Volume calculator

There was no volume calculator prepared when the spill occurred.



July 26, 2024

Dale Woodall Environmental Professional Devon Energy Production Company 205 E. Bender Road # 150 Hobbs, New Mexico 88240

Dear Mr. Woodall:

Subject: Remediation Closure Report and Reclamation Report

Devon Energy Production Company Seawolf 1 12 Federal 91H Release Unit D, Section 1, T26S, R33E Lea County, New Mexico Date of Release: 4/29/2018 Incident: nOY1813437455 CEC Project 331-072

Civil & Environmental Consultants, Inc. (CEC) is submitting this Remediation Closure Report and Reclamation Report in connection with the April 29, 2018 release of produced water at the Seawolf 1 12 Federal 91H well (Site). CEC was contracted by Devon to characterize and remediate the release. This Report is being submitted to document site characterization activities that were completed in accordance with 19.15.29.11 of the New Mexico Administrative Code (NMAC), remediation activities remedial actions that were completed in accordance with 19.15.29.12 NMAC, and reclamation activities that were completed in accordance with 19.15.29.13 NMAC.

1.0 BACKGROUND

According to the Release Notification filed with the State of New Mexico Form C-141, a release of produced water occurred on or around April 29, 2018, at the Seawolf 1 12 Federal 91H well pad located in Public Land Survey System (PLSS) Unit Letter D, Section 1, Township 26 South, Range 33 East, in Lea County, New Mexico. The location of the well pad is shown on Figure 1.

The layout of the Site including the approximate release location is shown on Figure 2. The approximate release point was at coordinates 32.079227, -103.532492. According to the initial Form C-141 Release Notification, the apparent cause of the release was a contractor failing to shut off a pump at the freshwater pond, causing tanks at the Site to overflow. An estimated 10 barrels of produced water were released to the well pad. None of the produced water was recovered. The spill was reported on May 14, 2018 and assigned an incident number nOY1813437455.

The initial Form C-141 Release Notification that includes a description of initial response actions that were taken by Devon and also OCD's directive in response to the notification, are included in Appendix A.

Devon Energy Production Company CEC Project 331-072 Page 2 July 26, 2024

2.0 DESKTOP REVIEW

A desktop review was performed by CEC to (a) determine the wellhead protection area and distance to the nearest water source as required under 19.15.29.11 NMAC, (b) determine the distance to the nearest water course as required under 19.15.29.11 NMAC, (c) preliminarily identify distances to sensitive receptors listed under 19.15.29.12 Section C of NMAC, and (d) determine (if possible based on published information) depth to groundwater in the area.

A map identifying "Sensitive Receptors" in the area is provided as Figure B-1 in Appendix B. The Site is not located within incorporated municipal boundaries or within a defined municipal well field covered under a municipal ordinance. Similarly, the Site is not located within a 100-year floodplain, nor does it overlie a subsurface mine. Further, the Site is not located within the prescribed distances of the various sensitive receptors listed under Section C (4.) of 19.15.29.12 NMAC. The Site is in an area of low karst potential.

According to the New Mexico Office of the State Engineer (NMOSE) water rights reporting system, a temporary well (Temporary Well C-4628) was installed approximately 0.39 miles east of the Site in June 2022. The location of Temporary Well C-4628 is shown in Figure B-1. Temporary Well C-4628 was drilled to a depth of approximately 55 feet below ground surface (bgs). The well was determined to be dry after 24 hours. Depth to groundwater in the vicinity of the Site is therefore determined to be greater than 51 feet bgs. The well record and log are included in Appendix C.

Based on a review of aerial imagery, the well pad was partially reclaimed sometime between February 2019 and March 2022 resulting in a smaller pad footprint. The difference in well pad configuration is apparent in the aerial photographs on Figures 2 (imagery form February 21, 2019) and 3 (imagery from June 11, 2024). As a result of the partial well pad reclamation, the release reported under Incident NOY1813437455 is no longer on the well pad.

3.0 REGULATORY LIMITS

Remediation Closure Criteria and Reclamation Closure Criteria for soil impacted by produced water are established in Table 1, Subsection E of 19.15.29.12 NMAC. Based on information obtained for the desktop survey and the groundwater depth of >50 feet, the Remediation Closure Criteria and Reclamation Closure Criteria for this Site are as follows.

