifier Added Result Qualifier RPD Limit Analyte Unit %Rec Limits Benzene <0.00200 UF1 0.0994 0.08395 mg/Kg 84 70 - 130 25 35 <0.00200 U 0.0994 0.07509 76 70 - 130 Toluene mg/Kg 5 35 Ethylbenzene <0.00200 U 0.0994 0.07445 75 70 - 130 6 35 mg/Kg <0.00401 U 0.199 0.1499 75 70 - 130 35 m-Xylene & p-Xylene mg/Kg 13 0.0994 <0.00200 U 0.07442 75 70 - 130 o-Xylene mg/Kg 14

MSD MSD

Surrogate	%Recovery Qualifie	er Limits
4-Bromofluorobenzene (Surr)	92	70 - 130
1,4-Difluorobenzene (Surr)	106	70 - 130

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

Lab

Mat

Ana

b Sample ID: MB 880-24835/1-A	Client Sample ID: Method Blank
trix: Solid	Prep Type: Total/NA
alysis Batch: 24860	Prep Batch: 24835
MB MB	

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0	U	50.0	mg/Kg		05/04/22 15:21	05/05/22 11:00	1
(GRO)-C6-C10								
Diesel Range Organics (Over	<50.0	U	50.0	mg/Kg		05/04/22 15:21	05/05/22 11:00	1
C10-C28)								
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/04/22 15:21	05/05/22 11:00	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	116		70 - 130	05/04/22 15:21	05/05/22 11:00	1
o-Terphenyl	126		70 - 130	05/04/22 15:21	05/05/22 11:00	1

Lab Sample ID: LCS 880-24835/2-A **Client Sample ID: Lab Control Sample** 

**Matrix: Solid** 

Prep Type: Total/NA Analysis Batch: 24860 Prep Batch: 24835

	Spike	LUS	LUS				70Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics	1000	1318	*+	mg/Kg		132	70 - 130
(GRO)-C6-C10							
Diesel Range Organics (Over	1000	1177		mg/Kg		118	70 - 130

C10-C28)

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Prep Type: Total/NA

Job ID: 890-2267-1

Client: Ensolum Project/Site: PLU 30 Big Sinks CTB SDG: 03E1558016

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

LCS LCS

%Recovery Qualifier

121

119

Lab Sample ID: LCS 880-24835/2-A Prep Type: Total/NA

Limits

70 - 130

70 - 130

**Matrix: Solid** 

Surrogate

o-Terphenyl

1-Chlorooctane

Analysis Batch: 24860

**Client Sample ID: Lab Control Sample** 

Prep Batch: 24835

Lab Sample ID: LCSD 880-24835/3-A

**Matrix: Solid** 

Analysis Batch: 24860

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 24835

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit 1000 1039 \*1 70 - 13020 Gasoline Range Organics mg/Kg 104 24 (GRO)-C6-C10 Diesel Range Organics (Over 1000 953.4 \*1 95 70 - 130 mg/Kg 21 20 C10-C28)

LCSD LCSD

Surrogate %Recovery Qualifier Limits 70 - 130 1-Chlorooctane 106 70 - 130 99 o-Terphenyl

Lab Sample ID: 890-2267-1 MS **Client Sample ID: PH01 Matrix: Solid** 

**Analysis Batch: 24860** 

Prep Type: Total/NA

Prep Batch: 24835

Sample Sample Spike MS MS Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits Gasoline Range Organics <50.0 U \*+ \*1 1000 971.4 mg/Kg 93 70 - 130 (GRO)-C6-C10 70 - 130 Diesel Range Organics (Over <50.0 U \*1 1000 754.1 mg/Kg 73

C10-C28)

MS MS

%Recovery Qualifier Limits Surrogate 70 - 130 1-Chlorooctane 82 o-Terphenyl 73 70 - 130

Lab Sample ID: 890-2267-1 MSD **Client Sample ID: PH01** 

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

Analysis Batch: 24860

Prep Batch: 24835

Sample Sample MSD MSD RPD Spike %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Gasoline Range Organics <50.0 U \*+ \*1 998 980.9 94 70 - 130 20 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U \*1 998 767.7 mg/Kg 75 70 - 130 20

C10-C28)

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	83		70 - 130
o-Terphenyl	74		70 - 130

**Prep Type: Soluble** 

## QC Sample Results

Client: Ensolum Job ID: 890-2267-1 Project/Site: PLU 30 Big Sinks CTB SDG: 03E1558016

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-24815/1-A Client Sample ID: Method Blank

**Matrix: Solid** 

**Analysis Batch: 24888** 

-	MB I	MB						
Analyte	Result (	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			05/05/22 22:43	1

Lab Sample ID: LCS 880-24815/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 24888** 

	Spike	LCS LCS				%Rec
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits
Chloride	250	254.6	mg/Kg		102	90 - 110

Lab Sample ID: LCSD 880-24815/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 24888** 

	Spike	LCSD LCSD				%Rec		RPD
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	250	252.2	mg/Kg		101	90 - 110	1	20

Lab Sample ID: 890-2267-1 MS Client Sample ID: PH01 **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 24888** 

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Chloride	85.9		250	332.8		mg/Kg		99	90 - 110

Lab Sample ID: 890-2267-1 MSD **Client Sample ID: PH01 Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 24888** 

	Sample Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result Qualifie	r Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	85.9	250	331.3		mg/Kg		98	90 - 110	0	20

# **QC Association Summary**

 Client: Ensolum
 Job ID: 890-2267-1

 Project/Site: PLU 30 Big Sinks CTB
 SDG: 03E1558016

**GC VOA** 

Prep Batch: 25279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2267-1	PH01	Total/NA	Solid	5035	
890-2267-2	PH01A	Total/NA	Solid	5035	
890-2267-3	PH02	Total/NA	Solid	5035	
890-2267-4	PH02A	Total/NA	Solid	5035	
890-2267-5	PH03	Total/NA	Solid	5035	
890-2267-6	PH03A	Total/NA	Solid	5035	
890-2267-7	BH01	Total/NA	Solid	5035	
890-2267-8	BH01A	Total/NA	Solid	5035	
890-2267-9	BH02	Total/NA	Solid	5035	
890-2267-10	BH02	Total/NA	Solid	5035	
MB 880-25279/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-25279/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-25279/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-14390-A-4-E MS	Matrix Spike	Total/NA	Solid	5035	
880-14390-A-4-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 25476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2267-1	PH01	Total/NA	Solid	8021B	25279
890-2267-2	PH01A	Total/NA	Solid	8021B	25279
890-2267-3	PH02	Total/NA	Solid	8021B	25279
890-2267-4	PH02A	Total/NA	Solid	8021B	25279
890-2267-5	PH03	Total/NA	Solid	8021B	25279
890-2267-6	PH03A	Total/NA	Solid	8021B	25279
890-2267-7	BH01	Total/NA	Solid	8021B	25279
890-2267-8	BH01A	Total/NA	Solid	8021B	25279
890-2267-9	BH02	Total/NA	Solid	8021B	25279
890-2267-10	BH02	Total/NA	Solid	8021B	25279
MB 880-25279/5-A	Method Blank	Total/NA	Solid	8021B	25279
LCS 880-25279/1-A	Lab Control Sample	Total/NA	Solid	8021B	25279
LCSD 880-25279/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	25279
880-14390-A-4-E MS	Matrix Spike	Total/NA	Solid	8021B	25279
880-14390-A-4-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	25279

Analysis Batch: 25522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2267-1	PH01	Total/NA	Solid	Total BTEX	
890-2267-2	PH01A	Total/NA	Solid	Total BTEX	
890-2267-3	PH02	Total/NA	Solid	Total BTEX	
890-2267-4	PH02A	Total/NA	Solid	Total BTEX	
890-2267-5	PH03	Total/NA	Solid	Total BTEX	
890-2267-6	PH03A	Total/NA	Solid	Total BTEX	
890-2267-7	BH01	Total/NA	Solid	Total BTEX	
890-2267-8	BH01A	Total/NA	Solid	Total BTEX	
890-2267-9	BH02	Total/NA	Solid	Total BTEX	
890-2267-10	BH02	Total/NA	Solid	Total BTEX	

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-5

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8

11

14

# **QC Association Summary**

Client: Ensolum

Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1

## SDG: 03E1558016

### GC Semi VOA

Prep Batch: 24835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
890-2267-1	PH01	Total/NA	Solid	8015NM Prep	
890-2267-2	PH01A	Total/NA	Solid	8015NM Prep	
890-2267-3	PH02	Total/NA	Solid	8015NM Prep	
890-2267-4	PH02A	Total/NA	Solid	8015NM Prep	
890-2267-5	PH03	Total/NA	Solid	8015NM Prep	
890-2267-6	PH03A	Total/NA	Solid	8015NM Prep	
890-2267-7	BH01	Total/NA	Solid	8015NM Prep	
890-2267-8	BH01A	Total/NA	Solid	8015NM Prep	
890-2267-9	BH02	Total/NA	Solid	8015NM Prep	
890-2267-10	BH02	Total/NA	Solid	8015NM Prep	
MB 880-24835/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-24835/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-24835/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2267-1 MS	PH01	Total/NA	Solid	8015NM Prep	
890-2267-1 MSD	PH01	Total/NA	Solid	8015NM Prep	

#### **Analysis Batch: 24860**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2267-1	PH01	Total/NA	Solid	8015B NM	24835
890-2267-2	PH01A	Total/NA	Solid	8015B NM	24835
890-2267-3	PH02	Total/NA	Solid	8015B NM	24835
890-2267-4	PH02A	Total/NA	Solid	8015B NM	24835
890-2267-5	PH03	Total/NA	Solid	8015B NM	24835
890-2267-6	PH03A	Total/NA	Solid	8015B NM	24835
890-2267-7	BH01	Total/NA	Solid	8015B NM	24835
890-2267-8	BH01A	Total/NA	Solid	8015B NM	24835
890-2267-9	BH02	Total/NA	Solid	8015B NM	24835
890-2267-10	BH02	Total/NA	Solid	8015B NM	24835
MB 880-24835/1-A	Method Blank	Total/NA	Solid	8015B NM	24835
LCS 880-24835/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	24835
LCSD 880-24835/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	24835
890-2267-1 MS	PH01	Total/NA	Solid	8015B NM	24835
890-2267-1 MSD	PH01	Total/NA	Solid	8015B NM	24835

#### Analysis Batch: 25086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
890-2267-1	PH01	Total/NA	Solid	8015 NM	
890-2267-2	PH01A	Total/NA	Solid	8015 NM	
890-2267-3	PH02	Total/NA	Solid	8015 NM	
890-2267-4	PH02A	Total/NA	Solid	8015 NM	
890-2267-5	PH03	Total/NA	Solid	8015 NM	
890-2267-6	PH03A	Total/NA	Solid	8015 NM	
890-2267-7	BH01	Total/NA	Solid	8015 NM	
890-2267-8	BH01A	Total/NA	Solid	8015 NM	
890-2267-9	BH02	Total/NA	Solid	8015 NM	
890-2267-10	BH02	Total/NA	Solid	8015 NM	

# **QC Association Summary**

Client: Ensolum Job ID: 890-2267-1 Project/Site: PLU 30 Big Sinks CTB

SDG: 03E1558016

### HPLC/IC

### Leach Batch: 24815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2267-1	PH01	Soluble	Solid	DI Leach	
890-2267-2	PH01A	Soluble	Solid	DI Leach	
890-2267-3	PH02	Soluble	Solid	DI Leach	
890-2267-4	PH02A	Soluble	Solid	DI Leach	
890-2267-5	PH03	Soluble	Solid	DI Leach	
890-2267-6	PH03A	Soluble	Solid	DI Leach	
890-2267-7	BH01	Soluble	Solid	DI Leach	
890-2267-8	BH01A	Soluble	Solid	DI Leach	
890-2267-9	BH02	Soluble	Solid	DI Leach	
890-2267-10	BH02	Soluble	Solid	DI Leach	
MB 880-24815/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-24815/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-24815/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2267-1 MS	PH01	Soluble	Solid	DI Leach	
890-2267-1 MSD	PH01	Soluble	Solid	DI Leach	

#### Analysis Batch: 24888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2267-1	PH01	Soluble	Solid	300.0	24815
890-2267-2	PH01A	Soluble	Solid	300.0	24815
890-2267-3	PH02	Soluble	Solid	300.0	24815
890-2267-4	PH02A	Soluble	Solid	300.0	24815
890-2267-5	PH03	Soluble	Solid	300.0	24815
890-2267-6	PH03A	Soluble	Solid	300.0	24815
890-2267-7	BH01	Soluble	Solid	300.0	24815
890-2267-8	BH01A	Soluble	Solid	300.0	24815
890-2267-9	BH02	Soluble	Solid	300.0	24815
890-2267-10	BH02	Soluble	Solid	300.0	24815
MB 880-24815/1-A	Method Blank	Soluble	Solid	300.0	24815
LCS 880-24815/2-A	Lab Control Sample	Soluble	Solid	300.0	24815
LCSD 880-24815/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	24815
890-2267-1 MS	PH01	Soluble	Solid	300.0	24815
890-2267-1 MSD	PH01	Soluble	Solid	300.0	24815

Client: Ensolum

Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1 SDG: 03E1558016

Client Sample ID: PH01

Date Collected: 05/02/22 10:40 Date Received: 05/03/22 08:13 Lab Sample ID: 890-2267-1

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/12/22 21:57	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25086	05/09/22 11:48	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	24835	05/04/22 15:21	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24860	05/05/22 12:01	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	24815	05/04/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			24888	05/05/22 23:10	CH	XEN MID

Client Sample ID: PH01A Lab S

Date Collected: 05/02/22 13:40 Date Received: 05/03/22 08:13 Lab Sample ID: 890-2267-2

Matrix: Solid

Dil Initial Final Batch Batch Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab Prep Total/NA 5035 5.01 g 5 mL 25279 05/10/22 13:49 MR XEN MID Total/NA 8021B 5 mL 05/12/22 22:18 XEN MID Analysis 1 5 mL 25476 MR Total/NA Total BTEX 25522 05/13/22 10:27 XEN MID Analysis 1 SM Total/NA Analysis 8015 NM 25086 05/09/22 11:48 XEN MID Total/NA 24835 XEN MID Prep 8015NM Prep 10.02 g 05/04/22 15:21 DM 10 mL Total/NA Analysis 8015B NM 24860 05/05/22 13:02 AJ XEN MID Soluble SC XEN MID Leach DI Leach 4.98 g 50 mL 24815 05/04/22 12:10 Soluble Analysis 300.0 24888 05/05/22 23:38 СН XEN MID

**Client Sample ID: PH02** 

Date Collected: 05/02/22 13:35 Date Received: 05/03/22 08:13 Lab Sample ID: 890-2267-3

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/12/22 22:39	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25086	05/09/22 11:48	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	24835	05/04/22 15:21	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24860	05/05/22 13:23	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	24815	05/04/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			24888	05/05/22 23:47	CH	XEN MID

Client Sample ID: PH02A

Date Collected: 05/02/22 13:40 Date Received: 05/03/22 08:13 **Lab Sample ID: 890-2267-4** 

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/12/22 22:59	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID

**Eurofins Carlsbad** 

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Client: Ensolum

Soluble

Project/Site: PLU 30 Big Sinks CTB

**Client Sample ID: PH02A** 

Date Collected: 05/02/22 13:40

Date Received: 05/03/22 08:13

Job ID: 890-2267-1 SDG: 03E1558016

Lab Sample ID: 890-2267-4

Matrix: Solid

Batch Batch Dil Initial Final Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA 8015 NM 25086 Analysis 05/09/22 11:48 XEN MID 1 AJ Total/NA Prep 8015NM Prep 10.03 g 10 mL 24835 05/04/22 15:21 DM XEN MID Total/NA Analysis 8015B NM 24860 05/05/22 13:43 ΑJ XEN MID 1 Soluble DI Leach 5.04 g 24815 05/04/22 12:10 SC XEN MID Leach 50 mL

1

Lab Sample ID: 890-2267-5

CH

05/05/22 23:56

24888

**Matrix: Solid** 

XEN MID

Date Collected: 05/02/22 10:30 Date Received: 05/03/22 08:13

**Client Sample ID: PH03** 

Analysis

300.0

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/13/22 00:23	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25086	05/09/22 11:48	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	24835	05/04/22 15:21	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24860	05/05/22 14:04	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	24815	05/04/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			24888	05/06/22 11:38	CH	XEN MID

Client Sample ID: PH03A

Date Collected: 05/02/22 14:35 Date Received: 05/03/22 08:13

Lab Sample ID: 890-2267-6 **Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/13/22 00:44	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25086	05/09/22 11:48	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	24835	05/04/22 15:21	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24860	05/05/22 14:26	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	24815	05/04/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			24888	05/06/22 11:47	CH	XEN MID

Client Sample ID: BH01

Date Collected: 05/02/22 10:35 Date Received: 05/03/22 08:13

Lab Sample I	ID: 890-2267-7
	Matrice Callel

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/13/22 01:05	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25086	05/09/22 11:48	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	24835	05/04/22 15:21	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24860	05/05/22 14:47	AJ	XEN MID

Client: Ensolum

Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1

SDG: 03E1558016

**Client Sample ID: BH01** 

Date Collected: 05/02/22 10:35 Date Received: 05/03/22 08:13

Lab Sample ID: 890-2267-7

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.98 g	50 mL	24815	05/04/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			24888	05/06/22 00:42	CH	XEN MID

Client Sample ID: BH01A Lab Sample ID: 890-2267-8 Matrix: Solid

Date Collected: 05/02/22 14:40 Date Received: 05/03/22 08:13

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/13/22 01:26	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25086	05/09/22 11:48	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	24835	05/04/22 15:21	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24860	05/05/22 15:08	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	24815	05/04/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			24888	05/06/22 00:51	CH	XEN MID

Lab Sample ID: 890-2267-9 **Client Sample ID: BH02** 

Date Collected: 05/02/22 13:17 Date Received: 05/03/22 08:13

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	25279	05/10/22 13:49	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25476	05/13/22 01:46	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25522	05/13/22 10:27	SM	XEN MID
Total/NA	Analysis	8015 NM		1			25086	05/09/22 11:48	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	24835	05/04/22 15:21	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24860	05/05/22 15:29	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	24815	05/04/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			24888	05/06/22 01:00	CH	XEN MID

Lab Sample ID: 890-2267-10 **Client Sample ID: BH02** 

Date Collected: 05/02/22 14:00 Date Received: 05/03/22 08:13

**Matrix: Solid** 

Batch Dil Initial Final Batch Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab 5035 25279 Total/NA Prep 5.01 g 5 mL 05/10/22 13:49 MR XEN MID Total/NA Analysis 8021B 1 5 mL 5 mL 25476 05/13/22 02:07 MR XEN MID Total/NA Total BTEX XEN MID Analysis 25522 05/13/22 10:27 SM 1 Total/NA Analysis 8015 NM 25086 05/09/22 11:48 AJ XEN MID Total/NA 8015NM Prep 24835 XEN MID Prep 10.02 g 10 mL 05/04/22 15:21 DM Total/NA Analysis 8015B NM 24860 05/05/22 15:50 AJ XEN MID Soluble 24815 DI Leach 50 mL SC XEN MID Leach 4.97 g 05/04/22 12:10 Soluble Analysis 300.0 24888 05/06/22 01:10 CH XEN MID

### **Lab Chronicle**

Client: Ensolum

Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1

SDG: 03E1558016

Laboratory References:

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

# **Accreditation/Certification Summary**

Client: Ensolum Job ID: 890-2267-1 Project/Site: PLU 30 Big Sinks CTB

SDG: 03E1558016

#### **Laboratory: Eurofins Midland**

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

Authority ēxas		ogram	Identification Number	Expiration Date 06-30-22	
		ELAP	T104704400-21-22		
The following analytes	are included in this report hi	it the laboratory is not cortifi	ied by the governing authority. This list ma	av include analytee for w	
the agency does not of	· '	it the laboratory is not certifi	led by the governing authority. This list his	ay include arialytes for wi	
0 ,	· '	Matrix	Analyte	ay include analytes for wi	
the agency does not of	fer certification.	•	, , ,	ay include analytes for wi	

## **Method Summary**

Client: Ensolum

Project/Site: PLU 30 Big Sinks CTB

Job ID: 890-2267-1

SDG: 03E1558016

Laboratory	
XEN MID	
XEN MID	
VENIMID	

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: PLU 30 Big Sinks CTB

Job ID: 890-2267-1

SDG: 03E1558016

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2267-1	PH01	Solid	05/02/22 10:40	05/03/22 08:13	0.5'
890-2267-2	PH01A	Solid	05/02/22 13:40	05/03/22 08:13	2'
890-2267-3	PH02	Solid	05/02/22 13:35	05/03/22 08:13	1'
890-2267-4	PH02A	Solid	05/02/22 13:40	05/03/22 08:13	2'
890-2267-5	PH03	Solid	05/02/22 10:30	05/03/22 08:13	0.5'
890-2267-6	PH03A	Solid	05/02/22 14:35	05/03/22 08:13	2'
890-2267-7	BH01	Solid	05/02/22 10:35	05/03/22 08:13	0.5'
890-2267-8	BH01A	Solid	05/02/22 14:40	05/03/22 08:13	1'
890-2267-9	BH02	Solid	05/02/22 13:17	05/03/22 08:13	1'
890-2267-10	BH02	Solid	05/02/22 14:00	05/03/22 08:13	1.5'

| iodice. Signature of this document and relinquishment of samples conditutes a valid purchase order from client company to Eurofine Xenco, its affiliates and subcontractors. It assigns standard items and conditions of services. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any fosses or expenses incurred by the client if such lisses are due to circumstances beyond the control                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Total 200.7 / 6010 200.8 / 6020: 8 ircle Method(s) and Metal(s) to be analyzed                                                                                                                                                                                                                                                                                     | 75 (5) (17) (17) (17) (17) (17) (17) (17) (17                                                                                                                                                                                                                                                                                                                                                                                       | 行(数)                                                                                                                                            | (5) HND (1) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1                                                                                                                                                                                                                 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NNKS CTB roject Location: D3 E 165 2016  mampler's Name: Connect Sh or Consider Custody Seals: Yes No NUA Temperatus Consider Custody Seals: Yes No NUA Temperatus Corrected Sample Identification Matrix Sampled PHOS PHOS PHOS PHOS PHOS PHOS PHOS PHOS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | roject Name: PL IA 30 316. NNKS (TR roject Location: ampler's Name: Canner Sh or Correction object Custody Seals: Yes No NA Temperatus Contal Containers: Yes No NA Temperatus Correction Sample Identification Matrix Sample Identification PH03 PH04 PH09 PH09 PH09 PH09 PH09 PH09 PH09 PH09                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Total 200.7 / 6010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Includers: Includer: Inclu | Address:  Addres | Company Name: ENSOLAN LLC. Address: Iann N. May Linklyd ST City, State ZIP. Iann N. May Linklyd ST Phone: Project Number: PL U 30 Big Sinks (TB Project Number: D3 E 165 3016 Project Number: D3 E 165 3016 Project Location: Sample Seals: Yes No Num Temperatus Confected Cooler Custody Seals: Yes No Num Temperatus Corrected Sample Custody Seals: Yes No Num Temperatus Correc |
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H;PO;#HP NaHSO;#NaSO; Zn Acetate+NaOH NaOH+Ascorbic Ac Sample Con                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | None: NO Cool: Cool HCL: HC H <sub>3</sub> SO <sub>4</sub> : H <sub>2</sub> H <sub>3</sub> PO <sub>4</sub> : HP NaHSO <sub>4</sub> : NABIS Na <sub>3</sub> S <sub>3</sub> O <sub>3</sub> : NASO <sub>3</sub> Zn Accetate+NaOH NaOH+Ascorbic Ac Sample Con                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Preservative None: NO Cool: Cool HCL: HC H; 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | PST/UST TRRP DAPT Other:  Preservative Co None: NO DI Cool: Cool Me HCL: HC H,50 a; HP NaHSO a; NABIS Na 5,5 0; NASO a Zn Accetate+NaOH: Zr NaOH+Ascorbic Acid Sample Comm Sample Comm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Brownfields RRC Superful  PST/UST TRRP Level IV  ADaPT Other:  Preservative Codes  None: NO DI Water: H  Cool: Cool MeOH: Me  HCL: HC HO 3: HN  H350 4: HP  NaHSO 4: NABIS  Na25 30 3: NASO 3  Zn Acetate+NaOH: Zn  NaOH+Ascorbic Acid: SAPC  Sample Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                             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## **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2267-1 SDG Number: 03E1558016

Login Number: 2267 List Source: Eurofins Carlsbad

List Number: 1 Creator: Clifton, Cloe

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: 890-2267-1

SDG Number: 03E1558016

Login Number: 2267
List Source: Eurofins Midland
List Number: 2
List Creation: 05/04/22 10:56 AM

Creator: Teel, Brianna

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

27

4

0

0

11

12

14



# **Environment Testing America**

# **ANALYTICAL REPORT**

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

Laboratory Job ID: 890-2274-1

Laboratory Sample Delivery Group: 03E1558016 Client Project/Site: PLU 30 BIG SINKS CTB

For:

Ensolum 705 W. Wadley Suite 210 Midland, Texas 79701

Attn: Kalei Jennings

LAMER

Authorized for release by: 5/11/2022 7:12:57 AM

Jessica Kramer, Project Manager (432)704-5440

Jessica.Kramer@et.eurofinsus.com

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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: PLU 30 BIG SINKS CTB
Laboratory Job ID: 890-2274-1
SDG: 03E1558016

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### **Definitions/Glossary**

Job ID: 890-2274-1 Client: Ensolum Project/Site: PLU 30 BIG SINKS CTB

SDG: 03E1558016

#### **Qualifiers**

**GC VOA** 

Qualifier **Qualifier Description** F1 MS and/or MSD recovery exceeds control limits. S1+ Surrogate recovery exceeds control limits, high biased. Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

Qualifier **Qualifier Description** S1+ Surrogate recovery exceeds control limits, high biased. Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier **Qualifier Description** 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

DFR 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

Decision Level Concentration (Radiochemistry) DLC

**EDL** Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

EPA recommended "Maximum Contaminant Level" MCL MDA Minimum Detectable Activity (Radiochemistry) MDC Minimum Detectable Concentration (Radiochemistry)

Method Detection Limit MDL 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

Toxicity Equivalent Factor (Dioxin) TEF Toxicity Equivalent Quotient (Dioxin) TEQ

**TNTC** Too Numerous To Count

**Eurofins Carlsbad** 

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#### **Case Narrative**

Client: Ensolum Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1

SDG: 03E1558016

Job ID: 890-2274-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-2274-1

#### Receipt

The samples were received on 5/3/2022 4:45 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 2.8°C

#### **GC VOA**

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-24964 and analytical batch 880-25052 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: Surrogate recovery for the following samples were outside control limits: FS01 (890-2274-1), FS02 (890-2274-2), FS03 (890-2274-3) and FS04 (890-2274-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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.

Lab Sample ID: 890-2274-1

Client: Ensolum Job ID: 890-2274-1 Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

**Client Sample ID: FS01** 

Date Collected: 05/03/22 11:00 Date Received: 05/03/22 16:45

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		05/06/22 11:22	05/09/22 01:57	1
Toluene	0.00868		0.00201	mg/Kg		05/06/22 11:22	05/09/22 01:57	1
Ethylbenzene	0.0141		0.00201	mg/Kg		05/06/22 11:22	05/09/22 01:57	1
m-Xylene & p-Xylene	0.197		0.00402	mg/Kg		05/06/22 11:22	05/09/22 01:57	1
o-Xylene	0.0796		0.00201	mg/Kg		05/06/22 11:22	05/09/22 01:57	1
Xylenes, Total	0.277		0.00402	mg/Kg		05/06/22 11:22	05/09/22 01:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130			05/06/22 11:22	05/09/22 01:57	1
1,4-Difluorobenzene (Surr)	88		70 - 130			05/06/22 11:22	05/09/22 01:57	1
Method: Total BTEX - Total BTEX (	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.299		0.00402	mg/Kg			05/09/22 15:24	1
Method: 8015 NM - Diesel Range C	Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	13300		250	mg/Kg			05/09/22 11:58	1
Method: 8015B NM - Diesel Range	Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	1290		250	mg/Kg		05/05/22 14:19	05/07/22 08:09	5
Diesel Range Organics (Over C10-C28)	10400		250	mg/Kg		05/05/22 14:19	05/07/22 08:09	5
Oll Range Organics (Over	1640		250	mg/Kg		05/05/22 14:19	05/07/22 08:09	5
C28-C36)								
	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac

Lab Sample ID: 890-2274-2 **Client Sample ID: FS02** 

RL

5.01

Unit

mg/Kg

70 - 130

121

394

Result Qualifier

Date Collected: 05/03/22 11:05 Date Received: 05/03/22 16:45

Method: 300.0 - Anions, Ion Chromatography - Soluble

Sample Depth: 0.5'

o-Terphenyl

Analyte

Chloride

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/06/22 11:22	05/09/22 02:17	1
Toluene	0.112		0.00200	mg/Kg		05/06/22 11:22	05/09/22 02:17	1
Ethylbenzene	0.0451		0.00200	mg/Kg		05/06/22 11:22	05/09/22 02:17	1
m-Xylene & p-Xylene	0.523		0.00400	mg/Kg		05/06/22 11:22	05/09/22 02:17	1
o-Xylene	0.164		0.00200	mg/Kg		05/06/22 11:22	05/09/22 02:17	1
Xylenes, Total	0.687		0.00400	mg/Kg		05/06/22 11:22	05/09/22 02:17	1

**Eurofins Carlsbad** 

05/05/22 14:19

Prepared

D

05/07/22 08:09

Analyzed

05/08/22 17:23

5

Dil Fac

**Matrix: Solid** 

Job ID: 890-2274-1 Client: Ensolum Project/Site: PLU 30 BIG SINKS CTB

**Client Sample ID: FS02** 

Date Collected: 05/03/22 11:05 Date Received: 05/03/22 16:45

Sample Depth: 0.5'

Lab Sample ID: 890-2274-2

Lab Sample ID: 890-2274-3

**Matrix: Solid** 

Matrix: Solid

SDG: 03E1558016

5
C

Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130			05/06/22 11:22	05/09/22 02:17	1
1,4-Difluorobenzene (Surr)	89		70 - 130			05/06/22 11:22	05/09/22 02:17	1
Method: Total BTEX - Total BT	EX Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.844		0.00400	mg/Kg			05/09/22 15:24	1
Method: 8015 NM - Diesel Ran	ge Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	10400		49.9	mg/Kg			05/09/22 11:58	1
Method: 8015B NM - Diesel Ra	nge Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	1180		49.9	mg/Kg		05/05/22 14:19	05/07/22 02:19	1
Diesel Range Organics (Over C10-C28)	7810		49.9	mg/Kg		05/05/22 14:19	05/07/22 02:19	1
Oll Range Organics (Over C28-C36)	1380		49.9	mg/Kg		05/05/22 14:19	05/07/22 02:19	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	142	S1+	70 - 130			05/05/22 14:19	05/07/22 02:19	1
o-Terphenyl	126		70 - 130			05/05/22 14:19	05/07/22 02:19	1
Method: 300.0 - Anions, Ion Cl	nromatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	141		5.00	mg/Kg			05/08/22 17:32	1

**Client Sample ID: FS03** 

Date Collected: 05/03/22 11:10 Date Received: 05/03/22 16:45

Sample Depth: 0.5'

**Total BTEX** 

Method: 8021B - Volatile Organic Compounds (GC) Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Benzene <0.00199 U 0.00199 05/06/22 11:22 05/09/22 02:38 mg/Kg Toluene 0.107 0.00199 mg/Kg 05/06/22 11:22 05/09/22 02:38 0.00199 mg/Kg 05/06/22 11:22 05/09/22 02:38 Ethylbenzene 0.192 1 05/09/22 11:01 05/10/22 02:23 m-Xylene & p-Xylene 35.7 0.200 mg/Kg 50 05/09/22 11:01 05/10/22 02:23 9.13 0.0998 mg/Kg 50 o-Xylene 0.200 05/09/22 11:01 05/10/22 02:23 50 **Xylenes, Total** 44.8 mg/Kg Limits Surrogate %Recovery Qualifier Prepared Dil Fac Analyzed 4-Bromofluorobenzene (Surr) 473 S1+ 70 - 130 05/06/22 11:22 05/09/22 02:38 1,4-Difluorobenzene (Surr) 78 70 - 130 05/06/22 11:22 05/09/22 02:38 **Method: Total BTEX - Total BTEX Calculation** Analyte Result Qualifier D RLUnit Prepared Analyzed Dil Fac

0.200

mg/Kg

45.1

**Eurofins Carlsbad** 

05/09/22 15:24

114

Client: Ensolum Job ID: 890-2274-1 Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

**Client Sample ID: FS03** 

Date Collected: 05/03/22 11:10 Date Received: 05/03/22 16:45

Sample Depth: 0.5'

Lab Sample ID: 890-2274-3

05/05/22 14:19

Matrix: Solid

05/07/22 08:29

Method: 8015 NM - Diesel Range Organics (DRO) (GC) Dil Fac Analyte Result Qualifier RL Unit D Analyzed Prepared 05/09/22 11:58 **Total TPH** 15500 249 mg/Kg

Method: 8015B NM - Diesel Range Organics (DRO) (GC) Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac 249 05/05/22 14:19 05/07/22 08:29 **Gasoline Range Organics** 2140 mg/Kg (GRO)-C6-C10 **Diesel Range Organics (Over** 249 mg/Kg 05/05/22 14:19 05/07/22 08:29 5 11500 C10-C28) **Oll Range Organics (Over** 1880 249 mg/Kg 05/05/22 14:19 05/07/22 08:29 C28-C36) %Recovery Qualifier Limits Prepared Analyzed Dil Fac Surrogate 1-Chlorooctane 70 - 130 05/05/22 14:19 148 S1+ 05/07/22 08:29 5

Method: 300.0 - Anions, Ion Chromatography - Soluble RL Unit D Analyte Result Qualifier Prepared Analyzed Dil Fac Chloride 723 4.97 mg/Kg 05/08/22 17:41

70 - 130

**Client Sample ID: FS04** Lab Sample ID: 890-2274-4 Matrix: Solid

Date Collected: 05/03/22 11:15

Date Received: 05/03/22 16:45

Sample Depth: 0.5'

o-Terphenyl

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/06/22 11:22	05/09/22 02:58	1
Toluene	0.0917		0.00200	mg/Kg		05/06/22 11:22	05/09/22 02:58	1
Ethylbenzene	0.0562		0.00200	mg/Kg		05/06/22 11:22	05/09/22 02:58	1
m-Xylene & p-Xylene	0.688		0.00401	mg/Kg		05/06/22 11:22	05/09/22 02:58	1
o-Xylene	0.251		0.00200	mg/Kg		05/06/22 11:22	05/09/22 02:58	1
Xylenes, Total	0.939		0.00401	mg/Kg		05/06/22 11:22	05/09/22 02:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	166	S1+	70 - 130			05/06/22 11:22	05/09/22 02:58	1
1,4-Difluorobenzene (Surr)	86		70 - 130			05/06/22 11:22	05/09/22 02:58	1
Method: Total BTEX - Total BT	EX Calculation	Qualifier		Unit	D			
Method: Total BTEX - Total BT Analyte	EX Calculation	Qualifier	RL 0.00401	<b>Unit</b> mg/Kg	D	Prepared	<b>Analyzed</b> 05/09/22 15:24	Dil Fac
Method: Total BTEX - Total BT Analyte Total BTEX Method: 8015 NM - Diesel Ran	EX Calculation Result 1.09 ge Organics (DR	O) (GC)	<b>RL</b> 0.00401	mg/Kg		Prepared	Analyzed 05/09/22 15:24	Dil Fac
Method: Total BTEX - Total BT Analyte Total BTEX Method: 8015 NM - Diesel Ran Analyte	EX Calculation Result 1.09 ge Organics (DR) Result		RL 0.00401 RL	mg/Kg <b>Unit</b>	D_		Analyzed 05/09/22 15:24 Analyzed	Dil Fac
Method: Total BTEX - Total BT Analyte Total BTEX Method: 8015 NM - Diesel Ran Analyte	EX Calculation Result 1.09 ge Organics (DR	O) (GC)	<b>RL</b> 0.00401	mg/Kg		Prepared	Analyzed 05/09/22 15:24	Dil Fac
Method: Total BTEX - Total BT Analyte Total BTEX  Method: 8015 NM - Diesel Ran Analyte Total TPH  Method: 8015B NM - Diesel Ra	EX Calculation Result 1.09 ge Organics (DR) Result 18800	O) (GC) Qualifier	RL 0.00401 RL	mg/Kg <b>Unit</b>		Prepared	Analyzed 05/09/22 15:24 Analyzed	Dil Fac
Method: Total BTEX - Total BT Analyte Total BTEX Method: 8015 NM - Diesel Ran Analyte Total TPH Method: 8015B NM - Diesel Ra	EX Calculation Result 1.09 ge Organics (DR) Result 18800 unge Organics (Di)	O) (GC) Qualifier	RL 0.00401 RL	mg/Kg <b>Unit</b>		Prepared	Analyzed 05/09/22 15:24 Analyzed	Dil Fac
Method: Total BTEX - Total BT Analyte Total BTEX  Method: 8015 NM - Diesel Ran Analyte Total TPH	EX Calculation Result 1.09 ge Organics (DR) Result 18800 unge Organics (Di)	O) (GC) Qualifier RO) (GC)	RL 0.00401	mg/Kg  Unit  mg/Kg	<u>D</u>	Prepared Prepared	Analyzed 05/09/22 15:24  Analyzed 05/09/22 11:58	Dil Fac

**Eurofins Carlsbad** 

5

**Matrix: Solid** 

Lab Sample ID: 890-2274-4

Lab Sample ID: 890-2274-5

# **Client Sample Results**

Client: Ensolum Job ID: 890-2274-1
Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

Client Sample ID: FS04

Date Collected: 05/03/22 11:15 Date Received: 05/03/22 16:45

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Oll Range Organics (Over C28-C36)	2330		250	mg/Kg		05/05/22 14:19	05/07/22 08:49	5
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	151	S1+	70 - 130			05/05/22 14:19	05/07/22 08:49	5
o-Terphenyl	248	S1+	70 - 130			05/05/22 14:19	05/07/22 08:49	5
Method: 300.0 - Anions, Ion C	hromatography -	Soluble						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	790		4.95	mg/Kg			05/08/22 17:50	1

Client Sample ID: FS05

Date Collected: 05/03/22 11:10

Date Received: 05/03/22 16:45

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	0.00362		0.00202	mg/Kg		05/06/22 11:22	05/09/22 03:19	
Toluene	0.200		0.00202	mg/Kg		05/06/22 11:22	05/09/22 03:19	
Ethylbenzene	0.0657		0.00202	mg/Kg		05/06/22 11:22	05/09/22 03:19	
m-Xylene & p-Xylene	0.800		0.00403	mg/Kg		05/06/22 11:22	05/09/22 03:19	
o-Xylene	0.277		0.00202	mg/Kg		05/06/22 11:22	05/09/22 03:19	
Xylenes, Total	1.08		0.00403	mg/Kg		05/06/22 11:22	05/09/22 03:19	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	125		70 - 130			05/06/22 11:22	05/09/22 03:19	
1,4-Difluorobenzene (Surr)	88		70 - 130			05/06/22 11:22	05/09/22 03:19	
Method: Total BTEX - Total BTEX	Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	1.35		0.00403	mg/Kg			05/09/22 15:24	
Method: 8015 NM - Diesel Range	•							
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	12900		250	mg/Kg			05/09/22 11:58	
Method: 8015B NM - Diesel Range	e Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics	496		250	mg/Kg		05/05/22 14:19	05/07/22 08:29	
(GRO)-C6-C10								
Diesel Range Organics (Over	12400		250	mg/Kg		05/05/22 14:19	05/07/22 08:29	
	<b>12400</b> <250	U	250 250	mg/Kg mg/Kg		05/05/22 14:19 05/05/22 14:19	05/07/22 08:29 05/07/22 08:29	
Diesel Range Organics (Over C10-C28)								Dil Fa
Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<250 %Recovery		250			05/05/22 14:19	05/07/22 08:29	Dil Fa
Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate	<250 %Recovery	Qualifier	250			05/05/22 14:19  Prepared	05/07/22 08:29  Analyzed	Dil Fa
Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate 1-Chlorooctane	<250 %Recovery 138 122	Qualifier S1+	250  Limits  70 - 130			05/05/22 14:19  Prepared  05/05/22 14:19	05/07/22 08:29  Analyzed  05/07/22 08:29	Dil Fa

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# **Client Sample Results**

Client: Ensolum Job ID: 890-2274-1 Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

Lab Sample ID: 890-2274-6

**Client Sample ID: FS06** Date Collected: 05/03/22 11:05 Date Received: 05/03/22 16:45

Sample Depth: 0.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.400	U	0.400	mg/Kg		05/10/22 10:17	05/11/22 01:40	200
Toluene	<0.400	U	0.400	mg/Kg		05/10/22 10:17	05/11/22 01:40	200
Ethylbenzene	1.28		0.400	mg/Kg		05/10/22 10:17	05/11/22 01:40	200
m-Xylene & p-Xylene	7.60		0.800	mg/Kg		05/10/22 10:17	05/11/22 01:40	200
o-Xylene	1.78		0.400	mg/Kg		05/10/22 10:17	05/11/22 01:40	200
Xylenes, Total	9.38		0.800	mg/Kg		05/10/22 10:17	05/11/22 01:40	200
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	138	S1+	70 - 130			05/10/22 10:17	05/11/22 01:40	200
1,4-Difluorobenzene (Surr)	76		70 - 130			05/10/22 10:17	05/11/22 01:40	200
Method: Total BTEX - Total BTEX	( Calculation							
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.177		0.00199	mg/Kg			05/09/22 15:24	1
Method: 8015 NM - Diesel Range	Organics (DR	O) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	16600		250	mg/Kg			05/09/22 11:58	1
Method: 8015B NM - Diesel Rang	ge Organics (D	RO) (GC)						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	617		250	mg/Kg		05/05/22 14:19	05/07/22 08:49	5
Diesel Range Organics (Over C10-C28)	16000		250	mg/Kg		05/05/22 14:19	05/07/22 08:49	5
Oll Range Organics (Over C28-C36)	<250	U	250	mg/Kg		05/05/22 14:19	05/07/22 08:49	5
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	131	S1+	70 - 130			05/05/22 14:19	05/07/22 08:49	5
o-Terphenyl	121		70 - 130			05/05/22 14:19	05/07/22 08:49	5
Method: 300.0 - Anions, Ion Chro	omatography -	Soluble						
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

5.01

mg/Kg

106

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05/10/22 17:54

Chloride

# **Surrogate Summary**

 Client: Ensolum
 Job ID: 890-2274-1

 Project/Site: PLU 30 BIG SINKS CTB
 SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