Constituent	Remediation	Reclamation		
	Closure Criteria	Closure Criteria ¹		
Chloride	10,000 mg/kg	600 mg/kg		
TPH (GRO+DRO+MRO)	2,500 mg/kg	100 mg/kg		
TPH (GRO+DRO)	1,000 mg/kg	NSE		
Total BTEX	50 mg/kg	50 mg/kg		
Benzene	10 mg/kg	10 mg/kg		

Reclamation Closure Criteria apply to the top four feet of the soil column irrespective of the Remediation Closure Criteria. NSE - No criteria established

Devon Energy Production Company CEC Project 331-072 Page 3 July 26, 2024

Prior to mobilization, CEC confirmed that no additional constituents of concern (COCs) were required to be analyzed with the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD) Oil Conservation Division. CEC also notified OCD via email of their intent to collect site characterization and confirmation samples prior to performing field work in accordance with Section D of 19.15.29.12 NMAC. Records documenting the required OCD notifications are included in Appendix D.

4.0 SITE CHARACTERIZATION ACTIVITIES

4.1 PHASE 1 SITE CHARACTERIZATION

CEC conducted initial site assessment activities on May 3, 2023, during which nine (9) hand-auger borings (SW 91H-1 through SW 91H-7; and SW 91H-HA1 and SW 91H-HA2) were installed. Hand-auger borings, SW 91H-HA1 and SW 91H-HA2, were installed to aid in the horizontal delineation. Soil was screened at these locations, but no samples were submitted for laboratory analysis. The locations of the hand-auger borings are shown on Figure 2. In general, hand-auger refusal was encountered at approximately 2.5 to 4.5 feet below ground surface (bgs) due to the presence of caliche or sandstone. While advancing the hand-auger borings, samples were collected at one-foot depth intervals for field screening. Each sample was screened for soil electrical conductivity (EC) using a FieldScout Soil Conductivity Probe with automatic temperature compensation, Total Petroleum Hydrocarbons (TPH) using a Dexsil PetroFLAG hydrocarbon analyzer, volatile organic compounds (VOC) using a RAE Photo-Ionization Detector (PID), and field chloride using Quantab® titration strips. CEC's standard operation procedures for conducting field screening are included in Appendix E. The results of the field screening are summarized on Table 1.

A total of nineteen (19) samples were collected from the hand-auger borings and submitted for laboratory analytical analysis to Eurofins Environment Testing South Central laboratory (Eurofins) in Midland, Texas. One background soil sample (SW 91H-BG1 (0-1')) was also collected and submitted for laboratory analysis. The background soil sampling location is shown on Figure 2. The soil samples were analyzed for BTEX (by Method 8021B), TPH (by Method 8015B), and chloride (by EPA Method 300.0). Analytical results for the samples that were collected during the Phase 1 site characterization are summarized on Table 2. The corresponding laboratory analytical reports are included in Appendix F.

Referring to Table 2, none of the samples that were collected were found to contain COCs at concentrations in excess of the Remediation Closure Criteria. Five (5) of the samples were found to contain chloride at concentrations in excess of the Reclamation Closure Criteria.

Following review of the results of the initial site characterization sampling, it was determined that additional delineation was warranted to meet the requirements of 19.15.29.13 NMAC.

4.2 PHASE 2 SITE CHARACTERIZATION

Phase 2 of the site characterization was conducted on June 5, 2023. During Phase 2, three (3) hand-auger borings (SW 91H-8, SW 91H-9 and SW 91H-10) were installed to further delineate the extent of soil contamination. The locations of the hand-auger borings are shown on Figure 2.

Devon Energy Production Company CEC Project 331-072 Page 4 July 26, 2024

All three of the hand-auger-borings encountered auger refusal on hard caliche at a depth of approximately 2 feet. Field screening was conducted following the procedures outlined in Section 4.1, and the results are summarized on Table 1. Field screening for Phase 2 focused on chlorides since none of the samples that were collected during the Phase 1 investigation were found to contain elevated concentrations of petroleum compounds.

Based on the field screening results, six (6) soil samples were submitted to Eurofins for laboratory analysis. Analytical results for the soil samples that were collected during the Phase 2 site characterization are summarized on Table 2. Analytical reports are included in Appendix F.

As shown on Table 2, none of the six (6) soil samples collected from the Phase 2 soil borings contained COCs at concentrations in excess of Remediation Closure Criteria or Reclamation Closure Criteria.