		DED4	DED74	Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)	
880-14398-A-1-C MS	Matrix Spike	103	101	
880-14398-A-1-D MSD	Matrix Spike Duplicate	101	104	
880-14479-A-6-D MS	Matrix Spike	108	95	
880-14479-A-6-E MSD	Matrix Spike Duplicate	117	90	
890-2252-A-5-D MS	Matrix Spike	122	90	
890-2252-A-5-E MSD	Matrix Spike Duplicate	126	86	
390-2274-1	FS01	114	88	
890-2274-2	FS02	103	89	
890-2274-3	FS03	473 S1+	78	
390-2274-4	FS04	166 S1+	86	
890-2274-5	FS05	125	88	
390-2274-6	FS06	138 S1+	76	
LCS 880-24964/1-A	Lab Control Sample	107	100	
LCS 880-25072/1-A	Lab Control Sample	124	89	
LCS 880-25242/1-A	Lab Control Sample	107	95	
_CSD 880-24964/2-A	Lab Control Sample Dup	108	100	
LCSD 880-25072/2-A	Lab Control Sample Dup	118	91	
LCSD 880-25242/2-A	Lab Control Sample Dup	112	93	
MB 880-24964/5-A	Method Blank	98	95	
MB 880-25055/8	Method Blank	104	89	
MB 880-25072/5-A	Method Blank	103	89	
MB 880-25078/5-A	Method Blank	100	91	
MB 880-25242/5-A	Method Blank	100	91	
Surrogate Legend				
BFB = 4-Bromofluorober	nzene (Surr)			

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

Matrix: Solid Prep Type: Total/NA

Matrix: Solid				Prep Type: Total/NA
				Percent Surrogate Recovery (Acceptance Limits)
		1001	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-2271-A-61-E MS	Matrix Spike	104	92	
890-2271-A-61-F MSD	Matrix Spike Duplicate	89	78	
890-2274-1	FS01	134 S1+	121	
890-2274-2	FS02	142 S1+	126	
890-2274-3	FS03	148 S1+	114	
890-2274-4	FS04	151 S1+	248 S1+	
890-2274-5	FS05	138 S1+	122	
890-2274-6	FS06	131 S1+	121	
LCS 880-24911/2-A	Lab Control Sample	101	95	
LCSD 880-24911/3-A	Lab Control Sample Dup	111	105	
MB 880-24911/1-A	Method Blank	98	102	
Surrogate Legend				
1CO = 1-Chlorooctane				

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OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-2274-1 SDG: 03E1558016 Project/Site: PLU 30 BIG SINKS CTB

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-24964/5-A

**Matrix: Solid** 

Analysis Batch: 25052

**Client Sample ID: Method Blank** 

Prep Type: Total/NA

Prep Batch: 24964

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/06/22 11:22	05/08/22 19:12	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/06/22 11:22	05/08/22 19:12	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/06/22 11:22	05/08/22 19:12	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		05/06/22 11:22	05/08/22 19:12	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/06/22 11:22	05/08/22 19:12	1
Xylenes, Total	< 0.00400	U	0.00400	mg/Kg		05/06/22 11:22	05/08/22 19:12	1

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98	70 - 130	05/06/22 11:22	05/08/22 19:12	1
1,4-Difluorobenzene (Surr)	95	70 - 130	05/06/22 11:22	05/08/22 19:12	1

Lab Sample ID: LCS 880-24964/1-A

**Matrix: Solid** 

Analysis Batch: 25052

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 24964

	Opike	LUU	LUU				/BIXEC	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.08587		mg/Kg		86	70 - 130	
Toluene	0.100	0.09093		mg/Kg		91	70 - 130	
Ethylbenzene	0.100	0.09444		mg/Kg		94	70 - 130	
m-Xylene & p-Xylene	0.200	0.1946		mg/Kg		97	70 - 130	
o-Xylene	0.100	0.1086		mg/Kg		109	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	107	70 - 130
1,4-Difluorobenzene (Surr)	100	70 - 130

Lab Sample ID: LCSD 880-24964/2-A

**Matrix: Solid** 

Analysis Batch: 25052

**Client Sample ID: Lab Control Sample Dup** 

Prep Type: Total/NA Prep Batch: 24964

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.08878		mg/Kg		89	70 - 130	3	35	
Toluene	0.100	0.08583		mg/Kg		86	70 - 130	6	35	
Ethylbenzene	0.100	0.08732		mg/Kg		87	70 - 130	8	35	
m-Xylene & p-Xylene	0.200	0.1780		mg/Kg		89	70 - 130	9	35	
o-Xylene	0.100	0.09949		mg/Kg		99	70 - 130	9	35	

LCSD LCSD

Surrogate	%Recovery Qua	alifier	Limits
4-Bromofluorobenzene (Surr)	108		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 880-14398-A-1-C MS

Matrix: Solid

Analysis Batch: 25052

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 24964

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00200	U F1	0.0996	0.04611	F1	mg/Kg		46	70 - 130	
Toluene	<0.00200	U F1	0.0996	0.03905	F1	mg/Kg		38	70 - 130	

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Job ID: 890-2274-1 Client: Ensolum Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

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

Lab Sample ID: 880-14398-A-1-C MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

Analysis Batch: 25052

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Ethylbenzene	<0.00200	U F1	0.0996	0.03452	F1	mg/Kg		34	70 - 130
m-Xylene & p-Xylene	<0.00401	U F1	0.199	0.06823	F1	mg/Kg		34	70 - 130
o-Xylene	<0.00200	U F1	0.0996	0.03400	F1	mg/Kg		34	70 - 130

MS MS

Surrogate	%Recovery C	<i>Qualifier</i>	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1.4-Difluorobenzene (Surr)	101		70 - 130

Lab Sample ID: 880-14398-A-1-D MSD

**Matrix: Solid** 

Analysis Batch: 25052

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

Prep Batch: 24964

Prep Type: Total/NA

Prep Batch: 24964

Sample Sample Spike MSD MSD RPD Result Qualifier Added Result Qualifier RPD Limit Analyte Unit %Rec Limits 0.0998 Benzene <0.00200 UF1 0.04463 F1 mg/Kg 45 70 - 130 3 35 0.0998 0.03916 F1 38 70 - 130 35 Toluene <0.00200 UF1 mg/Kg 0 Ethylbenzene <0.00200 UF1 0.0998 0.03504 F1 mg/Kg 35 70 - 130 1 35 <0.00401 UF1 0.200 0.07036 F1 35 70 - 130 35 m-Xylene & p-Xylene mg/Kg 3 0.0998 <0.00200 UF1 0.03610 F1 36 70 - 130 6 o-Xylene mg/Kg

MSD MSD

Surrogate	%Recovery Qua	lifier Limits
4-Bromofluorobenzene (Surr)	101	70 - 130
1,4-Difluorobenzene (Surr)	104	70 - 130

Lab Sample ID: MB 880-25055/8

**Matrix: Solid** 

Analysis Batch: 25055

Client Sample ID: Method Blank

Prep Type: Total/NA

MB MB

Analyte	Result	Qualifier	RL	Unit	D Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/09/22 11:01	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/09/22 11:01	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/09/22 11:01	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		05/09/22 11:01	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/09/22 11:01	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		05/09/22 11:01	1

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104	70 - 130		05/09/22 11:01	1
1,4-Difluorobenzene (Surr)	89	70 - 130		05/09/22 11:01	1

Lab Sample ID: MB 880-25072/5-A

**Matrix: Solid** 

Analysis Batch: 25055

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 25072

	IVID	D MD								
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac		
Benzene	<0.00200	U	0.00200	mg/Kg		05/09/22 11:01	05/09/22 23:59	1		
Toluene	<0.00200	U	0.00200	mg/Kg		05/09/22 11:01	05/09/22 23:59	1		
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/09/22 11:01	05/09/22 23:59	1		
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		05/09/22 11:01	05/09/22 23:59	1		

Client: Ensolum Job ID: 890-2274-1 Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

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

Lab Sample ID: MB 880-25072/5-A

**Matrix: Solid** 

Analysis Batch: 25055

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Type: Total/NA

Prep Batch: 25072

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/09/22 11:01	05/09/22 23:59	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		05/09/22 11:01	05/09/22 23:59	1

MR MR

MB MB

Surrogate	%Recovery 0	Qualifier Limits	Prepared	Analyzed	Dil Fac					
4-Bromofluorobenzene (Surr)	103	70 - 130	05/09/22 11:01	05/09/22 23:59	1					
1,4-Difluorobenzene (Surr)	89	70 - 130	05/09/22 11:01	05/09/22 23:59	1					

Lab Sample ID: LCS 880-25072/1-A **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 25055							Prep	Batch: 25072
	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.07686		ma/Ka		77	70 - 130	

Toluene 0.100 0.09570 mg/Kg 96 70 - 130 mg/Kg 108 Ethylbenzene 0.100 0.1080 70 - 130 m-Xylene & p-Xylene 0.200 0.2251 113 70 - 130 mg/Kg 0.100 0.1157 mg/Kg 116 70 - 130 o-Xylene

LCS LCS

Surrogate	%Recovery Qualific	er Limits
4-Bromofluorobenzene (Surr)	124	70 - 130
1,4-Difluorobenzene (Surr)	89	70 - 130

Lab Sample ID: LCSD 880-25072/2-A **Client Sample ID: Lab Control Sample Dup** 

**Matrix: Solid** 

Analysis Batch: 25055							Prep Batch: 25072		
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.07208		mg/Kg		72	70 - 130	6	35
Toluene	0.100	0.08611		mg/Kg		86	70 - 130	11	35
Ethylbenzene	0.100	0.09489		mg/Kg		95	70 - 130	13	35
m-Xylene & p-Xylene	0.200	0.1962		mg/Kg		98	70 - 130	14	35
o-Xylene	0.100	0.1005		mg/Kg		100	70 - 130	14	35

LCSD LCSD

Surrogate	%Recovery C	Qualifier	Limits	
4-Bromofluorobenzene (Surr)	118		70 - 130	
1,4-Difluorobenzene (Surr)	91		70 - 130	

Lab Sample ID: 890-2252-A-5-D MS Client Sample ID: Matrix Spike

Ma

Ana

	Camania Camania	Cuiles	MC MC	9/ Boo
nalysis Batch: 25055				Prep Batch: 25072
atrix: Solid				Prep Type: Total/NA

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.00200	U F1	0.0996	0.06588	F1	mg/Kg		66	70 - 130	
Toluene	<0.00200	U	0.0996	0.08075		mg/Kg		81	70 - 130	
Ethylbenzene	<0.00200	U	0.0996	0.09087		mg/Kg		91	70 - 130	
m-Xylene & p-Xylene	< 0.00401	U	0.199	0.1902		mg/Kg		95	70 - 130	
o-Xylene	<0.00200	U	0.0996	0.09879		mg/Kg		99	70 - 130	

Job ID: 890-2274-1 Client: Ensolum Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

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

Lab Sample ID: 890-2252-A-5-D MS

**Matrix: Solid** 

Analysis Batch: 25055

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 25072

MS MS

Surrogate Limits %Recovery Qualifier 4-Bromofluorobenzene (Surr) 122 70 - 130 1,4-Difluorobenzene (Surr) 90 70 - 130

Lab Sample ID: 890-2252-A-5-E MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

Analysis Batch: 25055

Prep Type: Total/NA

Prep Batch: 25072

Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit <0.00200 U F1 0.0994 0.07535 70 - 13035 Benzene mg/Kg 76 13 Toluene <0.00200 U 0.0994 0.09914 mg/Kg 100 70 - 130 20 35 <0.00200 U 0.0994 0.1134 mg/Kg 114 70 - 130 22 35 Ethylbenzene m-Xylene & p-Xylene <0.00401 U 0.199 0.2395 mg/Kg 120 70 - 130 23 35 o-Xylene <0.00200 U 0.0994 0.1232 mg/Kg 124 70 - 130 22 35

MSD MSD

MR MR

Surrogate	%Recovery	Qualifier	Limits		
4-Bromofluorobenzene (Surr)	126		70 - 130		
1,4-Difluorobenzene (Surr)	86		70 - 130		

Lab Sample ID: MB 880-25078/5-A

**Matrix: Solid** 

**Analysis Batch: 25225** 

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 25078

Dil Fac

Analyte Result Qualifier RL Unit Prepared Analyzed Benzene <0.00200 U 0.00200 05/09/22 11:34 05/10/22 11:39 mg/Kg Toluene <0.00200 U 0.00200 mg/Kg 05/09/22 11:34 05/10/22 11:39 05/10/22 11:39 Ethylbenzene <0.00200 U 0.00200 05/09/22 11:34 mg/Kg m-Xylene & p-Xylene <0.00400 U 0.00400 mg/Kg 05/09/22 11:34 05/10/22 11:39

o-Xylene <0.00200 U 0.00200 Xylenes, Total <0.00400 U 0.00400 MB MB

> %Recovery Qualifier Limits 70 - 130 100

> > 91

Prepared Analyzed Dil Fac 05/09/22 11:34 05/10/22 11:39 05/09/22 11:34 05/10/22 11:39

05/09/22 11:34

05/09/22 11:34

Lab Sample ID: MB 880-25242/5-A

**Matrix: Solid** 

Surrogate

**Analysis Batch: 25225** 

4-Bromofluorobenzene (Surr) 1,4-Difluorobenzene (Surr)

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

05/10/22 11:39

05/10/22 11:39

Prep Batch: 25242

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		05/10/22 10:17	05/10/22 22:34	1
Toluene	<0.00200	U	0.00200	mg/Kg		05/10/22 10:17	05/10/22 22:34	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		05/10/22 10:17	05/10/22 22:34	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		05/10/22 10:17	05/10/22 22:34	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		05/10/22 10:17	05/10/22 22:34	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		05/10/22 10:17	05/10/22 22:34	1

70 - 130

mg/Kg

mg/Kg

Client: Ensolum Job ID: 890-2274-1 SDG: 03E1558016 Project/Site: PLU 30 BIG SINKS CTB

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

Lab Sample ID: MB 880-25242/5-A

**Matrix: Solid** 

Analysis Batch: 25225

Client Sample ID: Method Blank

**Prep Type: Total/NA** 

Prep Batch: 25242

MB MB

Surrogate	%Recovery Qua	ualifier Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100	70 - 130	05/10/22 10:17	05/10/22 22:34	1
1,4-Difluorobenzene (Surr)	91	70 - 130	05/10/22 10:17	05/10/22 22:34	1

Lab Sample ID: LCS 880-25242/1-A **Client Sample ID: Lab Control Sample** 

**Matrix: Solid** 

Analysis Batch: 25225

Prep Type: Total/NA

Prep Batch: 25242

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.09934		mg/Kg		99	70 - 130	
Toluene	0.100	0.1085		mg/Kg		109	70 - 130	
Ethylbenzene	0.100	0.1135		mg/Kg		114	70 - 130	
m-Xylene & p-Xylene	0.200	0.2280		mg/Kg		114	70 - 130	
o-Xylene	0.100	0.1170		mg/Kg		117	70 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits	
4-Bromofluorobenzene (Surr)	107		70 - 130	
1,4-Difluorobenzene (Surr)	95		70 - 130	

Client Sample ID: Lab Control Sample Dup

Lab Sample ID: LCSD 880-25242/2-A **Matrix: Solid** 

**Analysis Batch: 25225** 

Prep Type: Total/NA

Prep Batch: 25242

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.08092		mg/Kg		81	70 - 130	20	35
Toluene	0.100	0.09358		mg/Kg		94	70 - 130	15	35
Ethylbenzene	0.100	0.09993		mg/Kg		100	70 - 130	13	35
m-Xylene & p-Xylene	0.200	0.2043		mg/Kg		102	70 - 130	11	35
o-Xylene	0.100	0.1052		mg/Kg		105	70 - 130	11	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	112		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Lab Sample ID: 880-14479-A-6-D MS Client Sample ID: Matrix Spike

Matrix: Solid

Analysis Batch: 25225

Prep Type: Total/NA

Prep Batch: 25242

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	<0.00202	U	0.0998	0.09344		mg/Kg		94	70 - 130
Toluene	<0.00202	U	0.0998	0.1023		mg/Kg		103	70 - 130
Ethylbenzene	<0.00202	U	0.0998	0.1059		mg/Kg		106	70 - 130
m-Xylene & p-Xylene	<0.00403	U	0.200	0.2174		mg/Kg		109	70 - 130
o-Xylene	<0.00202	U	0.0998	0.1094		mg/Kg		110	70 - 130

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	108		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Batch: 24911

### **QC Sample Results**

Client: Ensolum Job ID: 890-2274-1 Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

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

Lab Sample ID: 880-14479-A-6-E MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

Analysis Batch: 25225

Analysis Batch: 25225									Prep	Batch:	25242
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00202	U	0.0996	0.08899		mg/Kg		89	70 - 130	5	35
Toluene	<0.00202	U	0.0996	0.1075		mg/Kg		108	70 - 130	5	35
Ethylbenzene	<0.00202	U	0.0996	0.1151		mg/Kg		116	70 - 130	8	35
m-Xylene & p-Xylene	< 0.00403	U	0.199	0.2406		mg/Kg		121	70 - 130	10	35
o-Xylene	<0.00202	U	0.0996	0.1216		mg/Kg		122	70 - 130	11	35

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	117		70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

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

Lab Sample ID: MB 880-24911/1-A Client Sample ID: Method Blank

**Matrix: Solid** 

Analysis Batch: 24947

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		05/05/22 14:19	05/06/22 20:46	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		05/05/22 14:19	05/06/22 20:46	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		05/05/22 14:19	05/06/22 20:46	1

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	98	70 - 130	05/05/22 14:19	05/06/22 20:46	1
o-Terphenyl	102	70 - 130	05/05/22 14:19	05/06/22 20:46	1

Lab Sample ID: LCS 880-24911/2-A **Client Sample ID: Lab Control Sample** 

**Matrix: Solid** 

Analysis Batch: 24947							atch: 24911	
	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics	1000	1096		mg/Kg		110	70 - 130	
(GRO)-C6-C10								
Diesel Range Organics (Over	1000	901.0		mg/Kg		90	70 - 130	
C10-C28)								

LCS	LCS

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	101		70 - 130
o-Terphenyl	95		70 - 130

Lab Sample ID: LCSD 880-24911/3-A

Matrix: Solid							Prep T	ype: To	tal/NA
Analysis Batch: 24947							Prep	Batch:	24911
	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics	1000	1119		mg/Kg		112	70 - 130	2	20
(GRO)-C6-C10									

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Client Sample ID: Lab Control Sample Dup

Job ID: 890-2274-1 Client: Ensolum Project/Site: PLU 30 BIG SINKS CTB

SDG: 03E1558016

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

Lab Sample ID: LCSD 880-24911/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid** Prep Type: Total/NA Analysis Batch: 24947 Prep Batch: 24911 Spike LCSD LCSD %Rec RPD Added Result Qualifier Unit D %Rec Limits **RPD** Limit Analyte 1000 924 3 92 20 Diesel Range Organics (Over mg/Kg 70 - 1303 C10-C28)

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

Lab Sample ID: 890-2271-A-61-E MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 24947

Prep Batch: 24911

MS MS %Rec Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Gasoline Range Organics <50.0 U 1000 1195 mg/Kg 119 70 - 130 (GRO)-C6-C10 <50.0 U 1000 940.9 mg/Kg 92 70 - 130 Diesel Range Organics (Over C10-C28)

MS MS I imits Surrogate %Recovery Qualifier 1-Chlorooctane 104 70 - 130 92 70 - 130 o-Terphenyl

Lab Sample ID: 890-2271-A-61-F MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Solid** 

**Analysis Batch: 24947** 

Prep Batch: 24911 Sample Sample Spike MSD MSD %Rec RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits **RPD** Limit Gasoline Range Organics <50.0 U 998 1029 mg/Kg 103 70 - 13020 15 (GRO)-C6-C10 <50.0 U 998 813.9 80 70 - 130 20 Diesel Range Organics (Over mg/Kg 14 C10-C28)

MSD MSD Surrogate %Recovery Qualifier Limits 1-Chlorooctane 89 70 - 130

o-Terphenyl 78 70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-24903/1-A **Matrix: Solid** 

Analysis Batch: 25042

Analyte

MB MB

D

Prepared

Unit

<5.00 U 5.00 05/08/22 13:23 Chloride mg/Kg

RL

Result Qualifier

Lab Sample ID: LCS 880-24903/2-A **Matrix: Solid** 

Analysis Batch: 25042

LCS LCS Spike %Rec Analyte Added Result Qualifier Unit Limits %Rec Chloride 250 249.4 100 90 - 110 mg/Kg

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**Prep Type: Soluble** 

Client Sample ID: Method Blank

Analyzed

Client Sample ID: Lab Control Sample

**Prep Type: Soluble** 

Dil Fac

Job ID: 890-2274-1 Client: Ensolum Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCSD 880-24903/3-A Client Sample ID: Lab Control Sample Dup **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 25042

	<b>Spike</b>	LCSD LCSD				%Rec		RPD	
Analyte	Added	Result Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	243.6	mg/Kg		97	90 - 110	2	20	

Lab Sample ID: 890-2271-A-51-B MS Client Sample ID: Matrix Spike **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 25042** 

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Chloride	346		253	595.8		ma/Ka		99	90 - 110

Lab Sample ID: 890-2271-A-51-C MSD Client Sample ID: Matrix Spike Duplicate **Prep Type: Soluble** 

Matrix: Solid

Analysis Batch: 25042

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	346		253	597.3		mg/Kg		100	90 - 110	0	20

Lab Sample ID: MB 880-25241/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 25278** 

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Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00 U	5.00	mg/Kg			05/10/22 16:07	1

Lab Sample ID: LCS 880-25241/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 25278

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	250	257.0		mg/Kg		103	90 - 110	

Client Sample ID: Lab Control Sample Dup Lab Sample ID: LCSD 880-25241/3-A **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 25278** 

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	250	254.6		mg/Kg		102	90 - 110	1	20

Lab Sample ID: 880-14580-A-1-B MS Client Sample ID: Matrix Spike

**Matrix: Solid** 

**Analysis Batch: 25278** 

_	Sample Sample	Spike	MS MS				%Rec
Analyte	Result Qualifier	Added	Result Qualifie	r Unit	D	%Rec	Limits
Chloride	9500	5040	14730	ma/Ka		104	90 _ 110

Lab Sample ID: 880-14580-A-1-C MSD Client Sample ID: Matrix Spike Duplicate **Prep Type: Soluble** 

**Analysis Batch: 25278** 

	Sample Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	9500	5040	14680		mg/Kg		103	90 - 110	0	20

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**Prep Type: Soluble** 

Matrix: Solid

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Client: Ensolum

Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1 SDG: 03E1558016

**GC VOA** 

Prep Batch: 24964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-1	FS01	Total/NA	Solid	5035	
890-2274-2	FS02	Total/NA	Solid	5035	
890-2274-3	FS03	Total/NA	Solid	5035	
890-2274-4	FS04	Total/NA	Solid	5035	
890-2274-5	FS05	Total/NA	Solid	5035	
MB 880-24964/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-24964/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-24964/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-14398-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
880-14398-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### Analysis Batch: 25052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-1	FS01	Total/NA	Solid	8021B	24964
890-2274-2	FS02	Total/NA	Solid	8021B	24964
890-2274-3	FS03	Total/NA	Solid	8021B	24964
890-2274-4	FS04	Total/NA	Solid	8021B	24964
890-2274-5	FS05	Total/NA	Solid	8021B	24964
MB 880-24964/5-A	Method Blank	Total/NA	Solid	8021B	24964
LCS 880-24964/1-A	Lab Control Sample	Total/NA	Solid	8021B	24964
LCSD 880-24964/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	24964
880-14398-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	24964
880-14398-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	24964

### Analysis Batch: 25055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-3	FS03	Total/NA	Solid	8021B	25072
MB 880-25055/8	Method Blank	Total/NA	Solid	8021B	
MB 880-25072/5-A	Method Blank	Total/NA	Solid	8021B	25072
LCS 880-25072/1-A	Lab Control Sample	Total/NA	Solid	8021B	25072
LCSD 880-25072/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	25072
890-2252-A-5-D MS	Matrix Spike	Total/NA	Solid	8021B	25072
890-2252-A-5-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	25072

### Prep Batch: 25072

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-3	FS03	Total/NA	Solid	5035	
MB 880-25072/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-25072/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-25072/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2252-A-5-D MS	Matrix Spike	Total/NA	Solid	5035	
890-2252-A-5-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### Prep Batch: 25078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-25078/5-A	Method Blank	Total/NA	Solid	5035	

### **Analysis Batch: 25150**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-1	FS01	Total/NA	Solid	Total BTEX	
890-2274-2	FS02	Total/NA	Solid	Total BTEX	

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1/20

Client: Ensolum

Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1

## SDG: 03E1558016

## GC VOA (Continued)

### **Analysis Batch: 25150 (Continued)**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-3	FS03	Total/NA	Solid	Total BTEX	
890-2274-4	FS04	Total/NA	Solid	Total BTEX	
890-2274-5	FS05	Total/NA	Solid	Total BTEX	
890-2274-6	FS06	Total/NA	Solid	Total BTEX	

### Analysis Batch: 25225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-6	FS06	Total/NA	Solid	8021B	25242
MB 880-25078/5-A	Method Blank	Total/NA	Solid	8021B	25078
MB 880-25242/5-A	Method Blank	Total/NA	Solid	8021B	25242
LCS 880-25242/1-A	Lab Control Sample	Total/NA	Solid	8021B	25242
LCSD 880-25242/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	25242
880-14479-A-6-D MS	Matrix Spike	Total/NA	Solid	8021B	25242
880-14479-A-6-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	25242

### Prep Batch: 25242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-6	FS06	Total/NA	Solid	5035	
MB 880-25242/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-25242/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-25242/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-14479-A-6-D MS	Matrix Spike	Total/NA	Solid	5035	
880-14479-A-6-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

### **GC Semi VOA**

### Prep Batch: 24911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-1	FS01	Total/NA	Solid	8015NM Prep	
890-2274-2	FS02	Total/NA	Solid	8015NM Prep	
890-2274-3	FS03	Total/NA	Solid	8015NM Prep	
890-2274-4	FS04	Total/NA	Solid	8015NM Prep	
890-2274-5	FS05	Total/NA	Solid	8015NM Prep	
890-2274-6	FS06	Total/NA	Solid	8015NM Prep	
MB 880-24911/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-24911/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-24911/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-2271-A-61-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-2271-A-61-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

### Analysis Batch: 24947

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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-1	FS01	Total/NA	Solid	8015B NM	24911
890-2274-2	FS02	Total/NA	Solid	8015B NM	24911
890-2274-3	FS03	Total/NA	Solid	8015B NM	24911
890-2274-4	FS04	Total/NA	Solid	8015B NM	24911
MB 880-24911/1-A	Method Blank	Total/NA	Solid	8015B NM	24911
LCS 880-24911/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	24911
LCSD 880-24911/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	24911
890-2271-A-61-E MS	Matrix Spike	Total/NA	Solid	8015B NM	24911
890-2271-A-61-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	24911

Client: Ensolum

Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1

SDG: 03E1558016

### GC Semi VOA

### Analysis Batch: 24949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-5	FS05	Total/NA	Solid	8015B NM	24911
890-2274-6	FS06	Total/NA	Solid	8015B NM	24911

### **Analysis Batch: 25090**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-1	FS01	Total/NA	Solid	8015 NM	
890-2274-2	FS02	Total/NA	Solid	8015 NM	
890-2274-3	FS03	Total/NA	Solid	8015 NM	
890-2274-4	FS04	Total/NA	Solid	8015 NM	
890-2274-5	FS05	Total/NA	Solid	8015 NM	
890-2274-6	FS06	Total/NA	Solid	8015 NM	

### HPLC/IC

### Leach Batch: 24903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-1	FS01	Soluble	Solid	DI Leach	
890-2274-2	FS02	Soluble	Solid	DI Leach	
890-2274-3	FS03	Soluble	Solid	DI Leach	
890-2274-4	FS04	Soluble	Solid	DI Leach	
890-2274-5	FS05	Soluble	Solid	DI Leach	
MB 880-24903/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-24903/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-24903/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-2271-A-51-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-2271-A-51-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## Analysis Batch: 25042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-1	FS01	Soluble	Solid	300.0	24903
890-2274-2	FS02	Soluble	Solid	300.0	24903
890-2274-3	FS03	Soluble	Solid	300.0	24903
890-2274-4	FS04	Soluble	Solid	300.0	24903
890-2274-5	FS05	Soluble	Solid	300.0	24903
MB 880-24903/1-A	Method Blank	Soluble	Solid	300.0	24903
LCS 880-24903/2-A	Lab Control Sample	Soluble	Solid	300.0	24903
LCSD 880-24903/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	24903
890-2271-A-51-B MS	Matrix Spike	Soluble	Solid	300.0	24903
890-2271-A-51-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	24903

### Leach Batch: 25241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-6	FS06	Soluble	Solid	DI Leach	
MB 880-25241/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-25241/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-25241/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-14580-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-14580-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Client: Ensolum Job ID: 890-2274-1 Project/Site: PLU 30 BIG SINKS CTB

SDG: 03E1558016

### HPLC/IC

### Analysis Batch: 25278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2274-6	FS06	Soluble	Solid	300.0	25241
MB 880-25241/1-A	Method Blank	Soluble	Solid	300.0	25241
LCS 880-25241/2-A	Lab Control Sample	Soluble	Solid	300.0	25241
LCSD 880-25241/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	25241
880-14580-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	25241
880-14580-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	25241

Project/Site: PLU 30 BIG SINKS CTB

Matrix:	Solid
	00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	24964	05/06/22 11:22	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25052	05/09/22 01:57	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25150	05/09/22 15:24	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25090	05/09/22 11:58	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	24911	05/05/22 14:19	DM	XEN MID
Total/NA	Analysis	8015B NM		5			24947	05/07/22 08:09	AJ	XEN MID
Soluble	Leach	DI Leach			4.99 g	50 mL	24903	05/05/22 13:24	SC	XEN MID
Soluble	Analysis	300.0		1			25042	05/08/22 17:23	CH	XEN MID

**Client Sample ID: FS02** Lab Sample ID: 890-2274-2

Date Collected: 05/03/22 11:05 Date Received: 05/03/22 16:45 Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	24964	05/06/22 11:22	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25052	05/09/22 02:17	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25150	05/09/22 15:24	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25090	05/09/22 11:58	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	24911	05/05/22 14:19	DM	XEN MID
Total/NA	Analysis	8015B NM		1			24947	05/07/22 02:19	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	24903	05/05/22 13:24	SC	XEN MID
Soluble	Analysis	300.0		1			25042	05/08/22 17:32	CH	XEN MID

**Client Sample ID: FS03** Lab Sample ID: 890-2274-3

Date Collected: 05/03/22 11:10 Date Received: 05/03/22 16:45 **Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	24964	05/06/22 11:22	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25052	05/09/22 02:38	MR	XEN MID
Total/NA	Prep	5035			5.01 g	5 mL	25072	05/09/22 11:01	MR	XEN MID
Total/NA	Analysis	8021B		50			25055	05/10/22 02:23	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25150	05/09/22 15:24	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25090	05/09/22 11:58	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	24911	05/05/22 14:19	DM	XEN MID
Total/NA	Analysis	8015B NM		5			24947	05/07/22 08:29	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	24903	05/05/22 13:24	SC	XEN MID
Soluble	Analysis	300.0		1			25042	05/08/22 17:41	CH	XEN MI

Client: Ensolum

Project/Site: PLU 30 BIG SINKS CTB

Lab Sample ID: 890-2274-4

**Matrix: Solid** 

Job ID: 890-2274-1

SDG: 03E1558016

Date Collected: 05/03/22 11:15 Date Received: 05/03/22 16:45

**Client Sample ID: FS04** 

Batch Batch Dil Initial Final Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab 5035 Total/NA Prep 4.99 g 5 mL 24964 05/06/22 11:22 MR XEN MID 8021B Total/NA Analysis 1 5 mL 5 mL 25052 05/09/22 02:58 MR XEN MID Total/NA Analysis Total BTEX 25150 05/09/22 15:24 ΑJ XEN MID Total/NA 8015 NM 25090 05/09/22 11:58 XEN MID Analysis 1 AJ Total/NA 8015NM Prep 24911 05/05/22 14:19 DM XEN MID Prep 10.01 g 10 mL Total/NA Analysis 8015B NM 5 24947 05/07/22 08:49 AJ XEN MID Soluble DI Leach 5.05 g 50 mL 24903 05/05/22 13:24 SC XEN MID Leach Soluble Analysis 300.0 25042 05/08/22 17:50 СН XEN MID

Client Sample ID: FS05 Lab Sample ID: 890-2274-5

Date Collected: 05/03/22 11:10 **Matrix: Solid** 

Date Received: 05/03/22 16:45

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	24964	05/06/22 11:22	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	25052	05/09/22 03:19	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25150	05/09/22 15:24	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25090	05/09/22 11:58	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	24911	05/05/22 14:19	DM	XEN MID
Total/NA	Analysis	8015B NM		5			24949	05/07/22 08:29	AJ	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	24903	05/05/22 13:24	SC	XEN MID
Soluble	Analysis	300.0		1			25042	05/08/22 17:59	CH	XEN MID

Lab Sample ID: 890-2274-6 **Client Sample ID: FS06** 

Date Collected: 05/03/22 11:05 **Matrix: Solid** Date Received: 05/03/22 16:45

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	25242	05/10/22 10:17	MR	XEN MID
Total/NA	Analysis	8021B		200			25225	05/11/22 01:40	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			25150	05/09/22 15:24	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			25090	05/09/22 11:58	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	24911	05/05/22 14:19	DM	XEN MID
Total/NA	Analysis	8015B NM		5			24949	05/07/22 08:49	AJ	XEN MID
Soluble	Leach	DI Leach			4.99 g	50 mL	25241	05/10/22 10:17	SC	XEN MID
Soluble	Analysis	300.0		1			25278	05/10/22 17:54	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: PLU 30 BIG SINKS CTB
Job ID: 890-2274-1
SDG: 03E1558016

## **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		ELAP	T104704400-21-22	06-30-22	
The following analytes	are included in this report hi	it the laboratory is not cortifi	ied by the governing authority. This list ma	av include analytee for w	
the agency does not of	· '	it the laboratory is not certifi	led by the governing authority. This list his	ay include arialytes for wi	
0 ,	· '	Matrix	Analyte	ay include analytes for wi	
the agency does not of	fer certification.	•	, , ,	ay include analytes for wi	

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## **Method Summary**

Client: Ensolum

Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1

SDG: 03E1558016

ocol	Laboratory
346	XEN MID
SOP	XEN MID
346	XEN MID
346	XEN MID
WWA	XEN MID

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: PLU 30 BIG SINKS CTB

Job ID: 890-2274-1

SDG: 03E1558016

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2274-1	FS01	Solid	05/03/22 11:00	05/03/22 16:45	0.5'
890-2274-2	FS02	Solid	05/03/22 11:05	05/03/22 16:45	0.5'
890-2274-3	FS03	Solid	05/03/22 11:10	05/03/22 16:45	0.5'
890-2274-4	FS04	Solid	05/03/22 11:15	05/03/22 16:45	0.5'
890-2274-5	FS05	Solid	05/03/22 11:10	05/03/22 16:45	0.5'
890-2274-6	FS06	Solid	05/03/22 11:05	05/03/22 16:45	0.5'

Work Order No:

Midland, TX [432] 704-5440, San Antonio, TX [210] 509-3334

Environment Testing Xenco

seurofins :

EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296

Houston, TX (281) 240-4200, Dellar, TX (214) 902-0300

Chain of Custody

								www.xenco.com Page 1	Of T
Project Manager:	TALOMA MO	MOKRISSEY		Bill to: (if different)	NG.	ADRIAN BAKER	BAKER	Work Order Comments	
	ENSOLVIN LLC	100000000000000000000000000000000000000		Company Name:	45	XTD ENERGY	Program:	Inn: UST/PST   PRP   Brownfields   RRC	] Superfund
	201 N. Marian Feld St.	of St. Suite	W 400	Address:		3104 E. GREFEN	ST	State of Project:	
City, State ZIP: Mic	Midland, Tx 7	10664		City, State ZIP:		MN, bodelne	08139	evel III   PST/UST	☐ revel™ ☐
Phone: 33	334, 254, 8307	+	Email:	tmornssen	C-17	@ entolum.com		Deliverables: EDD ADaPT Other:	
Project Name:	PLM 30 BIG SIMESCTB	WESCIB	Tum	Turn Around			ANALYSIS REQUEST	Preservative Codes	e Codes
) Jac	03E1558016		Routine	Rush	Pres			None: NO	DI Water: H <sub>2</sub> O
Project Location:			Due Date:					Cool: Cool	MeOH: Me
	CONMER Shore		TAT starts the the lab, if rec	TAT starts the day received by the lab. If received by 4:30pm				HCL:HC H <sub>2</sub> SO <sub>4</sub> :H <sub>2</sub>	HNO 3: HN NaOH: Na
SAMPLE RECEIPT	Temp Blank:	ONO	Wetke:	Yes No	eters			H, PO+: HP	
Samples Received Intact:	(Ves) No	Thermometer ID:	er ID:   NE	FOO-V	mer		890-2274 Chain of Custody		
Cooler Custody Seals:	Yes No N/A	Correction Factor		C. 0 -	E9		0000	Na25,05: Na50	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	e Reading:	3.0		soy		Zn Acetate+NaOH: Zn	t: Zn
Total Containers:		Corrected 7	Corrected Temperature:	80	_	X		NaOH+Ascorbic Acid: SAPC	cid: SAPC
Sample Identification	ion Matrix	Date	Time	Depth Grab/	# of Cont	140 176 1977		Sample Comments	mments
Fioi	5	60150	1100	0.8	4	×			
Fso3			1105	200	_	1 1 1			
6203			0111				VALUE		
FSOY.			1116						
6505			0111						
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		1	-05						
	)								
2									
Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	200.8 / 6020t Metal(s) to be an	10000	BRCRA 13PPM TCLP / SPL	M Texas 11 PLP 6010 : 8R	Al Sb CRA Sb	As Ba Be B Co	A 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO, TCLP/SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg:1631	o Ni K Se Ag SiO, Na Sr Tl Sn U V Zn 1 U Hg: 1631/245.1/7470 /7471	
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order fit service. Estimins Xenco, will be listake only for the cost of samples and shall not assume any responsit of samples and shall not assume any responsit of samples and shall be achieved of \$55 order.	t and refinguishment of sam lable only for the cost of san rice of \$85.00 will be applie	spies contitutes a righes and shall not d to each project.	valid purchase osd t assume any respo	er from client compa nisbility for any losse for each sample subn	ty to Eurofin or expense	s Xenco, its affiliates an s incurred by the client ofins Xenco, but not an	them client company to Eurofins Xenco, its affiliates and subconfisacions. It assigns standard stems and conditions being for any losses or expenses incurred by the client if such losses are due to clicumstances beyond the control losses are due to clicumstances beyond the control losses are due to clicumstances beyond the control losses are due to analyzed. These terms will be enforced unless previously response control in the control of the control o	ritions introl regotisted.	
Relinquished by: (Signature)	(patrice)	AReceived	Received by: (Signature)	(4		Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
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Work Order No:

Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334

**Environment Testing** 

: eurofins

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300

Chain of Custody

Et Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296

Level IV Superfund DI Water: H<sub>2</sub>O HNO 1: HN MeOH: Me NAOH: NA Preservative Codes NaOH+Ascorbic Acid: SAPC Sample Comments Date/Time ö Reporting: Level II | Level III | PST/UST | TRRP Zn Acetate+NaOH: Zn Brownfields RRC Other: Na 25 20 3: NaSO K Se Ag SiO<sub>2</sub> Na Sr TI Sn U V Zn NaHSO a: NABIS Hg: 1631 / 245.1 / 7470 / 7471 None: NO 4, PO L HP Page H;504;H Cool: Cool HCL.HC Work Order Comments AD3PT Received by: (Signature) www.xenco.com UST/PST PRP EDD State of Project: Deliverables: Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni m charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Euroffers Xenco, but not analyzed. These terms will be enforced unless previously negotia TCLP / SPLP 6010 : BRCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Program: lockee. Signature of this document and relinquishment of samples constitutes a valid parchase order from client company to Eurofina Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofina 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 koses are due to circumstances beyond the control 890-2274 Chain of Custody ANALYSIS REQUEST Relinquished by: (Signature) 58330 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199 3104 E. GREGEN ST BAKER 九万 arlshod ,NM XTD ENERGY tmornssey @ ensolum.com HOL 7 ADEIAN अरहर Date/Time > 6.3.90 (hloridos × Pres 10 Sont Parameters Bill to: (if different) Company Name: Grab/ Comp 8RCRA 13PPM Texas 11 0.0-City, State ZIP: FOO-M TAT starts the day received by the lab, if received by 4:30pm 3.0 Yes No 8.0 Rush Address: Depth 3 Turn Around 0 Received by: (Signature) Email: Routine Due Date: Corrected Temperature: 89 Wet ice: Sampled 1105 Temperature Reading: Time 0011 0111 1105 1119 1110 Thermometer ID: Correction Factor: gol N. Marian Feld St. Suite MORRISSEY PLUL 30 BIG SINESCTB X No Sampled 60/50 Date Circle Method(s) and Metal(s) to be analyzed 10464 334, 254, 8307 Matrix 03E1558016 5 ENSOLVM LL Temp Blank: Yes No N/A Yes No CN/A Crimes Short 200.8 / 6020: (Yes) No Midland, TX TALOMA Relinquished by: (Signature) Sample Identification Samples Received Intact: Total 200.7 / 6010 Sample Custody Seals: Cooler Custody Seals: SAMPLE RECEIPT Total Containers: Project Number Project Manager Company Name: Sampler's Name: roject Location City, State ZIP: Project Name: CSOL FSOY 6505 FSOS FSON 1031 Address: # Od

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## **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-2274-1 SDG Number: 03E1558016

Login Number: 2274 List Source: Eurofins Carlsbad

List Number: 1 Creator: Clifton, Cloe

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: 890-2274-1

SDG Number: 03E1558016

Login Number: 2274
List Source: Eurofins Midland
List Number: 2
List Creation: 05/05/22 11:31 AM

Creator: Rodriguez, Leticia

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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APPENDIX E

**NMOCD Notifications** 

From: Aimee Cole
To: Tacoma Morrissey

**Subject:** FW: XTO Site Activities for the week of April 21st

**Date:** Monday, May 2, 2022 12:23:00 PM

Attachments: image001.png

image002.png image003.png image004.png



### **Aimee Cole**

Senior Managing Scientist 720-384-7365 Ensolum, LLC

in f 🔰

From: Green, Garrett J <garrett.green@exxonmobil.com>

**Sent:** Friday, April 29, 2022 10:00 AM

To: ocd.enviro@state.nm.us; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet,

Robert, EMNRD <Robert.Hamlet@state.nm.us>; Nobui, Jennifer, EMNRD

<Jennifer.Nobui@state.nm.us>; Chad.Hensley@state.nm.us

**Cc:** DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Baker, Adrian <adrian.baker@exxonmobil.com>; Aimee Cole <acole@ensolum.com>

**Subject:** XTO Site Activities for the week of April 21st

### [ \*\*EXTERNAL EMAIL\*\*]

All,

XTO plans to complete final sampling activities at the following sites the week of May 2, 2022.

### Monday

PLU 30 Big Sinks CTB / nAPP2206853301, nAPP2208351954, nAPP2209137379

#### Tuesday

PLU 30 Big Sinks CTB / nAPP2206853301, nAPP2208351954, nAPP2209137379

### Wednesday

- ADU 624 / NAPP2123634554

#### Thursday

ADU 624 / NAPP2123634554

### Friday

- ADU 624 / NAPP2123634554

Thank you,

### **Garrett Green**

Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

XTO Energy, Inc.

3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

From: Hamlet, Robert, EMNRD

To: Green, Garrett J

Cc: Tacoma Morrissey; DelawareSpills /SM; Bratcher, Mike, EMNRD; Nobui, Jennifer, EMNRD; Harimon, Jocelyn,

**EMNRD** 

Subject: RE: [EXTERNAL] XTO 48 Hour Liner Inspection PLU 30 Big Sinks CTB - NAPP2206853301, NAPP2208351954, &

NAPP2209137379

**Date:** Friday, April 29, 2022 9:31:38 AM

### [ \*\*EXTERNAL EMAIL\*\*]

Garrett,

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Robert Hamlet • Environmental Specialist - Advanced

Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us

http://www.emnrd.state.nm.us/OCD/



From: Green, Garrett J <garrett.green@exxonmobil.com>

**Sent:** Thursday, April 28, 2022 4:39 PM

**To:** Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>

**Cc:** Tacoma Morrissey <tmorrissey@ensolum.com>; DelawareSpills /SM

<DelawareSpills@exxonmobil.com>

**Subject:** [EXTERNAL] XTO 48 Hour Liner Inspection PLU 30 Big Sinks CTB - NAPP2206853301, NAPP2208351954, & NAPP2209137379

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Good afternoon,

This is sent as a 48-hour notification, XTO is scheduled to inspect the lined containment at PLU 30 Big Sinks CTB for three releases that occurred at the facility. Release dates are as follows (2/24/2022, 3/14/2022 and 3/19/2022), on Monday, May 2, 2022, at 10am MST. 24 hour release notifications were sent out on Friday, February 25, 2022 11:09 AM, Monday, March 14, 2022 3:05 PM and Saturday, March 19, 2022 12:47 PM since the releases were greater than 25 barrels in volume.

Please call us with any questions or concerns.

GPS Coordinates: (32.10395, -103.82149)

Thank you,

### **Garrett Green**

Environmental Coordinator
Delaware Business Unit
(575) 200-0729
<a href="mailto:Garrett.Green@ExxonMobil.com">Garrett.Green@ExxonMobil.com</a>

XTO Energy, Inc.

3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

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

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

## **Release Notification**

## **Responsible Party**

			resp	onsible i al c	y	
Responsible	Party XTC	) Energy		OGRID	5380	
Contact Nam				Contact Te	elephone 432-236-3808	
Contact ema	<sup>il</sup> adrian.bak	er@exxonmobil.c	om	Incident #	(assigned by OCD)	
			Rd Bldg 5, Midlan	id, Texas, 79707		
				of Release So	ource	
Latitude 32.1	10407		(NAD 83 in deci	Longitude _ imal degrees to 5 decin		
Site Name Pl	LU 30 Big S	inks		Site Type C	СТВ	
Date Release	Discovered	03/19/2022		API# (if app	licable)	
Unit Letter	Section	Township	Range	Coun	ty	
F	30	25S	31E	Edd	у	
Surface Owne				Volume of I	Release justification for the volumes	provided below)
× Crude Oi		Volume Release			Volume Recovered (b	
Produced Water Volume Released (bbls) 97.01			Volume Recovered (b	obls) 96.00		
Condensa	-1-		tion of total dissolv water >10,000 mg/		Yes No Volume Recovered (b	Ш
Natural G					`	<u>'</u>
		Volume Release	,	• • • • • • • • • • • • • • • • • • • •	Volume Recovered (N	<u> </u>
Other (de	escribe)	Volume/Weight	Released (provide	units)	Volume/Weight Recovered (provide units)	
Cause of Rel	bouncii	ng betty and batter		ment and misting		ank. Fluids then released from re recovered. A third-party

Received by OCD: 6/28/2024 6:51:07 PM Form C-141 State of New Mexico Oil Conservation Division Page 2

	PageH36eof 3	24
cident ID		
istrict RP		

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major	If YES, for what reason(s) does the response	nsible party consider this a major release?
release as defined by 19.15.29.7(A) NMAC?	A release equal to or greater than 25 barre	ls.
19.13.29.7(A) NMAC?		
🗶 Yes 🗌 No		
If YES, was immediate no	otice given to the OCD? By whom? To w	hom? When and by what means (phone, email, etc)?
•	Mike Bratcher; Victoria Venegas; Rob Han	nlet; ocd.enviro@state.nm.us on Saturday, March 19, 2022 12:47
PM via email.		
	Initial R	esponse
The responsible		•
The responsible p	Party must undertake the following actions immediate	ly unless they could create a safety hazard that would result in injury
➤ The source of the rele	pase has heen stonned	
	s been secured to protect human health and	the environment
	-	dikes, absorbent pads, or other containment devices.
	ecoverable materials have been removed ar	
	d above have <u>not</u> been undertaken, explain	why:
NA		
B 10.17.20.0 B (4) NH	110	
has begun, please attach	a narrative of actions to date. If remedial	remediation immediately after discovery of a release. If remediation efforts have been successfully completed or if the release occurred please attach all information needed for closure evaluation.
		best of my knowledge and understand that pursuant to OCD rules and
		ifications and perform corrective actions for releases which may endanger OCD does not relieve the operator of liability should their operations have
failed to adequately investig	ate and remediate contamination that pose a three	eat to groundwater, surface water, human health or the environment. In
addition, OCD acceptance of and/or regulations.	f a C-141 report does not relieve the operator of	responsibility for compliance with any other federal, state, or local laws
•	ıker	SSHE Coordinator
Printed Name: Adrian Ba	A D-1	Title: SSHE Coordinator
Signature:	h Jan L	Date:
email: adrian.baker@exx	onmobil.com	Telephone: 432-236-3808
<u></u>		Telephone.
OCD Only		
Received by:		Date:

Location:	PLU 30 Big Sinks CTB		
Spill Date:	3/19/2022		
	Area 1		
Approximate A	rea =	1347.50	cu.ft.
	VOLUME OF LEAK		
Total Crude Oil	=	144.00	bbls
Total Produced	Water =	96.00	bbls
	Area 2		
Approximate A	rea =	5696.00	sq. ft.
Average Satura	tion (or depth) of spill =	1.00	inches
Average Porosi	ty Factor =	0.03	
<u> </u>			
	VOLUME OF LEAK	1	1
Total Crude Oil	=	1.52	bbls
Total Produced	Water =	1.01	bbls

TOTAL VOLUME OF LEAV				
TOTAL VOLUME OF LEAK				
Total Crude Oil =	145.52 l	bbls		
Total Produced Water =	97.01	bbls		
TOTAL VOLUME RECOVERED				
Total Crude Oil =	144.00	bbls		
Total Produced Water =	96.00	bbls		

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NAPP2209137379 Incident ID 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?	> 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 <b>not</b> 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.			
<ul> <li>         \infty Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.     </li> <li>         \infty Field data     </li> </ul>			
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			
<ul> <li>☑ Boring or excavation logs</li> <li>☑ Photographs including date and GIS information</li> </ul>			
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.

Received by OCD: 6/28/2024 6:51:07 PM Form C-141 State of New Mexico Page 4 Oil Conservation Division

	Page 139 of 32
cident ID	NAPP2209137379
istrict RP	
:1:4 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: Garrett Green Title: Environmental Coordinator

Signature: Date: 3/6/2023 \_\_\_\_

email: garrett.green@exxonmobil.com Telephone: 575-200-0729

OCD Only

Received by: \_\_\_\_\_ Date: \_\_\_\_\_\_

Date: \_\_\_\_\_\_\_

Page 140 of 324 NAPP2209137379 Incident ID District RP Facility ID Application ID

# **Remediation Plan**

Remediation Plan Checklist: Each of the following items must be included in the plan.			
<ul> <li>□ Detailed description of proposed remediation technique</li> <li>□ Scaled sitemap with GPS coordinates showing delineation points</li> <li>□ Estimated volume of material to be remediated</li> <li>□ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC</li> <li>□ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)</li> </ul>			
<u>Deferral Requests Only</u> : Each of the following items must be confirmed as part of any request for deferral of remediation.			
☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.			
Extents of contamination must be fully delineated.			
Contamination does not cause an imminent risk to human health, the environment, or groundwater.			
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: _ Garrett Green	Title: Environmental Coordinator		
Signature: _ Sat Sun	Date: <u>3/6/2023</u>		
email: _garrett.green@exxonmobil.com	Telephone: <u>575-200-0729</u>		
OCD Only			
<u>oes om,</u>			
Received by:	Date:		
☐ Approved ☐ Approved with Attached Conditions of	Approval		
Signature:	<u>Date:</u>		



March 6, 2022

#### **New Mexico Oil Conservation Division**

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

Re: Deferral Request Addendum

PLU 30 Big Sinks Battery

Incident Numbers NAPP2206853301, NAPP2208351954, & NAPP2209137379

**Eddy County, New Mexico** 

### To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of XTO Energy, Inc. (XTO), has prepared this *Deferral Request Addendum* (*Addendum*) to document assessment and remediation activities completed at the Poker Lake Unit (PLU) 30 Big Sinks Battery (Site). This *Addendum* details the additional remediation activities completed at the Site in response to the New Mexico Oil Conservation Division (NMOCD) denial of the original *Deferral Request*. In the denial, NMOCD indicated additional depth to water confirmation and excavation of accessible impacted soil was required. Based on the additional remediation activities described below, XTO is submitting this *Addendum* and requesting deferral of final remediation for Incident Numbers NAPP2206853301, NAPP2208351954, and NAPP2209137379 until the Site is reconstructed and/or the well pad is abandoned.

#### **BACKGROUND**

The Site is located in Unit F, Section 30, Township 25 South, Range 31 East, in Eddy County, New Mexico (32.10395°, -103.82149°) and is associated with oil and gas exploration and production operations on federal land managed by the Bureau of Land Management (BLM).

#### Incident Number NAPP2206853301

On February 24, 2022, a water dump washed out on a separator, causing the skim tank to overflow and release approximately 99.23 barrels (bbls) of crude oil into lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 99 bbls of crude oil were recovered from within the lined containment. XTO reported the release to the NMOCD via email on February 25, 2022, and submitted a Release Notification Form C-141 (Form C-141) on March 9, 2022. The release was assigned Incident Number NAPP2206853301.

### Incident Number NAPP2208351954

On March 14, 2022, a diaphragm failed on a 6-inch water dump, causing the skim tank to overflow and release approximately 64.2 bbls of crude oil and 16.05 bbls of produced water into lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids;

Ensolum, LLC | Environmental, Engineering & Hydrogeologic Consultants 705 W. Wadley, Suite 210 | Midland, TX 78209 | ensolum.com Texas PG Firm No. 50588 | Texas PE Firm No. F-21843 XTO Energy, Inc Deferral Request Addendum PLU 30 Big Sinks Battery

approximately 64 bbls of crude oil and 16 bbls of produced water were recovered from within the lined containment. XTO reported the release to the NMOCD via email on March 14, 2022, and submitted a Form C-141 on March 24, 2022. The release was assigned Incident Number NAPP2208351954.

### Incident Number NAPP2209137379

On March 19, 2022, a diaphragm on a water dump failed, causing the skim tank to overflow and release approximately 145.52 bbls of crude oil and 97.01 bbls of produced water into lined containment and onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 144 bbls of crude oil and 96 bbls of produced water were recovered from within the lined containment. XTO reported the release to the NMOCD via email on March 19, 2022, and submitted a Form C-141 on April 1, 2022. The release was assigned Incident Number NAPP2209137379.

A *Deferral Request* submitted on May 25, 2022 detailed Site characterization according to Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Results from the Site characterization are presented on page 3 of the Form C-141, Site Assessment/Characterization. Based on the results of the Site Characterization, the following NMOCD Table I Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

A 48-hour advance notice of liner inspection was provided via email to the NMOCD District II. A liner integrity inspection was conducted May 2, 2022. Upon inspection, the liner was determined to be competent. Photographic documentation was completed during the liner inspection and a photographic log is included in Appendix A. The release areas outside of containment overlapped for all three releases and were addressed concurrently.

Between April 2022 and May 2022, XTO conducted assessment, delineation, and excavation activities in response to the releases. An estimated 30 cubic yards of accessible impacted soil was excavated from the Site. To address residual petroleum hydrocarbon impacts left in place, a 5 percent (%) solution of Micro-Blaze® with freshwater was applied to the impacted area to promote natural attenuation of the hydrocarbons through biodegradation. Based on the remedial activities and laboratory analytical results from the soil sampling events, XTO submitted a *Deferral Request* on May 25, 2022, requesting to defer impacted soil immediately adjacent to and in between active production equipment until major facility reconstruction or abandonment.

On September 26, 2022, NMOCD denied the *Deferral Request* for Incident Number nAPP2209137379 for the following reasons:

• The deferral request is denied. Depth to groundwater is not adequately identified. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided. If evidence of depth to ground water within a ½ mile radius of the site cannot be provided, impacted soils will need to meet Table 1 Closure Criteria for ground water at a depth of 50 feet or less. As much of the contaminated soil outside the secondary containment area should be removed safely with alternative methods. Delineation up against



XTO Energy, Inc Deferral Request Addendum PLU 30 Big Sinks Battery

and under the containment needs to occur to define edge of release. The work will need to occur in 90 days after the report has been reviewed.

#### **DEPTH TO WATER CONFIRMATION**

In an effort to confirm the depth to groundwater beneath the Site, Ensolum personnel oversaw installation of a soil boring within 0.5 miles of the Site on June 22, 2022, utilizing a truck-mounted air rotary rig. The soil boring (C-4624) was permitted by the New Mexico Office of the State Engineer (NMOSE) and was advanced to a total depth of 120 feet below ground surface (bgs). An Ensolum geologist logged and described soils continuously. No moisture or groundwater was encountered during drilling activities. The lithologic/soil sampling log is included in Appendix B. The location of the borehole is approximately 0.20 miles southeast of the Site and is depicted on Figure 1. The borehole was left open for over 72 hours to allow for potential slow infill of groundwater. After the 72-hour waiting period without observing groundwater, it was confirmed that groundwater beneath the Site is greater than 100 feet bgs. The borehole was properly abandoned with drill cuttings and hydrated bentonite chips. Based on the confirmed depth to water greater than 100 feet bgs, the Table I Closure Criteria assigned in the original *Deferral Request* are applicable and appropriate for protection of groundwater at this Site.

#### ADDITIONAL EXCAVATION AND DELINEATION SOIL SAMPLING ACTIVITIES

Between October 19, 2022 and November 4, 2022, excavation activities were completed via hand shoveling to remove accessible impacted soil to the maximum extent practicable (MEP) as indicated by visible staining and field screening activities for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. The excavation depth was limited to an approximate depth of 1-foot bgs due to refusal with hand shovels. The release area was not accessible with mechanical equipment due to the surrounding active production equipment preventing access to the area of the release extent.

Following removal of impacted soil to the MEP, Ensolum personnel collected 5-point composite soil samples at a frequency of every 200 square feet from the floor of the excavation. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples FS01A through FS06A were collected from the floor of the excavation at a depth of 1-foot bgs. In addition, boreholes BH03 and BH04 were collected within the release extent, as close to the secondary containment as possible, on the south and east sides respectively, at a depth of 1.5 feet bgs to delineate the current depth of the affected soil.

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

The excavation extent and excavation soil sample locations are depicted on Figure 2.

#### LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for excavation floor samples FS01A through FS06A, collected at 1-foot bgs, indicated TPH-GRO/TPH-DRO and TPH concentrations exceeded the Closure Criteria. Impacted soil was excavated to the MEP via hand shoveling. Due to the surrounding active production equipment, the



XTO Energy, Inc Deferral Request Addendum PLU 30 Big Sinks Battery

release area was not accessible with mechanical equipment, including a hydrovac, skid steer, and/or backhoe. Photographic documentation is included in Appendix A. Laboratory analytical results are summarized in Table 1 and the laboratory analytical reports are included in Appendix C.

Laboratory analytical results from delineation soil samples BH02 through BH04 indicate all COC concentrations were in compliance with the Closure Criteria and effectively confirm residual petroleum hydrocarbon impacts do not exceed 1.5 bgs.

The excavation measured approximately 1,200 square feet in areal extent. An additional 30 cubic yards of impacted soil was removed during the excavation activities. The impacted soil was transported and properly disposed of at a permitted disposal facility in Carlsbad, New Mexico.

#### **DEFFERAL REQUEST**

A total of 60 cubic yards of impacted soil was excavated from the Site via hand shoveling to MEP, which terminated at a depth of 1-foot bgs due to refusal. Residual impacted petroleum hydrocarbon soil was left in place in the floor of the excavation due to the release area being surrounded by active production equipment where it could not be accessed with mechanical equipment and remediation would require a major facility deconstruction. Total TPH concentrations from confirmation samples collected in May 2022 to the October 2022 and December 2022 confirmation sampling events have reduced by an average of 62% with some areas decreasing more than 70%. Lighter end TPH in the GRO range have reduced by an average of 85% with some areas decreasing to 98%, indicating the gross impacts have been effectively removed from the Site through excavation and the application of a bio-amendment that supports natural attenuation, which is protective of human health and the environment.

Residual petroleum hydrocarbon-impacted soil remains in place within and around production equipment; however, the impacted soil is delineated vertically by delineation soil samples BH02/BH03/BH04 and laterally by delineation soil samples from borehole BH01 and potholes PH01 through PH03. Approximately 30 cubic yards of petroleum hydrocarbon impacted soil remains in place assuming a maximum 1.5-foot depth based on the delineation soil samples listed above. The deferral area and delineation soil samples are depicted on Figure 3.

XTO does not believe deferment will result in imminent risk to human health, the environment, or groundwater. Depth to groundwater was estimated to be greater than 100 feet bgs and no other sensitive receptors were identified near the Site. Based on the presence of active production equipment within and around the release area and the complete lateral and vertical delineation of impacted soil remaining in place, XTO requests deferral of final remediation for Incident Numbers NAPP2206853301, NAPP2208351954, and NAPP2209137379 until final reclamation of the well pad or major construction, whichever comes first.

XTO Energy, Inc Deferral Request Addendum PLU 30 Big Sinks Battery

If you have any questions or comments, please contact Ms. Tacoma Morrissey at (337) 257-8307 or tmorrissey@ensolum.com.

Sincerely, **Ensolum**, **LLC** 

Corner Whitman

Field Geologist

Daniel R. Moir, PG Senior Managing Geologist

cc: Garrett Green, XTO

Shelby Pennington, XTO Bureau of Land Management

#### Appendices:

Figure 1 Site Receptor Map

Figure 2 Excavation Soil Sample Locations

Figure 3 Deferral Map

Table 1 Soil Sample Analytical Results

Appendix A Photographic Log

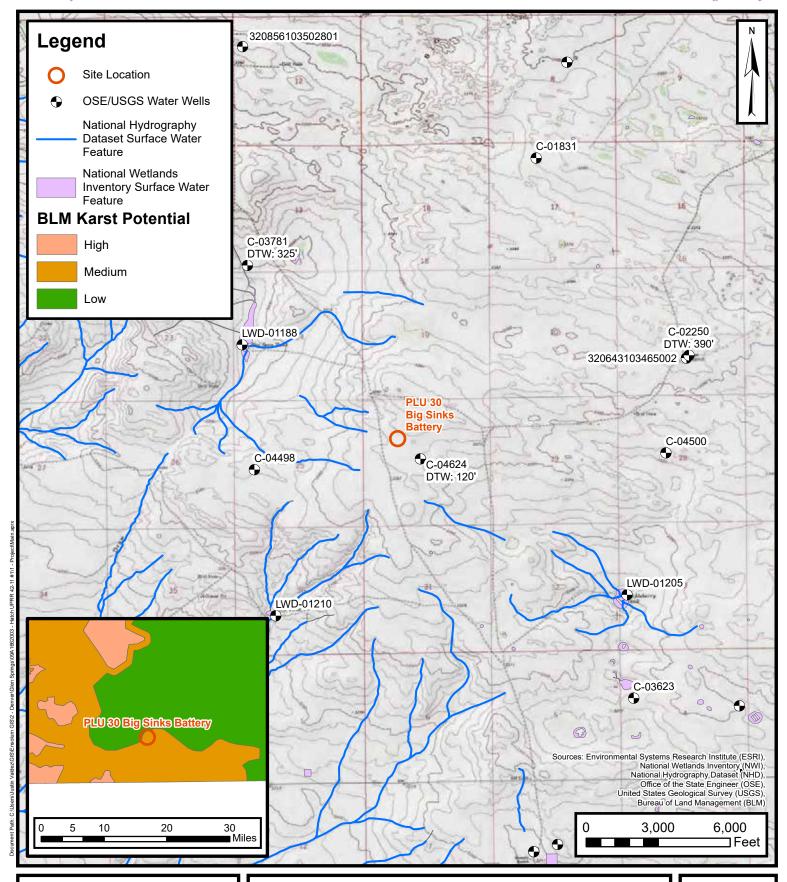
Appendix B Lithologic / Soil Sampling Logs

Appendix C Laboratory Analytical Reports & Chain-of-Custody Documentation

Appendix D NMOCD Notifications Appendix E Final C-141 Notification



**FIGURES** 





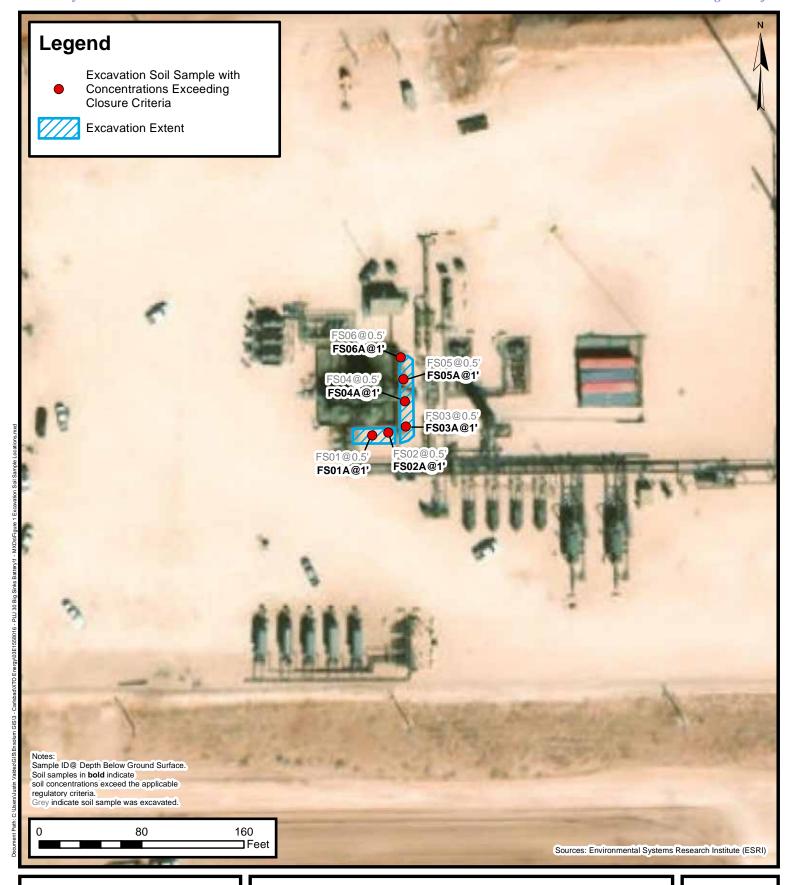
# **Site Receptor Map**

PLU 30 Big Sinks Battery XTO Energy, Inc NAPP2206853301, NAPP2208351954, NAPP2209137379 Unit F, Sec 30, T25S, R31E Eddy County, New Mexico

1

**FIGURE** 

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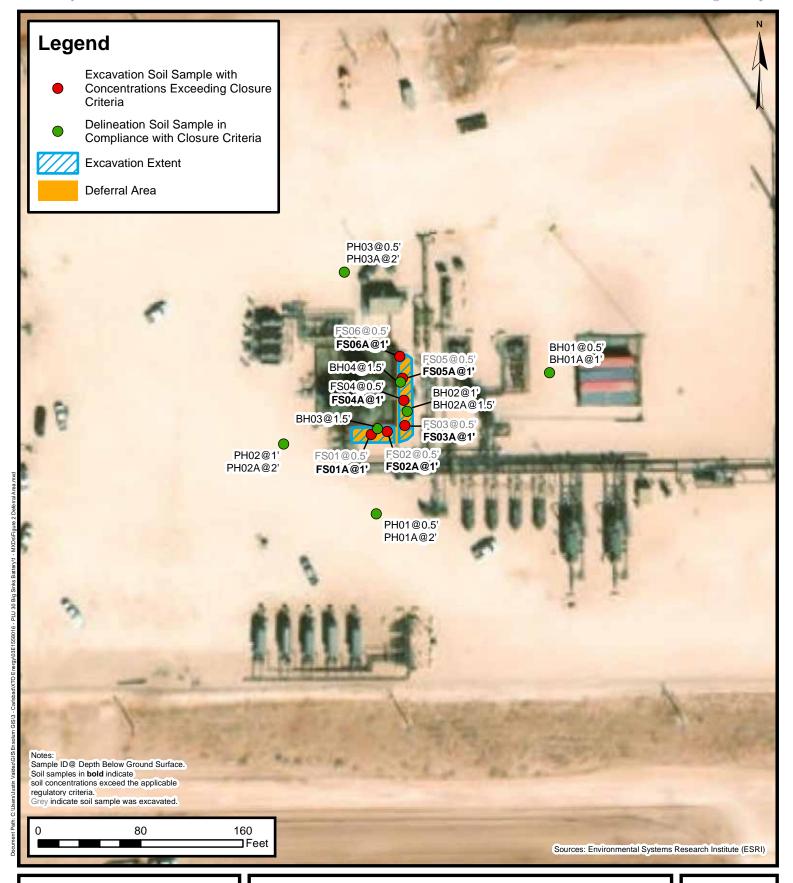




# **Excavation Soil Sample Locations**

PLU 30 Big Sinks Battery XTO Energy, Inc NAPP2206853301, NAPP2208351954, NAPP2209137379 Unit F, Sec 30, T25S, R31E Eddy County, New Mexico FIGURE

2





# **Deferral Area**

PLU 30 Big Sinks Battery XTO Energy, Inc NAPP2206853301, NAPP2208351954, NAPP2209137379 Unit F, Sec 30, T25S, R31E Eddy County, New Mexico FIGURE

3



**TABLES** 



## TABLE 1 SOIL SAMPLE ANALYTICAL RESULTS PLU 30 BIG SINKS BATTERY XTO ENERGY, INC EDDY COUNTY, NEW MEXICO

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Cl	osure Criteria (l	NMAC 19.15.29)	10	50	NE	NE	NE	1,000	2,500	20,000
				Asse	ssment Soil Sa	mples				
<del>SS01</del>	04/15/2022	0.5	<0.0398	<del>158</del>	4,620	11,200	<del>&lt;250</del>	15,800	15,800	103
<del>\$\$02</del>	04/15/2022	0.5	<del>&lt;0.0402</del>	157	2,060	7,820	<49.9	9,880	9,880	448
				Delir	neation Soil Sa	mples				
BH01	05/02/2022	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	46.1
BH01A	05/02/2022	1	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	14.6
BH02	05/02/2022	1	<0.00200	<0.00399	<49.9	428	60.9	428	489	26.2
BH02	05/02/2022	1.5	< 0.00199	<0.00398	<50.0	110	<50.0	110	110	15.4
BH03	10/19/2022	1.5	<0.00199	<0.00398	<49.9	216	124	216	340	263
BH04	10/19/2022	1.5	<0.00200	<0.00399	63.3	377	263	440	703	201
PH01	05/02/2022	0.5	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	85.9
PH01A	05/02/2022	2	< 0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	17.0
PH02	05/02/2022	1	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	76.4
PH02A	05/02/2022	2	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	52.1
PH03	05/02/2022	0.5	<0.00198	< 0.00396	<50.0	<50.0	<50.0	<50.0	<50.0	36.9
PH03A	05/02/2022	2	< 0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	36.3
				Confi	rmation Soil Sa	amples				
FS01	05/03/2022	0.5'	<0.00201	0.299	1,290	10,400	<del>1,640</del>	11,700	13,300	394
FS01A	10/19/2022	1'	< 0.00201	0.0449	244	5,310	3,130	5,550	8,680	224
FS02	05/03/2022	0.5'	<del>&lt;0.00200</del>	0.844	1,180	<del>7,810</del>	1,380	8,990	10,400	141
FS02A	10/19/2022	1'	< 0.00199	0.0327	204	3,150	1,730	3,350	5,080	80.0
FS03	05/03/2022	0.5'	<0.00199	45.1	2,140	11,500	1,880	13,600	15,500	723
FS03A	10/24/2022	1'	< 0.00200	0.0639	321	5,750	<49.8	6,070	6,070	62.2
FS04	05/03/2022	0.5'	<0.00200	1.09	2,220	14,200	2,330	16,400	18,800	790
FS04A	10/24/2022	1'	< 0.00199	0.237	<50.0	4,540	488	4,540	5,030	107
FS05	05/03/2022	0.5'	0.00362	1.35	496	12,400	<del>&lt;250</del>	12,900	12,900	528
FS05A	12/01/2022	1'	<0.00200	0.0153	84.4	4000	<50.0	4,084	4,084	39.9
FS06	05/03/2022	0.5'	<0.400	0.177	617	<del>16,000</del>	<del>&lt;250</del>	<del>16,600</del>	16,600	<del>106</del>
FS06A	12/01/2022	1'	< 0.00199	0.0288	107	3740	<50.0	3,847	3,847	18.6

#### Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in **bold** exceed the NMOCD Table I Closure Criteria or reclamation requirement where applicable.

MMAC: New Mexico Administrative Code Grey text indicates soil sample removed during excavation activities

GRO: Gasoline Range Organics DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

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**APPENDIX A** 

Photographic Log



#### **Photographic Log**

XTO Energy, Inc.
PLU 30 Big Sinks Battery

Incident Numbers: NAPP2206853301, NAPP2208351954, NAPP2209137379



Photograph 1 Date: Apr 15, 2022
Description: View of release extent and visible staining facing north.



Photograph 2 Date: Apr 15, 2022

Description: View of release extent and visible staining facing south.



Photograph 3 Date: May 2, 2022
Description: View of containment during liner inspection, facing south.



Photograph 4 Date: May 2, 2022

Description: View of containment during liner inspection, facing west.

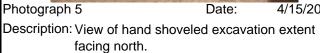


#### Photographic Log

XTO Energy, Inc.
PLU 30 Big Sinks Battery

Incident Numbers: NAPP2206853301, NAPP2208351954, NAPP2209137379







Description: View of hand shoveled excavation extent facing south.



Photographic Log
XTO Energy, Inc
PLU 30 Big Sinks Battery
nAPP2209137379, nAPP2208351954, nAPP2206853301





Photograph 7 Date: 11/04/2022

Description: Limited access to release area.

View: Looking north.

Photograph 8 Date: 11/04/2022 Description: Elevated view, east section of release.

View: Looking northwest.





Photograph 9 Date: 10/24/2022

Description: Hand excavation of staining.

View: Looking southeast.

Photograph 10 Date: 10/24/2022

Description: Hand excavation of staining.

View: Looking northeast.



**APPENDIX B** 

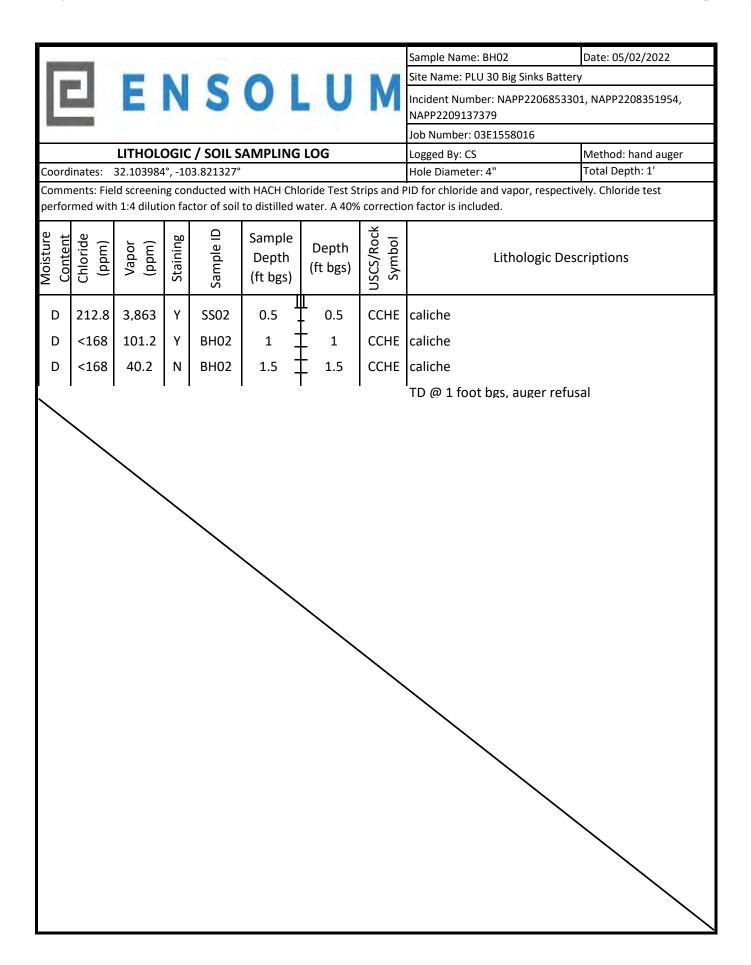
Lithologic Soil Sampling Logs

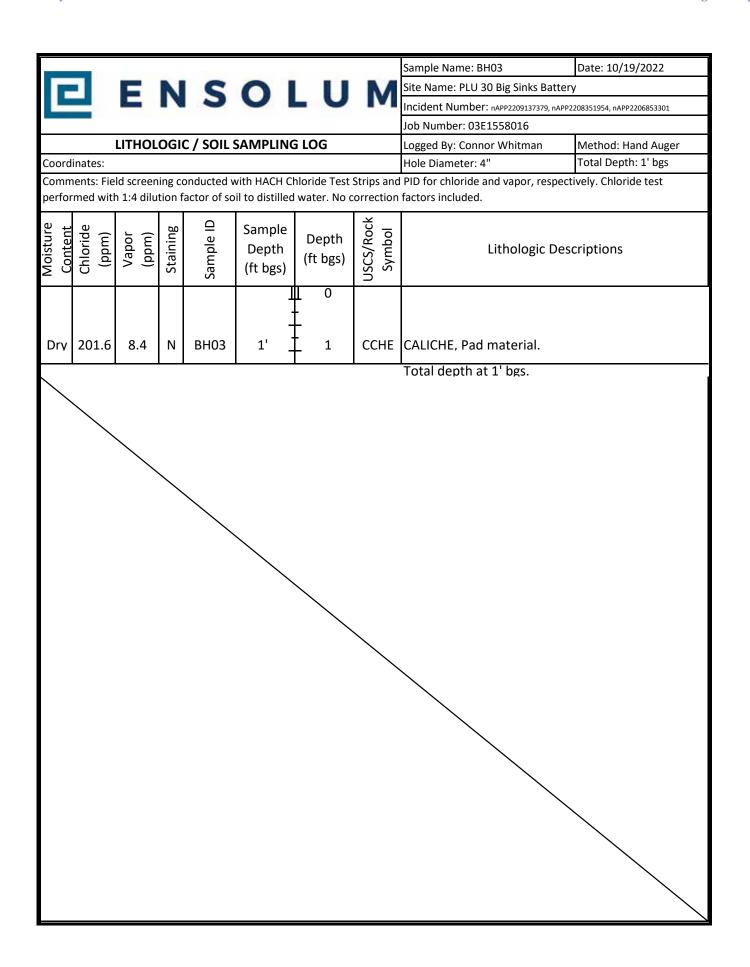


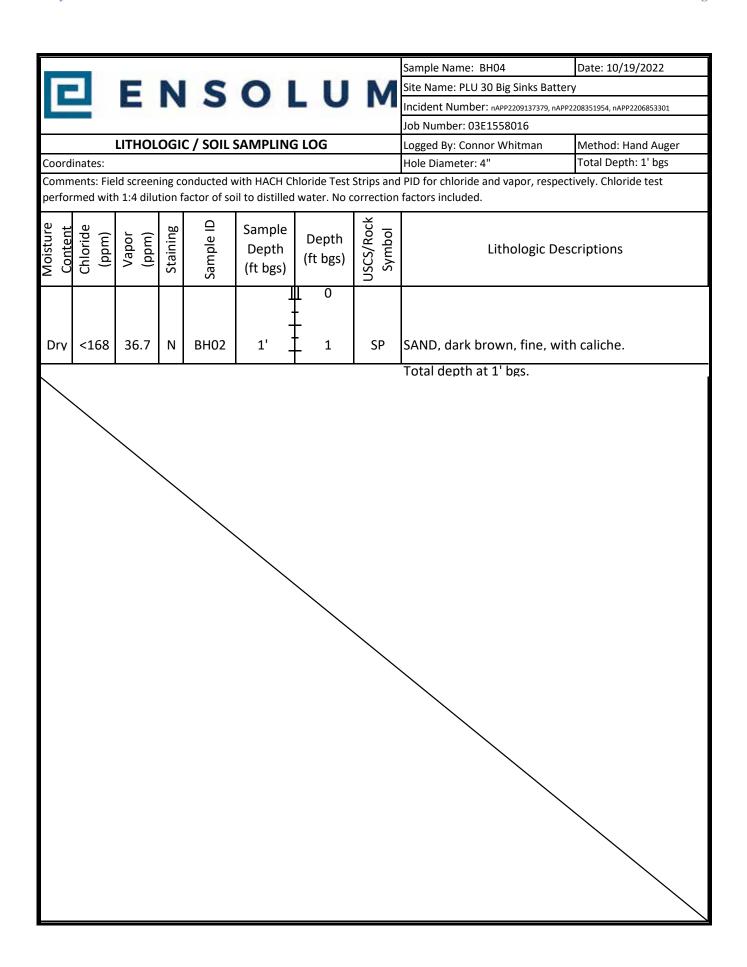
NOI	OSE POD NO. (W C-4624 POD	L		WELL TAG ID NO.		OSE FILE NO(S C-4624						
OCAT	WELL OWNER N XTO ENERG					PHONE (OPTION 432-236-380						
VELL	WELL OWNER N 6401 HOLIDA					CITY MIDLAND		TX 79707	ZIP			
GENERAL AND WELL LOCATION	WELL LOCATION	LAT	DE	EGREES MINUTES SEC 32 6 5	* ACCURACY REQUIRED: ONE TENTH OF A SECOND							
ENER	(FROM GPS)	_	NGITUDE		5.79 W	7.500	QUIRED: WGS 84					
1. G			UNIT 30 BS # 1031	O STREET ADDRESS AND COMMON LAND H PAD	MARKS – PLS	SS (SECTION, TO	WNSHJIP, RANGE) WH	ERE AVAILABLE				
	LICENSE NO. WD-118	4	NAME OF LICENSED	DRILLER RUSSELL SOUTHERLANI	)		NAME OF WELL DR WEST TEXAS	ILLING COMPANY S WATER WELL SEI	RVICE			
	DRILLING STAR 06/22/22		DRILLING ENDED 06/22/22	DEPTH OF COMPLETED WELL (FT) 120	BORE HO	LE DEPTH (FT)	DEPTH WATER FIR	ST ENCOUNTERED (FT)	).			
_	COMPLETED WI	ELL IS:	ARTESIAN	DRY HOLE SHALLOW (UN	CONFINED)	STATIC WATER LEVEL IN COMPLETED W						
LIO	DRILLING FLUII	);	✓ AIR	MUD ADDITIVES – SI	PECIFY:							
)RM	DRILLING METH	IOD:	✓ ROTARY	HAMMER CABLE TOOL	ОТНЕ	ER - SPECIFY:						
2. DRILLING & CASING INFORMATION	FROM TO DIAM			CASING MATERIAL AND/OR GRADE (include each easing string, and	CON	ASING NECTION TYPE	CASING INSIDE DIAM.	CASING WALL THICKNESS	SLOT SIZE (inches			
& CAS			(inches)	note sections of screen)	(add coupling diameter)		(inches)	(inches)	(mene.			
LING		_		NO CASING IN HOLE								
DRII												
2.		-										
	DEPTH (fee	t bgl)	BORE HOLE	LIST ANNULAR SEAL M	IATERIAL A	AND	AMOUNT	METHO	D OF			
RIAL	FROM	ТО	DIAM. (inches)	GRAVEL PACK SIZE-RANG	GE BY INTE	ERVAL	(cubic feet)	PLACEN				
ANNULAR MATERIAL				N/A			egeoil au.	25 2022 pm   5a				
NULAR												
3. AN												
	NO. C-46		1406	POD NO.	140	WR-20		& LOG (Version 04/3	0/19)			

WELL TAG ID NO.