5.0 SITE CHARACTERIZATION FINDINGS AND DEVELOPMENT OF REMEDIATION PLAN

Site characterization investigations identified an approximately 1,918-square-foot area over which Reclamation Closure Criteria were exceeded in the soil. Within this area, the contaminated soil that exceeded Reclamation Closure Criteria was found to extend to depths ranging from 2 to 4 feet. A map showing areas targeted for reclamation and projected reclamation depths based on results of site characterization is shown on Figure 3. This map was subsequently used to guide remediation activities.

6.0 DESCRIPTION OF REMEDIATION ACTIVITIES

Excavation to remove impacted soil was conducted between January 29, 2024 and February 1, 2024. In accordance with NMOCD regulatory guidelines, soil containing COCs at concentrations in excess of Reclamation Closure Criteria was excavated and stockpiled on-site pending transfer to an NMOCD-permitted surface waste facility for disposal (R360 Antelope Ridge). While undertaking the excavation, a FieldScout Soil Conductivity Probe with automatic temperature compensation was utilized to guide the excavation. The sidewalls and floors of the excavation were expanded until field tests and field observations indicated chloride concentration was less than the applicable Reclamation Closure Criteria. The results of the field screening that was performed on confirmation soil samples are presented on Table 3. Confirmation soil sampling locations are shown on Figure 4. Photographs documenting the reclamation efforts are included in the photographic log in Appendix G. Approximately 185 cubic yards of soil were removed over this period.

Upon making a determination based on field observations and field screening that there was a high likelihood that reclamation goals had been achieved, CEC collected representative five-point composite post-excavation confirmation soil samples representative of each 200 square feet of the sidewalls and floor of the excavated area pursuant to Subsection C of 19.15.29.12 NMAC. The area represented by each confirmation sample is shown on Figure 4. The samples were submitted to Eurofins Environment Testing South Central laboratory (Eurofins) in Midland, Texas to be analyzed for BTEX (by Method 8021B), TPH (by Method 8015B), and chloride (by EPA Method 300.0). No wet or discolored areas were encountered, and discrete grab samples were not required. Photographs documenting the reclamation activities are included in Appendix G.

Devon Energy Production Company CEC Project 331-072 Page 5 July 26, 2024

The results of the confirmation soil sampling are summarized on Table 4. Analytical reports are included in Appendix F. As shown on Table 4, none of the confirmation samples were found to contain COCs at concentrations in excess of the reclamation criteria.

7.0 RECLAMATION ACTIVITIES

Upon completion of excavation activities and receipt of final laboratory analytical results confirming remediation goals were met, the excavation was backfilled with caliche to a depth of 2 feet bgs. The top two feet of the excavation was backfilled with locally procured topsoil.

A representative five-point composite soil sample (BF-SW91H-042918) was collected from the surface of the backfilled excavation on June 26, 2024. The analytical report for sample BF-SW91H-042918 is included in Appendix F. None of the COCs were detected at concentrations in excess of the reclamation closure criteria.

Following backfill activities, the disturbed area was contoured to match the surrounding topography and the surface was prepared for seeding using an agricultural disk. The disturbed area was seeded by hand-held broadcaster with the BLM sandy sites seed mix #2 at the rate specified in pounds of pure live seed (PLS) per acre.

Species/Cultivar	PLS/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

The specification for BLM Seed Mix #2 in included in Appendix H. Photographs of the reclaimed excavation area are provided in the photographic log in Appendix G.

It is CEC's understanding that Devon is monitoring the site to identify and mitigate erosional issues should they develop and to assess vegetation growth. Focus for this phase is to prevent erosion and site degradation, and to monitor for and treat invasive and noxious weed species.

A Revegetation Report (C-141-V-Revegetation) will be submitted to OCD when vegetative cover has been established that reflects a life-form ratio of ± 50 percent of pre-disturbance levels and a total percent plant cover of at least 70 percent of pre-disturbance levels, excluding noxious weeds.

8.0 REMEDIATION AND RECLAMATION CLOSURE STATUS

As discussed in prior sections of this report, site characterization investigations identified an area extending over a footprint of approximately 1,918 square feet where one or more COCs were detected at concentrations in excess of Reclamation Closure Criteria. The affected soil in the area was excavated to depths ranging from 2 to 4 feet. During remediation, the final areal limits of soil excavation were reduced to 1,510 square feet based on field observations and screening. Approximately 185 cubic yards of soil were excavated from this area. Results of confirmation soil sampling conducted after completing the excavation demonstrated that COCs are compliant with remediation closure criteria

Devon Energy Production Company CEC Project 331-072 Page 6 July 26, 2024

and reclamation closure criteria. Based on the work completed, it is CEC's opinion that <u>Incident nOY1813437455</u> qualifies for remediation closure approval under 19.15.29.12.D. and also qualifies for reclamation closure approval under 19.15.29.13.D &19.15.29.13.D(1) NMAC.

9.0 CLOSING

CEC appreciates the opportunity to assist Devon on this project. Please contact us if you have any questions or wish to discuss any aspects of this report.

Sincerely,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Laura D. Campbell Project Manager Robert J. Valli Principal

Ran Mani

Enclosures:

FIGURES:

Figure 1: Site Location Map

Figure 2: Release Characterization Sample Locations

Figure 3: Areas Targeted for Soil Remediation

Figure 4: Final Soil Excavation Limits and Confirmation Sample Locations

TABLES:

Table 1: Summary of Field Screening Results – Release Characterization

Table 2: Summary of Laboratory Analytical Results – Release Characterization

Table 3: Summary of Field Screening Results – Remedial Actions

Table 4: Summary of Laboratory Analytical Results – Soil Confirmation Sampling

APPENDICES:

Appendix A: Release Notification and OCD Response

Appendix B: Sensitive Receptor Map

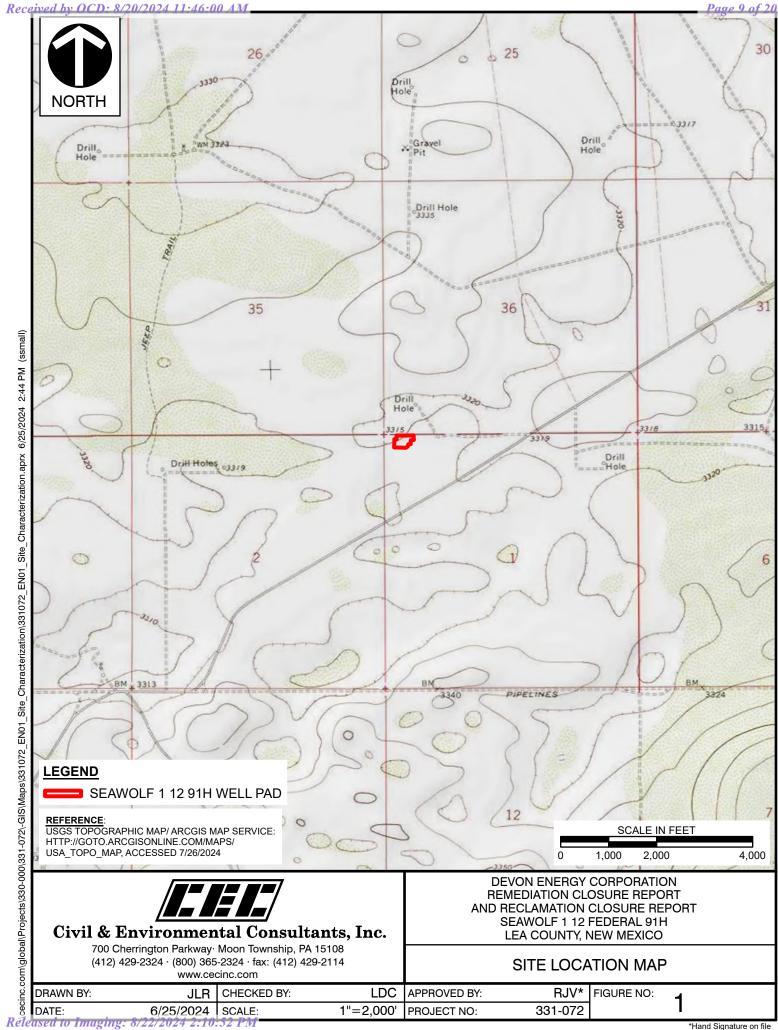
Appendix C: Temporary Well C-4626 Records