	DEPTH (	feet bgl)		COLOR AND TYPE OF MATERI	AL ENCOUNTERED -		WAT	TER	ESTIMATED YIELD FOR
	FROM	то	THICKNESS (feet)	INCLUDE WATER-BEARING CAVITY (attach supplemental sheets to fi	ES OR FRACTURE ZO	A. Warrell	BEAR (YES	ING?	WATER- BEARING ZONES (gpm)
	0	17		CALACHII	Ē		Y	✓ N	
	17	30		SAND		-	Y	√ N	
	30	40		SAND, SMALL G	RAVEL		Y	√N	
	40	95		SAND			Y	√ N	
	95	120		SANDSTONE, S	SAND		Y	√N	
7							Y	N	
HYDROGEOLOGIC LOG OF WELL							Y	N	
OF							Y	N	
900							Y	N	
IC I							Y	N	
100							Y	N	
GEO							Y	N	
RO							Y	N	
HYL							Y	N	
4							Y	N	
							Y	N	
							Y	N	
							Y	N	
							Y	N	
H							Y	N	
							Y	N	
	METHOD U	SED TO E	STIMATE YIELD	OF WATER-BEARING STRATA:		TOT	AL ESTIN	IATED	
	PUM	P $\square A$	AIR LIFT	BAILER OTHER - SPECIFY:DR	Y HOLE	WEI	L YIELD	(gpm):	0.00
RVISION	WELL TES	STAR	T TIME, END TIME FORMATION: TH	ACH A COPY OF DATA COLLECTED DUF ME, AND A TABLE SHOWING DISCHARG IE BORING WILL BE SECURED AND	LEFT OPEN FOR 72	OVER TH	AT WH	IG PERIO	D. IE, XTO WILI
TEST; RIG SUPERVIS			AS	SESS FOR THE PRESENCE OR ABSE PRING FOLLOWING NMOSE ABAND	NCE OF GROUNDY	VALER	X10 WH	LL BAC	KEILL THE
S. TES	PRINT NAM			VISOR(S) THAT PROVIDED ONSITE SUP	ERVISION OF WELL O	CONSTRU	CTION O	THER TH	IAN LICENSEF
SIGNATURE	RECORD O	F THE ABO	OVE DESCRIBED	AT TO THE BEST OF MY KNOWLEDGE WELL. I ALSO CERTIFY THAT THE WEL WITH THE PERMIT HOLDER WITHIN 30 I	L TAG, IF REQUIRED DAYS AFTER THE CO	HAS BEE	N INSTA N OF WEI	LLED AN	D THAT THIS
6. SI	Lussu	SIGNAT	TURE OF DRILLE	Kussell Souther (~	1			DATE	
FOI	R OSE INTER	NAL USE			WR-20	WELL RE	CORD & 1	LOG (Ver	sion 04/30/2019
	E NO.			POD NO.	TRN NO				
LO	CATION			•	WELL TAG ID	VO.			PAGE 2 OF 2









APPENDIX C

Laboratory Analytical Reports & Chain of Custody Documentation

# PREPARED FOR

Attn: Tacoma Morrissey
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 12/30/2022 12:04:17 PM Revision 2

# **JOB DESCRIPTION**

PLU 30 Big Sinks Battery SDG NUMBER 03E1558016

# **JOB NUMBER**

890-3250-1

Eurofins Carlsbad 1089 N Canal St. Carlsbad NM 88220

# **Eurofins Carlsbad**

## **Job Notes**

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

# **Authorization**

Generated 12/30/2022 12:04:17 PM Revision 2

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

Client: Ensolum Laboratory Job ID: 890-3250-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

# **Table of Contents**

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## **Definitions/Glossary**

Client: Ensolum Job ID: 890-3250-1 Project/Site: PLU 30 Big Sinks Battery

SDG: 03E1558016

**Qualifiers** 

**GC VOA** 

Qualifier **Qualifier Description** 

S1-Surrogate recovery exceeds control limits, low biased. U Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier **Qualifier Description** 

S1+ Surrogate recovery exceeds control limits, high biased. U Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier **Qualifier Description** 

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

Duplicate Error Ratio (normalized absolute difference) **DER** 

Dil Fac **Dilution Factor** 

Detection Limit (DoD/DOE) DL

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) Minimum Detectable Concentration (Radiochemistry) MDC

MDL Method Detection Limit Minimum Level (Dioxin) ML MPN Most Probable Number Method Quantitation Limit MQL

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent POS Positive / Present

**Practical Quantitation Limit PQL** 

**PRES** Presumptive QC **Quality Control** 

**RER** Relative Error Ratio (Radiochemistry)

RI 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

**Eurofins Carlsbad** 

#### Case Narrative

Client: Ensolum

Job ID: 890-3250-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

Job ID: 890-3250-1

**Laboratory: Eurofins Carlsbad** 

**Narrative** 

Job Narrative 890-3250-1

#### REVISION

The report being provided is a revision of the original report sent on 10/25/2022. The report (revision 2) is being revised due to Per client email, requesting sample depth to be changed.

Report revision history

The report being provided is a revision of the original report sent on 10/25/2022. The report (revision 2) is being revised due to Per client email, requesting sample depth to be changed.

Revision 1 - 11/29/2022 - Reason - Per client email, requesting sample ID change.

#### Receipt

The sample was received on 10/20/2022 9:38 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.6°C

#### Receipt Exceptions

The following sample was received and analyzed from an unpreserved bulk soil jar: BH04 (890-3250-1).

#### **GC VOA**

Method 8021B: Surrogate recovery for the following sample was outside control limits: BH04 (890-3250-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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 surrogate recovery for the blank associated with preparation batch 880-37503 and analytical batch 880-37444 was outside the upper control 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.

**Eurofins Carlsbad** 12/30/2022 (Rev. 2)

Matrix: Solid

Lab Sample ID: 890-3250-1

# **Client Sample Results**

Client: Ensolum Job ID: 890-3250-1

Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

**Client Sample ID: BH04** 

Date Collected: 10/19/22 12:20 Date Received: 10/20/22 09:38

Sample Depth: 1.5'

Chloride

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 15:23	•
Toluene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 15:23	•
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 15:23	•
m-Xylene & p-Xylene	< 0.00399	U	0.00399	mg/Kg		10/21/22 14:15	10/24/22 15:23	
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 15:23	•
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		10/21/22 14:15	10/24/22 15:23	,
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	80		70 - 130			10/21/22 14:15	10/24/22 15:23	
1,4-Difluorobenzene (Surr)	58	S1-	70 - 130			10/21/22 14:15	10/24/22 15:23	•
Method: TAL SOP Total BTE	X - Total BTE	X Calculat	ion					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			10/24/22 16:38	•
Method: SW846 8015 NM - D	_	•	, , ,		_	_		
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	703		49.9	mg/Kg			10/24/22 09:48	,
Method: SW846 8015B NM -								
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	63.3		49.9	mg/Kg		10/21/22 13:50	10/22/22 01:41	,
Diesel Range Organics (Over C10-C28)	377		49.9	mg/Kg		10/21/22 13:50	10/22/22 01:41	,
Oll Range Organics (Over C28-C36)	263		49.9	mg/Kg		10/21/22 13:50	10/22/22 01:41	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	79		70 - 130			10/21/22 13:50	10/22/22 01:41	•
o-Terphenyl	87		70 - 130			10/21/22 13:50	10/22/22 01:41	•
Method: MCAWW 300.0 - An	ions. Ion Chr	omatograj	ohy - Soluble					
	, -	•						
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa

4.98

mg/Kg

201

10/24/22 18:40

## **Surrogate Summary**

Client: Ensolum Job ID: 890-3250-1
Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

		BFB1	DFBZ1	urrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
390-3250-1	BH04	80	58 S1-	
390-3253-A-1-A MS	Matrix Spike	100	95	
390-3253-A-1-B MSD	Matrix Spike Duplicate	97	72	
_CS 880-37514/1-A	Lab Control Sample	96	89	
_CSD 880-37514/2-A	Lab Control Sample Dup	95	81	
MB 880-37514/5-A	Method Blank	107	77	
Surrogate Legend				

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

Matrix: Solid Prep Type: Total/NA

ab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)	
90-3240-A-2-C MS	Matrix Spike	82	84	
390-3240-A-2-D MSD	Matrix Spike Duplicate	79	81	
390-3250-1	BH04	79	87	
CS 880-37503/2-A	Lab Control Sample	90	100	
CSD 880-37503/3-A	Lab Control Sample Dup	99	110	
ИВ 880-37503/1-A	Method Blank	118	133 S1+	

1CO = 1-Chlorooctane OTPH = o-Terphenyl

**Eurofins Carlsbad** 

1

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1 1

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14

# **QC Sample Results**

Client: Ensolum Job ID: 890-3250-1 Project/Site: PLU 30 Big Sinks Battery

SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-37514/5-A

**Matrix: Solid** 

**Analysis Batch: 37615** 

**Client Sample ID: Method Blank** 

Prep Type: Total/NA

Prep Batch: 37514

	IVID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/21/22 14:15	10/24/22 10:42	1

MB MB

MD MD

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107	70 - 130	10/21/22 14:15	10/24/22 10:42	1
1,4-Difluorobenzene (Surr)	77	70 - 130	10/21/22 14:15	10/24/22 10:42	1

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 37514

Prep Type: Total/NA

Lab Sample ID: LCS 880-37514/1-A **Matrix: Solid** 

**Analysis Batch: 37615** 

	Spike	LCS LCS			%Rec	
Analyte	Added	Result Qualifie	r Unit	D %Rec	Limits	
Benzene	0.100	0.1046	mg/Kg	105	70 - 130	
Toluene	0.100	0.1066	mg/Kg	107	70 - 130	
Ethylbenzene	0.100	0.09931	mg/Kg	99	70 - 130	
m-Xylene & p-Xylene	0.200	0.2054	mg/Kg	103	70 - 130	
o-Xylene	0.100	0.1034	mg/Kg	103	70 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	89		70 - 130

Lab Sample ID: LCSD 880-37514/2-A **Client Sample ID: Lab Control Sample Dup** 

**Matrix: Solid** 

Analysis Batch: 37615				Pre				Batch: 37514		
-	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.09576		mg/Kg		96	70 - 130	9	35	
Toluene	0.100	0.09860		mg/Kg		99	70 - 130	8	35	
Ethylbenzene	0.100	0.1009		mg/Kg		101	70 - 130	2	35	
m-Xylene & p-Xylene	0.200	0.1953		mg/Kg		98	70 - 130	5	35	
o-Xylene	0.100	0.09779		mg/Kg		98	70 - 130	6	35	

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		70 - 130
1.4-Difluorobenzene (Surr)	81		70 - 130

Lab Sample ID: 890-3253-A-1-A MS

**Matrix: Solid** 

**Analysis Batch: 37615** 

				Prep Batch: 37514
				%Rec
ier	Unit	D	%Rec	Limits
	mg/Kg		99	70 - 130

MS MS Sample Sample Spike Analyte Result Qualifier Added Result Qualific <0.00201 U 0.100 0.1004 Benzene Toluene <0.00201 U 0.100 0.1142 mg/Kg 114 70 - 130

**Eurofins Carlsbad** 

**Client Sample ID: Matrix Spike** 

Prep Batch: 37514

## **QC Sample Results**

Job ID: 890-3250-1 Client: Ensolum Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

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

MS MS

Lab Sample ID: 890-3253-A-1-A MS Client Sample ID: Matrix Spike **Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 37615** 

Sample	Sample	Spike	MS	MS				%Rec
Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
<0.00201	U	0.100	0.09592		mg/Kg		96	70 - 130
<0.00402	U	0.200	0.2008		mg/Kg		100	70 - 130
<0.00201	U	0.100	0.1000		mg/Kg		100	70 - 130
	Result <0.00201 <0.00402	Sample         Sample           Result         Qualifier           <0.00201	Result   Qualifier   Added   <0.00201   U   0.100   <0.00402   U   0.200	Result         Qualifier         Added         Result           <0.00201	Result         Qualifier         Added         Result         Qualifier           <0.00201	Result         Qualifier         Added         Result         Qualifier         Unit           <0.00201	Result         Qualifier         Added         Result         Qualifier         Unit         D           <0.00201	Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec           <0.00201

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: 890-3253-A-1-B MSD **Client Sample ID: Matrix Spike Duplicate** Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 3/615									Prep E	satcn: 3	3/514
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.00201	U	0.0996	0.09485		mg/Kg		94	70 - 130	6	35
Toluene	< 0.00201	U	0.0996	0.09849		mg/Kg		99	70 - 130	15	35
Ethylbenzene	< 0.00201	U	0.0996	0.09498		mg/Kg		95	70 - 130	1	35
m-Xylene & p-Xylene	< 0.00402	U	0.199	0.1982		mg/Kg		100	70 - 130	1	35
o-Xylene	< 0.00201	U	0.0996	0.1021		mg/Kg		103	70 - 130	2	35

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		70 - 130
1,4-Difluorobenzene (Surr)	72		70 - 130

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

Lab Sample ID: MB 880-37503/1-A

**Matrix: Solid** 

Analysis Batch: 37444							Prep Batch:	37503
	MB	MB					•	
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/21/22 13:50	10/21/22 19:50	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/21/22 13:50	10/21/22 19:50	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	ma/Ka		10/21/22 13:50	10/21/22 19:50	1

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared Analy	zed Dil Fac
1-Chlorooctane	118	70 - 130	10/21/22 13:50 10/21/22	19:50
o-Terphenyl	133 S1+	70 - 130	10/21/22 13:50 10/21/22	? 19:50

Lab Sample ID: LCS 880-37503/2-A

Analysis Batch: 37444							Prep Batch: 37503
	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics (GRO)-C6-C10	1000	858.1		mg/Kg		86	70 - 130
Diesel Range Organics (Over C10-C28)	1000	774.2		mg/Kg		77	70 - 130

**Eurofins Carlsbad** 

**Client Sample ID: Method Blank** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

## QC Sample Results

Client: Ensolum Job ID: 890-3250-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

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

100

Lab Sample ID: LCS 880-37503/2-A

**Matrix: Solid** 

**Analysis Batch: 37444** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

**Prep Type: Total/NA** 

Prep Batch: 37503

Prep Batch: 37503

LCS LCS Limits %Recovery Qualifier Surrogate 1-Chlorooctane 90 70 - 130

**Client Sample ID: Lab Control Sample Dup** Lab Sample ID: LCSD 880-37503/3-A

70 - 130

o-Terphenyl

C10-C28)

**Analysis Batch: 37444** 

**Matrix: Solid Prep Type: Total/NA** Prep Batch: 37503

LCSD LCSD RPD %Rec Spike Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Gasoline Range Organics 1000 1041 104 70 - 130 19 20 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 902.2 mg/Kg 90 70 - 130 15 20

LCSD LCSD

%Recovery Qualifier Surrogate Limits 70 - 130 1-Chlorooctane 99 70 - 130 o-Terphenyl 110

Lab Sample ID: 890-3240-A-2-C MS **Client Sample ID: Matrix Spike** 

**Matrix: Solid** 

**Analysis Batch: 37444** 

Sample Sample Spike MS MS %Rec Result Qualifier Added Result Qualifier Limits **Analyte** Unit %Rec Gasoline Range Organics <49.9 U 998 1086 mg/Kg 109 70 - 130 (GRO)-C6-C10 <49.9 U 998 Diesel Range Organics (Over 781.6 mg/Kg 76 70 - 130

C10-C28)

MS MS Surrogate %Recovery Qualifier Limits 1-Chlorooctane 70 - 130 82 o-Terphenyl 84 70 - 130

Lab Sample ID: 890-3240-A-2-D MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Solid** 

**Analysis Batch: 37444** 

Prep Batch: 37503 Sample Sample Spike MSD MSD %Rec **RPD** Result Qualifier Result Qualifier Limits **RPD** Limit **Analyte** Added Unit %Rec <49.9 U 998 1014 102 Gasoline Range Organics mg/Kg 70 - 130 20 (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 998 762.1 mg/Kg 74 70 - 130 3 20

C10-C28)

MSD MSD %Recovery Qualifier Limits Surrogate 1-Chlorooctane 79 70 - 130 o-Terphenyl 81 70 - 130

**Eurofins Carlsbad** 

## **QC Sample Results**

Client: Ensolum Job ID: 890-3250-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37513/1-A **Client Sample ID: Method Blank Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 37653** 

MB MB

RL Analyte Result Qualifier Unit D Prepared Analyzed Dil Fac 5.00 10/24/22 16:26 Chloride <5.00 U mg/Kg

Lab Sample ID: LCS 880-37513/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 37653** 

Spike LCS LCS %Rec **Analyte** Added Result Qualifier Unit D %Rec Limits 250 Chloride 252.2 mg/Kg 101 90 - 110

Lab Sample ID: LCSD 880-37513/3-A Client Sample ID: Lab Control Sample Dup **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 37653** 

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit Limits RPD Limit D %Rec Chloride 250 254.8 102 90 - 110 20 mg/Kg

**Eurofins Carlsbad** 

# **QC Association Summary**

Client: Ensolum

Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3250-1 SDG: 03E1558016

#### **GC VOA**

#### Prep Batch: 37514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3250-1	BH04	Total/NA	Solid	5035	
MB 880-37514/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37514/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37514/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3253-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
890-3253-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

#### **Analysis Batch: 37615**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3250-1	BH04	Total/NA	Solid	8021B	37514
MB 880-37514/5-A	Method Blank	Total/NA	Solid	8021B	37514
LCS 880-37514/1-A	Lab Control Sample	Total/NA	Solid	8021B	37514
LCSD 880-37514/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37514
890-3253-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	37514
890-3253-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	37514

#### **Analysis Batch: 37726**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3250-1	BH04	Total/NA	Solid	Total BTEX	

#### **GC Semi VOA**

#### **Analysis Batch: 37444**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3250-1	BH04	Total/NA	Solid	8015B NM	37503
MB 880-37503/1-A	Method Blank	Total/NA	Solid	8015B NM	37503
LCS 880-37503/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	37503
LCSD 880-37503/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	37503
890-3240-A-2-C MS	Matrix Spike	Total/NA	Solid	8015B NM	37503
890-3240-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	37503

#### Prep Batch: 37503

<b>Lab Sample ID</b> 890-3250-1	Client Sample ID BH04	Prep Type Total/NA	Matrix Solid	Method 8015NM Prep	Prep Batch
MB 880-37503/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-37503/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-37503/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3240-A-2-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3240-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

#### **Analysis Batch: 37631**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3250-1	BH04	Total/NA	Solid	8015 NM	

#### **HPLC/IC**

#### Leach Batch: 37513

Released to Imaging: 7/15/2024 1:23:48 PM

<b>Lab Sample ID</b> 890-3250-1	Client Sample ID BH04	Prep Type Soluble	<b>Matrix</b> Solid	Method DI Leach	Prep Batch
MB 880-37513/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37513/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37513/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

**Eurofins Carlsbad** 

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# **QC Association Summary**

Client: Ensolum

Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3250-1

SDG: 03E1558016

## HPLC/IC

**Analysis Batch: 37653** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3250-1	BH04	Soluble	Solid	300.0	37513
MB 880-37513/1-A	Method Blank	Soluble	Solid	300.0	37513
LCS 880-37513/2-A	Lab Control Sample	Soluble	Solid	300.0	37513
LCSD 880-37513/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37513

#### **Lab Chronicle**

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery
Job ID: 890-3250-1
SDG: 03E1558016

**Client Sample ID: BH04** 

Date Collected: 10/19/22 12:20 Date Received: 10/20/22 09:38 Lab Sample ID: 890-3250-1

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	37514	10/21/22 14:15	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37615	10/24/22 15:23	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37726	10/24/22 16:38	SM	EET MID
Total/NA	Analysis	8015 NM		1			37631	10/24/22 09:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	37503	10/21/22 13:50	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37444	10/22/22 01:41	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	37513	10/21/22 18:00	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	37653	10/24/22 18:40	CH	EET MID

#### **Laboratory References:**

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

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# **Accreditation/Certification Summary**

Client: Ensolum

Job ID: 890-3250-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

## **Laboratory: Eurofins Midland**

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

Authority	Program	Identification Number	<b>Expiration Date</b>
N/A	N/A	None on record.	

## **Method Summary**

Client: Ensolum

Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3250-1

SDG: 03E1558016

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

**Eurofins Carlsbad** 

## **Sample Summary**

Client: Ensolum

Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3250-1

SDG: 03E1558016

Lab Sample ID Client Sample ID Collected Matrix Received Depth 890-3250-1 BH04 Solid 10/19/22 12:20 10/20/22 09:38 1.5'

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# Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300 Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334 EL Paso, TX (915) 585-3443, Lubbock, TX (808) 794-1296 Hobbs, NM (575) 392-7550, Carisbad, NM (575) 988-3199

Work Order No:

Project Manager.	Tacoma Morrissey			Bill to: (if different)		Garrett Green		Work	Work Order Comments	40
1	Ensolum			Company Name:		XTO Energy		Program: UST/PST   PRP   Brownfleids   RRC   Superfund	☐ Brownfields ☐	RC Superfund
	3122 National Parks Hwy	ks Hwy		Address:	8	3104 E. Green St.		State of Project:	1	ſ
te ZIP:	Carlsbad, NM 88220	20	100	City, State ZIP.	రి	Carlsbad, NM 88220	20	Reporting: Level III Clevel III C PST/UST C TRRP C Level IV	L □ PST/UST □ I	RRP ☐ Level IV
	303-887-2946		Email: G	arrett	@Exxon	Green@ExxonMobil com		Deliverables: EDD	ADaPT [	Other
Project Name:	PLU 30 Big Sinks Battery	inks Battery	TumA	Around			ANALYSIS REQUEST	QUEST	Pres	Preservative Codes
Project Number:	03E1558016	58016	N Routine	□ Rush	Pres.				None: NO	DI Water: H <sub>2</sub> O
Project Location:			Due Date:						Cool: Cool	MeOH: Me
Sampler's Name:	Connor Whitman	Whitman	TAT starts the	TAT starts the day received by			_		HCL: HC	HNO, HN
PO#	200 000 000	(	the lab, if rec	the lab, if received by 4:30pm	sı	_			H-500, H2	NaOH Na
SAMPLE RECEIPT	T Temp Blank:	K. Yes No	Wet Ice:	No No	nete				Н₃РОФ НЬ	
Samples Received Intact:	act: Yes No	Thermometer ID:	CID: - IN	F00-		1000			NaHSO4: NABIS	AABIS
Cooler Custody Seals:	Yes No SUA	WA Correction Factor.	actor.	0.0					Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>	VaSO <sub>3</sub>
Sample Custody Seals:	Yes No	MA Temperature Reading:	Reading:	3.0	13/ 3		890-3250 Chain of Custody	ustody	Zn Acetate	Zn Acetate+NaOH: Zn
Total Containers:	1000	Corrected Temperature:	emperature:	2.5	7	(51			NaOH+As	NaOH+Ascorbic Acid: SAPC
Sample Identification		Matrix Sampled	Time	Depth Grab/	# of Cont	ясьн эр нч этех (8			Sam	Sample Comments
KH02		5 10/19/22		1	-				Incident ID	ő
1									4APREZESSIBLE	DECEMBER NAPPERSONS
									Cost Center	ter:
										2037891001
BUILDING TO THE	1	/							AFE:	The second second
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Total 200.7 / 6010	10 200.8 / 6020:		BRCRA 13PPM	M Texas 11	Al Sb A	Al Sb As Ba Be B (	Cd Ca Cr Co Cu Fe Pb	Pb Mg Mn Mo Ni K Se Ag S	Ag SiO <sub>2</sub> Na Sr Ti S	-
Circle Method(s) and Metal(s) to be analyzed	d Metal(s) to be a	nalyzed	TCLP / SPI	LP 6010: 8RCRA	CRA Sb	As Ba Be	Cd Cr Co Cu Pb Mn Mo Ni Se Ag TI U		Hg: 1631/245.1/74	17470 17471
Notice: Signature of this document and relinquishment of samples constitutes a valid purch of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume a of Eurofins Xenco. A minimum charge of \$55.00 will be applied to each project and a charge	ocument and relinquish: will be liable only for th num charge of \$85.00 w	ment of samples constitutes to cost of samples and shall fill be applied to each project	ditutes a valid pur dishall not assume project and a chai	hase order from o any responsibility ge of \$5 for each	fient compar for any loss sample subm	y to Eurofins Xences or expenses incited to Eurofins Xe	o, its affiliates and subcontractors. nurred by the client if such losses an enco, but not analyzed. These terms	Notice: Signature of this document and relinquishment of samples constitutes a vaild 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 citicumstances beyond the control of eurofins Xenco. A minimum charge of \$55.00 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 nagotiated.	ons ntrol potlated.	
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9							9			NAME OF TAXABLE PARTY

## **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-3250-1

SDG Number: 03E1558016

Login Number: 3250 List Source: Eurofins Carlsbad

List Number: 1

Creator: Stutzman, Amanda

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

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## **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-3250-1 SDG Number: 03E1558016

Login Number: 3250 **List Source: Eurofins Midland** List Creation: 10/21/22 10:46 AM List Number: 2

Creator: Rodriguez, Leticia

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	N/A	

<6mm (1/4").

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# **ANALYTICAL REPORT**

# PREPARED FOR

Attn: Tacoma Morrissey
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701
Generated 12/12/2022 3:32:51 PM

# **JOB DESCRIPTION**

PLU 30 Big Sinks SDG NUMBER 03E1558016

## **JOB NUMBER**

880-22192-1

Eurofins Midland 1211 W. Florida Ave Midland TX 79701



# **Eurofins Midland**

## **Job Notes**

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

# **Authorization**

Generated 12/12/2022 3:32:51 PM

Authorized for release by Jessica Kramer, Project Manager <u>Jessica.Kramer@et.eurofinsus.com</u> (432)704-5440 10

12

Client: Ensolum
Project/Site: PLU 30 Big Sinks
Laboratory Job ID: 880-22192-1
SDG: 03E1558016

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## **Definitions/Glossary**

Job ID: 880-22192-1 Client: Ensolum Project/Site: PLU 30 Big Sinks

SDG: 03E1558016

**Qualifiers** 

**GC VOA** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**GC Semi VOA** 

Qualifier **Qualifier Description** 

S1+ Surrogate recovery exceeds control limits, high biased. Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier **Qualifier Description** 

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** 

Detection Limit (DoD/DOE) DL

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) Most Probable Number MPN Method Quantitation Limit MQL

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NFG 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)

Relative Percent Difference, a measure of the relative difference between two points RPD

TEF Toxicity Equivalent Factor (Dioxin) TFO Toxicity Equivalent Quotient (Dioxin)

**TNTC** Too Numerous To Count

#### Case Narrative

Job ID: 880-22192-1 Client: Ensolum Project/Site: PLU 30 Big Sinks

SDG: 03E1558016

Job ID: 880-22192-1

**Laboratory: Eurofins Midland** 

Narrative

Job Narrative 880-22192-1

#### Receipt

The samples were received on 12/1/2022 2:38 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice.

#### **GC VOA**

Method 8021B: The following sample was diluted due to the nature of the sample matrix: (880-22119-A-24-B MSD). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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: (880-22110-A-1-D) and (880-22110-A-1-E MS). 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: FS06A (880-22192-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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.

Matrix: Solid

Lab Sample ID: 880-22192-1

## **Client Sample Results**

Client: Ensolum Job ID: 880-22192-1 Project/Site: PLU 30 Big Sinks SDG: 03E1558016

Client Sample ID: FS05A

Date Collected: 12/01/22 13:05 Date Received: 12/01/22 14:38

Sample Depth: 1'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/02/22 10:31	12/10/22 04:48	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/02/22 10:31	12/10/22 04:48	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/02/22 10:31	12/10/22 04:48	1
m-Xylene & p-Xylene	0.0100		0.00399	mg/Kg		12/02/22 10:31	12/10/22 04:48	1
o-Xylene	0.00532		0.00200	mg/Kg		12/02/22 10:31	12/10/22 04:48	1
Xylenes, Total	0.0153		0.00399	mg/Kg		12/02/22 10:31	12/10/22 04:48	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	116		70 - 130			12/02/22 10:31	12/10/22 04:48	1
1,4-Difluorobenzene (Surr)	94		70 - 130			12/02/22 10:31	12/10/22 04:48	1
Method: TAL SOP Total BTEX - T	otal BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.0153		0.00399	mg/Kg			12/12/22 15:45	1
Method: SW846 8015 NM - Diese	I Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	4080		50.0	mg/Kg			12/07/22 09:45	1
Method: SW846 8015B NM - Dies	sel Range Orga	nics (DRO)	(GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	84.4		50.0	mg/Kg		12/05/22 11:32	12/06/22 13:42	1
Diesel Range Organics (Over	4000		50.0	mg/Kg		12/05/22 11:32	12/06/22 13:42	1
C10-C28)								
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/05/22 11:32	12/06/22 13:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	114		70 - 130			12/05/22 11:32	12/06/22 13:42	1
o-Terphenyl	114		70 - 130			12/05/22 11:32	12/06/22 13:42	1
Method: MCAWW 300.0 - Anions	, Ion Chromato	graphy - So	oluble					
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

Client Sample ID: FS06A Lab Sample ID: 880-22192-2

5.01

mg/Kg

39.9

Date Collected: 12/01/22 13:10 Date Received: 12/01/22 14:38

Sample Depth: 1'

Chloride

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		12/02/22 10:31	12/10/22 05:09	1
Toluene	<0.00199	U	0.00199	mg/Kg		12/02/22 10:31	12/10/22 05:09	1
Ethylbenzene	<0.00199	U	0.00199	mg/Kg		12/02/22 10:31	12/10/22 05:09	1
m-Xylene & p-Xylene	0.0195		0.00398	mg/Kg		12/02/22 10:31	12/10/22 05:09	1
o-Xylene	0.00925		0.00199	mg/Kg		12/02/22 10:31	12/10/22 05:09	1
Xylenes, Total	0.0288		0.00398	mg/Kg		12/02/22 10:31	12/10/22 05:09	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130			12/02/22 10:31	12/10/22 05:09	1

**Eurofins Midland** 

12/08/22 08:53

**Matrix: Solid** 

Released to Imaging: 7/15/2024 1:23:48 PM

Matrix: Solid

## **Client Sample Results**

Client: Ensolum Job ID: 880-22192-1 Project/Site: PLU 30 Big Sinks SDG: 03E1558016

Client Sample ID: FS06A Lab Sample ID: 880-22192-2 Date Collected: 12/01/22 13:10 Date Received: 12/01/22 14:38

Sample Depth: 1'

Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	97		70 - 130			12/02/22 10:31	12/10/22 05:09	
Method: TAL SOP Total BTEX - 1	Total BTEX Cald	ulation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	0.0288		0.00398	mg/Kg			12/12/22 15:45	
Method: SW846 8015 NM - Diese	el Range Organi	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	3850		50.0	mg/Kg			12/07/22 09:45	
Method: SW846 8015B NM - Die	sel Range Orga	nics (DRO)	(GC)					
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	107		50.0	mg/Kg		12/05/22 11:32	12/06/22 14:03	
	3740		50.0	mg/Kg		12/05/22 11:32	12/06/22 14:03	
C10-C28)	<b>3740</b> <50.0	U	50.0 50.0	mg/Kg mg/Kg		12/05/22 11:32 12/05/22 11:32	12/06/22 14:03 12/06/22 14:03	
C10-C28) Oll Range Organics (Over C28-C36)								Dil Fa
C10-C28) Oll Range Organics (Over C28-C36) Surrogate	<50.0		50.0			12/05/22 11:32	12/06/22 14:03	Dil Fa
C10-C28) Oll Range Organics (Over C28-C36) Surrogate 1-Chlorooctane	<50.0  **Recovery  137	Qualifier S1+	50.0 <i>Limits</i>			12/05/22 11:32  Prepared	12/06/22 14:03  Analyzed	Dil Fa
C10-C28) Oll Range Organics (Over C28-C36) Surrogate 1-Chlorooctane 0-Terphenyl	<50.0 <b>%Recovery</b> 137 133	Qualifier S1+ S1+	50.0  Limits  70 - 130  70 - 130			12/05/22 11:32  Prepared  12/05/22 11:32	12/06/22 14:03  Analyzed 12/06/22 14:03	Dil Fa
Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate 1-Chloroctane o-Terphenyl Method: MCAWW 300.0 - Anions Analyte	<50.0  **Recovery 137 133 s, lon Chromato	Qualifier S1+ S1+	50.0  Limits  70 - 130  70 - 130		D	12/05/22 11:32  Prepared  12/05/22 11:32	12/06/22 14:03  Analyzed 12/06/22 14:03	Dil Fa

## **Surrogate Summary**

Client: Ensolum Job ID: 880-22192-1 Project/Site: PLU 30 Big Sinks SDG: 03E1558016

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)	
880-22119-A-24-A MS	Matrix Spike	84	94	
880-22119-A-24-B MSD	Matrix Spike Duplicate	79	98	
880-22192-1	FS05A	116	94	
880-22192-2	FS06A	106	97	
LCS 880-40826/1-A	Lab Control Sample	99	101	
LCSD 880-40826/2-A	Lab Control Sample Dup	106	104	
MB 880-40826/5-A	Method Blank	77	94	
Surrogate Legend				
BFB = 4-Bromofluoroben	zene (Surr)			

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

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

				trop types seems
		1CO1	ОТРН1	Percent Surrogate Recovery (Acceptance Limits)
I ah Camula ID	Client Comple ID	(70-130)	(70-130)	
Lab Sample ID	Client Sample ID			
880-22110-A-1-E MS	Matrix Spike	142 S1+	112	
880-22110-A-1-F MSD	Matrix Spike Duplicate	120	99	
880-22192-1	FS05A	114	114	
880-22192-2	FS06A	137 S1+	133 S1+	
LCS 880-41024/2-A	Lab Control Sample	129	120	
LCSD 880-41024/3-A	Lab Control Sample Dup	129	117	
MB 880-41024/1-A	Method Blank	130	127	
Surrogate Legend				
1CO = 1-Chlorooctane				

**Eurofins Midland** 

OTPH = o-Terphenyl

Client: Ensolum

Job ID: 880-22192-1

SDG: 03E1558016

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

Lab Sample ID: MB 880-40826/5-A

**Matrix: Solid** 

Analysis Batch: 41499

Project/Site: PLU 30 Big Sinks

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 40826

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		12/01/22 16:02	12/09/22 20:43	1
Toluene	<0.00200	U	0.00200	mg/Kg		12/01/22 16:02	12/09/22 20:43	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		12/01/22 16:02	12/09/22 20:43	1
m-Xylene & p-Xylene	< 0.00400	U	0.00400	mg/Kg		12/01/22 16:02	12/09/22 20:43	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		12/01/22 16:02	12/09/22 20:43	1
Xylenes, Total	< 0.00400	U	0.00400	mg/Kg		12/01/22 16:02	12/09/22 20:43	1

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	77	70 - 130	12/01/22 16:02 12	/09/22 20:43	1
1,4-Difluorobenzene (Surr)	94	70 - 130	12/01/22 16:02 12	/09/22 20:43	1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 40826

Lab Sample ID: LCS 880-40826/1-A **Matrix: Solid** Analysis Batch: 41499 LCS LCS Spike

	Орікс						701100	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1015		mg/Kg		102	70 - 130	
Toluene	0.100	0.08806		mg/Kg		88	70 - 130	
Ethylbenzene	0.100	0.09021		mg/Kg		90	70 - 130	
m-Xylene & p-Xylene	0.200	0.1860		mg/Kg		93	70 - 130	
o-Xylene	0.100	0.08888		mg/Kg		89	70 - 130	

LCS LCS

Surrogate	%Recovery Qu	ıalifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

Lab Sample ID: LCSD 880-40826/2-A

**Matrix: Solid** 

Analysis Batch: 41499

**Client Sample ID: Lab Control Sample Dup** 

Prep Type: Total/NA

Prep Batch: 40826

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.08696		mg/Kg		87	70 - 130	15	35
Toluene	0.100	0.07710		mg/Kg		77	70 - 130	13	35
Ethylbenzene	0.100	0.07744		mg/Kg		77	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.1595		mg/Kg		80	70 - 130	15	35
o-Xylene	0.100	0.07872		mg/Kg		79	70 - 130	12	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

## QC Sample Results

Client: Ensolum Job ID: 880-22192-1 Project/Site: PLU 30 Big Sinks SDG: 03E1558016

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

Lab Sample ID: MB 880-41024/1-A

Lab Sample ID: LCS 880-41024/2-A

**Matrix: Solid** 

**Matrix: Solid** 

Analysis Batch: 41104

Analysis Batch: 41104

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 41024

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		12/05/22 11:32	12/06/22 08:55	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		12/05/22 11:32	12/06/22 08:55	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		12/05/22 11:32	12/06/22 08:55	1
	MR	MR						

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	130	70 - 130	12/05/22 11:32	12/06/22 08:55	1
o-Terphenyl	127	70 - 130	12/05/22 11:32	12/06/22 08:55	1

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 41024

LCS LCS Spike Added Analyte Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 840.2 84 70 - 130 mg/Kg (GRO)-C6-C10 1000 897.2 70 - 130 Diesel Range Organics (Over mg/Kg 90 C10-C28)

LCS LCS

Surrogate	%Recovery Qualifier	Limits
1-Chlorooctane	129	70 - 130
o-Terphenyl	120	70 - 130

Lab Sample ID: LCSD 880-41024/3-A Client Sample ID: Lab Control Sample Dup

**Matrix: Solid** 

Analysis Batch: 41104

Prep Type: Total/NA Prep Batch: 41024 LCSD LCSD RPD

Spike %Rec Analyte Added Result Qualifier RPD Limit Unit %Rec Limits Gasoline Range Organics 1000 836.2 mg/Kg 84 70 - 130 20 (GRO)-C6-C10 Diesel Range Organics (Over 1000 886.7 mg/Kg 89 70 - 130 20 C10-C28)

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
1-Chlorooctane	129	70 - 130
o-Terphenyl	117	70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-40959/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 41085

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			12/07/22 22:10	1

## **QC Sample Results**

Client: Ensolum Job ID: 880-22192-1 Project/Site: PLU 30 Big Sinks SDG: 03E1558016

Method: 300.0 - Anions, Ion Chromatography (Continued)

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 880-40959/2-A **Prep Type: Soluble** 

**Matrix: Solid** 

Analysis Batch: 41085

_	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Chloride	250	267.0		mg/Kg		107	90 - 110

Lab Sample ID: LCSD 880-40959/3-A **Client Sample ID: Lab Control Sample Dup Prep Type: Soluble Matrix: Solid** 

Analysis Batch: 41085

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	250	267.4		mg/Kg		107	90 - 110	0	20

## **QC Association Summary**

Client: Ensolum

Project/Site: PLU 30 Big Sinks

Job ID: 880-22192-1 SDG: 03E1558016

## **GC VOA**

## Prep Batch: 40826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22192-1	FS05A	Total/NA	Solid	5035	
880-22192-2	FS06A	Total/NA	Solid	5035	
MB 880-40826/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-40826/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-40826/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

## Analysis Batch: 41499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22192-1	FS05A	Total/NA	Solid	8021B	40826
880-22192-2	FS06A	Total/NA	Solid	8021B	40826
MB 880-40826/5-A	Method Blank	Total/NA	Solid	8021B	40826
LCS 880-40826/1-A	Lab Control Sample	Total/NA	Solid	8021B	40826
LCSD 880-40826/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	40826

## **Analysis Batch: 41666**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22192-1	FS05A	Total/NA	Solid	Total BTEX	
880-22192-2	FS06A	Total/NA	Solid	Total BTEX	

## **GC Semi VOA**

## Prep Batch: 41024

Lab Sample ID	Client Sample ID	Pron Type	Matrix	Method	Dran Batah
· · · · · · · · · · · · · · · · · · ·	•	Prep Type			Prep Batch
880-22192-1	FS05A	Total/NA	Solid	8015NM Prep	
880-22192-2	FS06A	Total/NA	Solid	8015NM Prep	
MB 880-41024/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-41024/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-41024/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 41104

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22192-1	FS05A	Total/NA	Solid	8015B NM	41024
880-22192-2	FS06A	Total/NA	Solid	8015B NM	41024
MB 880-41024/1-A	Method Blank	Total/NA	Solid	8015B NM	41024
LCS 880-41024/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	41024
LCSD 880-41024/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	41024

## **Analysis Batch: 41228**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22192-1	FS05A	Total/NA	Solid	8015 NM	
880-22192-2	FS06A	Total/NA	Solid	8015 NM	

#### HPLC/IC

#### Leach Batch: 40959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22192-1	FS05A	Soluble	Solid	DI Leach	
880-22192-2	FS06A	Soluble	Solid	DI Leach	
MB 880-40959/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-40959/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-40959/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

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# **QC Association Summary**

 Client: Ensolum
 Job ID: 880-22192-1

 Project/Site: PLU 30 Big Sinks
 SDG: 03E1558016

HPLC/IC

Analysis Batch: 41085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-22192-1	FS05A	Soluble	Solid	300.0	40959
880-22192-2	FS06A	Soluble	Solid	300.0	40959
MB 880-40959/1-A	Method Blank	Soluble	Solid	300.0	40959
LCS 880-40959/2-A	Lab Control Sample	Soluble	Solid	300.0	40959
LCSD 880-40959/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	40959

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Client: Ensolum Job ID: 880-22192-1 Project/Site: PLU 30 Big Sinks SDG: 03E1558016

Client Sample ID: FS05A Date Collected: 12/01/22 13:05 Lab Sample ID: 880-22192-1

Matrix: Solid

Date Received: 12/01/22 14:38

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			40826	MNR	EET MID	12/02/22 10:31
Total/NA	Analysis	8021B		1	41499	MNR	EET MID	12/10/22 04:48
Total/NA	Analysis	Total BTEX		1	41666	SM	EET MID	12/12/22 15:45
Total/NA	Analysis	8015 NM		1	41228	SM	EET MID	12/07/22 09:45
Total/NA	Prep	8015NM Prep			41024	DM	EET MID	12/05/22 11:32
Total/NA	Analysis	8015B NM		1	41104	SM	EET MID	12/06/22 13:42
Soluble	Leach	DI Leach			40959	SMC	EET MID	12/03/22 13:50
Soluble	Analysis	300.0		1	41085	CH	EET MID	12/08/22 08:53

Client Sample ID: FS06A Lab Sample ID: 880-22192-2 Date Collected: 12/01/22 13:10

Matrix: Solid

Date Received: 12/01/22 14:38

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Prep	5035			40826	MNR	EET MID	12/02/22 10:31
Total/NA	Analysis	8021B		1	41499	MNR	EET MID	12/10/22 05:09
Total/NA	Analysis	Total BTEX		1	41666	SM	EET MID	12/12/22 15:45
Total/NA	Analysis	8015 NM		1	41228	SM	EET MID	12/07/22 09:45
Total/NA	Prep	8015NM Prep			41024	DM	EET MID	12/05/22 11:32
Total/NA	Analysis	8015B NM		1	41104	SM	EET MID	12/06/22 14:03
Soluble	Leach	DI Leach			40959	SMC	EET MID	12/03/22 13:50
Soluble	Analysis	300.0		1	41085	CH	EET MID	12/08/22 08:59

**Laboratory References:** 

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

## **Accreditation/Certification Summary**

 Client: Ensolum
 Job ID: 880-22192-1

 Project/Site: PLU 30 Big Sinks
 SDG: 03E1558016

**Laboratory: Eurofins Midland** 

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

Authority	Pr	ogram	Identification Number	<b>Expiration Date</b>	
Texas	NE	ELAP	T104704400-22-24	06-30-23	
The following analytes	are included in this report hi	it the laboratory is not certifi	ed by the governing authority. This list ma	av include analytes for y	
the agency does not of	' '	it the laboratory is not certifi	ed by the governing authority. This list his	ay include analytes for v	
0 ,	' '	Matrix	Analyte	ay include analytes for v	
the agency does not of	fer certification.	•	, , ,	ay include analytes for v	

## Method Summary

Client: Ensolum

Project/Site: PLU 30 Big Sinks

Job ID: 880-22192-1

SDG: 03E1558016

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

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## **Sample Summary**

Client: Ensolum

Project/Site: PLU 30 Big Sinks

Job ID: 880-22192-1

SDG: 03E1558016

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-22192-1	FS05A	Solid	12/01/22 13:05	12/01/22 14:38	1'
880-22192-2	FS06A	Solid	12/01/22 13:10	12/01/22 14:38	1'

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Project Manager Company Name

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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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Sample Identification   Matrix   Sampled   Sampled   Sampled   Sample   Comp   Cont   Sample Comn   Sample	deat hun ber	Incia			22	-	1,600	1	_		F505A
Sci   February   Sci   February   Februar	ample Comments	Sa			BT Tf			1			Sample Identifica
Chry State ZIP   TRRP   Chry State ZIP	Ascorbic Acid SAPC	NaOH+A			£1 14	<u> </u>		Temperature	Corrected		Total Containers,
Colty State ZIP   Carlot	ate+NaOH Zn	Zn Acet			î d	<u></u>	73	ure Reading:	Temperat	8	Sample Custody Seals.
City, State ZIP   Colf, Col	) <sub>3</sub> NaSO <sub>3</sub>	Na <sub>2</sub> S <sub>2</sub> O			100	Pa			Correction	Yes No N/A	Cooler Custody Seals,
City, State ZIP   Colf, Catalon   Colf, State ZIP   Colf, Catalon   Colf, State ZIP   Colf Colf Colf Colf Colf Colf Colf Colf	₄ NABIS	NaHSO		•		ram	T-NIM-OUT		Thermom	Yes No	Samples Received Intact:
Anne:		H <sub>3</sub> PO <sub>4</sub> 1				eters	(Yes)No	Wet Ice:	Yes No	Temp Blank.	SAMPLE RECEIPT
Annual		H <sub>2</sub> S0 4 H	•			<u> </u>	ived by 4:30pm	the lab, if rece			PO#
Industric         Cert's field         City, State ZIP         Cuty, State ZIP <td></td> <td>HO HO</td> <td></td> <td></td> <td></td> <td></td> <td>day received by</td> <td>TAT starts the</td> <td>Rice of</td> <td>Kase Par</td> <td>_</td>		HO HO					day received by	TAT starts the	Rice of	Kase Par	_
City, State ZIP     Cuty, State ZIP <t< td=""><td></td><td>Cool Co</td><td></td><td></td><td></td><td></td><td></td><td>Due Date.</td><td>\$213</td><td>2.1040-103</td><td></td></t<>		Cool Co						Due Date.	\$213	2.1040-103	
City, State ZIP:   Cuty, Stat		None N				Code Pres	Rush	Routine	4	10855136	
303-127-2546 Email Gellet Greek State 219. Konts bed Mon 1822 Reporting Level III   PST/UST   TRRP	eservative Codes	Pr	REQUEST	ANALYSIS			Around	Jun	mis	OL GO SO Rig S	
City, State ZIP: Cotty, State ZIP: Reporting Level III Level III PST/UST   TRRP		EDD [	Delivera	Midl. Craw		1.67	4500	Email	2005	303-187-2	
	☐ TRRP ☐ Level IV	ng Levelli Levelli PST/UST	Reportir	In tells	Kirls & S. A		City, State ZIP		1400	Mished MM	City, state ZIP

## **Login Sample Receipt Checklist**

 Client: Ensolum
 Job Number: 880-22192-1

 SDG Number: 03E1558016

Login Number: 22192 List Source: Eurofins Midland

List Number: 1

Creator: Kramer, Jessica

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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

0J 324

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**Environment Testing** 

# **ANALYTICAL REPORT**

# PREPARED FOR

Attn: Tacoma Morrissey
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701

Generated 12/30/2022 12:00:36 PM Revision 2

# **JOB DESCRIPTION**

PLU 30 Big Sinks Battery SDG NUMBER 03E1558016

## **JOB NUMBER**

890-3243-1

Eurofins Carlsbad 1089 N Canal St. Carlsbad NM 88220

# **Eurofins Carlsbad**

## **Job Notes**

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

# **Authorization**

Generated 12/30/2022 12:00:36 PM Revision 2

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

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Laboratory Job ID: 890-3243-1
SDG: 03E1558016

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-

## **Definitions/Glossary**

Client: Ensolum Job ID: 890-3243-1 Project/Site: PLU 30 Big Sinks Battery

SDG: 03E1558016

### **Qualifiers**

**GC 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.

GC Semi VOA

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier **Qualifier Description** 

MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not

applicable.