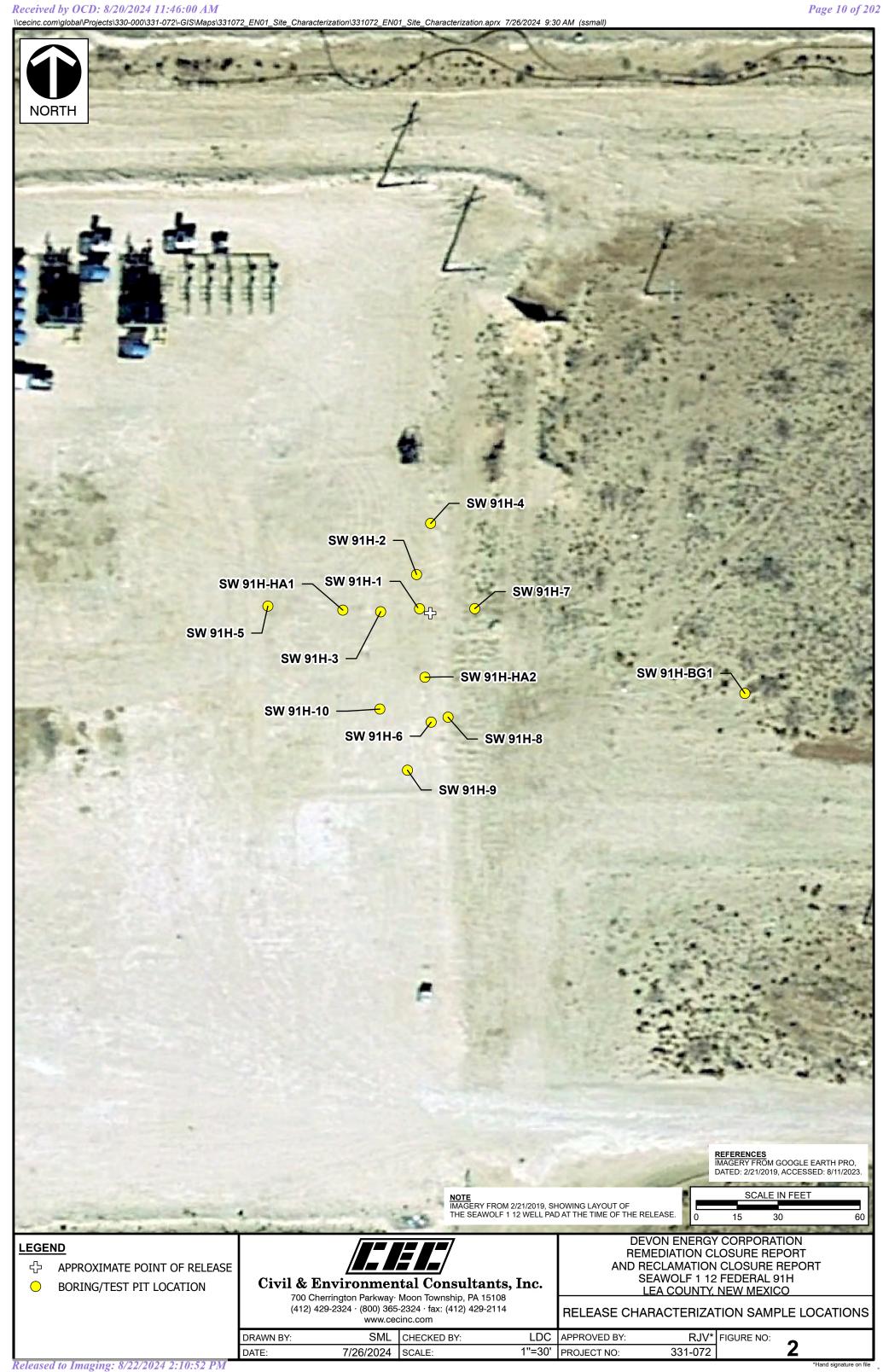
Appendix D: NMOCD Correspondence Appendix E: SOPs for Field Screening Appendix F: Laboratory Analytical Reports