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** 

DΙ 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)

MCI EPA recommended "Maximum Contaminant Level" MDA Minimum Detectable Activity (Radiochemistry) Minimum Detectable Concentration (Radiochemistry) MDC

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)

Reporting Limit or Requested Limit (Radiochemistry) RL

RPD Relative Percent Difference, a measure of the relative difference between two points

**TEF** Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) TEQ

**TNTC** Too Numerous To Count

**Eurofins Carlsbad** 

## Case Narrative

Client: Ensolum

Job ID: 890-3243-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

Job ID: 890-3243-1

**Laboratory: Eurofins Carlsbad** 

Narrative

Job Narrative 890-3243-1

#### REVISION

The report being provided is a revision of the original report sent on 10/31/2022. The report (revision 2) is being revised due to Per client email, requesting sample ID and depth change.

Report revision history

The report being provided is a revision of the original report sent on 10/31/2022. The report (revision 2) is being revised due to Per client email, requesting sample ID and depth change.

Revision 1 - 11/29/2022 - Reason - Per client email, requesting sample ID change.

#### Receipt

The sample was received on 10/20/2022 9:38 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.8°C

#### **Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: BH03 (890-3243-1).

#### **GC VOA**

Method 8021B: The following samples were diluted due to the nature of the sample matrix: (880-20605-A-1-E MS) and (880-20605-A-1-F MSD). Because of this dilution, the surrogate spike and matrix spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-38021 and analytical batch 880-38089 was outside the upper control limits.

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

#### GC Semi VOA

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 880-37511 and analytical batch 880-37598 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.

**Matrix: Solid** 

Lab Sample ID: 890-3243-1

## **Client Sample Results**

Client: Ensolum Job ID: 890-3243-1
Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

**Client Sample ID: BH03** 

Date Collected: 10/19/22 10:40 Date Received: 10/20/22 09:38

Sample Depth: 1.5'

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 03:17	
Toluene	<0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 03:17	
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 03:17	
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		10/26/22 14:13	10/29/22 03:17	
o-Xylene	<0.00199	U	0.00199	mg/Kg		10/26/22 14:13	10/29/22 03:17	
Kylenes, Total	<0.00398	U	0.00398	mg/Kg		10/26/22 14:13	10/29/22 03:17	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
l-Bromofluorobenzene (Surr)	111		70 - 130			10/26/22 14:13	10/29/22 03:17	
,4-Difluorobenzene (Surr)	95		70 - 130			10/26/22 14:13	10/29/22 03:17	
Method: TAL SOP Total BTE	X - Total BTE	X Calculat	ion					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
otal BTEX	<0.00398	U	0.00398	mg/Kg			10/30/22 21:36	
Method: SW846 8015 NM - D	Diesel Range	Organics (	DRO) (GC)					
Analyte	_	Qualifier	, RL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	340		49.9	mg/Kg			10/24/22 09:48	
Method: SW846 8015B NM -	Diesel Range	Organics	(DRO) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics GRO)-C6-C10	<49.9	U	49.9	mg/Kg		10/21/22 13:00	10/21/22 19:08	
Diesel Range Organics (Over C10-C28)	216		49.9	mg/Kg		10/21/22 13:00	10/21/22 19:08	
Oll Range Organics (Over 228-C36)	124		49.9	mg/Kg		10/21/22 13:00	10/21/22 19:08	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
I-Chlorooctane	86		70 - 130			10/21/22 13:00	10/21/22 19:08	
-Chioroociane								

RL

4.99

Result Qualifier

263

Unit

mg/Kg

D

Prepared

Analyzed

10/23/22 21:38

Dil Fac

**Eurofins Carlsbad** 

**Analyte** 

Chloride

## **Surrogate Summary**

Client: Ensolum Job ID: 890-3243-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

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

			Percen	nt Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-20605-A-1-E MS	Matrix Spike	101	92	
880-20605-A-1-F MSD	Matrix Spike Duplicate	102	90	
890-3243-1	BH03	111	95	
LCS 880-37911/1-A	Lab Control Sample	99	91	
LCSD 880-37911/2-A	Lab Control Sample Dup	101	91	
MB 880-37911/5-A	Method Blank	102	87	
MB 880-38021/5-A	Method Blank	72	60 S1-	
Surrogate Legend				
BFB = 4-Bromofluorob	enzene (Surr)			
DFBZ = 1,4-Difluorobe	nzene (Surr)			

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

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

			Percent Surrog	gate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-20579-A-1-C MS	Matrix Spike	77	78	
880-20579-A-1-D MSD	Matrix Spike Duplicate	84	83	
890-3243-1	BH03	86	95	
LCS 880-37446/2-A	Lab Control Sample	96	105	
LCSD 880-37446/3-A	Lab Control Sample Dup	98	102	
MB 880-37446/1-A	Method Blank	116	130	
Surrogate Legend				
1CO = 1-Chlorooctane				

**Eurofins Carlsbad** 

OTPH = o-Terphenyl

## **QC Sample Results**

Client: Ensolum Job ID: 890-3243-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-37911/5-A

**Matrix: Solid** 

**Analysis Batch: 38089** 

**Client Sample ID: Method Blank** 

Prep Type: Total/NA

Prep Batch: 37911

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/26/22 14:13	10/29/22 01:12	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/26/22 14:13	10/29/22 01:12	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/26/22 14:13	10/29/22 01:12	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/26/22 14:13	10/29/22 01:12	1

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102	70 - 130	10/26/22 14:13	10/29/22 01:12	1
1,4-Difluorobenzene (Surr)	87	70 - 130	10/26/22 14:13	10/29/22 01:12	1

Lab Sample ID: LCS 880-37911/1-A

**Matrix: Solid** 

**Analysis Batch: 38089** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA Prep Batch: 37911

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits Benzene 0.100 0.07484 mg/Kg 75 70 - 130 Toluene 0.100 0.07671 mg/Kg 77 70 - 130 Ethylbenzene 0.100 0.07425 mg/Kg 74 70 - 130 74 m-Xylene & p-Xylene 0.200 0.1480 mg/Kg 70 - 130 o-Xylene 0.100 0.08609 mg/Kg 70 - 130

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	91		70 - 130

Lab Sample ID: LCSD 880-37911/2-A

**Matrix: Solid** 

**Analysis Batch: 38089** 

**Client Sample ID: Lab Control Sample Dup** 

Prep Type: Total/NA

Prep Batch: 37911

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.07938		mg/Kg		79	70 - 130	6	35
Toluene	0.100	0.08189		mg/Kg		82	70 - 130	7	35
Ethylbenzene	0.100	0.08032		mg/Kg		80	70 - 130	8	35
m-Xylene & p-Xylene	0.200	0.1556		mg/Kg		78	70 - 130	5	35
o-Xylene	0.100	0.08950		mg/Kg		89	70 - 130	4	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		70 - 130
1,4-Difluorobenzene (Surr)	91		70 - 130

Lab Sample ID: 880-20605-A-1-E MS

**Matrix: Solid** 

**Analysis Batch: 38089** 

**Client Sample ID: Matrix Spike** Prep Type: Total/NA

Prep Batch: 37911

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	<0.00201	U F1	0.100	0.08080		mg/Kg		80	70 - 130
Toluene	<0.00201	U F1	0.100	0.07923		mg/Kg		78	70 - 130

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12/30/2022 (Rev. 2)

Prep Batch: 37911

## **QC Sample Results**

Client: Ensolum Job ID: 890-3243-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

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

Lab Sample ID: 880-20605-A-1-E MS Client Sample ID: Matrix Spike **Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 38089** 

•	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00201	U F1	0.100	0.07637		mg/Kg		76	70 - 130	
m-Xylene & p-Xylene	<0.00402	U F1	0.200	0.1440		mg/Kg		72	70 - 130	
o-Xylene	<0.00201	U	0.100	0.08398		mg/Kg		84	70 - 130	

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

Lab Sample ID: 880-20605-A-1-F MSD

**Matrix: Solid** 

**Analysis Batch: 38089** 

**Client Sample ID: Matrix Spike Duplicate** Prep Type: Total/NA Prep Batch: 37911

MSD MSD Sample Sample Spike %Rec **RPD** Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit 0.0990 20 Benzene 0.06610 F1 70 - 130 35 <0.00201 UF1 mg/Kg 66

Toluene <0.00201 UF1 0.0990 0.06481 F1 65 70 - 130 20 35 mg/Kg 0.0990 Ethylbenzene <0.00201 UF1 0.06337 F1 mg/Kg 64 70 - 130 19 35 m-Xylene & p-Xylene <0.00402 UF1 0.198 0.1224 F1 mq/Kq 62 70 - 130 16 35 <0.00201 U 0.0990 0.07052 71 70 - 130 17 o-Xylene mg/Kg

MSD MSD

Surrogate	%Recovery (	Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

Lab Sample ID: MB 880-38021/5-A

**Matrix: Solid** 

Prep Type: Total/NA **Analysis Batch: 38089** MB MB

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/27/22 13:34	10/28/22 13:48	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/27/22 13:34	10/28/22 13:48	1

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	72	70 - 130	10/27/22 13:34	10/28/22 13:48	1
1,4-Difluorobenzene (Surr)	60 S1-	70 - 130	10/27/22 13:34	10/28/22 13:48	1

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

Lab Sample ID: MB 880-37446/1-A **Client Sample ID: Method Blank Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 37444** 

MB MB Result Qualifier RL Unit Prepared Analyte Analyzed Dil Fac Gasoline Range Organics <50.0 U 50.0 mg/Kg 10/21/22 07:36 10/21/22 08:48

(GRO)-C6-C10

**Eurofins Carlsbad** 

Prep Batch: 37446

**Client Sample ID: Method Blank** 

## QC Sample Results

Client: Ensolum Job ID: 890-3243-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

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

Lab Sample ID: MB 880-37446/1-A

**Matrix: Solid** 

**Analysis Batch: 37444** 

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 37446

MB MB Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Diesel Range Organics (Over <50.0 U 50.0 mg/Kg 10/21/22 07:36 10/21/22 08:48 C10-C28) Oll Range Organics (Over C28-C36) <50.0 U 50.0 mg/Kg 10/21/22 07:36 10/21/22 08:48

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	116	70 - 130	10/21/22 07:36	10/21/22 08:48	1
o-Terphenyl	130	70 - 130	10/21/22 07:36	10/21/22 08:48	1

Lab Sample ID: LCS 880-37446/2-A

**Matrix: Solid** 

**Analysis Batch: 37444** 

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

Prep Batch: 37446

LCS LCS Spike %Rec Added Result Qualifier Limits Analyte Unit D %Rec Gasoline Range Organics 1000 977.4 98 70 - 130 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 900.1 90 70 - 130 mg/Kg C10-C28)

Spike

Added

1000

LCSD LCSD

1058

Result Qualifier

Unit

mg/Kg

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	105		70 - 130

Lab Sample ID: LCSD 880-37446/3-A

**Matrix: Solid** 

**Analyte** 

**Analysis Batch: 37444** 

Gasoline Range Organics

Client Sample ID: Lab Control Sample Dup

97

Prep Type: Total/NA Prep Batch: 37446

%Rec **RPD** RPD D %Rec Limits Limit 106 70 - 130 8 20

8

20

(GRO)-C6-C10 Diesel Range Organics (Over 1000 970.9 mg/Kg C10-C28) LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	102		70 - 130

Lab Sample ID: 880-20579-A-1-C MS

**Matrix: Solid** 

**Analysis Batch: 37444** 

**Client Sample ID: Matrix Spike** 

70 - 130

Prep Type: Total/NA Prep Batch: 37446

Spike MS MS %Rec Sample Sample **Analyte** Result Qualifier Added Result Qualifier Unit D %Rec Limits Gasoline Range Organics <49.8 U 998 888.0 84 70 - 130 mg/Kg (GRO)-C6-C10 <49.8 U 998 717.3 72 70 - 130 Diesel Range Organics (Over mg/Kg

C10-C28)

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	77		70 - 130
o-Terphenyl	78		70 - 130

**Eurofins Carlsbad** 

## QC Sample Results

Client: Ensolum Job ID: 890-3243-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

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

Lab Sample ID: 880-20579-A-1-D MSD

**Matrix: Solid** 

**Analysis Batch: 37444** 

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA

Prep Batch: 37446

MSD MSD %Rec **RPD** Sample Sample Spike Result Qualifier Added Result Qualifier D %Rec Limits **RPD** Limit Analyte Unit Gasoline Range Organics <49.8 U 998 1056 mg/Kg 101 70 - 130 17 20 (GRO)-C6-C10 Diesel Range Organics (Over 998 767.2 70 - 130 7 <49.8 U mg/Kg 77 20

C10-C28)

MSD MSD

	%Recovery	Qualifier	Limits
1-Chlorooctane	84		70 - 130
o-Terphenyl	83		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37511/1-A **Client Sample ID: Method Blank Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 37598** 

MB MB

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			10/23/22 19:22	1

Lab Sample ID: LCS 880-37511/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 37598** 

	Spike	LCS LCS				%Rec
Analyte	Added	Result Qualif	er Unit	D	%Rec	Limits
Chloride	250	259.6	mg/Kg		104	90 - 110

Lab Sample ID: LCSD 880-37511/3-A **Client Sample ID: Lab Control Sample Dup Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 37598** 

	Spike	LCSD LCSI	)			%Rec		RPD
Analyte	Added	Result Quali	ifier Unit	D	%Rec	Limits	RPD	Limit
Chloride	250	259.0	mg/Kg		104	90 - 110	0	20

Lab Sample ID: 890-3240-A-3-C MS **Client Sample ID: Matrix Spike** 

**Matrix: Solid** 

Analysis Batch: 37598

7 mm, 610 = 410 m 61 600	Sample	Sample	Spike	МС	MS				%Rec
Aurabata	•	-	•			1114	_	0/ 🗖	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Chloride	1120		2/18	133/	1	ma/Ka		87	00 110

Lab Sample ID: 890-3240-A-3-D MSD **Client Sample ID: Matrix Spike Duplicate** 

**Matrix: Solid** 

Analysis Batch: 37598

Allalysis Datcil. 37 330											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	1120		248	1329	4	mg/Kg		85	90 - 110	0	20

**Eurofins Carlsbad** 

**Prep Type: Soluble** 

**Prep Type: Soluble** 

# **QC Association Summary**

Client: Ensolum

Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1 SDG: 03E1558016

## **GC VOA**

## Prep Batch: 37911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3243-1	BH03	Total/NA	Solid	5035	
MB 880-37911/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37911/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37911/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20605-A-1-E MS	Matrix Spike	Total/NA	Solid	5035	
880-20605-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## Prep Batch: 38021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-38021/5-A	Method Blank	Total/NA	Solid	5035	

## **Analysis Batch: 38089**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3243-1	BH03	Total/NA	Solid	8021B	37911
MB 880-37911/5-A	Method Blank	Total/NA	Solid	8021B	37911
MB 880-38021/5-A	Method Blank	Total/NA	Solid	8021B	38021
LCS 880-37911/1-A	Lab Control Sample	Total/NA	Solid	8021B	37911
LCSD 880-37911/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37911
880-20605-A-1-E MS	Matrix Spike	Total/NA	Solid	8021B	37911
880-20605-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	37911

## **Analysis Batch: 38189**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3243-1	BH03	Total/NA	Solid	Total BTEX	

## **GC Semi VOA**

## **Analysis Batch: 37444**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3243-1	BH03	Total/NA	Solid	8015B NM	37446
MB 880-37446/1-A	Method Blank	Total/NA	Solid	8015B NM	37446
LCS 880-37446/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	37446
LCSD 880-37446/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	37446
880-20579-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	37446
880-20579-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	37446

## Prep Batch: 37446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3243-1	BH03	Total/NA	Solid	8015NM Prep	
MB 880-37446/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-37446/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-37446/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-20579-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-20579-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## **Analysis Batch: 37626**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3243-1	BH03	Total/NA	Solid	8015 NM	

**Eurofins Carlsbad** 

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# **QC Association Summary**

Client: Ensolum

Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1

SDG: 03E1558016

## **HPLC/IC**

Leach Batch: 37511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3243-1	BH03	Soluble	Solid	DI Leach	
MB 880-37511/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37511/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37511/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3240-A-3-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3240-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## **Analysis Batch: 37598**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3243-1	BH03	Soluble	Solid	300.0	37511
MB 880-37511/1-A	Method Blank	Soluble	Solid	300.0	37511
LCS 880-37511/2-A	Lab Control Sample	Soluble	Solid	300.0	37511
LCSD 880-37511/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37511
890-3240-A-3-C MS	Matrix Spike	Soluble	Solid	300.0	37511
890-3240-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	37511

## **Lab Chronicle**

Client: Ensolum Job ID: 890-3243-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

**Client Sample ID: BH03** Lab Sample ID: 890-3243-1

Matrix: Solid

Date Collected: 10/19/22 10:40 Date Received: 10/20/22 09:38

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	37911	10/26/22 14:13	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38089	10/29/22 03:17	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38189	10/30/22 21:36	SM	EET MID
Total/NA	Analysis	8015 NM		1			37626	10/24/22 09:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	37446	10/21/22 13:00	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37444	10/21/22 19:08	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	37511	10/21/22 14:12	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	37598	10/23/22 21:38	CH	EET MID

#### **Laboratory References:**

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

**Eurofins Carlsbad** 

# **Accreditation/Certification Summary**

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1 SDG: 03E1558016

**Laboratory: Eurofins Midland** 

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

Authority	Program	Identification Number		
N/A	N/A	None on record.		

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# **Method Summary**

Client: Ensolum

Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3243-1

SDG: 03E1558016

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<b>Laboratory</b> EET MID	Λ
EET MID	

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: PLU 30 Big Sinks Battery

Job ID: 890-3243-1

SDG: 03E1558016

Lab Sample ID Client Sample ID Collected Matrix Received Depth 890-3243-1 BH03 Solid 10/19/22 10:40 10/20/22 09:38 1.5'

# Chain of Custody

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. Carisbad, NM (575) 998-3199 Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300

Work Order No:

Project Manager. Tac	Tacoma Morrissey			Bill to: (if different)	orent)	Garrett Green	Green			Work Ord	Work Order Comments		
Company Name: Ens	Ensolum			Company Name	ame	XTO Energy	nergy		Program: U	Program: UST/PST   PRP   Brownfields   RRC   Superfund	ownfields RF	C   Superfund	Acres 1
Address 312	3122 National Parks Hwy	Hwy		Address:		3104 E	3104 E. Green St		State of Project:	oject:	30.804		
City, State ZIP: Carl	Carlsbad, NM 88220			City. State ZIP.	JP.	Carlsb	Carlsbad, NM 88220	220	Reporting 1	Reporting: Level II Level III PST/UST TRRP	PST/UST   TR	RP   Level N	-
Phone: 303	303-887-2946		Email:	Garrell Gr	Senime	KonMobil	( com		Deliverables EDD		ADaPT 🗆 Ott	Other	
Project Name:	PLU 30 Big Sinks Battery	s Battery	Turn	Turn Around				ANALYS	ANALYSIS REQUEST		Prese	Preservative Codes	
Project Number:	03E1558016	016	Routine	Rush	Pres.						None NO	DI Water. H <sub>2</sub> O	
Project Location:			Due Date:		7		-				Cool: Cool	MeOH: Me	
Sampler's Name:	Connor Whitman	Iman	TAT starts the day received by	day received	À G		-5-6-			- - -	HCL HC	HNO <sub>3</sub> HN	
PO#	Towns Divers		Calca fee:		ene)	500	_				H.PO. HP	NACT. NA	
Samples Received Intact	NO NO	Thermometer ID	The same	12 8		(0.00					NaHSO, NABIS	BIS	
Cooler Custody Seals:	10	N/A Correction Factor.		0:01	Τ	Æ:A					Na,S2O, NaSO	SO <sub>3</sub>	
Sample Custody Seals:	$\boldsymbol{\smile}$	Temperature Reading:	Reading:			d3) :		890-3243	890-3243 Chain of Custody		Zn Acetate+NaOH Zn	NaOH Zn	
Total Containers:		Corrected Temperature:	perature:	3.0		SEO			_	_	NaOH+Asco	NaOH+Ascorbic Acid SAPC	
Sample Identification	tion Matrix	Date	Time	Depth G	Grab/ # of Comp Cont	иотно	08) H97 8) X3T8				Samp	Sample Comments	
BHOI	5	10/10/22	1040	1 (	(5						Incident ID:	100	
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Total 200.7 / 6010	200.8 / 6020:	8R	BRCRA 13PPM	A Texas 11	¥	Sb As B	Ba Be B	Cd Ca Cr Co Cu Fe	e Pb Mg Mn Mo Ni	K Se A	Na Sr TI Sn	U V Zn	
Circle Method(s) and Metal(s) to be analyzed	etal(s) to be anal	yzed	TCLP / SPL	P 6010	BRCRA	Sb	As Ba Be	Cd Cr Co Cu Pb Mn Mo Ni	n Mo Ni Se Ag Ti U	- 200	Hg: 1631 / 245.1 / 7470 / 7471	0 / 7471	- 67
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subbloomstances beyond the control of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any tosses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum change of \$55.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. Those terms will be enforced unless previously negotiated.	ent and relinquishmen be liable only for the co charge of \$85.00 will b	t of samples constit ost of samples and s e applied to each or	utes a valid purc hall not assume oject and a chan	hase order fro any responsit pe of \$5 for ea	m client o ility for ar	ompany to E y losses or submitted	urofins Xen expenses in o Eurofins X	ase order from cilent company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions ny responsibility for any losses or expenses incurred by the cilent if such losses are due to circumstances beyond the contro of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These tarms will be anforced unless previously negoti	ctors. It assigns standa sses are due to circumst a terms will be anforced	rd terms and conditions ances beyond the control unless previously negotiat	pe		
Relinquished by: (Signature)	gnature)	Received	Received by: (Signature)	(e)	-	Date/Time	ime	Relinquished by: (Signature)	Signature)	Received by: (Signature)	ature)	Date/Time	
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# **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-3243-1

SDG Number: 03E1558016

Login Number: 3243 List Source: Eurofins Carlsbad

List Number: 1 Creator: Clifton, Cloe

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

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# **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-3243-1

SDG Number: 03E1558016

List Source: Eurofins Midland
List Number: 2
List Creation: 10/21/22 10:46 AM

Creator: Rodriguez, Leticia

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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**Environment Testing** 

# **ANALYTICAL REPORT**

# PREPARED FOR

Attn: Tacoma Morrissey Ensolum 601 N. Marienfeld St. Suite 400 Midland, Texas 79701

Generated 12/27/2022 10:07:28 AM Revision 1

# **JOB DESCRIPTION**

PLU 30 BIG SINKS CTB SDG NUMBER 03E1558016

# **JOB NUMBER**

890-3291-1

Eurofins Carlsbad 1089 N Canal St. Carlsbad NM 88220

# **Eurofins Carlsbad**

# **Job Notes**

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

# **Authorization**

Generated 12/27/2022 10:07:28 AM

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

Revision 1

Client: Ensolum
Project/Site: PLU 30 BIG SINKS CTB
Laboratory Job ID: 890-3291-1
SDG: 03E1558016

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## **Definitions/Glossary**

Client: Ensolum Job ID: 890-3291-1 Project/Site: PLU 30 BIG SINKS CTB

SDG: 03E1558016

**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** 

4 MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not

S1+ Surrogate recovery exceeds control limits, high biased. U Indicates the analyte was analyzed for but not detected.

**HPLC/IC** 

Qualifier **Qualifier Description** 

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** 

DI 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)

MCI 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)

Reporting Limit or Requested Limit (Radiochemistry) RL

RPD Relative Percent Difference, a measure of the relative difference between two points

**TEF** Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) **TEQ** 

**TNTC** Too Numerous To Count

**Eurofins Carlsbad** 

#### Case Narrative

Client: Ensolum

Job ID: 890-3291-1 Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

Job ID: 890-3291-1

**Laboratory: Eurofins Carlsbad** 

**Narrative** 

Job Narrative 890-3291-1

#### REVISION

The report being provided is a revision of the original report sent on 11/1/2022. The report (revision 1) is being revised due to Per client email, requesting sample ID correction and sample depth.

Report revision history

#### Receipt

The samples were received on 10/25/2022 3:17 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 1.4°C

#### Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: FS03A (890-3291-1) and FS04A (890-3291-2).

#### **GC VOA**

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-38099 and analytical batch 880-38214 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: Surrogate recovery for the following samples were outside control limits: FS03A (890-3291-1), (890-3291-A-1-C MS) and (890-3291-A-1-D 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 samples were outside control limits: (LCS 880-38024/2-A) and (LCSD 880-38024/3-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

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

Job ID: 890-3291-1

Client: Ensolum Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

**Client Sample ID: FS03A** Lab Sample ID: 890-3291-1

Date Collected: 10/24/22 10:45 **Matrix: Solid** Date Received: 10/25/22 15:17

Sample Depth: 1 feet b

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/28/22 12:40	10/31/22 18:36	1
Toluene	0.00241		0.00200	mg/Kg		10/28/22 12:40	10/31/22 18:36	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/28/22 12:40	10/31/22 18:36	1
m-Xylene & p-Xylene	0.0464		0.00399	mg/Kg		10/28/22 12:40	10/31/22 18:36	1
o-Xylene	0.0151		0.00200	mg/Kg		10/28/22 12:40	10/31/22 18:36	1
Xylenes, Total	0.0615		0.00399	mg/Kg		10/28/22 12:40	10/31/22 18:36	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	121		70 - 130			10/28/22 12:40	10/31/22 18:36	1
1,4-Difluorobenzene (Surr)	87		70 - 130			10/28/22 12:40	10/31/22 18:36	1
Method: TAL SOP Total BTEX	( - Total BTE	X Calculat	ion					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.0639		0.00399	mg/Kg			11/01/22 09:15	1
Method: SW846 8015 NM - Di	esel Range (	Organics (	DRO) (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	6070		49.8	mg/Kg			10/31/22 13:27	1
Method: SW846 8015B NM - [	Diesel Range	organics	(DRO) (GC)					
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	321		49.8	mg/Kg		10/27/22 15:04	10/29/22 22:42	1
Diesel Range Organics (Over C10-C28)	5750		49.8	mg/Kg		10/27/22 15:04	10/29/22 22:42	1
Oll Range Organics (Over C28-C36)	<49.8	U	49.8	mg/Kg		10/27/22 15:04	10/29/22 22:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130			10/27/22 15:04	10/29/22 22:42	1
o-Terphenyl	151	S1+	70 - 130			10/27/22 15:04	10/29/22 22:42	1
Method: MCAWW 300.0 - Anio	ons, Ion Chr	omatogra	ohy - Soluble					
	•							
Analyte	•	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

Client Sample ID: FS04A Lab Sample ID: 890-3291-2

Date Collected: 10/24/22 13:50 Date Received: 10/25/22 15:17

Sample Depth: 1 feet b

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/28/22 12:40	10/31/22 19:02	1
Toluene	< 0.00199	U	0.00199	mg/Kg		10/28/22 12:40	10/31/22 19:02	1
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		10/28/22 12:40	10/31/22 19:02	1
m-Xylene & p-Xylene	0.00946		0.00398	mg/Kg		10/28/22 12:40	10/31/22 19:02	1
o-Xylene	0.228		0.00199	mg/Kg		10/28/22 12:40	10/31/22 19:02	1
Xylenes, Total	0.237		0.00398	mg/Kg		10/28/22 12:40	10/31/22 19:02	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		70 - 130			10/28/22 12:40	10/31/22 19:02	1

**Eurofins Carlsbad** 

**Matrix: Solid** 

Sample Depth: 1 feet b

Analyte

Chloride

# **Client Sample Results**

Client: Ensolum Job ID: 890-3291-1

Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

**Client Sample ID: FS04A** Lab Sample ID: 890-3291-2 Matrix: Solid Date Collected: 10/24/22 13:50

Date Received: 10/25/22 15:17

Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1,4-Difluorobenzene (Surr)	113		70 - 130			10/28/22 12:40	10/31/22 19:02	
Method: TAL SOP Total BTE	X - Total BTE	X Calculat	ion					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.237		0.00398	mg/Kg			11/01/22 09:15	
Method: SW846 8015 NM - D	)iesel Range (	Organics (	DRO) (GC)					
Analyte		Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	5030		50.0	mg/Kg			10/31/22 13:36	•
Method: SW846 8015B NM -	Diocal Bango	Organica	(DBO) (GC)					
Analyte	_	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/27/22 13:59	10/29/22 15:55	
Diesel Range Organics (Over C10-C28)	4540		50.0	mg/Kg		10/27/22 13:59	10/29/22 15:55	•
Oll Range Organics (Over C28-C36)	488		50.0	mg/Kg		10/27/22 13:59	10/29/22 15:55	,
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fa
1-Chlorooctane	101		70 - 130			10/27/22 13:59	10/29/22 15:55	
o-Terphenyl	115		70 - 130			10/27/22 13:59	10/29/22 15:55	

RL

4.99

Unit

mg/Kg

Prepared

Analyzed

10/30/22 09:27

Dil Fac

Result Qualifier

Client: Ensolum

Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1

SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

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

			Percen	t Surrogate Recovery (A
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-20720-A-21-C MS	Matrix Spike	105	96	
880-20720-A-21-D MSD	Matrix Spike Duplicate	98	92	
890-3291-1	FS03A	121	87	
890-3291-2	FS04A	117	113	
LCS 880-38099/1-A	Lab Control Sample	118	90	
LCSD 880-38099/2-A	Lab Control Sample Dup	120	99	
MB 880-38099/5-A	Method Blank	79	90	
Surrogate Legend				
		79	90	

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid Prep Type: Total/NA

Client Sample ID  Matrix Spike  Matrix Spike Duplicate FS03A FS03A	1CO1 (70-130) 82 99 96 105	OTPH1 (70-130) 85 102 151 S1+	
Matrix Spike Matrix Spike Duplicate FS03A	82 99 96	85 102 151 S1+	
Matrix Spike Duplicate FS03A	99 96	102 151 S1+	
FS03A	96	151 S1+	
	<del></del>		
FS03A	105		
	103	175 S1+	
FS03A	101	169 S1+	
FS04A	101	115	
Lab Control Sample	121	141 S1+	
Lab Control Sample	110	113	
Lab Control Sample Dup	127	145 S1+	
Lab Control Sample Dup	104	103	
Method Blank	92	103	
Method Blank	83	86	
	FS04A Lab Control Sample Lab Control Sample Lab Control Sample Dup Lab Control Sample Dup Method Blank	FS04A 101 Lab Control Sample 121 Lab Control Sample 110 Lab Control Sample Dup 127 Lab Control Sample Dup 104 Method Blank 92	FS04A 101 115  Lab Control Sample 121 141 S1+  Lab Control Sample 110 113  Lab Control Sample Dup 127 145 S1+  Lab Control Sample Dup 104 103  Method Blank 92 103

OTPH = o-Terphenyl

Client: Ensolum Job ID: 890-3291-1 Project/Site: PLU 30 BIG SINKS CTB

SDG: 03E1558016

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

Lab Sample ID: MB 880-38099/5-A

**Matrix: Solid** 

**Analysis Batch: 38214** 

**Client Sample ID: Method Blank** 

Prep Type: Total/NA

Prep Batch: 38099

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/28/22 12:40	10/31/22 11:40	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/28/22 12:40	10/31/22 11:40	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/28/22 12:40	10/31/22 11:40	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/28/22 12:40	10/31/22 11:40	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/28/22 12:40	10/31/22 11:40	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/28/22 12:40	10/31/22 11:40	1
	MB	МВ						

Surrogate	%Recovery Qualifier	Limits	Prepared Analy	yzed Dil Fac
4-Bromofluorobenzene (Surr)	79	70 - 130	10/28/22 12:40 10/31/2	2 11:40 1
1,4-Difluorobenzene (Surr)	90	70 - 130	10/28/22 12:40 10/31/2	2 11:40 1

Lab Sample ID: LCS 880-38099/1-A

**Matrix: Solid** 

**Analysis Batch: 38214** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 38099

•	Spike	LCS LCS			%Rec	
Analyte	Added	Result Qualifier	Unit	D %Rec	Limits	
Benzene	0.100	0.09267	mg/Kg	93	70 - 130	
Toluene	0.100	0.08730	mg/Kg	87	70 - 130	
Ethylbenzene	0.100	0.08721	mg/Kg	87	70 - 130	
m-Xylene & p-Xylene	0.200	0.1768	mg/Kg	88	70 - 130	
o-Xylene	0.100	0.08756	mg/Kg	88	70 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	118		70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

Lab Sample ID: LCSD 880-38099/2-A **Client Sample ID: Lab Control Sample Dup** 

**Matrix: Solid** 

**Analysis Batch: 38214** 

					Prep Type: Total/NA			
					Prep I	Batch: 3	88099	
Spike	LCSD LCSD				%Rec		RPD	
Added	Result Qualifier	Unit	D	%Rec	Limits	RPD	Limit	

Analyte	Added	Result Qualifier	Unit	D %Rec	Limits	RPD	Limit
Benzene	0.100	0.09817	mg/Kg	98	70 - 130	6	35
Toluene	0.100	0.08916	mg/Kg	89	70 - 130	2	35
Ethylbenzene	0.100	0.08955	mg/Kg	90	70 - 130	3	35
m-Xylene & p-Xylene	0.200	0.1831	mg/Kg	92	70 - 130	3	35
o-Xylene	0.100	0.08959	mg/Kg	90	70 - 130	2	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	120		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

Lab Sample ID: 880-20720-A-21-C MS

**Matrix: Solid** 

**Analysis Batch: 38214** 

**Client Sample ID: Matrix Spike** Prep Type: Total/NA

Prep Batch: 38099

MS MS Sample Sample Spike %Rec Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits 70 - 130 <0.00200 U F1 0.0998 Benzene 0.06269 F1 mg/Kg 63 Toluene <0.00200 UF1 0.0998 0.05124 F1 mg/Kg 51 70 - 130

## QC Sample Results

Client: Ensolum Job ID: 890-3291-1 Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

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

Lab Sample ID: 880-20720-A-21-C MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 38214									Prep B	atch: 38099
	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.00200	U F1	0.0998	0.04323	F1	mg/Kg		43	70 - 130	
m-Xylene & p-Xylene	< 0.00401	U F1	0.200	0.08653	F1	mg/Kg		43	70 - 130	
o-Xylene	<0.00200	U F1	0.0998	0.04264	F1	mg/Kg		43	70 - 130	

MS MS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	105	70 - 130
1,4-Difluorobenzene (Surr)	96	70 - 130

Lab Sample ID: 880-20720-A-21-D MSD

**Matrix: Solid** 

**Analysis Batch: 38214** 

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA

Prep Batch: 38099 **RPD** 

Sample Sample Spike MSD MSD %Rec Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit 0.0990 0.06961 70 - 130 35 Benzene <0.00200 UF1 mg/Kg 70 10 Toluene <0.00200 UF1 0.0990 0.06111 F1 62 70 - 130 18 35 mg/Kg 0.0990 Ethylbenzene <0.00200 UF1 0.05794 F1 mg/Kg 59 70 - 130 29 35 m-Xylene & p-Xylene <0.00401 UF1 0.198 0.1157 F1 mq/Kq 58 70 - 130 29 35 <0.00200 UF1 0.0990 0.05577 F1 56 70 - 130 27 o-Xylene mg/Kg

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

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

Lab Sample ID: MB 880-38024/1-A

**Matrix: Solid** 

**Analysis Batch: 38137** 

Client Sample ID: Method Blank
Prep Type: Total/NA
Duan Datala 20004

Prep Batch: 38024

MB MB Analyte Result Qualifier RL Unit Prepared Analyzed Dil Fac Gasoline Range Organics <50.0 U 50.0 10/27/22 13:59 10/29/22 10:00 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U 50.0 mg/Kg 10/27/22 13:59 10/29/22 10:00 C10-C28) Oll Range Organics (Over C28-C36) <50.0 U 50.0 mg/Kg 10/27/22 13:59 10/29/22 10:00

MB MB

Surr	ogate %Recove	ry Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Ch	lorooctane	92	70 - 130	10/27/22 13:59	10/29/22 10:00	1
o-Te	rphenyl 1	03	70 - 130	10/27/22 13:59	10/29/22 10:00	1

Lab Sample ID: LCS 880-38024/2-A

**Matrix: Solid** 

**Analysis Batch: 38137** 

<b>Client Sample ID: Lab Control Sample</b>
Prep Type: Total/NA

Prep Batch: 38024

	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1170		mg/Kg		117	70 - 130
Diesel Range Organics (Over C10-C28)	1000	855.4		mg/Kg		86	70 - 130

Project/Site: PLU 30 BIG SINKS CTB

Client: Ensolum

Job ID: 890-3291-1

SDG: 03E1558016

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

Lab Sample ID: LCS 880-38024/2-A

Lab Sample ID: LCSD 880-38024/3-A

Lab Sample ID: 890-3282-A-1-C MS

**Matrix: Solid** 

**Analysis Batch: 38137** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 38024

LCS LCS

Limits %Recovery Qualifier Surrogate 1-Chlorooctane 121 70 - 130 o-Terphenyl 141 S1+ 70 - 130

**Client Sample ID: Lab Control Sample Dup** 

**Prep Type: Total/NA** 

**Matrix: Solid** 

**Analysis Batch: 38137** 

Prep Batch: 38024

LCSD LCSD RPD %Rec Spike Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Gasoline Range Organics 1000 1233 mg/Kg 123 70 - 130 5 20 (GRO)-C6-C10 Diesel Range Organics (Over 1000 912.3 mg/Kg 91 70 - 130 6 20

C10-C28)

LCSD LCSD

Surrogate %Recovery Qualifier Limits 70 - 130 1-Chlorooctane 127 70 - 130 o-Terphenyl 145 S1+

**Client Sample ID: Matrix Spike** 

**Prep Type: Total/NA** 

Prep Batch: 38024

Sample Sample Spike MS MS %Rec Result Qualifier Added Result Qualifier Limits **Analyte** Unit D %Rec <49.8 U Gasoline Range Organics 998 994.7 mg/Kg 98 70 - 130 (GRO)-C6-C10 <49.8 U 998 Diesel Range Organics (Over 895.0 mg/Kg 88 70 - 130

C10-C28)

**Matrix: Solid** 

**Analysis Batch: 38137** 

MS MS

Surrogate %Recovery Qualifier Limits 1-Chlorooctane 70 - 130 82 o-Terphenyl 85 70 - 130

Lab Sample ID: 890-3282-A-1-D MSD Client Sample ID: Matrix Spike Duplicate

MSD MSD

**Matrix: Solid** 

**Analysis Batch: 38137** 

Prep Type: Total/NA Prep Batch: 38024

%Rec **RPD** Limits **RPD** Limit

Result Qualifier Added Result Qualifier **Analyte** Unit %Rec <49.8 U 998 914.9 Gasoline Range Organics mg/Kg 90 70 - 130 8 20 (GRO)-C6-C10 Diesel Range Organics (Over <49.8 U 998 1085 mg/Kg 107 70 - 130 19 20

Spike

C10-C28)