Appendix G: Photographic Log

Appendix H: Reseeding Specification

FIGURES





\\cecinc.com\globa\\Projects\330-000\331-072\-GIS\Maps\331072_EN01_Site_Characterization\331072_EN01_Site_Characterization.aprx 7/26/2024 9:30 AM (ssmall) **NORTH** SW 91H-4 SW 91H-3 -SW 91H-2 SW 91H-HA1 SW 91H-1 SW 91H-5 -SW 91H-7 SW 91H-BG1 SW 91H-HA2 SW 91H-8 SW 91H-10 -SW 91H-6 SW 91H-9 **LEGEND** 4 APPROXIMATE POINT OF RELEASE \circ **BORING/TEST PIT LOCATION** BORING/TEST PIT LOCATION - HORIZONTAL DELINEATION POINT 0 BORING/TEST PIT LOCATION - VERTICAL DELINEATION POINT PROJECTED RECLAMATION EXCAVATION DEPTH 1-FOOT 2-FEET REFERENCES
1. ESRI WORLD IMAGERY / ARCGIS MAP SERVICE:
HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY,
ACCESSED 7/26/2024 3-FEET 4-FEET **DEVON ENERGY CORPORATION** SCALE IN FEET REMEDIATION CLOSURE REPORT AND RECLAMATION CLOSURE REPORT SEAWOLF 1 12 FEDERAL 91H Civil & Environmental Consultants, Inc. LEA COUNTY, NEW MEXICO 700 Cherrington Parkway Moon Township, PA 15108 (412) 429-2324 · (800) 365-2324 · fax: (412) 429-2114 AREAS TARGETED FOR SOIL REMEDIATION NOTE IMAGERY FROM 3/27/2022, SHOWING CURRENT LAYOUT OF SEAWOLF 1 12 WELL PAD. www.cecinc.com SML CHECKED BY: LDC APPROVED BY: RJV* FIGURE NO: DRAWN BY:

DATE:

7/26/2024

SCALE:

1"=30' PROJECT NO:

331-072

Received by OCD: 8/20/2024 11:46:00 AM Page 12 of 202 \\cecinc.com\globa\\Projects\330-000\331-072\-GIS\Maps\331072_EN01_Site_Characterization\331072_EN01_Site_Characterization.aprx 7/26/2024 9:30 AM (ssmall) **NORTH SW 91H-4** SW 91H-2 SW91H-Stdewall 3 SW91H-Bottom2 SW91H-1 **SW91H-3** SW91H-Bottom3 SW91H-Bottom 1 **SW91H**-5 — — **\$**₩91H=7 SW 91HHA1 SW91H-Bottom 6 SW91H-Bottom 4 SW91H-Stdewall 2 SW 91H-Bottom 5 SW91H-Bottom 8 SW 91HHA2 SW 91H-Bottom 7 SW 91H-10 -**SW91H**=6 SW 91H-Bottom 9 SW91H-Sidewall 1 **SW 91H-9 LEGEND** む APPROXIMATE POINT OF RELEASE 5-POINT COMPOSITE BOTTOM **EXCAVATION SAMPLE** BORING/TEST PIT LOCATION 5-POINT COMPOSITE SIDEWALL SAMPLE LENGTH AND ID 5-POINT COMPOSITE CONFIRMATION SAMPLE GRID BLOCK FINAL RECLAMATION EXCAVATION DEPTH 1-FOOT 2-FEET REFERENCES 3-FEET T. ESRI WORLD IMAGERY / ARCGIS MAP SERVICE: HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY, 4-FEET ACCESSED 7/26/2024 **DEVON ENERGY CORPORATION** REMEDIATION CLOSURE REPORT NOTE IMAGERY FROM 3/27/2022, SHOWING CURRENT LAYOUT OF SEAWOLF 1 12 WELL PAD. AND RECLAMATION CLOSURE REPORT SEAWOLF 1 12 FEDERAL 91H Civil & Environmental Consultants, Inc. LEA COUNTY, NEW MEXICO 700 Cherrington Parkway Moon Township, PA 15108 SCALE IN FEET FINAL SOIL EXCAVATION LIMITS (412) 429-2324 · (800) 365-2324 · fax: (412) 429-2114 www.cecinc.com AND CONFIRMATION SAMPLE LOCATIONS 10 20 40 SML CHECKED BY: LDC | APPROVED BY: RJV* FIGURE NO: DRAWN BY: DATE: 7/26/2024 1"=20' PROJECT NO: 331-072 SCALE:

TABLES

TABLE 1 SUMMARY OF SOIL FIELD SCREENING RESULTS - RELEASE CHARACTERIZATION REMEDIATION CLOSURE REPORT AND RECLMATION REPORT SEAWOLF 1 12 FEDERAL 91H APRIL 29, 2018 RELEASE DEVON ENERGY CORPORATION CEC PROJECT NUMBER: 331-072