MSD MSD

Sample Sample

%Recovery Qualifier Limits Surrogate 1-Chlorooctane 99 70 - 130 o-Terphenyl 102 70 - 130

o-Terphenyl

# **QC Sample Results**

Client: Ensolum Job ID: 890-3291-1 Project/Site: PLU 30 BIG SINKS CTB

SDG: 03E1558016

10/27/22 15:04 10/29/22 21:37

Client Sample ID: Lab Control Sample Dun

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

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Lab Sample ID: MB 880-38030/1-A **Client Sample ID: Method Blank Matrix: Solid Prep Type: Total/NA** Prep Batch: 38030 **Analysis Batch: 38135** 

	MB	МВ						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		10/27/22 15:04	10/29/22 21:37	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		10/27/22 15:04	10/29/22 21:37	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		10/27/22 15:04	10/29/22 21:37	1
	MB	MB						
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	83		70 - 130			10/27/22 15:04	10/29/22 21:37	1

Lab Sample ID: LCS 880-38030/2-A **Client Sample ID: Lab Control Sample Matrix: Solid Prep Type: Total/NA** Prep Batch: 38030 **Analysis Batch: 38135** 

70 - 130

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10	1000	820.2		mg/Kg		82	70 - 130	
Diesel Range Organics (Over C10-C28)	1000	1025		mg/Kg		102	70 - 130	

	LCS LC	cs	
Surrogate	%Recovery Qu	ualifier	Limits
1-Chlorooctane	110		70 - 130
o-Terphenyl	113		70 - 130

Lah Sample ID: LCSD 880-38030/3-A

Lab Cample ID. LOOD 000-3003073-A	b cumple ib: Ecob coc coccore A					Olient Cample ID: Lab Control Cample Da								
Matrix: Solid							Prep Ty	pe: Tot	al/NA					
Analysis Batch: 38135							Prep B	atch: 3	38030					
	Spike	LCSD	LCSD				%Rec		RPD					
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit					
Gasoline Range Organics (GRO)-C6-C10	1000	811.4		mg/Kg		81	70 - 130	1	20					
Diesel Range Organics (Over	1000	945.5		mg/Kg		95	70 - 130	8	20					

C10-C28)			
	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	104		70 - 130
o-Terphenyl	103		70 - 130

Lab Sample ID: 890-3291-1 MS **Client Sample ID: FS03A Matrix: Solid** Prep Type: Total/NA

**Analysis Batch: 38135** Prep Batch: 38030

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10	321		998	1085		mg/Kg		77	70 - 130	
Diesel Range Organics (Over C10-C28)	5750		998	6103	4	mg/Kg		35	70 - 130	

Project/Site: PLU 30 BIG SINKS CTB

Client: Ensolum

Job ID: 890-3291-1

SDG: 03E1558016

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

Lab Sample ID: 890-3291-1 MS Client Sample ID: FS03A

**Matrix: Solid** 

Prep Type: Total/NA **Analysis Batch: 38135** Prep Batch: 38030

MS MS %Recovery Qualifier Limits Surrogate 1-Chlorooctane 105 70 - 130 o-Terphenyl 175 S1+ 70 - 130

Client Sample ID: FS03A Lab Sample ID: 890-3291-1 MSD

**Matrix: Solid** 

**Prep Type: Total/NA** 

Prep Batch: 38030 **Analysis Batch: 38135** 

RPD MSD MSD %Rec Sample Sample Spike Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Gasoline Range Organics 321 998 1054 74 70 - 130 3 20 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 5750 998 5872 4 mg/Kg 12 70 - 130 20 C10-C28)

MSD MSD Surrogate %Recovery Qualifier Limits 70 - 130 1-Chlorooctane 101 70 - 130 o-Terphenyl 169 S1+

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-38007/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 38166** 

MB MB

RL Unit Analyte Result Qualifier Prepared Analyzed Dil Fac Chloride <5.00 U 5.00 10/30/22 08:00 mg/Kg

Lab Sample ID: LCS 880-38007/2-A Client Sample ID: Lab Control Sample **Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 38166** 

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits Chloride 250 263.5 mg/Kg 105 90 - 110

Lab Sample ID: LCSD 880-38007/3-A **Client Sample ID: Lab Control Sample Dup Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 38166** 

Spike LCSD LCSD %Rec Added Limits RPD Analyte Result Qualifier Unit D %Rec Limit Chloride 250 264.0 mg/Kg 106 90 - 110 0 20

Lab Sample ID: 890-3286-A-1-B MS **Client Sample ID: Matrix Spike** 

**Matrix: Solid** 

**Analysis Batch: 38166** 

Released to Imaging: 7/15/2024 1:23:48 PM

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Chloride 10600 5030 15700 90 - 110 mg/Kg 101

**Eurofins Carlsbad** 

**RPD** 

**Prep Type: Soluble** 

# **QC Sample Results**

Client: Ensolum Job ID: 890-3291-1 Project/Site: PLU 30 BIG SINKS CTB SDG: 03E1558016

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-3286-A-1-C MSD **Client Sample ID: Matrix Spike Duplicate Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 38166** 

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	10600		5030	15700		mg/Kg		101	90 - 110	0	20

# **QC Association Summary**

Client: Ensolum

Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1 SDG: 03E1558016

#### **GC VOA**

Prep Batch: 38099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-1	FS03A	Total/NA	Solid	5035	
890-3291-2	FS04A	Total/NA	Solid	5035	
MB 880-38099/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-38099/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-38099/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-20720-A-21-C MS	Matrix Spike	Total/NA	Solid	5035	
880-20720-A-21-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

#### **Analysis Batch: 38214**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-1	FS03A	Total/NA	Solid	8021B	38099
890-3291-2	FS04A	Total/NA	Solid	8021B	38099
MB 880-38099/5-A	Method Blank	Total/NA	Solid	8021B	38099
LCS 880-38099/1-A	Lab Control Sample	Total/NA	Solid	8021B	38099
LCSD 880-38099/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	38099
880-20720-A-21-C MS	Matrix Spike	Total/NA	Solid	8021B	38099
880-20720-A-21-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	38099

#### **Analysis Batch: 38336**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-1	FS03A	Total/NA	Solid	Total BTEX	
890-3291-2	FS04A	Total/NA	Solid	Total BTEX	

#### **GC Semi VOA**

#### Prep Batch: 38024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-2	FS04A	Total/NA	Solid	8015NM Prep	
MB 880-38024/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38024/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-38024/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3282-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3282-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

#### Prep Batch: 38030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-1	FS03A	Total/NA	Solid	8015NM Prep	
MB 880-38030/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-38030/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-38030/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3291-1 MS	FS03A	Total/NA	Solid	8015NM Prep	
890-3291-1 MSD	FS03A	Total/NA	Solid	8015NM Prep	

#### **Analysis Batch: 38135**

Released to Imaging: 7/15/2024 1:23:48 PM

<b>Lab Sample ID</b> 890-3291-1	Client Sample ID FS03A	Prep Type Total/NA	Matrix Solid	Method 8015B NM	Prep Batch 38030
MB 880-38030/1-A	Method Blank	Total/NA	Solid	8015B NM	38030
LCS 880-38030/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38030
LCSD 880-38030/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38030
890-3291-1 MS	FS03A	Total/NA	Solid	8015B NM	38030
890-3291-1 MSD	FS03A	Total/NA	Solid	8015B NM	38030

**Eurofins Carlsbad** 

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# **QC Association Summary**

Client: Ensolum

Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1 SDG: 03E1558016

## **GC Semi VOA**

#### **Analysis Batch: 38137**

<b>Lab Sample ID</b> 890-3291-2	Client Sample ID FS04A	Prep Type Total/NA	Matrix Solid	Method 8015B NM	Prep Batch 38024
MB 880-38024/1-A	Method Blank	Total/NA	Solid	8015B NM	38024
LCS 880-38024/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	38024
LCSD 880-38024/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	38024
890-3282-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	38024
890-3282-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	38024

# **Analysis Batch: 38277**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-1	FS03A	Total/NA	Solid	8015 NM	
890-3291-2	FS04A	Total/NA	Solid	8015 NM	

#### HPLC/IC

#### Leach Batch: 38007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-1	FS03A	Soluble	Solid	DI Leach	
890-3291-2	FS04A	Soluble	Solid	DI Leach	
MB 880-38007/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-38007/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-38007/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3286-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3286-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

#### **Analysis Batch: 38166**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3291-1	FS03A	Soluble	Solid	300.0	38007
890-3291-2	FS04A	Soluble	Solid	300.0	38007
MB 880-38007/1-A	Method Blank	Soluble	Solid	300.0	38007
LCS 880-38007/2-A	Lab Control Sample	Soluble	Solid	300.0	38007
LCSD 880-38007/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	38007
890-3286-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	38007
890-3286-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	38007

Client: Ensolum Project/Site: PLU 30 BIG SINKS CTB Job ID: 890-3291-1 SDG: 03E1558016

Lab Sample ID: 890-3291-1

**Matrix: Solid** 

**Client Sample ID: FS03A** Date Collected: 10/24/22 10:45 Date Received: 10/25/22 15:17

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	38099	10/28/22 12:40	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38214	10/31/22 18:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38336	11/01/22 09:15	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38277	10/31/22 13:27	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	38030	10/27/22 15:04	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	38135	10/29/22 22:42	AJ	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	38007	10/27/22 11:23	CH	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	38166	10/30/22 09:20	CH	EET MID

**Client Sample ID: FS04A** Lab Sample ID: 890-3291-2 Date Collected: 10/24/22 13:50 **Matrix: Solid** 

Date Received: 10/25/22 15:17

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	38099	10/28/22 12:40	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	38214	10/31/22 19:02	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			38336	11/01/22 09:15	AJ	EET MID
Total/NA	Analysis	8015 NM		1			38277	10/31/22 13:36	AJ	EET MID
Total/NA Total/NA	Prep Analysis	8015NM Prep 8015B NM		1	10.00 g 1 uL	10 mL 1 uL	38024 38137	10/27/22 13:59 10/29/22 15:55		EET MID EET MID
Soluble Soluble	Leach Analysis	DI Leach 300.0		1	5.01 g 50 mL	50 mL 50 mL	38007 38166	10/27/22 11:23 10/30/22 09:27	CH CH	EET MID EET MID

**Laboratory References:** 

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

# **Accreditation/Certification Summary**

Client: Ensolum

Job ID: 890-3291-1 SDG: 03E1558016

Project/Site: PLU 30 BIG SINKS CTB

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	<b>Expiration Date</b>
N/A	N/A	None on record.	

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# **Method Summary**

Client: Ensolum

Project/Site: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1

SDG: 03E1558016

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: PLU 30 BIG SINKS CTB

Job ID: 890-3291-1

SDG: 03E1558016

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depti
890-3291-1	FS03A	Solid	10/24/22 10:45	10/25/22 15:17	1 feet b
890-3291-2	FS04A	Solid	10/24/22 13:50	10/25/22 15:17	1 feet b

eurofins

Project Number: Project Name: City, State ZIP.

303-887-2946 Carlsbad, NM 88220 3122 National Parks Hwy

PLU 30 Big Sinks CTB

Turn Around

Rush

Code

ANALYSIS REQUEST

Cool: Cool None: NO

Preservative Codes

Di Water, H<sub>2</sub>O MeOH: Me

03E1558016

Due Date: Routine Company Name Project Manager

Ensolum

Address:

City, State ZIP:

Carlsbad, NM 88220 3104 E Green St XTO Energy Garrett Green

Bill to: (If different)

Company Name:

Tacoma Morrissey

# 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

1	Reg	Sta	Pro		1	
	orting Le	State of Project:	gram: US			
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	ors. It assigns standard terms and conditions as are due to circumstances beyond the control erms will be enforced unless previously negotiated.	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.	urofins Xenco, it expenses incurre Eurofins Xenco	sany to Ex sases or e bmitted to	ent comp for any la ample su	order from cli responsibility \$5 for each s-	es a valid purchase all not assume any est and a charge of	samples constitut of samples and shi pplied to each proj	elinquishment o only for the cost \$85.00 will be a	ment and o	Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontract 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 losss of Eurofins Xenco, with the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses of Eurofins Xenco, but not analyzed. These to
Sn U V Zn 7470 / 7471	Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn Mo Ni Se Ag Ti U Hg: 1631/245.1/7470/7471	RA 13PPM Texas 11 AISb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni ICLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	Ba Be Cd	Al Sb As Ba Be CRA Sb As Ba E	AI Sb	Texas 11 6010: 8R0	8RCRA 13PPM Texas 11 TCLP / SPLP 6010: 8F		200.8 / 6020: lal(s) to be analyz	200.8 Metal(s)	Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed
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OCCUPATION PRINCESS MANUAL SECTIONS	- Appropriate		×	×	-	5 Comp	1:50 0.5	10/24/2022	s		FS04
ID:	Incident ID:		×	×	-	0.5 Comp	10:45 0	10/24/2022	S		FS03
Sample Comments	Sa		BTEX (	CHLOR	# of Cont	Depth Grab/	Time De	Date Sampled	Matrix	ation	Sample Identification
NaOH+Ascorbic Acid: SAPC	NaCH+A		o E	1000.00		. 4	erature:	Corrected Temperature	(		Total Containers:
Zn Acetate+NaOH: Zn			ii G	S (E		6	ading:	remperature Reading	NO (N/A	Yes	Sample Custody Seals:
NaSO,		890-3291 Chain of Custody		PA:	P	6.0		Correction Factor	NO NIA	Yes	Cooler Custody Seals:
NABIS	NaHSO4 NABIS			300.	arar	FOOM	2	Thermometer ID:	No	(Yes)	Samples Received Intact
7	H,PO, HP			.0)	nete	Yes No	Wet Ice:	Yes No	Temp Blank:	Ter	SAMPLE RECEIPT
2 NaOH: Na	H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub>		Ļ	L	rs	by 4:30pm	the lab. If received by 4:30pm			100	PO#
	HCL HC	-				received by	TAT starts the day received by		Connor Whitman	C	Sampler's Name:
u.s	C00: C00:						Due Date:	0			Project Location:

12/27/2022 (Rev. 1)

# **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-3291-1 SDG Number: 03E1558016

Login Number: 3291 **List Source: Eurofins Carlsbad** 

List Number: 1 Creator: Clifton, Cloe

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

# **Login Sample Receipt Checklist**

Client: Ensolum

Job Number: 890-3291-1

SDG Number: 03E1558016

List Source: Eurofins Midland
List Number: 2
List Creation: 10/27/22 10:25 AM

Creator: Rodriguez, Leticia

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**

# PREPARED FOR

Attn: Tacoma Morrissey
Ensolum
601 N. Marienfeld St.
Suite 400
Midland, Texas 79701
Generated 12/27/2022 10:05:00 AM Revision 1

# **JOB DESCRIPTION**

PLU 30 Big Sinks Battery SDG NUMBER 03E1558016

# **JOB NUMBER**

890-3247-1

Eurofins Carlsbad 1089 N Canal St. Carlsbad NM 88220



# **Eurofins Carlsbad**

# **Job Notes**

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

# **Authorization**

Generated 12/27/2022 10:05:00 AM

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

Revision 1

Client: Ensolum
Project/Site: PLU 30 Big Sinks Battery

Laboratory Job ID: 890-3247-1
SDG: 03E1558016

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# **Definitions/Glossary**

Client: Ensolum Job ID: 890-3247-1 Project/Site: PLU 30 Big Sinks Battery

SDG: 03E1558016

#### **Qualifiers**

**GC VOA** 

Qualifier **Qualifier Description** 

Indicates the analyte was analyzed for but not detected.

#### **GC Semi VOA**

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

**HPLC/IC** 

Qualifier **Qualifier Description** 

MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not

applicable.

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** 

Detection Limit (DoD/DOE) DL

Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample DL, RA, RE, IN

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 Minimum Level (Dioxin) ML MPN Most Probable Number MQL Method Quantitation Limit

NC Not Calculated

Not Detected at the reporting limit (or MDL or EDL if shown) ND

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

**Eurofins Carlsbad** 

#### Case Narrative

Client: Ensolum

Job ID: 890-3247-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

Job ID: 890-3247-1

**Laboratory: Eurofins Carlsbad** 

**Narrative** 

Job Narrative 890-3247-1

#### REVISION

The report being provided is a revision of the original report sent on 10/24/2022. The report (revision 1) is being revised due to Per client email, requesting sample depths to be corrected.

Report revision history

#### Receipt

The samples were received on 10/20/2022 9:38 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 3.6°C

#### Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: FS01A (890-3247-1) and FS02A (890-3247-2).

#### **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 surrogate recovery for the blank associated with preparation batch 880-37503 and analytical batch 880-37444 was outside the upper control limits.

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 880-37511 and analytical batch 880-37598 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.

Project/Site: PLU 30 Big Sinks Battery

Client: Ensolum Job ID: 890-3247-1 SDG: 03E1558016

Lab Sample ID: 890-3247-1

Date Collected: 10/19/22 14:10 Date Received: 10/20/22 09:38

Client Sample ID: FS01A

**Matrix: Solid** 

Sample Depth: 1 feet b

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.00201	U	0.00201	mg/Kg		10/21/22 14:15	10/24/22 14:21	
Toluene	<0.00201	U	0.00201	mg/Kg		10/21/22 14:15	10/24/22 14:21	
Ethylbenzene	0.00261		0.00201	mg/Kg		10/21/22 14:15	10/24/22 14:21	
m-Xylene & p-Xylene	0.0306		0.00402	mg/Kg		10/21/22 14:15	10/24/22 14:21	
o-Xylene	0.0117		0.00201	mg/Kg		10/21/22 14:15	10/24/22 14:21	
Kylenes, Total	0.0423		0.00402	mg/Kg		10/21/22 14:15	10/24/22 14:21	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil F
1-Bromofluorobenzene (Surr)	118		70 - 130			10/21/22 14:15	10/24/22 14:21	
1,4-Difluorobenzene (Surr)	73		70 - 130			10/21/22 14:15	10/24/22 14:21	
Method: TAL SOP Total BTE	X - Total BTE	X Calculat	ion					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Total BTEX	0.0449		0.00402	mg/Kg			10/24/22 16:38	
Method: SW846 8015 NM - D	Diesel Range (	Organics (	DRO) (GC)					
Analyte	_	Qualifier	, RL	Unit	D	Prepared	Analyzed	Dil Fa
Total TPH	8680		49.9	mg/Kg			10/24/22 09:48	
Method: SW846 8015B NM -	Diesel Range	organics	(DRO) (GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics (GRO)-C6-C10	244		49.9	mg/Kg		10/21/22 13:50	10/22/22 00:39	
Diesel Range Organics (Over C10-C28)	5310		49.9	mg/Kg		10/21/22 13:50	10/22/22 00:39	
Oll Range Organics (Over C28-C36)	3130		49.9	mg/Kg		10/21/22 13:50	10/22/22 00:39	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil F
I-Chlorooctane	110		70 - 130			10/21/22 13:50	10/22/22 00:39	
o-Terphenyl	121		70 - 130			10/21/22 13:50	10/22/22 00:39	

Client Sample ID: FS02A Lab Sample ID: 890-3247-2 Matrix: Solid

RL

5.01

Unit

mg/Kg

Prepared

Analyzed

10/23/22 21:42

Dil Fac

Result Qualifier

224

Date Collected: 10/19/22 14:15 Date Received: 10/20/22 09:38

Sample Depth: 1 feet b

Analyte

Chloride

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		10/21/22 14:15	10/24/22 15:02	1
Toluene	< 0.00199	U	0.00199	mg/Kg		10/21/22 14:15	10/24/22 15:02	1
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		10/21/22 14:15	10/24/22 15:02	1
m-Xylene & p-Xylene	0.0222		0.00398	mg/Kg		10/21/22 14:15	10/24/22 15:02	1
o-Xylene	0.0105		0.00199	mg/Kg		10/21/22 14:15	10/24/22 15:02	1
Xylenes, Total	0.0327		0.00398	mg/Kg		10/21/22 14:15	10/24/22 15:02	1

# **Client Sample Results**

Client: Ensolum Job ID: 890-3247-1
Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

Client Sample ID: FS02A

Date Collected: 10/19/22 14:15 Date Received: 10/20/22 09:38 Sample Depth: 1 feet b Lab Sample ID: 890-3247-2

Matrix: Solid

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	124	70 - 130	10/21/22 14:15	10/24/22 15:02	1
1,4-Difluorobenzene (Surr)	72	70 - 130	10/21/22 14:15	10/24/22 15:02	1

Method: TAL SOP Tota	I BTEX - Total BTEX Calculat	ion					
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.0327	0.00398	mg/Kg			10/24/22 16:38	1

Method: SW846 8015 NM - D	iesel Range Organics (D	RO) (GC)					
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	5080	50.0	mg/Kg			10/24/22 09:48	1

Method: SW846 8015B NM -	<b>Diesel Range Organics</b>	(DRO) (GC)					
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	204	50.0	mg/Kg		10/21/22 13:50	10/22/22 01:20	1
Diesel Range Organics (Over C10-C28)	3150	50.0	mg/Kg		10/21/22 13:50	10/22/22 01:20	1
Oll Range Organics (Over C28-C36)	1730	50.0	mg/Kg		10/21/22 13:50	10/22/22 01:20	1
Surrogate	%Recovery Qualifier	Limits			Prepared	Analyzed	Dil Fac

Surrogate	%Recovery	Qualifier	Limits	Prepared	Anaiyzea	DII Fac
1-Chlorooctane	88		70 - 130	10/21/22 13:50	10/22/22 01:20	1
o-Terphenyl	92		70 - 130	10/21/22 13:50	10/22/22 01:20	1

Method: MCAWW 300.0 - Anic	ons, Ion Chromatograph	y - Soluble					
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	80.0	5.00	mg/Kg			10/23/22 21:47	1

2

3

4

6

8

9

10

12

13

L

# **Surrogate Summary**

Client: Ensolum Job ID: 890-3247-1
Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

			cent Surrogate Reco	
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-3247-1	FS01A	118	73	
890-3247-2	FS02A	124	72	
890-3253-A-1-A MS	Matrix Spike	100	95	
890-3253-A-1-B MSD	Matrix Spike Duplicate	97	72	
LCS 880-37514/1-A	Lab Control Sample	96	89	
LCSD 880-37514/2-A	Lab Control Sample Dup	95	81	
MB 880-37514/5-A	Method Blank	107	77	
Surrogate Legend				
BFB = 4-Bromofluorobenz	zene (Surr)			

DFBZ = 1,4-Diffuorobenzene (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)		
890-3240-A-2-C MS	Matrix Spike	82	84		
890-3240-A-2-D MSD	Matrix Spike Duplicate	79	81		
390-3247-1	FS01A	110	121		
390-3247-2	FS02A	88	92		
LCS 880-37503/2-A	Lab Control Sample	90	100		
LCSD 880-37503/3-A	Lab Control Sample Dup	99	110		
MB 880-37503/1-A	Method Blank	118	133 S1+		
Surrogate Legend					

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

## **QC Sample Results**

Client: Ensolum Job ID: 890-3247-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-37514/5-A

**Matrix: Solid** 

**Analysis Batch: 37615** 

**Client Sample ID: Method Blank** 

Prep Type: Total/NA

Prep Batch: 37514

	MB	MB						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
Toluene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		10/21/22 14:15	10/24/22 10:42	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		10/21/22 14:15	10/24/22 10:42	1

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107	70 - 130	10/21/22 14:15	10/24/22 10:42	1
1,4-Difluorobenzene (Surr)	77	70 - 130	10/21/22 14:15	10/24/22 10:42	1

Lab Sample ID: LCS 880-37514/1-A

**Matrix: Solid** 

**Analysis Batch: 37615** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 37514

•	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	0.100	0.1046		mg/Kg		105	70 - 130
Toluene	0.100	0.1066		mg/Kg		107	70 - 130
Ethylbenzene	0.100	0.09931		mg/Kg		99	70 - 130
m-Xylene & p-Xylene	0.200	0.2054		mg/Kg		103	70 - 130
o-Xylene	0.100	0.1034		mg/Kg		103	70 - 130

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	96		70 - 130
1,4-Difluorobenzene (Surr)	89		70 - 130

Lab Sample ID: LCSD 880-37514/2-A

**Matrix: Solid** 

**Analysis Batch: 37615** 

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

Prep Batch: 37514

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.09576		mg/Kg		96	70 - 130	9	35
Toluene	0.100	0.09860		mg/Kg		99	70 - 130	8	35
Ethylbenzene	0.100	0.1009		mg/Kg		101	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.1953		mg/Kg		98	70 - 130	5	35
o-Xylene	0.100	0.09779		mg/Kg		98	70 - 130	6	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		70 - 130
1.4-Difluorobenzene (Surr)	81		70 - 130

Lab Sample ID: 890-3253-A-1-A MS

**Matrix: Solid** 

**Analysis Batch: 37615** 

**Client Sample ID: Matrix Spike** Prep Type: Total/NA

Prep Batch: 37514

MS MS Sample Sample Spike %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits <0.00201 U 0.100 0.1004 70 - 130 Benzene mg/Kg 99 Toluene <0.00201 U 0.100 0.1142 mg/Kg 109 70 - 130

**Eurofins Carlsbad** 

## QC Sample Results

Client: Ensolum Job ID: 890-3247-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

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

**Client Sample ID: Matrix Spike** Lab Sample ID: 890-3253-A-1-A MS **Matrix: Solid Prep Type: Total/NA** 

**Analysis Batch: 37615** 

Prep Batch: 37514 MS MS Sample Sample Spike %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Ethylbenzene <0.00201 U 0.100 0.09592 96 70 - 130 mg/Kg m-Xylene & p-Xylene <0.00402 U 0.200 0.2008 mg/Kg 100 70 - 130<0.00201 U 0.100 0.1000 100 o-Xylene mg/Kg 70 - 130

MS MS

Surrogate %Recovery Qualifier Limits 70 - 130 4-Bromofluorobenzene (Surr) 100 70 - 130 1,4-Difluorobenzene (Surr) 95

Lab Sample ID: 890-3253-A-1-B MSD

**Matrix: Solid** 

**Analysis Batch: 37615** 

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA

Prep Batch: 37514 %Rec **RPD** 

Sample Sample Spike MSD MSD Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit Analyte 0.0996 70 - 130 35 Benzene <0.00201 U 0.09485 mg/Kg 94 6 <0.00201 U 0.0996 0.09849 70 - 130 35 Toluene mg/Kg 94 15 Ethylbenzene <0.00201 U 0.0996 0.09498 mg/Kg 95 70 - 130 1 35 <0.00402 U 0.199 0.1982 100 70 - 130 35 m-Xylene & p-Xylene mq/Kq 1 <0.00201 U 0.0996 2 o-Xylene 0.1021 mg/Kg 103 70 - 13035

MSD MSD

Surrogate %Recovery Qualifier Limits 70 - 130 4-Bromofluorobenzene (Surr) 97 1,4-Difluorobenzene (Surr) 72 70 - 130

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

Lab Sample ID: MB 880-37503/1-A

**Matrix: Solid** 

Analyte

**Analysis Batch: 37444** 

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

Analyzed

Prep Batch: 37503

Dil Fac

MB MB Result Qualifier RL Unit **Prepared** 

<50.0 U 50.0 10/21/22 13:50 10/21/22 19:50 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over <50.0 U 50.0 10/21/22 13:50 10/21/22 19:50 mg/Kg C10-C28) Oll Range Organics (Over C28-C36) <50.0 U 50.0 mg/Kg 10/21/22 13:50 10/21/22 19:50

MB MB

%Recovery Qualifier Limits Prepared Dil Fac Surrogate Analyzed 70 - 130 10/21/22 13:50 10/21/22 19:50 1-Chlorooctane 118 70 - 130 10/21/22 13:50 10/21/22 19:50 o-Terphenyl 133 S1+

Lab Sample ID: LCS 880-37503/2-A

**Matrix: Solid** 

**Analysis Batch: 37444** 

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

Prep Batch: 37503

	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics (GRO)-C6-C10	1000	858.1		mg/Kg		86	70 - 130
Diesel Range Organics (Over	1000	774.2		mg/Kg		77	70 - 130

**Eurofins Carlsbad** 

Client: Ensolum

Job ID: 890-3247-1

SDG: 03E1558016

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

Lab Sample ID: LCS 880-37503/2-A

Project/Site: PLU 30 Big Sinks Battery

**Matrix: Solid** 

**Analysis Batch: 37444** 

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

Prep Batch: 37503

LCS LCS

Limits %Recovery Qualifier Surrogate 1-Chlorooctane 90 70 - 130 o-Terphenyl 100 70 - 130

**Client Sample ID: Lab Control Sample Dup** Lab Sample ID: LCSD 880-37503/3-A

902.2

**Matrix: Solid** 

**Analysis Batch: 37444** 

Diesel Range Organics (Over

**Prep Type: Total/NA** 

90

70 - 130

Prep Batch: 37503

15

LCSD LCSD RPD %Rec Spike Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit Gasoline Range Organics 1000 1041 mg/Kg 104 70 - 130 19 20 (GRO)-C6-C10 1000

C10-C28)

LCSD LCSD

Surrogate	%Recovery Qualif	ier Limits
1-Chlorooctane	99	70 - 130
o-Terphenyl	110	70 - 130

Lab Sample ID: 890-3240-A-2-C MS **Client Sample ID: Matrix Spike** 

**Matrix: Solid** 

**Analysis Batch: 37444** 

**Prep Type: Total/NA** 

mg/Kg

Prep Batch: 37503 %Rec

Sample Sample Spike MS MS Result Qualifier Added Result Qualifier Limits **Analyte** Unit D %Rec <49.9 U Gasoline Range Organics 998 1086 mg/Kg 109 70 - 130 (GRO)-C6-C10 <49.9 U 998 Diesel Range Organics (Over 781.6 mg/Kg 76 70 - 130

C10-C28)

MS MS

Surrogate	%Recovery Qualifie	r Limits
1-Chlorooctane	82	70 - 130
o-Terphenyl	84	70 - 130

Lab Sample ID: 890-3240-A-2-D MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

**Analysis Batch: 37444** 

Prep Type: Total/NA Prep Batch: 37503

%Rec **RPD** 

Sample Sample Spike MSD MSD Result Qualifier Added Result Qualifier Limits **RPD** Limit Analyte Unit D %Rec <49.9 U 998 1014 102 70 - 130 Gasoline Range Organics mg/Kg 20 (GRO)-C6-C10 Diesel Range Organics (Over <49.9 U 998 762.1 mg/Kg 74 70 - 130 3 20

C10-C28)

MSD MSD

Surrogate	%Recovery Qua	lifier Limits
1-Chlorooctane	79	70 - 130
o-Terphenyl	81	70 - 130

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20

Client Sample ID: Method Blank

**Client Sample ID: Lab Control Sample** 

D %Rec

104

Client Sample ID: Lab Control Sample Dup

**Client Sample ID: Matrix Spike Duplicate** 

%Rec

Limits

90 - 110

**Client Sample ID: Matrix Spike** 

**Prep Type: Soluble** 

## QC Sample Results

Client: Ensolum Job ID: 890-3247-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-37511/1-A

**Matrix: Solid** 

**Analysis Batch: 37598** 

MB MB

Result Qualifier RL Unit D Analyzed Dil Fac Analyte **Prepared** 5.00 10/23/22 19:22 Chloride <5.00 U mg/Kg

LCS LCS

259.6

Result Qualifier

Unit

mg/Kg

Lab Sample ID: LCS 880-37511/2-A

**Matrix: Solid** 

**Analysis Batch: 37598** 

Spike Added

Analyte

Lab Sample ID: LCSD 880-37511/3-A

**Matrix: Solid** 

Chloride

**Analysis Batch: 37598** 

Spike LCSD LCSD %Rec **RPD** Analyte Added Result Qualifier Limits RPD Limit Unit %Rec Chloride 250 259.0 90 - 110 20 mg/Kg 104

250

Lab Sample ID: 890-3240-A-3-C MS

**Matrix: Solid** 

**Analysis Batch: 37598** 

Spike MS MS %Rec Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits 1334 4 Chloride 1120 248 mg/Kg 87 90 - 110

Lab Sample ID: 890-3240-A-3-D MSD

**Matrix: Solid** 

**Analysis Batch: 37598** 

RPD Sample Sample Spike MSD MSD %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit 248 1329 4 Chloride 1120 mg/Kg 85 90 - 110 0 20

# **QC Association Summary**

Client: Ensolum

Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1 SDG: 03E1558016

## **GC VOA**

## Prep Batch: 37514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3247-1	FS01A	Total/NA	Solid	5035	
890-3247-2	FS02A	Total/NA	Solid	5035	
MB 880-37514/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-37514/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-37514/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-3253-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
890-3253-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## **Analysis Batch: 37615**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3247-1	FS01A	Total/NA	Solid	8021B	37514
890-3247-2	FS02A	Total/NA	Solid	8021B	37514
MB 880-37514/5-A	Method Blank	Total/NA	Solid	8021B	37514
LCS 880-37514/1-A	Lab Control Sample	Total/NA	Solid	8021B	37514
LCSD 880-37514/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	37514
890-3253-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	37514
890-3253-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	37514

## **Analysis Batch: 37725**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3247-1	FS01A	Total/NA	Solid	Total BTEX	
890-3247-2	FS02A	Total/NA	Solid	Total BTEX	

## **GC Semi VOA**

## **Analysis Batch: 37444**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3247-1	FS01A	Total/NA	Solid	8015B NM	37503
890-3247-2	FS02A	Total/NA	Solid	8015B NM	37503
MB 880-37503/1-A	Method Blank	Total/NA	Solid	8015B NM	37503
LCS 880-37503/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	37503
LCSD 880-37503/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	37503
890-3240-A-2-C MS	Matrix Spike	Total/NA	Solid	8015B NM	37503
890-3240-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	37503

## Prep Batch: 37503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3247-1	FS01A	Total/NA	Solid	8015NM Prep	
890-3247-2	FS02A	Total/NA	Solid	8015NM Prep	
MB 880-37503/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-37503/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-37503/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-3240-A-2-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-3240-A-2-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## **Analysis Batch: 37630**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3247-1	FS01A	Total/NA	Solid	8015 NM	
890-3247-2	FS02A	Total/NA	Solid	8015 NM	

**Eurofins Carlsbad** 

# **QC Association Summary**

Client: Ensolum

Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1

SDG: 03E1558016

## HPLC/IC

Leach Batch: 37511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3247-1	FS01A	Soluble	Solid	DI Leach	
890-3247-2	FS02A	Soluble	Solid	DI Leach	
MB 880-37511/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-37511/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-37511/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-3240-A-3-C MS	Matrix Spike	Soluble	Solid	DI Leach	
890-3240-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## **Analysis Batch: 37598**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-3247-1	FS01A	Soluble	Solid	300.0	37511
890-3247-2	FS02A	Soluble	Solid	300.0	37511
MB 880-37511/1-A	Method Blank	Soluble	Solid	300.0	37511
LCS 880-37511/2-A	Lab Control Sample	Soluble	Solid	300.0	37511
LCSD 880-37511/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	37511
890-3240-A-3-C MS	Matrix Spike	Soluble	Solid	300.0	37511
890-3240-A-3-D MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	37511

Client: Ensolum

Project/Site: PLU 30 Big Sinks Battery

SDG: 03E1558016

Job ID: 890-3247-1

Client Sample ID: FS01A

Date Collected: 10/19/22 14:10 Date Received: 10/20/22 09:38

Lab Sample ID: 890-3247-1

**Matrix: Solid** 

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	37514	10/21/22 14:15	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	37615	10/24/22 14:21	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			37725	10/24/22 16:38	SM	EET MID
Total/NA	Analysis	8015 NM		1			37630	10/24/22 09:48	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	37503	10/21/22 13:50	DM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	37444	10/22/22 00:39	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	37511	10/21/22 14:12	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	37598	10/23/22 21:42	CH	EET MID

Client Sample ID: FS02A Lab Sample ID: 890-3247-2 Date Collected: 10/19/22 14:15 **Matrix: Solid** 

Date Received: 10/20/22 09:38

Leach

Analysis

Batch Batch Dil Initial Final Batch Prepared Method **Prep Type** Type Run **Factor Amount** Amount Number or Analyzed **Analyst** Lab Prep 5035 37514 Total/NA 5.03 g 5 mL 10/21/22 14:15 MNR **EET MID** 8021B Total/NA Analysis 5 mL 5 mL 37615 10/24/22 15:02 MNR **EET MID** 1 Total/NA Analysis Total BTEX 1 37725 10/24/22 16:38 SM **EET MID** Total/NA 8015 NM Analysis 1 37630 10/24/22 09:48 SM **EET MID** Total/NA Prep 8015NM Prep 10.01 g 10 mL 37503 10/21/22 13:50 DM **EET MID** Total/NA 8015B NM Analysis 1 uL 1 uL 37444 10/22/22 01:20 SM **EET MID** 

5 g

50 mL

50 mL

50 mL

37511

37598

10/21/22 14:12 KS

10/23/22 21:47 CH

**Laboratory References:** 

Soluble

Soluble

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

DI Leach

300.0

**Eurofins Carlsbad** 

**EET MID** 

**EET MID** 

# **Accreditation/Certification Summary**

Client: Ensolum

Job ID: 890-3247-1 Project/Site: PLU 30 Big Sinks Battery SDG: 03E1558016

**Laboratory: Eurofins Midland** 

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

Authority	Program	Identification Number	<b>Expiration Date</b>
N/A	N/A	None on record.	

## **Method Summary**

Client: Ensolum

Project/Site: PLU 30 Big Sinks Battery

Job ID: 890-3247-1

SDG: 03E1558016

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: PLU 30 Big Sinks Battery

Job ID: 890-3247-1

SDG: 03E1558016

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depti
890-3247-1	FS01A	Solid	10/19/22 14:10	10/20/22 09:38	1 feet b
890-3247-2	FS02A	Solid	10/19/22 14:15	10/20/22 09:38	1 feet b

3

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12

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114

Page

Work Order No:

Revised Date 08/25/2020 Rev. 2020 2

Chain of Custody

Midland, TX (432) 704-5440. San Antonio. TX (210) 508-3334 EL Paso, TX (915) 585-3443. Lubbock, TX (806) 794-1296 Hobbs. NM (575) 392-7550. Carlsbad, NM (575) 988-3199 Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300

Project Manager. Tac	Tacoma Morrissey	20		Bill to: (if different)	1	Garrett Green	ien	Ä		Work Or	Work Order Comments	
Company Name: Ens	Ensolum			Company Name	-95	XTO Energy	N.		Program: US	Program: UST/PST   PRP   Brownfields   RRC   Superfund	3rownfields ☐ R	RC Superfund
	3122 National Parks Hwy	ks Hwy		Address	en-	3104 E. Green St	een St		State of Project:	ect:	1	ו
City, State ZIP. Car	Carlsbad, NM 88220	20		City. State ZIP.	200	arlsbad.	Carlsbad, NM 88220		Reporting Le	evel III	] PST/UST ☐ TR	RRP L Level IV
Phone: 303	303-887-2946		Empil	Garnett Grass	n@ExconMobil	Mobil co	com		Deliverables: EDD		ADaPT 🗆 OI	Other
Project Name:	PLU 30 Big Sinks Battery	inks Battery	Turn	Around				ANALYSIS REQUEST	QUEST		Prese	Preservative Codes
Project Number:	03E1558016	58016	N Routine	Rush	Pres. Code						None NO	Di Water, H <sub>2</sub> O
Project Location:			Due Date:								Cool Cool	MeOH: Me
Sampler's Name:	Connor Whitman	Whitman	TAT starts the	TAT starts the day received by the lab. If received by 4:30pm				_		_	HCL HC	NHOOH NE
SAMDI E RECEIPT	Temp Blank	Vac No	+	ves No	eres	-					H,PO. HP	
Samples Received Intact:	-	F	eter ID:		_	0.00					NaHSO, NABIS	ABIS
Cooler Custody Seals:	Yes No		. Factor		_	E 1W					Na,S <sub>2</sub> O, NaSO	880,
Sample Custody Seals:	Yes No A	N/A Temperature Reading:	ure Reading:			42)	7	890-3247 Chain of Custody	Custody		Zn Acetate+NaOH Zn	NaOH Zn
Total Containers:		Corrected	Corrected Temperature:			-	1200	-	-		NaOH+Asc	NaOH+Ascorbic Acid SAPC
Sample Identification		Matrix Sampled	Time	Depth Grab/	# of Cont	PH (80	s) X3TE				Samp	Sample Comments
FSO/A		5 10/01/22		2,5,	-	1					Incident ID:	
FS02A		1		15. 6	1	1					AAPP2309132379 A	APRESOCITITIE AAPRESOCITIES AAPRESONESSO
/											Cost Center.	er;
											20	2037891001
	/										AFE:	
	/	/										
			1-6-17	*			10					
			(a = 1)			1						
							1					
Total 200.7 / 6010 200.8 / 6020: Circle Method(s) and Metal(s) to be analyzed	200.8 / 6020: //etal(s) to be an	): nalvzed	BRCRA 13PPM TCLP / SPLI	RA 13PPM Texas 11 AI S TCLP / SPLP 6010: 8RCRA	Al Sb	As Ba	Se B Cd	AI Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO, Na Sr Tl Sn U CR As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631/245.1/7470	Mg Mn Mo	Ni K Se Ag SiC	lg SiO <sub>2</sub> Na Sr Tl Sn U V Zr Hg: 1631/245.1/7470 /7471	n U V Zn 70 /7471
Voloce: Signature of this document and reinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and such losses and such losses 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 service. Eurofins Xenco, will be labelled to asch applied to asch project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negociated for Eurofins Xenco. A minimum charge of \$55 do will be applied to asch project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negociated	ment and relinquish to liable only for the charge of \$85.00 w	ment of samples con e cost of samples ill be applied to ea	onstitutes a valid pur and shall not assume ch project and a cha	chase order from of any responsibility rge of \$5 for each 1	y for any loss	by to Euro tes or expa litted to Ex	fins Xenco, its mises incurred molins Xenco,	affiliates and subcontractors.  by the client if such losses a but not analyzed. These term:	It assigns standard re due to circumstar s will be enforced un	d terms and conditions nces beyond the contro nless previously negotia	ated.	
Relinquished by: (Signature)	ignature)	Rece	Received by: (Signature)	(nre)	۵	Date/Time	-	Relinquished by: (Signature)	ature)	Received by: (Signature)	nature)	Date/Time
· Cultita		Seul Co	2		6.01	0.9	10-20-23938					
3			1		20		4					

## **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-3247-1 SDG Number: 03E1558016

Login Number: 3247 **List Source: Eurofins Carlsbad** 

List Number: 1

Creator: Stutzman, Amanda

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

## **Login Sample Receipt Checklist**

Client: Ensolum Job Number: 890-3247-1 SDG Number: 03E1558016

Login Number: 3247 **List Source: Eurofins Midland** List Creation: 10/21/22 10:46 AM List Number: 2

Creator: Rodriguez, Leticia

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	

Released to Imaging: 7/15/2024 1:23:48 PM



APPENDIX D

**NMOCD Notifications** 

From: <u>Green, Garrett J</u>
To: <u>Tacoma Morrissey</u>

Subject: FW: XTO - Sampling Notification (Week of 10/31/22 - 11/4/22)

**Date:** Friday, October 28, 2022 2:16:44 PM

## [ \*\*EXTERNAL EMAIL\*\*]

From: Green, Garrett J

**Sent:** Friday, October 28, 2022 1:11 PM

**To:** ocd.enviro@emnrd.nm.gov; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Billings, Bradford, EMNRD <Bradford.Billings@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@emnrd.nm.gov>

**Cc:** DelawareSpills /SM <DelawareSpills@exxonmobil.com>

Subject: XTO - Sampling Notification (Week of 10/31/22 - 11/4/22)

All,

XTO plans to complete final sampling activities at the following sites the week of Oct 31, 2022.

#### Monday

Poker Lake Unit 409/ nAPP2223751933

#### Tuesday

- Poker Lake Unit 409/ nAPP2223751933
- JRU DI 11 Ekalaka 823H/ nAPP2224527297

#### Wednesday

- Poker Lake Unit 409/ nAPP2223751933
- JRU DI 11 Ekalaka 823H/ nAPP2224527297

#### Thursday

- Poker Lake Unit 409/ nAPP2223751933
- PLU 30 Big Sinks/ nAPP2209137379, nAPP2208351954, nAPP2206853301

## Friday

- Poker Lake Unit 409/ nAPP2223751933

#### Thank you!

## **Garrett Green**

Environmental Coordinator Delaware Business Unit (575) 200-0729 From: <u>Collins, Melanie</u>

To: <u>DelawareSpills /SM</u>; <u>Green, Garrett J</u>; <u>Pennington, Shelby G</u>

Cc: Ashley Ager; Kalei Jennings; Tacoma Morrissey; Ben Belill; Stuart Hyde

Subject: FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 110560

**Date:** Tuesday, September 6, 2022 1:18:20 PM

Attachments: <u>image001.png</u>

## [ \*\*EXTERNAL EMAIL\*\*]

And the 3<sup>rd</sup> one arrived..released 3/19/22.

## Melanie Collins



Environmental Technician melanie.collins@exxonmobil.com 432-556-3756

**From:** OCDOnline@state.nm.us [mailto:OCDOnline@state.nm.us]

Sent: Tuesday, September 6, 2022 12:57 PM

To: Collins, Melanie <melanie.collins@exxonmobil.com>

Subject: The Oil Conservation Division (OCD) has rejected the application, Application ID: 110560

#### External Email - Think Before You Click

To whom it may concern (c/o Melanie Collins for XTO ENERGY, INC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2209137379, for the following reasons:

• The deferral request is denied. Depth to groundwater is not adequately identified. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided. If evidence of depth to ground water within a ½ mile radius of the site cannot be provided, impacted soils will need to meet Table 1 Closure Criteria for ground water at a depth of 50 feet or less. As much of the contaminated soil outside the secondary containment area should be removed safely with alternative methods. Delineation up against and under the containment needs to occur to define edge of release. The work will need to occur in 90 days after the report has been reviewed.

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 110560.

Please review and make the required correction(s) prior to resubmitting. If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you, Robert Hamlet 575-748-1283 Robert.Hamlet@state.nm.us

New Mexico Energy, Minerals and Natural Resources Department 1220 South St. Francis Drive Santa Fe, NM 87505 From: Hamlet, Robert, EMNRD

To: Green, Garrett J

Cc: Tacoma Morrissey; DelawareSpills /SM; Bratcher, Mike, EMNRD; Nobui, Jennifer, EMNRD; Harimon, Jocelyn,

<u>EMNRD</u>

Subject: RE: [EXTERNAL] XTO 48 Hour Liner Inspection PLU 30 Big Sinks CTB - NAPP2206853301, NAPP2208351954, &

NAPP2209137379

**Date:** Friday, April 29, 2022 9:31:38 AM

### [ \*\*EXTERNAL EMAIL\*\*]

Garrett,

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Robert Hamlet • Environmental Specialist - Advanced

Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us

http://www.emnrd.state.nm.us/OCD/



From: Green, Garrett J <garrett.green@exxonmobil.com>

**Sent:** Thursday, April 28, 2022 4:39 PM

**To:** Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>

**Cc:** Tacoma Morrissey <tmorrissey@ensolum.com>; DelawareSpills /SM

<DelawareSpills@exxonmobil.com>

**Subject:** [EXTERNAL] XTO 48 Hour Liner Inspection PLU 30 Big Sinks CTB - NAPP2206853301, NAPP2208351954, & NAPP2209137379

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Good afternoon,

This is sent as a 48-hour notification, XTO is scheduled to inspect the lined containment at PLU 30 Big Sinks CTB for three releases that occurred at the facility. Release dates are as follows (2/24/2022, 3/14/2022 and 3/19/2022), on Monday, May 2, 2022, at 10am MST. 24 hour release notifications were sent out on Friday, February 25, 2022 11:09 AM, Monday, March 14, 2022 3:05 PM and Saturday, March 19, 2022 12:47 PM since the releases were greater than 25 barrels in volume.

Please call us with any questions or concerns.

GPS Coordinates: (32.10395, -103.82149)

Thank you,

#### **Garrett Green**

Environmental Coordinator
Delaware Business Unit
(575) 200-0729
<a href="mailto:Garrett.Green@ExxonMobil.com">Garrett.Green@ExxonMobil.com</a>

XTO Energy, Inc.

3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729



**APPENDIX B** 

NMOCD Correspondence

From: Hamlet, Robert, EMNRD

To: Green, Garrett J

Cc: Tacoma Morrissey; DelawareSpills /SM; Bratcher, Mike, EMNRD; Nobui, Jennifer, EMNRD; Harimon, Jocelyn,

<u>EMNRD</u>

Subject: RE: [EXTERNAL] XTO 48 Hour Liner Inspection PLU 30 Big Sinks CTB - NAPP2206853301, NAPP2208351954, &

NAPP2209137379

**Date:** Friday, April 29, 2022 9:31:38 AM

### [ \*\*EXTERNAL EMAIL\*\*]

Garrett,

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Robert Hamlet • Environmental Specialist - Advanced

Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us

http://www.emnrd.state.nm.us/OCD/



From: Green, Garrett J <garrett.green@exxonmobil.com>

**Sent:** Thursday, April 28, 2022 4:39 PM

**To:** Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Enviro, OCD, EMNRD <OCD.Enviro@state.nm.us>

**Cc:** Tacoma Morrissey <tmorrissey@ensolum.com>; DelawareSpills /SM

<DelawareSpills@exxonmobil.com>

**Subject:** [EXTERNAL] XTO 48 Hour Liner Inspection PLU 30 Big Sinks CTB - NAPP2206853301, NAPP2208351954, & NAPP2209137379

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Good afternoon,

This is sent as a 48-hour notification, XTO is scheduled to inspect the lined containment at PLU 30 Big Sinks CTB for three releases that occurred at the facility. Release dates are as follows (2/24/2022, 3/14/2022 and 3/19/2022), on Monday, May 2, 2022, at 10am MST. 24 hour release notifications were sent out on Friday, February 25, 2022 11:09 AM, Monday, March 14, 2022 3:05 PM and Saturday, March 19, 2022 12:47 PM since the releases were greater than 25 barrels in volume.

Please call us with any questions or concerns.

GPS Coordinates: (32.10395, -103.82149)

Thank you,

#### **Garrett Green**

Environmental Coordinator
Delaware Business Unit
(575) 200-0729
Garrett.Green@ExxonMobil.com

XTO Energy, Inc.

3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

From: Aimee Cole
To: Tacoma Morrissey

**Subject:** FW: XTO Site Activities for the week of April 21st

**Date:** Monday, May 2, 2022 12:23:00 PM

Attachments: image001.png

image002.png image003.png image004.png



### **Aimee Cole**

Senior Managing Scientist 720-384-7365 Ensolum, LLC

From: Green, Garrett J <garrett.green@exxonmobil.com>

**Sent:** Friday, April 29, 2022 10:00 AM

in f 💆

To: ocd.enviro@state.nm.us; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet,

Robert, EMNRD <Robert.Hamlet@state.nm.us>; Nobui, Jennifer, EMNRD

<Jennifer.Nobui@state.nm.us>; Chad.Hensley@state.nm.us

**Cc:** DelawareSpills /SM <DelawareSpills@exxonmobil.com>; Baker, Adrian <adrian.baker@exxonmobil.com>; Aimee Cole <acole@ensolum.com>

**Subject:** XTO Site Activities for the week of April 21st

## [ \*\*EXTERNAL EMAIL\*\*]

All,

XTO plans to complete final sampling activities at the following sites the week of May 2, 2022.

#### Monday

PLU 30 Big Sinks CTB / nAPP2206853301, nAPP2208351954, nAPP2209137379

#### Tuesday

PLU 30 Big Sinks CTB / nAPP2206853301, nAPP2208351954, nAPP2209137379

#### Wednesday

- ADU 624 / NAPP2123634554

#### Thursday

- ADU 624 / NAPP2123634554

## Friday

- ADU 624 / NAPP2123634554

Thank you,

## **Garrett Green**

Environmental Coordinator
Delaware Business Unit
(575) 200-0729
<a href="mailto:Garrett.Green@ExxonMobil.com">Garrett.Green@ExxonMobil.com</a>

XTO Energy, Inc.

3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

From: <u>Collins, Melanie</u>

To: <u>DelawareSpills /SM</u>; <u>Green, Garrett J</u>; <u>Pennington, Shelby G</u>

Cc: Ashley Ager; Kalei Jennings; Tacoma Morrissey; Ben Belill; Stuart Hyde

Subject: FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 110560

**Date:** Tuesday, September 6, 2022 1:18:20 PM

Attachments: <u>image001.png</u>

## [\*\*EXTERNAL EMAIL\*\*]

And the 3<sup>rd</sup> one arrived..released 3/19/22.

## Melanie Collins



Environmental Technician melanie.collins@exxonmobil.com 432-556-3756

**From:** OCDOnline@state.nm.us [mailto:OCDOnline@state.nm.us]

Sent: Tuesday, September 6, 2022 12:57 PM

To: Collins, Melanie <melanie.collins@exxonmobil.com>

Subject: The Oil Conservation Division (OCD) has rejected the application, Application ID: 110560

#### External Email - Think Before You Click

To whom it may concern (c/o Melanie Collins for XTO ENERGY, INC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2209137379, for the following reasons:

• The deferral request is denied. Depth to groundwater is not adequately identified. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided. If evidence of depth to ground water within a ½ mile radius of the site cannot be provided, impacted soils will need to meet Table 1 Closure Criteria for ground water at a depth of 50 feet or less. As much of the contaminated soil outside the secondary containment area should be removed safely with alternative methods. Delineation up against and under the containment needs to occur to define edge of release. The work will need to occur in 90 days after the report has been reviewed.

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 110560.

Please review and make the required correction(s) prior to resubmitting. If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you, Robert Hamlet 575-748-1283 Robert.Hamlet@state.nm.us

New Mexico Energy, Minerals and Natural Resources Department 1220 South St. Francis Drive Santa Fe, NM 87505 From: Green, Garrett J

To: <a href="mailto:ocd.enviro@emnrd.nm.gov">ocd.enviro@emnrd.nm.gov</a>; <a href="mailto:Bratcher">Bratcher</a>, <a href="mailto:Michael</a>, <a href="mailto:EMNRD">EMNRD</a>; <a href="mailto:Hamlet</a>, <a href="mailto:Robert</a>, <a href="mailto:EMNRD">EMNRD</a>; <a href="mailto:Hamlet</a>, <a href="mailto:Board</a>, <a href="mailto:Hamlet</a>, <a href="mailto:Board</a>, <a href="mailto:Bamlet</a>, <a href="mailto:Bamle

Cc: <u>Tacoma Morrissey</u>; <u>DelawareSpills /SM</u>

Subject: XTO - Sampling Notification (Week of 10/17/22 - 10/21/22)

**Date:** Monday, October 17, 2022 11:21:03 AM

## [ \*\*EXTERNAL EMAIL\*\*]

All,

Please see the update below to this week's sampling schedule. XTO plans to complete final sampling activities at the following sites the week of Oct 17, 2022.

#### Monday

- BEU 29W Vader 100H / nAPP2102831345

### Tuesday

- BEU 29W Vader 100H / nAPP2102831345
- PLU 21 BD 125H/ nAPP2214547737

#### Wednesday

- BEU 29W Vader 100H / nAPP2102831345
- PLU 30 Big Sinks/ nAPP2209137379, nAPP2208351954, nAPP2206853301

#### Thursday

- PLU 30 Big Sinks/ nAPP2209137379, nAPP2208351954, nAPP2206853301
- JRU 108 / nAPP2217931599
- JRU 106 / nAPP2212344322

#### **Garrett Green**

Environmental Coordinator Delaware Business Unit (575) 200-0729

Garrett.Green@ExxonMobil.com

#### XTO Energy, Inc.

3104 E. Greene Street | Carlsbad, NM 88220 | M: (575)200-0729

From: <u>Green, Garrett J</u>
To: <u>Tacoma Morrissey</u>

Subject: FW: XTO - Sampling Notification (Week of 10/31/22 - 11/4/22)

**Date:** Friday, October 28, 2022 2:16:44 PM

## [ \*\*EXTERNAL EMAIL\*\*]

From: Green, Garrett J

**Sent:** Friday, October 28, 2022 1:11 PM

**To:** ocd.enviro@emnrd.nm.gov; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Billings, Bradford, EMNRD <Bradford.Billings@emnrd.nm.gov>; Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@emnrd.nm.gov>

**Cc:** DelawareSpills /SM <DelawareSpills@exxonmobil.com>

Subject: XTO - Sampling Notification (Week of 10/31/22 - 11/4/22)

All,

XTO plans to complete final sampling activities at the following sites the week of Oct 31, 2022.

#### Monday

Poker Lake Unit 409/ nAPP2223751933

#### Tuesday

- Poker Lake Unit 409/ nAPP2223751933
- JRU DI 11 Ekalaka 823H/ nAPP2224527297

#### Wednesday

- Poker Lake Unit 409/ nAPP2223751933
- JRU DI 11 Ekalaka 823H/ nAPP2224527297

#### Thursday

- Poker Lake Unit 409/ nAPP2223751933
- PLU 30 Big Sinks/ nAPP2209137379, nAPP2208351954, nAPP2206853301

## Friday

- Poker Lake Unit 409/ nAPP2223751933

#### Thank you!

## **Garrett Green**

Environmental Coordinator Delaware Business Unit (575) 200-0729 From: <u>Collins, Melanie</u>

Tacoma Morrissey; Ashley Ager; Ben Belill

Cc: Pennington, Shelby G; Green, Garrett J; DelawareSpills /SM

**Subject:** FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 193687

**Date:** Monday, July 10, 2023 4:46:34 PM

Attachments: <u>image001.png</u>

## [\*\*EXTERNAL EMAIL\*\*]

Deferral Denial for PLU 30 BS TB released 2/24/22 --- Deferral was submitted 3/6/23.

# Melanie Collins



**Environmental Technician** 

melanie.collins@exxonmobil.com

432-556-3756

**From:** OCDOnline@state.nm.us <OCDOnline@state.nm.us>

**Sent:** Monday, July 10, 2023 4:37 PM

To: Collins, Melanie <melanie.collins@exxonmobil.com>

Subject: The Oil Conservation Division (OCD) has rejected the application, Application ID: 193687

#### **External Email - Think Before You Click**

To whom it may concern (c/o Melanie Collins for XTO ENERGY, INC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2206853301, for the following reasons:

• The Deferral Request is Denied. The "step-out" samples on pad to verify the edge of the release should only be a maximum of 1-2 feet from the observed edge of the release. Stepping out away from the release area toward the edge of the pad may tell us whether or not the release left the active well pad, but it does not tell us where the actual edge of the release is located. When equipment is located in and around the release area, samples must come from the sidewalls of the release area excavation. The OCD needs to know if the release went in, around, or under equipment/tanks/pipelines. Not having sidewall samples from the actual excavation won't give us those sampling data points that we need. On future reports, "step-out" samples should only be taken a maximum of 1-2 feet from the observed edge of the release area. "Step-out" samples should never be conducted if equipment is in the vicinity of the release area. Please conduct sidewalls in the release area excavation.

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 193687.

Please review and make the required correction(s) prior to resubmitting.

If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you, Robert Hamlet 575-748-1283 Robert.Hamlet@emnrd.nm.gov

New Mexico Energy, Minerals and Natural Resources Department 1220 South St. Francis Drive Santa Fe, NM 87505 From: <u>Collins, Melanie</u>

To: <u>Tacoma Morrissey</u>; <u>Ashley Ager</u>; <u>Ben Belill</u>

Cc: <u>Green, Garrett J; DelawareSpills /SM; Pennington, Shelby G</u>

Subject: FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 193699

**Date:** Tuesday, July 11, 2023 3:20:07 PM

Attachments: <u>image001.png</u>

## [ \*\*EXTERNAL EMAIL\*\*]

Another PLU 30 BS denial, from the multi-incident report. Release date is 3/14/22.

# Melanie Collins



Environmental Technician

melanie.collins@exxonmobil.com

432-556-3756

From: OCDOnline@state.nm.us < OCDOnline@state.nm.us >

**Sent:** Tuesday, July 11, 2023 3:12 PM

To: Collins, Melanie <melanie.collins@exxonmobil.com>

Subject: The Oil Conservation Division (OCD) has rejected the application, Application ID: 193699

#### **External Email - Think Before You Click**

To whom it may concern (c/o Melanie Collins for XTO ENERGY, INC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2208351954, for the following reasons:

• The Deferral Request is Denied. The "step-out" samples on pad to verify the edge of the release should only be a maximum of 1-2 feet from the observed edge of the release. Stepping out away from the release area toward the edge of the pad may tell us whether or not the release left the active well pad, but it does not tell us where the actual edge of the release is located. When equipment is located in and around the release area, samples must come from the sidewalls of the release area excavation. The OCD needs to know if the release went in, around, or under equipment/tanks/pipelines. Not having sidewall samples from the actual excavation won't give us those sampling data points that we need. On future reports, "step-out" samples should only be taken a maximum of 1-2 feet from the observed edge of the release area. "Step-out" samples should never be conducted if equipment is in the vicinity of the release area. Please conduct sidewalls in the release area excavation.

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 193699.

Please review and make the required correction(s) prior to resubmitting.

If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you, Robert Hamlet 575-748-1283 Robert.Hamlet@emnrd.nm.gov

New Mexico Energy, Minerals and Natural Resources Department 1220 South St. Francis Drive Santa Fe, NM 87505 From: <u>Collins, Melanie</u>

To: <u>Tacoma Morrissey</u>; <u>Ben Belill</u>; <u>Ashley Ager</u>

Cc: <u>DelawareSpills /SM; Green, Garrett J; Pennington, Shelby G</u>

Subject: FW: The Oil Conservation Division (OCD) has rejected the application, Application ID: 193710

**Date:** Friday, June 30, 2023 8:00:12 AM

Attachments: <u>image001.png</u>

## [ \*\*EXTERNAL EMAIL\*\*]

Another deferral denial....PLU 30 Big Sinks CTB released 3/19/22; deferral submitted 5/25/22.

# Melanie Collins



**Environmental Technician** 

melanie.collins@exxonmobil.com

432-556-3756

**From:** OCDOnline@state.nm.us < OCDOnline@state.nm.us >

**Sent:** Thursday, June 29, 2023 5:27 PM

To: Collins, Melanie <melanie.collins@exxonmobil.com>

Subject: The Oil Conservation Division (OCD) has rejected the application, Application ID: 193710

#### **External Email - Think Before You Click**

To whom it may concern (c/o Melanie Collins for XTO ENERGY, INC),

The OCD has rejected the submitted *Application for administrative approval of a release notification and corrective action* (C-141), for incident ID (n#) nAPP2209137379, for the following reasons:

This deferral application is not approved. • The release should be horizontally and vertically delineated to 600 mg/kg for chlorides 100 mg/kg TPH to define the edges of the release. • Delineation samples must include lab tested analytical results. • A scaled diagram of the release area was not included in this report.

The rejected C-141 can be found in the OCD Online: Permitting - Action Status, under the Application ID: 193710.

Please review and make the required correction(s) prior to resubmitting.

If you have any questions why this application was rejected or believe it was rejected in error, please contact me prior to submitting an additional C-141.

Thank you, Jocelyn Harimon Environmental Specialist



APPENDIX C

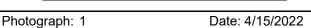
Photographic Log



## **Photographic Log**

XTO Energy, Inc PLU 30 Big Sinks Battery naPP2209137379, nAPP2208351954, nAPP2206853301





Description: Soil staining within the release extent.

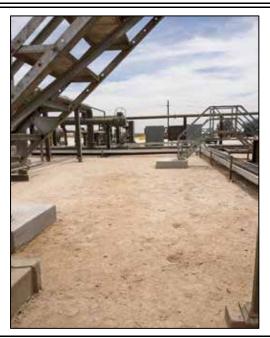
View: North



Date: 5/2/2022 Photograph: 2

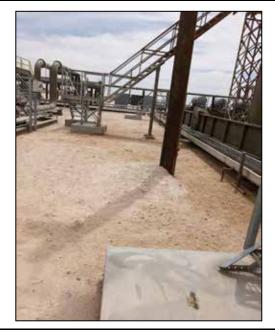
Description: Liner inspection activities.

View: West



Date: 5/2/2022 Photograph: 3 Description: Hand shoveled excavation extent.

View: North



Photograph: 4 Date:5/2/2022 Description: Hand shoveled excavation extent.

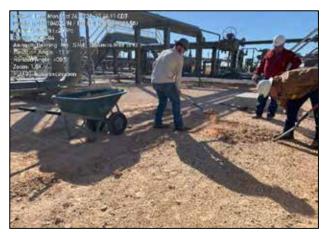
View: South.



## **Photographic Log**

XTO Energy, Inc PLU 30 Big Sinks Battery naPP2209137379, nAPP2208351954, nAPP2206853301





Photograph: 5 Date: 11/04/2022

Description: Elevated view, east section of release.

View: Northwest

Photograph: 6 Date: 10/24/2022

Description: Hand excavation of staining.

View: Southeast





Photograph: 7 Date: 10/24/2022

Description: Hand excavation of staining.

View: Northeast

Photograph: 8 Date: 2/2/2024

Description: Excavation extent.

View: Northwest



APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation

# PREPARED FOR

Attn: Tacoma Morrissey Ensolum 601 N. Marienfeld St. Suite 400 Midland, Texas 79701 Generated 2/13/2024 12:22:15 PM

# **JOB DESCRIPTION**

PLU 30 BIG SINKS BATTERY 03C1558016

# **JOB NUMBER**

890-6096-1

Eurofins Carlsbad 1089 N Canal St. Carlsbad NM 88220

# **Eurofins Carlsbad**

## **Job Notes**

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

## **Authorization**

Generated 2/13/2024 12:22:15 PM

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

Eurofins Carlsbad is a laboratory within Eurofins Environment Testing South Central, LLC, a company within Eurofins Environment Testing Group of Companies

Released to Imaging: 7/15/2024 1:23:48 PM

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Project/Site: PLU 30 BIG SINKS BATTERY

Client: Ensolum

Laboratory Job ID: 890-6096-1 SDG: 03C1558016

# **Table of Contents**

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## **Definitions/Glossary**

Job ID: 890-6096-1 Client: Ensolum Project/Site: PLU 30 BIG SINKS BATTERY

SDG: 03C1558016

#### **Qualifiers**

**GC VOA** 

Qualifier **Qualifier Description** F1 MS and/or MSD recovery exceeds control limits. S1+ Surrogate recovery exceeds control limits, high biased. 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. S1+ Surrogate recovery exceeds control limits, high biased. Indicates the analyte was analyzed for but not detected. U

## HPLC/IC

Qualifier **Qualifier Description** П 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

Decision Level Concentration (Radiochemistry) DLC

**EDL** Estimated Detection Limit (Dioxin) LOD Limit of Detection (DoD/DOE) LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level" Minimum Detectable Activity (Radiochemistry) MDA Minimum Detectable Concentration (Radiochemistry) MDC

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** 

Presumptive **PRES** QC **Quality Control** 

RER Relative Error Ratio (Radiochemistry)

Reporting Limit or Requested Limit (Radiochemistry) RL

Relative Percent Difference, a measure of the relative difference between two points RPD

Toxicity Equivalent Factor (Dioxin) TEF Toxicity Equivalent Quotient (Dioxin) TFO

**TNTC** Too Numerous To Count

#### Case Narrative

Client: Ensolum Job ID: 890-6096-1

Project: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1 Eurofins Carlsbad

# Job Narrative 890-6096-1

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

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

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

#### Receipt

The samples were received on 2/1/2024 2:43 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 0.4°C

#### **Receipt Exceptions**

The following samples were received and analyzed from an unpreserved bulk soil jar: SW01 (890-6096-1), SW02 (890-6096-2), SS03 (890-6096-3), SS04 (890-6096-4), SS05 (890-6096-5), SS06 (890-6096-6) and SS07 (890-6096-7).

#### **GC VOA**

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-72821 and analytical batch 880-72835 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: SW01 (890-6096-1) and SS07 (890-6096-7). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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 surrogate recovery for the blank associated with preparation batch 880-72531 and analytical batch 880-72814 was outside the upper control limits.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: SW01 (890-6096-1), SW02 (890-6096-2), SS03 (890-6096-3), SS04 (890-6096-4), (890-6096-A-2-C MS) and (890-6096-A-2-D MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD\_NM: The method blank for preparation batch 880-72531 and analytical batch 880-72814 contained Gasoline Range Organics (GRO)-C6-C10 above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8015MOD\_NM: Spike compounds were inadvertently omitted during the extraction process for the matrix spike/matrix spike duplicate (MS/MSD); therefore, matrix spike recoveries are unavailable for preparation batch 880-72531 and analytical batch 880-72814. The associated laboratory control sample (LCS) met acceptance criteria.

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.

**Eurofins Carlsbad** 

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## **Client Sample Results**

Client: Ensolum Job ID: 890-6096-1 Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

**Client Sample ID: SW01** Lab Sample ID: 890-6096-1

Date Collected: 02/01/24 10:50 Matrix: Solid

Date Received: 02/01/24 14:43 Sample Depth: 0-1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		02/11/24 13:30	02/13/24 07:21	1
Toluene	<0.00201	U	0.00201	mg/Kg		02/11/24 13:30	02/13/24 07:21	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		02/11/24 13:30	02/13/24 07:21	1
m-Xylene & p-Xylene	< 0.00402	U	0.00402	mg/Kg		02/11/24 13:30	02/13/24 07:21	1
o-Xylene	0.00251		0.00201	mg/Kg		02/11/24 13:30	02/13/24 07:21	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		02/11/24 13:30	02/13/24 07:21	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	321	S1+	70 - 130			02/11/24 13:30	02/13/24 07:21	1
1,4-Difluorobenzene (Surr)	100		70 - 130			02/11/24 13:30	02/13/24 07:21	1
Method: TAL SOP Total BTEX -	Total BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	< 0.00402	U	0.00402	mg/Kg			02/13/24 07:21	1
Method: SW846 8015 NM - Diese	• •		•					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	
Analyte	• •	Qualifier	•	Unit mg/Kg	D	Prepared	<b>Analyzed</b> 02/11/24 21:36	
	Result <248	<b>Qualifier</b> U	RL 248		D	Prepared		
Analyte Total TPH	Result <248	<b>Qualifier</b> U	RL 248		<u>D</u>	Prepared Prepared		1
Analyte Total TPH  Method: SW846 8015B NM - Die Analyte Gasoline Range Organics	Result <248	Qualifier Unics (DRO) Qualifier	RL 248 (GC)	mg/Kg			02/11/24 21:36	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result <248 sel Range Orga Result	Qualifier U nics (DRO) Qualifier U	RL 248 (GC)	mg/Kg		Prepared	02/11/24 21:36  Analyzed	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10	Result <248 sel Range Orga Result <248	Qualifier U  nics (DRO) Qualifier U	RL 248  (GC)  RL 248	mg/Kg  Unit  mg/Kg		Prepared 02/06/24 16:51	02/11/24 21:36  Analyzed 02/11/24 21:36	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result <248  sel Range Orga Result <248 <248	Qualifier U  nics (DRO) Qualifier U  U	RL 248  (GC)  RL 248  248	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51	02/11/24 21:36  Analyzed 02/11/24 21:36 02/11/24 21:36	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result   <248	Qualifier U  nics (DRO) Qualifier U  U	RL 248  (GC)  RL 248  248  248	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51 02/06/24 16:51	02/11/24 21:36  Analyzed 02/11/24 21:36 02/11/24 21:36 02/11/24 21:36	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	Result <248  sel Range Orga Result <248 <248 <248 <248  %Recovery 0.4	Qualifier U  nics (DRO) Qualifier U  U  Qualifier	RL 248  (GC)  RL 248  248  248  Limits	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51 02/06/24 16:51 Prepared	02/11/24 21:36  Analyzed 02/11/24 21:36 02/11/24 21:36 02/11/24 21:36 Analyzed	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	Result   <248	Qualifier U  nics (DRO) Qualifier U  U  Qualifier S1- S1-	RL 248  (GC)  RL 248  248  248  248  Limits  70 - 130  70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51 02/06/24 16:51  Prepared 02/06/24 16:51	02/11/24 21:36  Analyzed 02/11/24 21:36  02/11/24 21:36  02/11/24 21:36  Analyzed 02/11/24 21:36	Dil Fac
Analyte Total TPH  Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	Result <248  sel Range Orga Result <248 <248 <248  %Recovery 0.4 2  n Chromatograp	Qualifier U  nics (DRO) Qualifier U  U  Qualifier S1- S1-	RL 248  (GC)  RL 248  248  248  248  Limits  70 - 130  70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51 02/06/24 16:51  Prepared 02/06/24 16:51	02/11/24 21:36  Analyzed 02/11/24 21:36  02/11/24 21:36  02/11/24 21:36  Analyzed 02/11/24 21:36	Dil Face  5 5 5 Dil Face 5 Dil Face 5 Dil Face

**Client Sample ID: SW02** Lab Sample ID: 890-6096-2

Date Collected: 02/01/24 11:05 Date Received: 02/01/24 14:43

Sample Depth: 0-1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 07:42	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 07:42	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 07:42	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		02/11/24 13:30	02/13/24 07:42	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 07:42	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		02/11/24 13:30	02/13/24 07:42	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130			02/11/24 13:30	02/13/24 07:42	1

**Eurofins Carlsbad** 

Matrix: Solid

## Client Sample Results

Job ID: 890-6096-1 Client: Ensolum Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

Client Sample ID: SW02 Lab Sample ID: 890-6096-2

Date Collected: 02/01/24 11:05 Matrix: Solid Date Received: 02/01/24 14:43

Sample Depth: 0-1

Method: SW846 8021B -	Volatile Organic Compounds (GC)	(Continued)
Surrogato	%Pecovery Qualifier	l imits

Prepared Analyzed Dil Fac 1,4-Difluorobenzene (Surr) 70 - 130 02/11/24 13:30 02/13/24 07:42 124

**Method: TAL SOP Total BTEX - Total BTEX Calculation** 

Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac Total BTEX <0.00401 U 02/13/24 07:42 0.00401 mg/Kg

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

Result Qualifier RL Unit D Prepared Analyzed Dil Fac Total TPH <50.5 U 50.5 mg/Kg 02/11/24 20:26

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

D Result Qualifier RL Unit Prepared Analyzed Dil Fac <50.5 U F1 02/11/24 20:26 Gasoline Range Organics 50.5 mg/Kg 02/06/24 16:51 (GRO)-C6-C10 <50.5 U F1 50.5 mg/Kg 02/06/24 16:51 02/11/24 20:26 Diesel Range Organics (Over C10-C28) 02/06/24 16:51 Oll Range Organics (Over C28-C36) <50.5 U 50.5 mg/Kg 02/11/24 20:26

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1-Chlorooctane 4 S1-70 - 130 02/06/24 16:51 02/11/24 20:26 o-Terphenyl 0.4 S1-70 - 130 02/06/24 16:51 02/11/24 20:26 1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte Result Qualifier RL Unit D Prepared Analyzed Dil Fac 4.97 02/06/24 22:40 Chloride 95.9 mg/Kg

Client Sample ID: SS03 Lab Sample ID: 890-6096-3

Date Collected: 02/01/24 11:15

Date Received: 02/01/24 14:43

Sample Depth: 0.5

Method:	SW846 8021B -	Volatile Organ	nic Compounds	(GC)
---------	---------------	----------------	---------------	------

Dil Fac Analyte Result Qualifier RL Unit D Prepared Analyzed Benzene <0.00199 0.00199 mg/Kg 02/11/24 13:30 02/13/24 08:02 <0.00199 U 0.00199 02/11/24 13:30 02/13/24 08:02 Toluene mg/Kg Ethylbenzene <0.00199 U 0.00199 mg/Kg 02/11/24 13:30 02/13/24 08:02 0.00398 02/11/24 13:30 02/13/24 08:02 m-Xylene & p-Xylene <0.00398 U mg/Kg o-Xylene <0.00199 U 0.00199 mg/Kg 02/11/24 13:30 02/13/24 08:02 Xylenes, Total <0.00398 U 0.00398 mg/Kg 02/11/24 13:30 02/13/24 08:02 %Recovery Qualifier Limits Analyzed Dil Fac Surrogate Prepared 70 - 130 114 02/11/24 13:30 02/13/24 08:02 4-Bromofluorobenzene (Surr)

1,4-Difluorobenzene (Surr) 121 70 - 130 02/11/24 13:30 02/13/24 08:02

**Method: TAL SOP Total BTEX - Total BTEX Calculation** 

Analyte Result Qualifier RL Unit D Dil Fac Prepared Analyzed Total BTEX <0.00398 U 02/13/24 08:02 0.00398 mg/Kg

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

Analyte Result Qualifier RLUnit D Prepared Analyzed Dil Fac **Total TPH** 49.7 mg/Kg 02/11/24 21:58 50.3

**Eurofins Carlsbad** 

Matrix: Solid

Job ID: 890-6096-1

Client: Ensolum Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

**Client Sample ID: SS03** Lab Sample ID: 890-6096-3 Date Collected: 02/01/24 11:15

Matrix: Solid Date Received: 02/01/24 14:43

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	49.7	mg/Kg		02/06/24 16:51	02/11/24 21:58	1
Diesel Range Organics (Over C10-C28)	50.3		49.7	mg/Kg		02/06/24 16:51	02/11/24 21:58	1
OII Range Organics (Over C28-C36)	<49.7	U	49.7	mg/Kg		02/06/24 16:51	02/11/24 21:58	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	25	S1-	70 - 130			02/06/24 16:51	02/11/24 21:58	1
o-Terphenyl	18	S1-	70 - 130			02/06/24 16:51	02/11/24 21:58	1
Method: EPA 300.0 - Anions, Ion	Chromatograp	hy - Solubl	e					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac

Chloride 83.8 4.95 mg/Kg 02/06/24 22:46

**Client Sample ID: SS04** Lab Sample ID: 890-6096-4

Date Collected: 02/01/24 11:20 Matrix: Solid Date Received: 02/01/24 14:43

Sample Depth: 0.5

Sample Depth: 0.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199	mg/Kg		02/11/24 13:30	02/13/24 08:23	1
Toluene	<0.00199	U	0.00199	mg/Kg		02/11/24 13:30	02/13/24 08:23	1
Ethylbenzene	< 0.00199	U	0.00199	mg/Kg		02/11/24 13:30	02/13/24 08:23	1
m-Xylene & p-Xylene	<0.00398	U	0.00398	mg/Kg		02/11/24 13:30	02/13/24 08:23	1
o-Xylene	<0.00199	U	0.00199	mg/Kg		02/11/24 13:30	02/13/24 08:23	1
Xylenes, Total	<0.00398	U	0.00398	mg/Kg		02/11/24 13:30	02/13/24 08:23	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130			02/11/24 13:30	02/13/24 08:23	1
1,4-Difluorobenzene (Surr)	130		70 - 130			02/11/24 13:30	02/13/24 08:23	1
Method: TAL SOP Total BTEX - 1 Analyte Total BTEX		Qualifier	<b>RL</b> 0.00398	Unit mg/Kg	D	Prepared	Analyzed 02/13/24 08:23	Dil Fac
-	-0.00000	O	0.00390	mg/kg			02/13/24 00:23	
Method: SW846 8015 NM - Diese	el Range Organ	ics (DRO) (	GC)		D	Prepared		
	el Range Organ	ics (DRO) (		Unit mg/Kg	D	Prepared	Analyzed 02/11/24 22:21	Dil Fac
Method: SW846 8015 NM - Diese Analyte	Range Organ Result <49.9	ics (DRO) ( Qualifier	RL 49.9	Unit	<u>D</u>	Prepared	Analyzed	Dil Fac
Method: SW846 8015 NM - Diese Analyte Total TPH	el Range Organ Result <49.9 sel Range Orga	ics (DRO) ( Qualifier	RL 49.9	Unit	D	Prepared Prepared	Analyzed	Dil Fac
Method: SW846 8015 NM - Diese Analyte Total TPH Method: SW846 8015B NM - Dies	el Range Organ Result <49.9 sel Range Orga	ics (DRO) ( Qualifier U nics (DRO) Qualifier	RL 49.9 (GC)	Unit mg/Kg			Analyzed 02/11/24 22:21	Dil Fac
Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	el Range Organ Result <49.9 sel Range Orga Result	ics (DRO) (Qualifier U nics (DRO) Qualifier U	(GC) RL RL RL	Unit mg/Kg Unit		Prepared	Analyzed 02/11/24 22:21 Analyzed	Dil Fac
Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	el Range Organ Result <49.9 sel Range Orga Result <49.9	ics (DRO) (Qualifier U nics (DRO) Qualifier U	(GC)  RL  49.9  (GC)  RL  49.9	Unit mg/Kg  Unit mg/Kg		Prepared 02/06/24 16:51	Analyzed 02/11/24 22:21  Analyzed 02/11/24 22:21	Dil Fac
Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	el Range Organ Result <49.9 sel Range Orga Result <49.9 <49.9	ics (DRO) (CQualifier U  nics (DRO) Qualifier U  U	(GC)  RL  49.9  (GC)  RL  49.9  49.9	Unit mg/Kg  Unit mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51	Analyzed 02/11/24 22:21  Analyzed 02/11/24 22:21 02/11/24 22:21	Dil Fac
Method: SW846 8015 NM - Diese Analyte Total TPH  Method: SW846 8015B NM - Diese Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	el Range Organ Result <49.9 sel Range Orga Result <49.9 <49.9 <49.9	ics (DRO) (CQualifier U  nics (DRO) Qualifier U  U	GC) RL 49.9  (GC) RL 49.9  49.9  49.9	Unit mg/Kg  Unit mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51 02/06/24 16:51	Analyzed 02/11/24 22:21  Analyzed 02/11/24 22:21 02/11/24 22:21 02/11/24 22:21	Dil Fac Dil Fac

# **Client Sample Results**

Client: Ensolum Job ID: 890-6096-1 Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

Client Sample ID: SS04 Lab Sample ID: 890-6096-4

Date Collected: 02/01/24 11:20 Matrix: Solid Date Received: 02/01/24 14:43

Sample Depth: 0.5

Method: EPA 300.0 - Anions, Ion C	hromatography - Soluble						
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	78.0	4.95	mg/Kg			02/06/24 22:53	1

**Client Sample ID: SS05** Lab Sample ID: 890-6096-5 Matrix: Solid

Date Collected: 02/01/24 11:25 Date Received: 02/01/24 14:43

Sample Depth: 0.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 08:43	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 08:43	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 08:43	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		02/11/24 13:30	02/13/24 08:43	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 08:43	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		02/11/24 13:30	02/13/24 08:43	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		70 - 130			02/11/24 13:30	02/13/24 08:43	1
1,4-Difluorobenzene (Surr)	116		70 - 130			02/11/24 13:30	02/13/24 08:43	1
Method: TAL SOP Total BTEX	- Total BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			02/13/24 08:43	1
Method: SW846 8015 NM - Die	sel Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	201		50.0	mg/Kg			02/11/24 22:43	1

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0	U	50.0	mg/Kg		02/06/24 16:51	02/11/24 22:43	1
(GRO)-C6-C10								
Diesel Range Organics (Over	201		50.0	mg/Kg		02/06/24 16:51	02/11/24 22:43	1
C10-C28)								
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/06/24 16:51	02/11/24 22:43	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	96		70 - 130			02/06/24 16:51	02/11/24 22:43	1
o-Terphenyl	96		70 - 130			02/06/24 16:51	02/11/24 22:43	1

Method: EPA 300.0 - Anions, Ion Chro	matography - S	Soluble					
Analyte	Result Qualifi	fier RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	102	5.05	mg/Kg			02/06/24 23:00	1

# **Client Sample Results**

Client: Ensolum Job ID: 890-6096-1 Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

**Client Sample ID: SS06** 

Lab Sample ID: 890-6096-6 Date Collected: 02/01/24 11:30 Matrix: Solid

Date Received: 02/01/24 14:43

Sample Depth: 0.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201	mg/Kg		02/11/24 13:30	02/13/24 09:04	1
Toluene	<0.00201	U	0.00201	mg/Kg		02/11/24 13:30	02/13/24 09:04	1
Ethylbenzene	<0.00201	U	0.00201	mg/Kg		02/11/24 13:30	02/13/24 09:04	1
m-Xylene & p-Xylene	<0.00402	U	0.00402	mg/Kg		02/11/24 13:30	02/13/24 09:04	1
o-Xylene	<0.00201	U	0.00201	mg/Kg		02/11/24 13:30	02/13/24 09:04	1
Xylenes, Total	<0.00402	U	0.00402	mg/Kg		02/11/24 13:30	02/13/24 09:04	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		70 - 130			02/11/24 13:30	02/13/24 09:04	1
1,4-Difluorobenzene (Surr)	116		70 - 130			02/11/24 13:30	02/13/24 09:04	1
Method: TAL SOP Total BTEX -	Total BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402	mg/Kg			02/13/24 09:04	1
Method: SW846 8015 NM - Diese	el Range Organ	ics (DRO) (	GC)					
Analyte	Pocult	Qualifier	•					
<b>-,</b>	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6		<b>RL</b> 49.6	Unit mg/Kg	D	Prepared	<b>Analyzed</b> 02/11/24 23:05	
	<49.6	U	49.6		D	Prepared		
Total TPH	<49.6 sel Range Orga	U	49.6		D D	Prepared Prepared		1
Total TPH  Method: SW846 8015B NM - Die	<49.6 sel Range Orga	nics (DRO) Qualifier	49.6 <b>(GC)</b>	mg/Kg			02/11/24 23:05	Dil Fac
Total TPH  Method: SW846 8015B NM - Die Analyte Gasoline Range Organics	<49.6 sel Range Orga Result	nics (DRO) Qualifier	49.6 (GC)	mg/Kg <b>Unit</b>		Prepared	02/11/24 23:05  Analyzed	Dil Fac
Total TPH  Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	<49.6 sel Range Orga Result <49.6	Unics (DRO) Qualifier U	49.6 (GC) RL 49.6	mg/Kg  Unit  mg/Kg		Prepared 02/06/24 16:51	02/11/24 23:05  Analyzed 02/11/24 23:05	Dil Fac
Total TPH  Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	<49.6  sel Range Orga Result <49.6 <49.6	Unics (DRO) Qualifier U	49.6  (GC)  RL  49.6  49.6	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51	02/11/24 23:05  Analyzed 02/11/24 23:05 02/11/24 23:05	Dil Fac
Total TPH  Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<49.6  sel Range Orga Result <49.6 <49.6 <49.6	Unics (DRO) Qualifier U	49.6  (GC)  RL  49.6  49.6  49.6  49.6	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51 02/06/24 16:51	02/11/24 23:05  Analyzed 02/11/24 23:05 02/11/24 23:05 02/11/24 23:05	Dil Face 1 1 1 Dil Face
Total TPH  Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)  Surrogate	<49.6 sel Range Orga Result <49.6 <49.6 <49.6 %Recovery	Unics (DRO) Qualifier U	49.6  (GC)  RL  49.6  49.6  49.6  Limits	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51 02/06/24 16:51 Prepared	02/11/24 23:05  Analyzed 02/11/24 23:05 02/11/24 23:05 02/11/24 23:05 Analyzed	Dil Fac
Total TPH  Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane	<49.6 sel Range Orga Result <49.6 <49.6 <49.6 %Recovery 121 123	U nics (DRO) Qualifier U U Qualifier	49.6  (GC)  RL  49.6  49.6  49.6  Limits  70 - 130  70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51 02/06/24 16:51  Prepared 02/06/24 16:51	02/11/24 23:05  Analyzed 02/11/24 23:05 02/11/24 23:05 02/11/24 23:05  Analyzed 02/11/24 23:05	Dil Fac
Total TPH  Method: SW846 8015B NM - Die Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36)  Surrogate 1-Chlorooctane o-Terphenyl	\$\sel \text{Range Orga Result}\$  \$\sel \text{Result}\$  \$\sel \text{49.6}\$  \$\sel \text{Recovery}\$  \$\frac{121}{123}\$ \$\text{1 Chromatograph}\$	U nics (DRO) Qualifier U U Qualifier	49.6  (GC)  RL  49.6  49.6  49.6  Limits  70 - 130  70 - 130	mg/Kg  Unit  mg/Kg  mg/Kg		Prepared 02/06/24 16:51 02/06/24 16:51 02/06/24 16:51  Prepared 02/06/24 16:51	02/11/24 23:05  Analyzed 02/11/24 23:05 02/11/24 23:05 02/11/24 23:05  Analyzed 02/11/24 23:05	Dil Fac

**Client Sample ID: SS07** Lab Sample ID: 890-6096-7

Date Collected: 02/01/24 11:35 Date Received: 02/01/24 14:43

Sample Depth: 0.5

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 09:24	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 09:24	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 09:24	1
m-Xylene & p-Xylene	<0.00401	U	0.00401	mg/Kg		02/11/24 13:30	02/13/24 09:24	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 09:24	1
Xylenes, Total	<0.00401	U	0.00401	mg/Kg		02/11/24 13:30	02/13/24 09:24	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	159	S1+	70 - 130			02/11/24 13:30	02/13/24 09:24	1

**Eurofins Carlsbad** 

Matrix: Solid

Sample Depth: 0.5

## **Client Sample Results**

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY
Job ID: 890-6096-1
SDG: 03C1558016

Client Sample ID: SS07 Lab Sample ID: 890-6096-7

Date Collected: 02/01/24 11:35

Matrix: Solid

Date Received: 02/01/24 14:43

Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	125		70 - 130			02/11/24 13:30	02/13/24 09:24	1
Method: TAL SOP Total BTEX - T	otal BTEX Cald	culation						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401	mg/Kg			02/13/24 09:24	1
Method: SW846 8015 NM - Diese	I Range Organ	ics (DRO) (	GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3	mg/Kg			02/11/24 23:26	1
Method: SW846 8015B NM - Dies	sel Range Orga	nics (DRO)	(GC)					
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	50.3	mg/Kg		02/06/24 16:51	02/11/24 23:26	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3	mg/Kg		02/06/24 16:51	02/11/24 23:26	1
Oll Range Organics (Over C28-C36)	<50.3	U	50.3	mg/Kg		02/06/24 16:51	02/11/24 23:26	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	90		70 - 130			02/06/24 16:51	02/11/24 23:26	1

Method: EPA 300.0 - Anions, Ion C	hromatography - Soluble	!					
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	76.7	5.01	mg/Kg			02/06/24 23:27	1

## **Surrogate Summary**

Client: Ensolum Job ID: 890-6096-1 Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-6096-1	SW01	321 S1+	100	
890-6096-2	SW02	106	124	
890-6096-3	SS03	114	121	
890-6096-4	SS04	115	130	
890-6096-5	SS05	112	116	
890-6096-6	SS06	113	116	
890-6096-7	SS07	159 S1+	125	
890-6102-A-6-C MS	Matrix Spike	103	107	
890-6102-A-6-D MSD	Matrix Spike Duplicate	105	106	
LCS 880-72821/1-A	Lab Control Sample	102	101	
LCSD 880-72821/2-A	Lab Control Sample Dup	95	99	
MB 880-72821/5-A	Method Blank	127	130	
MB 880-72837/5-A	Method Blank	118	122	
Surrogate Legend				
BFB = 4-Bromofluorobe	nzene (Surr)			

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

Matrix: Solid Prep Type: Total/NA

nati ixi oona				1 100 13001 1
		1001	ОТРН1	Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
890-6096-1	SW01	0.4 S1-	2 S1-	
890-6096-2	SW02	4 S1-	0.4 S1-	
890-6096-2 MS	SW02	0.9 S1-	0.3 S1-	
890-6096-2 MSD	SW02	2 S1-	0.3 S1-	
890-6096-3	SS03	25 S1-	18 S1-	
890-6096-4	SS04	66 S1-	56 S1-	
890-6096-5	SS05	96	96	
890-6096-6	SS06	121	123	
890-6096-7	SS07	90	93	
LCS 880-72531/2-A	Lab Control Sample	120	115	
LCSD 880-72531/3-A	Lab Control Sample Dup	105	101	
MB 880-72531/1-A	Method Blank	204 S1+	221 S1+	
Surrogate Legend				
1CO = 1-Chlorooctane				
OTPH = o-Terphenyl				

## **QC Sample Results**

Client: Ensolum Job ID: 890-6096-1 Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-72821/5-A

**Matrix: Solid** 

Analysis Batch: 72835

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 72821

	IVID	IVID						
Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 00:57	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 00:57	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 00:57	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/11/24 13:30	02/13/24 00:57	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/11/24 13:30	02/13/24 00:57	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/11/24 13:30	02/13/24 00:57	1
	***	***						

MB MB

MD MD

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	127	70 - 130	02/11/24 13:30	02/13/24 00:57	1
1,4-Difluorobenzene (Surr)	130	70 - 130	02/11/24 13:30	02/13/24 00:57	1

Lab Sample ID: LCS 880-72821/1-A

**Matrix: Solid** 

**Analysis Batch: 72835** 

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

Prep Batch: 72821

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.09626 mg/Kg 96 70 - 130 Toluene 0.100 0.09713 mg/Kg 97 70 - 130 0.08842 Ethylbenzene 0.100 mg/Kg 88 70 - 130 0.200 0.2090 104 70 - 130 m-Xylene & p-Xylene mg/Kg 0.100 0.09157 70 - 130 o-Xylene mg/Kg 92

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

Lab Sample ID: LCSD 880-72821/2-A

**Matrix: Solid** 

Analysis Batch: 72835

**Client Sample ID: Lab Control Sample Dup** 

Prep Type: Total/NA

Prep Batch: 72821

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.09743		mg/Kg		97	70 - 130	1	35	
Toluene	0.100	0.09577		mg/Kg		96	70 - 130	1	35	
Ethylbenzene	0.100	0.09049		mg/Kg		90	70 - 130	2	35	
m-Xylene & p-Xylene	0.200	0.2036		mg/Kg		102	70 - 130	3	35	
o-Xylene	0.100	0.08994		mg/Kg		90	70 - 130	2	35	

LCSD LCSD

Surrogate	%Recovery Qualifie	r Limits
4-Bromofluorobenzene (Surr)	95	70 - 130
1,4-Difluorobenzene (Surr)	99	70 - 130

Lab Sample ID: 890-6102-A-6-C MS

**Matrix: Solid** 

Analysis Batch: 72835

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

Prep Batch: 72821

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	<0.00200	U F1	0.0996	0.06796	F1	mg/Kg		68	70 - 130
Toluene	<0.00200	U F1	0.0996	0.06838	F1	mg/Kg		69	70 - 130

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Prep Batch: 72821

Prep Type: Total/NA

5

## QC Sample Results

Client: Ensolum Job ID: 890-6096-1 Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

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

Lab Sample ID: 890-6102-A-6-C MS Client Sample ID: Matrix Spike Prep Type: Total/NA

**Matrix: Solid** 

Analysis Batch: 72835

	Sample	Sample	Spike	MS	MS				%Rec
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Ethylbenzene	<0.00200	U F1	0.0996	0.05975	F1	mg/Kg		60	70 - 130
m-Xylene & p-Xylene	<0.00401	U	0.199	0.1426		mg/Kg		72	70 - 130
o-Xylene	<0.00200	U F1	0.0996	0.07199		mg/Kg		72	70 - 130

MS MS

Surrogate	%Recovery Qualif	ier Limits
4-Bromofluorobenzene (Surr)	103	70 - 130
1,4-Difluorobenzene (Surr)	107	70 - 130

Lab Sample ID: 890-6102-A-6-D MSD Client Sample ID: Matrix Spike Duplicate

**Matrix: Solid** 

**Analysis Batch: 72835** 

Prep Batch: 72821 Sample Sample Spike MSD MSD Result Qualifier Added Result Qualifier RPD Limit Analyte Unit %Rec Limits 0.0990 Benzene <0.00200 UF1 0.06864 F1 mg/Kg 69 70 - 130 35 0.0990 0.06759 F1 70 - 130 Toluene <0.00200 UF1 mg/Kg 68 35 Ethylbenzene <0.00200 UF1 0.0990 0.06441 F1 65 70 - 130 35 mg/Kg <0.00401 U 0.198 0.1530 77 70 - 130 35 m-Xylene & p-Xylene mg/Kg

0.06881 F1

mg/Kg

0.0990

MSD MSD

<0.00200 UF1

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	106		70 - 130

Lab Sample ID: MB 880-72837/5-A

Matrix: Solid

o-Xylene

Analysis Batch: 72835

Client Sample ID: Method Blank Prep Type: Total/NA Prep Batch: 72837

70 - 130

69

MB MB

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		02/12/24 08:41	02/12/24 13:20	1
Toluene	<0.00200	U	0.00200	mg/Kg		02/12/24 08:41	02/12/24 13:20	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		02/12/24 08:41	02/12/24 13:20	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		02/12/24 08:41	02/12/24 13:20	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		02/12/24 08:41	02/12/24 13:20	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		02/12/24 08:41	02/12/24 13:20	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	118		70 - 130	02/12/24 08:41	02/12/24 13:20	1
1,4-Difluorobenzene (Surr)	122		70 - 130	02/12/24 08:41	02/12/24 13:20	1

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

Lab Sample ID: MB 880-72531/1-A

**Matrix: Solid** 

Analysis Batch: 72814

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

Prep Batch: 72531

	MB MB	ИВ					
Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<50.0 U	50.0	mg/Kg		02/06/24 16:51	02/11/24 19:18	1
(GRO)-C6-C10							

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## QC Sample Results

Client: Ensolum Job ID: 890-6096-1 Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

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

Lab Sample ID: MB 880-72531/1-A

**Matrix: Solid** 

Analysis Batch: 72814

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 72531

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		02/06/24 16:51	02/11/24 19:18	1
Oll Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		02/06/24 16:51	02/11/24 19:18	1

MB MB

MR MR

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	204	S1+	70 - 130	02/06/24 16:51	02/11/24 19:18	1
o-Terphenyl	221	S1+	70 - 130	02/06/24 16:51	02/11/24 19:18	1

Lab Sample ID: LCS 880-72531/2-A Client Sample ID: Lab Control Sample

**Matrix: Solid** 

Prep Type: Total/NA Prep Batch: 72531 Analysis Batch: 72814 LCS LCS Spike

Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 1019 70 - 130 mg/Kg 102 (GRO)-C6-C10 1000 1033 103 Diesel Range Organics (Over mg/Kg 70 - 130C10-C28)

LCS LCS

Surrogate	%Recovery Qualifier	Limits
1-Chlorooctane	120	70 - 130
o-Terphenyl	115	70 - 130

Lab Sample ID: LCSD 880-72531/3-A

**Matrix: Solid** 

Analysis Batch: 72814

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

Prep Batch: 72531

Spike LCSD LCSD %Rec **RPD** Analyte Added Result Qualifier %Rec Limits RPD Limit Unit Gasoline Range Organics 1000 903.6 90 70 - 130 mg/Kg 12 20 (GRO)-C6-C10 Diesel Range Organics (Over 1000 932.7 mg/Kg 93 70 - 130 10 20

C10-C28)

LCSD LCSD

Surrogate	%Recovery Qualifier	Limits
1-Chlorooctane	105	70 - 130
o-Terphenyl	101	70 - 130

Lab Sample ID: 890-6096-2 MS

**Matrix: Solid** 

Analysis Batch: 72814

Client Sample ID: SW02 Prep Type: Total/NA

Prep Batch: 72531

Sample Sample Spike MS MS %Rec Result Qualifier Added Result Qualifier Unit %Rec Analyte <50.5 U F1 1010 <50.4 U F1 2 70 - 130 Gasoline Range Organics mg/Kg (GRO)-C6-C10 <50.5 U F1 1010 -0.1 70 - 130 Diesel Range Organics (Over <50.4 U F1 mg/Kg

C10-C28)

	MS	MS			
Surrogate	%Recovery	Qualifier	Limits		
1-Chlorooctane	0.9	S1-	70 - 130		
o-Terphenyl	0.3	S1-	70 - 130		

Client: Ensolum Job ID: 890-6096-1 Project/Site: PLU 30 BIG SINKS BATTERY

SDG: 03C1558016

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

Lab Sample ID: 890-6096-2 MSD Client Sample ID: SW02 **Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 72814 Prep Batch: 72531

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics (GRO)-C6-C10	<50.5	U F1	1010	<50.4	U F1	mg/Kg		2	70 - 130	6	20	
Diesel Range Organics (Over	<50.5	U F1	1010	<50.4	U F1	mg/Kg		0.1	70 - 130	9	20	

C10-C28)

o-Terphenyl

MSD MSD %Recovery Qualifier Limits Surrogate 70 - 130 1-Chlorooctane 2 S1-

70 - 130

#### Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-72305/1-A Client Sample ID: Method Blank **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 72467** 

мв мв

0.3 S1-

Analyte	Result Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00 U	5.00	mg/Kg			02/06/24 21:05	1

Lab Sample ID: LCS 880-72305/2-A **Client Sample ID: Lab Control Sample Prep Type: Soluble Matrix: Solid** 

**Analysis Batch: 72467** 

	Spike	LCS LCS	•			%Rec	
Analyte	Added	Result Qual	lifier Unit	D	%Rec	Limits	
Chloride	250	255.0	mg/Kg		102	90 - 110	

Lab Sample ID: LCSD 880-72305/3-A Client Sample ID: Lab Control Sample Dup **Prep Type: Soluble** 

**Matrix: Solid** 

**Analysis Batch: 72467** 

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	254.3		mg/Kg		102	90 - 110	0	20	

Lab Sample ID: 890-6096-5 MS **Client Sample ID: SS05 Matrix: Solid Prep Type: Soluble** 

**Analysis Batch: 72467** 

	Sample	Sample	Spike	MS MS				%Rec
Analyte	Result	Qualifier	Added	Result Qualific	er Unit	D	%Rec	Limits
Chloride	102		253	368.0	ma/Ka		105	90 - 110

**Client Sample ID: SS05** Lab Sample ID: 890-6096-5 MSD

**Matrix: Solid** 

Analysis Batch: 72467

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Allalysis Datcii. 12401												
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	102		253	365.8		mg/Kg		104	90 - 110	1	20	

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**Prep Type: Soluble** 

# **QC Association Summary**

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY
Job ID: 890-6096-1
SDG: 03C1558016

**GC VOA** 

Prep Batch: 72821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6096-1	SW01	Total/NA	Solid	5035	
890-6096-2	SW02	Total/NA	Solid	5035	
890-6096-3	SS03	Total/NA	Solid	5035	
890-6096-4	SS04	Total/NA	Solid	5035	
890-6096-5	SS05	Total/NA	Solid	5035	
890-6096-6	SS06	Total/NA	Solid	5035	
890-6096-7	SS07	Total/NA	Solid	5035	
MB 880-72821/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-72821/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-72821/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-6102-A-6-C MS	Matrix Spike	Total/NA	Solid	5035	
890-6102-A-6-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 72835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6096-1	SW01	Total/NA	Solid	8021B	72821
890-6096-2	SW02	Total/NA	Solid	8021B	72821
890-6096-3	SS03	Total/NA	Solid	8021B	72821
890-6096-4	SS04	Total/NA	Solid	8021B	72821
890-6096-5	SS05	Total/NA	Solid	8021B	72821
890-6096-6	SS06	Total/NA	Solid	8021B	72821
890-6096-7	SS07	Total/NA	Solid	8021B	72821
MB 880-72821/5-A	Method Blank	Total/NA	Solid	8021B	72821
MB 880-72837/5-A	Method Blank	Total/NA	Solid	8021B	72837
LCS 880-72821/1-A	Lab Control Sample	Total/NA	Solid	8021B	72821
LCSD 880-72821/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	72821
890-6102-A-6-C MS	Matrix Spike	Total/NA	Solid	8021B	72821
890-6102-A-6-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	72821

Prep Batch: 72837

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-72837/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 73053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6096-1	SW01	Total/NA	Solid	Total BTEX	
890-6096-2	SW02	Total/NA	Solid	Total BTEX	
890-6096-3	SS03	Total/NA	Solid	Total BTEX	
890-6096-4	SS04	Total/NA	Solid	Total BTEX	
890-6096-5	SS05	Total/NA	Solid	Total BTEX	
890-6096-6	SS06	Total/NA	Solid	Total BTEX	
890-6096-7	SS07	Total/NA	Solid	Total BTEX	

**GC Semi VOA** 

Prep Batch: 72531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6096-1	SW01	Total/NA	Solid	8015NM Prep	
890-6096-2	SW02	Total/NA	Solid	8015NM Prep	
890-6096-3	SS03	Total/NA	Solid	8015NM Prep	
890-6096-4	SS04	Total/NA	Solid	8015NM Prep	

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## **QC Association Summary**

Client: Ensolum Job ID: 890-6096-1 Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

GC Semi VOA (Continued)

## Prep Batch: 72531 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6096-5	SS05	Total/NA	Solid	8015NM Prep	
890-6096-6	SS06	Total/NA	Solid	8015NM Prep	
890-6096-7	SS07	Total/NA	Solid	8015NM Prep	
MB 880-72531/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-72531/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-72531/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-6096-2 MS	SW02	Total/NA	Solid	8015NM Prep	
890-6096-2 MSD	SW02	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 72814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6096-1	SW01	Total/NA	Solid	8015B NM	72531
890-6096-2	SW02	Total/NA	Solid	8015B NM	72531
890-6096-3	SS03	Total/NA	Solid	8015B NM	72531
890-6096-4	SS04	Total/NA	Solid	8015B NM	72531
890-6096-5	SS05	Total/NA	Solid	8015B NM	72531
890-6096-6	SS06	Total/NA	Solid	8015B NM	72531
890-6096-7	SS07	Total/NA	Solid	8015B NM	72531
MB 880-72531/1-A	Method Blank	Total/NA	Solid	8015B NM	72531
LCS 880-72531/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	72531
LCSD 880-72531/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	72531
890-6096-2 MS	SW02	Total/NA	Solid	8015B NM	72531
890-6096-2 MSD	SW02	Total/NA	Solid	8015B NM	72531

## **Analysis Batch: 72975**

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6096-1	SW01	Total/NA	Solid	8015 NM	
890-6096-2	SW02	Total/NA	Solid	8015 NM	
890-6096-3	SS03	Total/NA	Solid	8015 NM	
890-6096-4	SS04	Total/NA	Solid	8015 NM	
890-6096-5	SS05	Total/NA	Solid	8015 NM	
890-6096-6	SS06	Total/NA	Solid	8015 NM	
890-6096-7	SS07	Total/NA	Solid	8015 NM	

## **HPLC/IC**

#### Leach Batch: 72305

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
890-6096-1	SW01	Soluble	Solid	DI Leach	
890-6096-2	SW02	Soluble	Solid	DI Leach	
390-6096-3	SS03	Soluble	Solid	DI Leach	
390-6096-4	SS04	Soluble	Solid	DI Leach	
890-6096-5	SS05	Soluble	Solid	DI Leach	
390-6096-6	SS06	Soluble	Solid	DI Leach	
390-6096-7	SS07	Soluble	Solid	DI Leach	
MB 880-72305/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-72305/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-72305/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
390-6096-5 MS	SS05	Soluble	Solid	DI Leach	
890-6096-5 MSD	SS05	Soluble	Solid	DI Leach	

# **QC Association Summary**

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY
Job ID: 890-6096-1
SDG: 03C1558016

HPLC/IC

Analysis Batch: 72467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-6096-1	SW01	Soluble	Solid	300.0	72305
890-6096-2	SW02	Soluble	Solid	300.0	72305
890-6096-3	SS03	Soluble	Solid	300.0	72305
890-6096-4	SS04	Soluble	Solid	300.0	72305
890-6096-5	SS05	Soluble	Solid	300.0	72305
890-6096-6	SS06	Soluble	Solid	300.0	72305
890-6096-7	SS07	Soluble	Solid	300.0	72305
MB 880-72305/1-A	Method Blank	Soluble	Solid	300.0	72305
LCS 880-72305/2-A	Lab Control Sample	Soluble	Solid	300.0	72305
LCSD 880-72305/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	72305
890-6096-5 MS	SS05	Soluble	Solid	300.0	72305
890-6096-5 MSD	SS05	Soluble	Solid	300.0	72305

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Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1

SDG: 03C1558016

Client Sample ID: SW01 Date Collected: 02/01/24 10:50 Lab Sample ID: 890-6096-1

**Matrix: Solid** 

Date Received: 02/01/24 14:43

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	72821	02/11/24 13:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72835	02/13/24 07:21	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			73053	02/13/24 07:21	SM	EET MID
Total/NA	Analysis	8015 NM		1			72975	02/11/24 21:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	72531	02/06/24 16:51	TKC	EET MID
Total/NA	Analysis	8015B NM		5	1 uL	1 uL	72814	02/11/24 21:36	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	72305	02/04/24 12:41	СН	EET MIC
Soluble	Analysis	300.0		1			72467	02/06/24 22:33	CH	EET MIC

Client Sample ID: SW02 Lab Sample ID: 890-6096-2

Matrix: Solid

**Matrix: Solid** 

Date Collected: 02/01/24 11:05 Date Received: 02/01/24 14:43

Batch Dil Initial Final Batch Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab Prep Total/NA 5035 4.99 g 5 mL 72821 02/11/24 13:30 MNR **EET MID** Total/NA 8021B 5 mL 72835 02/13/24 07:42 **EET MID** Analysis 1 5 mL MNR Total/NA Total BTEX 73053 02/13/24 07:42 Analysis 1 SM **EET MID** Total/NA Analysis 8015 NM 72975 02/11/24 20:26 SM **EET MID** Total/NA 9.90 g 72531 02/06/24 16:51 EET MID Prep 8015NM Prep 10 mL TKC Total/NA Analysis 8015B NM 1 uL 1 uL 72814 02/11/24 20:26 SM **EET MID** 72305 Soluble 02/04/24 12:41 Leach DI Leach 5.03 g 50 mL CH **EET MID** Soluble Analysis 300.0 72467 02/06/24 22:40 СН **EET MID** 

**Client Sample ID: SS03** Lab Sample ID: 890-6096-3

Date Collected: 02/01/24 11:15 Date Received: 02/01/24 14:43

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	72821	02/11/24 13:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72835	02/13/24 08:02	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			73053	02/13/24 08:02	SM	EET MID
Total/NA	Analysis	8015 NM		1			72975	02/11/24 21:58	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	72531	02/06/24 16:51	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72814	02/11/24 21:58	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	72305	02/04/24 12:41	СН	EET MID
Soluble	Analysis	300.0		1			72467	02/06/24 22:46	CH	EET MID

Lab Sample ID: 890-6096-4 **Client Sample ID: SS04** Date Collected: 02/01/24 11:20 Matrix: Solid

Date Received: 02/01/24 14:43

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	72821	02/11/24 13:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72835	02/13/24 08:23	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			73053	02/13/24 08:23	SM	EET MID

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Client: Ensolum

Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1 SDG: 03C1558016

ah Sample ID: 890 6096 4

Client Sample ID: SS04
Date Collected: 02/01/24 11:20
Date Received: 02/01/24 14:43

Lab Sample ID: 890-6096-4

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			72975	02/11/24 22:21	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	72531	02/06/24 16:51	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72814	02/11/24 22:21	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	72305	02/04/24 12:41	СН	EET MID
Soluble	Analysis	300.0		1			72467	02/06/24 22:53	CH	EET MID

Client Sample ID: SS05 Lab Sample ID: 890-6096-5

Date Collected: 02/01/24 11:25 Matrix: Solid

Date Received: 02/01/24 14:43

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	72821	02/11/24 13:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72835	02/13/24 08:43	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			73053	02/13/24 08:43	SM	EET MID
Total/NA	Analysis	8015 NM		1			72975	02/11/24 22:43	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	72531	02/06/24 16:51	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72814	02/11/24 22:43	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	72305	02/04/24 12:41	СН	EET MID
Soluble	Analysis	300.0		1			72467	02/06/24 23:00	CH	EET MID

Client Sample ID: SS06 Lab Sample ID: 890-6096-6

Date Collected: 02/01/24 11:30 Date Received: 02/01/24 14:43

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	72821	02/11/24 13:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72835	02/13/24 09:04	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			73053	02/13/24 09:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			72975	02/11/24 23:05	SM	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	72531	02/06/24 16:51	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72814	02/11/24 23:05	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	72305	02/04/24 12:41	CH	EET MID
Soluble	Analysis	300.0		1			72467	02/06/24 23:20	CH	EET MID

Client Sample ID: SS07 Lab Sample ID: 890-6096-7

Date Collected: 02/01/24 11:35 Date Received: 02/01/24 14:43

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	72821	02/11/24 13:30	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72835	02/13/24 09:24	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			73053	02/13/24 09:24	SM	EET MID
Total/NA	Analysis	8015 NM		1			72975	02/11/24 23:26	SM	EET MID
Total/NA Total/NA	Prep Analysis	8015NM Prep 8015B NM		1	9.94 g 1 uL	10 mL 1 uL	72531 72814	02/06/24 16:51 02/11/24 23:26	TKC SM	EET MID

**Eurofins Carlsbad** 

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**Matrix: Solid** 

**Matrix: Solid** 

Analysis

СН

## **Lab Chronicle**

Client: Ensolum Job ID: 890-6096-1 Project/Site: PLU 30 BIG SINKS BATTERY SDG: 03C1558016

**Client Sample ID: SS07** Lab Sample ID: 890-6096-7

Date Collected: 02/01/24 11:35 Matrix: Solid Date Received: 02/01/24 14:43

Batch Dil Batch Batch Initial Final Prepared Method Prep Type Туре Run Factor Amount Amount Number or Analyzed Analyst Lab Soluble DI Leach 72305 02/04/24 12:41 Leach 4.99 g 50 mL СН **EET MID** 300.0 02/06/24 23:27 EET MID

72467

1

#### **Laboratory References:**

Soluble

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

# **Accreditation/Certification Summary**

Client: Ensolum
Project/Site: PLU 30 BIG SINKS BATTERY
Job ID: 890-6096-1
SDG: 03C1558016

## **Laboratory: Eurofins Midland**

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

Authority	Progra	am	Identification Number	<b>Expiration Date</b>
Texas	NELA	Р	T104704400-23-26	06-30-24
The following analytes	are included in this report, bu	it the laboratory is not certif	fied by the governing authority. This lis	t mav include analytes
0 ,	• •	·····, ·····, ······		
for which the agency do	oes not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte	
0 ,		Matrix Solid	Analyte Total TPH	

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## **Method Summary**

Client: Ensolum

Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1

SDG: 03C1558016

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

#### **Protocol References:**

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

#### Laboratory References:

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

# **Sample Summary**

Client: Ensolum

Project/Site: PLU 30 BIG SINKS BATTERY

Job ID: 890-6096-1

SDG: 03C1558016

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-6096-1	SW01	Solid	02/01/24 10:50	02/01/24 14:43	0-1
890-6096-2	SW02	Solid	02/01/24 11:05	02/01/24 14:43	0-1
890-6096-3	SS03	Solid	02/01/24 11:15	02/01/24 14:43	0.5
890-6096-4	SS04	Solid	02/01/24 11:20	02/01/24 14:43	0.5
890-6096-5	SS05	Solid	02/01/24 11:25	02/01/24 14:43	0.5
890-6096-6	SS06	Solid	02/01/24 11:30	02/01/24 14:43	0.5
890-6096-7	SS07	Solid	02/01/24 11:35	02/01/24 14:43	0.5

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						d social	M (679) S	12-7550 Cz	Hobbs, NM (620) SIZ-7550. Calebad, MA (525) 98:	CaC	396	2000	Barre	-
Project Manager Tace	Tacoma Morrissey	sey			Bill to: (if dit	(if different)	Garre	Garrett Green			W	Work Orrier Commants	mmante	5
Company Name: Ensi	Ensolum				Company Name	Vame	XTO	XTO Energy		1 4	Program: UST/PST   PRP   Brownfloate   Dec	PRP   Brownin	Dog Dog	P
	3122 National Parks Hwy	Parks H	W		Address	N	3104	3104 E. Green St		- in	State of Project:		The second	punuadne
City, State ZiP Cark	Carlsbad, NM 88220	38220			City, State ZIP.	ZIP	Carls	Carlsbad, NM 88220	220	æ	Reporting: Level II D Level III PST/UST TRRP	Well!   PSTA	IST   TRRP	Level IV
Phone: 303-	303-887-2946			Email	Email: Garrett. Green@ExxonMobil.com	Ben@	xxonMo	bil.com		ŏ	Deliverables: EDD	ADaPT	] Other	
Project Name:	PLU 30 Big Sinks Battery	Sinks	Battery	Tur	Turn Around				A	ANALYSIS REQUEST	ST		Presentative Codes	Codes
Project Number:	030	03C1558016	2	- Routine	□ Rush	Code	2 8					ž	None NO	Di Water H.O.
Project Location:				Oue Date:								0		Maryll Ma
Sampler's Name.	Canno	Connor Whitman	an	TAT starts th	TAT starts the day received by	r ch						H		HNO, HN
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SAMPLE RECEIPT	Temp Blank:		Ves No N	Wet toe	Yes No	nen						Ŧ		
Samples Received Infact.	(Yes) No	No.	hermometer	.O	1WMOO	T						2	NAHSO. NARIS	
Cooler Custody Seais:	Yes No	X	Yes No (N/A) Correction Factor.	tor.	2.0-		-					2 2	Na.S.O.: NaSO.	
Sample Custody Seals:	Yes No	NA	Femperature Reading:	Reading:	0.0		d3)	10				70	Zn Acetate+NeOH Zn	72
Total Containers.		7	Corrected Temperature	perature:	0.0		SEG					Na	NaGH*Ascorbic Acid: SAPIC	d SAPC
Sample Identification		Matrix	Date	Time	Depth Gr	Graby # of	HOBE	08) H					Samuel Comment	
SWO		5	2/1/24	loco	0110	9		+					Sample Con	ments
S Mo 2		1	4	5011	+	+		+				Inc	Incident ID:	
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Circle Method(s) and Metal(s) to be analyzed	tal(s) to be	analyze	P	TCLP / SPLP 601	LP 6010: 8	BRCRA	Sb As	As Ba Be (	04 CA CO CL	Cu Pb Mn Mo Ni Se Ag Ti U	Min Mio Ni K Se Ag Se Ag Ti U H	Se Ag SiO <sub>2</sub> Na Sr Ti Sn ( Hg. 1631 / 245.1 / 7470	> 7	Zh 71
Notice: Signature of this document and nithquishment of samples considered a valid purchase order from client company to Enroftns Xenco, its affiliates and subcontractors. It assigns standard forms and conditions of service. Eurofins Xenco, it such losses and one to circumstances beyond the control of survivers and service and service of some service and service of some services. A minimum charge of \$55.00 will be applied to each project and a charge of \$5 for each submitmed to Funding Xenco, and one applied to each project and a charge of \$5 for each submitmed to Funding Xenco.	of and refinguisa Sable only fort ange of \$85.00 v	hament of a the cost of will be app	amples constitution series and shifted to each proj	diff not assume oct and a chang	hase order from any responsible e of \$5 for each	Totient co	mpany to E	expenses inc	red by the clear if	obcoeffactors. It assign such losses are due to	s standard terms and con- dictional ances beyond the	ditions		
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## **Login Sample Receipt Checklist**

 Client: Ensolum
 Job Number: 890-6096-1

 SDG Number: 03C1558016

Login Number: 6096 List Source: Eurofins Carlsbad

List Number: 1

Creator: Lopez, Abraham

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

Client: Ensolum Job Number: 890-6096-1 SDG Number: 03C1558016

Login Number: 6096 **List Source: Eurofins Midland** List Number: 2 List Creation: 02/05/24 08:29 AM

Creator: Rodriguez, Leticia

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	N/A	

<6mm (1/4").

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 Phone:(575) 393-6161 Fax:(575) 393-0720

District II 811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III 1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

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

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

QUESTIONS

Action 359740

#### **QUESTIONS**

Operator:	OGRID:
XTO ENERGY, INC	5380
6401 Holiday Hill Road	Action Number:
Midland, TX 79707	359740
	Action Type:
	[C-141] Deferral Request C-141 (C-141-v-Deferral)

#### QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2209137379
Incident Name	NAPP2209137379 PLU 30 BIG SINKS CTB @ 0
Incident Type	Oil Release
Incident Status	Deferral Request Received
Incident Facility	[fAPP2203544302] PLU 30 BIG SINKS

Location of Release Source	
Please answer all the questions in this group.	
Site Name	PLU 30 BIG SINKS CTB
Date Release Discovered 03/19/2022	
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Oil Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for	or the volumes provided should be attached to the follow-up C-141 submission.
Crude Oil Released (bbls) Details	Cause: Equipment Failure   Separator   Crude Oil   Released: 146 BBL   Recovered: 144 BBL   Lost: 2 BBL.
Produced Water Released (bbls) Details	Cause: Equipment Failure   Separator   Produced Water   Released: 97 BBL   Recovered: 96 BBL   Lost: 1 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	No
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

District I
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District III 1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

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

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

QUESTIONS, Page 2

Action 359740

QUEST	IONS (continued)
Operator: XTO ENERGY, INC	OGRID: 5380
6401 Holiday Hill Road Midland, TX 79707	Action Number: 359740
	Action Type:  [C-141] Deferral Request C-141 (C-141-v-Deferral)
QUESTIONS	
Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.	e. gas only) are to be submitted on the C-129 form.
Initial Response	
The responsible party must undertake the following actions immediately unless they could create a	safety hazard that would result in injury.
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.
	iation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of ted or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of evaluation in the follow-up C-141 submission.
to report and/or file certain release notifications and perform corrective actions for relethe OCD does not relieve the operator of liability should their operations have failed to	knowledge and understand that pursuant to OCD rules and regulations all operators are required asses which may endanger public health or the environment. The acceptance of a C-141 report by adequately investigate and remediate contamination that pose a threat to groundwater, surface t does not relieve the operator of responsibility for compliance with any other federal, state, or
I hereby agree and sign off to the above statement	Name: Amy Ruth Title: Coordinator SSHE Environmental

Email: amy.ruth@exxonmobil.com

Date: 06/28/2024

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

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

QUESTIONS, Page 3

Action 359740

**QUESTIONS** (continued)

Operator:	OGRID:
XTO ENERGY, INC	5380
6401 Holiday Hill Road	Action Number:
Midland, TX 79707	359740
	Action Type:
	[C-141] Deferral Request C-141 (C-141-v-Deferral)

#### QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approva release discovery date.	l and beyond). This information must be provided to the appropriate district office no later than 90 days after the
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release ar	nd the following surface areas:
A continuously flowing watercourse or any other significant watercourse	Between 1000 (ft.) and ½ (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between ½ and 1 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Medium
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
Please answer all the questions that apply or are indicated. This information must be provide	ed to the appropriate district office no later than 90 days after the release discovery date.
Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamin	nation associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, ir	n milligrams per kilograms.)
Chloride (EPA 300.0 or SM4500 Cl B)	1040
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	6680
GRO+DRO (EPA SW-846 Method 8015M)	6070
BTEX (EPA SW-846 Method 8021B or 8260B)	0.1
Benzene (EPA SW-846 Method 8021B or 8260B)	0
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes comp which includes the anticipated timelines for beginning and completing the remediation.	pleted efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC,
On what estimated date will the remediation commence	04/15/2022
On what date will (or did) the final sampling or liner inspection occur	05/02/2022
On what date will (or was) the remediation complete(d)	02/01/2024
What is the estimated surface area (in square feet) that will be reclaimed	20000
What is the estimated volume (in cubic yards) that will be reclaimed	800
What is the estimated surface area (in square feet) that will be remediated	1075
What is the estimated volume (in cubic yards) that will be remediated	90
These estimated dates and measurements are recognized to be the best guess or calculation	at the time of submission and may (be) change(d) over time as more remediation efforts are completed.
The OCD recognizes that proposed remediation measures may have to be minimally adjusted	d in accordance with the physical realities encountered during remediation. If the responsible party has any need to

significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

District I

1625 N. French Dr., Hobbs, NM 88240 Phone:(575) 393-6161 Fax:(575) 393-0720 **District II** 

811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720 **District III** 

1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

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

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

QUESTIONS, Page 4

Action 359740

**QUESTIONS** (continued)

Operator:	OGRID:
XTO ENERGY, INC	5380
6401 Holiday Hill Road	Action Number:
Midland, TX 79707	359740
	Action Type:
	[C-141] Deferral Request C-141 (C-141-v-Deferral)

#### QUESTIONS

Remediation Plan (continued)		
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.		
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:		
(Select all answers below that apply.)		
(Ex Situ) Excavation and off-site disposal (i.e. dig and haul, hydrovac, etc.)	Yes	
Which OCD approved facility will be used for off-site disposal	HALFWAY DISPOSAL AND LANDFILL [fEEM0112334510]	
OR which OCD approved well (API) will be used for off-site disposal	Not answered.	
OR is the off-site disposal site, to be used, out-of-state	Not answered.	
OR is the off-site disposal site, to be used, an NMED facility	Not answered.	
(Ex Situ) Excavation and on-site remediation (i.e. On-Site Land Farms)	Not answered.	
(In Situ) Soil Vapor Extraction	Not answered.	
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.	
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.	
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.	
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.	
OTHER (Non-listed remedial process)	Not answered.	

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

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

I hereby agree and sign off to the above statement

Name: Amv Ruth

Title: Coordinator SSHE Environmental

Email: amy.ruth@exxonmobil.com

Date: 06/28/2024

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 Phone:(575) 393-6161 Fax:(575) 393-0720 District II

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

QUESTIONS, Page 5

Action 359740

**QUESTIONS** (continued)

Operator:  XTO ENERGY, INC	OGRID: 5380
6401 Holiday Hill Road Midland, TX 79707	Action Number: 359740
Wildiand, 1X 13101	Action Type:  [C-141] Deferral Request C-141 (C-141-v-Deferral)
QUESTIONS	·
Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of	f the following items must be confirmed as part of any request for deferral of remediation.
Requesting a deferral of the remediation closure due date with the approval of this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Is the remaining contamination in areas immediately under or around production equipment where remediation could cause a major facility deconstruction	Yes
Please list or describe the production equipment and how (re)moving the equipment would cause major facility deconstruction	The release occurred immediately adjacent to a tank battery containment and is surrounded by surface production equipment. The area cannot be accessed except with personnel and hand tools.
What is the remaining surface area (in square feet) that will still need to be remediated if a deferral is granted	1075
What is the remaining volume (in cubic yards) that will still need to be remediated if a deferral is granted	30
	liately under or around production equipment such as production tanks, wellheads and pipelines where n may be deferred with division written approval until the equipment is removed during other operations, or when
Enter the facility ID (f#) on which this deferral should be granted	PLU 30 BIG SINKS [fAPP2203544302]
Enter the well API (30-) on which this deferral should be granted	Not answered.
Contamination does not cause an imminent risk to human health, the environment, or groundwater	True
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed e which includes the anticipated timelines for beginning and completing the remediation.	fforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC
to report and/or file certain release notifications and perform corrective actions for relethe OCD does not relieve the operator of liability should their operations have failed to	knowledge and understand that pursuant to OCD rules and regulations all operators are required asses which may endanger public health or the environment. The acceptance of a C-141 report by adequately investigate and remediate contamination that pose a threat to groundwater, surface t does not relieve the operator of responsibility for compliance with any other federal, state, or
I hereby agree and sign off to the above statement	Name: Amy Ruth Title: Coordinator SSHE Environmental Email: amy.ruth@exxonmobil.com

Date: 06/28/2024

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

QUESTIONS, Page 6

Action 359740

Operator:	OGRID:
XTO ENERGY, INC	5380
6401 Holiday Hill Road	Action Number:
Midland, TX 79707	359740
	Action Type:
	[C-141] Deferral Request C-141 (C-141-v-Deferral)

**QUESTIONS** (continued)

#### QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	308056
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	02/01/2024
What was the (estimated) number of samples that were to be gathered	10
What was the sampling surface area in square feet	2000

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	No

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

CONDITIONS

Action 359740

#### **CONDITIONS**

Operator:	OGRID:
XTO ENERGY, INC	5380
6401 Holiday Hill Road	Action Number:
Midland, TX 79707	359740
	Action Type:
	[C-141] Deferral Request C-141 (C-141-v-Deferral)

#### CONDITIONS

Created By	Condition	Condition Date
crystal.walker	Deferral is approved for designated deferral area depicted on Figure 4 of Application 359740. The remaining impacted soil is fully delineated. Per 19.15.29.12.C.(2). If the contamination is located in areas immediately under or around production equipment such as production tanks, wellheads and pipelines where remediation could cause a major facility deconstruction, the remediation, restoration and reclamation may be deferred with division written approved until the equipment is removed during other operations, or when the well or facility is plugged or abandoned, whichever comes first. Final remediation and reclamation shall take place in accordance with 19.15.29.12 and 19.15.29.13 NMAC once the site is no longer being used for oil and gas operations.	7/15/2024