Field Screening Parameter Field Site Electrical Volatile Organic **Total Petroleum** Sample ID Sample Date Depth Assessment Conductivity Compounds Hydrocarbons Chloride (mg/kg)² Phase $(mS)^1$ (ppm)³ (ppm)⁴ 0 - 10 0 1.1 164 1-2 2.15 --0 0 SW 91H-1 5/3/2023 5.75 1696 0 19 2-3 3-4 5.75 1560 0 13 3 4-5 4.3 1136 0 0 - 11.5 276 0 24 SW 91H-2 1-2 0.9 0.3 0 5/3/2023 2-3 3.6 984 0 14 0-1 0.4 62 0 0 SW 91H-3 5/3/2023 1-2 0.85 0.3 0 2-3 4 920 0.3 1 0.3 0 52 0 - 1SW 91H-4 5/3/2023 Phase 1 0 1-2 0.4 106 0-1 0.3 0 256 100 SW 91H-5 5/3/2023 1-2 0.65 0 231 --2-3 0.35 302 0 196 0-1 4 654 0 199 SW 91H-6 5/3/2023 1-2 2.51 358 0.1 111 0-1 0.3 0 79 --SW 91H-7 5/3/2023 1-2 1.9 0 129 226 0.3 0 - 1SW 91H-HA1 5/3/2023 2-3 5.0 0.3 0 - 1SW 91H-HA2 5/3/2023 2-3 3.5 0 302 196 SW 91H-BG1 5/3/2023 0 - 10.3 <62 0 114 0.55 0-1 SW 91H-8 6/5/1932 1-2 1.05 0-1 0.75 SW 91H-9 6/5/2023 Phase 2 1-2 1.25 0.2 0 - 1SW 91H-10 6/5/2023

0.45

Notes:

- 1. Soil electrical conductivity collected using a FieldScout Soil Conductivity Probe with automatic temperature compensation.
- 2. Chloride readings collected from Quantab ® titrator strips by creating an aqueous solution of 50 grams of soil to 100 mL of distilled water. For readings collected from 1:2 aqueous solution, actual titrator readings were doubled to calculate the actual chloride concentration.
- 3. Volatile Organic Compounds (VOCs) were measured in the headspace using a photoionization detector.

1-2

- $4.\ Total\ Petroleum\ Hydrocarbons\ (TPH)\ were\ measured\ using\ a\ Dex sil\ PetroFLAG\ meter\ with\ a\ response\ setting\ of\ 5.$
- -- Denotes parameter not anlayzed.

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TABLE 2

SUMMARY OF LABORATORY ANALYTICAL RESULTS - RELEASE CHARACTERIZATION REMEDIATION CLOSURE REPORT AND RECLAMATION REPORT SEAWOLF 1 12 FEDERAL 91H APRIL 29, 2018 RELEASE DEVON ENERGY CORPORATION CEC PROJECT NUMBER: 331-072

				Volatile Organ	ic Compounds	Total l	Petroleu	m Hydrocarb	ons	Anions
Sample ID	Sample Date	Depth (ft- bgs)	Field Assessment Phase	Benzene	Total BTEX ¹ (mg/kg)	TPH (GRO+DRO) ² (mg/kg)		TPH (GRO + DRO + MRO) ³ (mg/kg)		Chloride
		0-1		<0.000391 *+	< 0.00103	33.9	J,F1	33.9	J,F1	263
		1-2		<0.000407 *+	< 0.00107	23	J	23	J	686
SW 91H-1	5/3/2023	2-3		<0.000437 *+	< 0.00115	23.7	J	23.7	J	2,070
		3-4		<0.000419 *+	< 0.0011	20.2	J	20.2	J	2,180
		4-5		<0.00041 *+	0.000617 J	20.6	J	20.6	J	1,430
		0-1		<0.000391 *+	< 0.00103	29.2	J	29.2	J	367
SW 91H-2	5/3/2023	1-2		<0.000398 *+	< 0.00104	15.9	J	15.9	J	254
		2-3		<0.000417 *+	< 0.0011	17	J	17	J	294
		0-1		<0.000392 *+	< 0.00103	36	J	36	J	114
SW 91H-3	5/3/2023	1-2	Phase 1	<0.000401 *+	< 0.00105	18.4	J	18.4	J	363
		2-3	Phase I	<0.000412 *+	0.000655 J	<16.1	J	<16.1	J	1,220
SW 91H-4	5/3/2023	0-1		<0.000432 *+	< 0.00113	43.5	J	43.5	J	115
3W 91H-4	3/3/2023	1-2		<0.00041 *+	< 0.00108	21.9	J	21.9	J	445
SW 91H-5	5/3/2023	0-1		<0.000401 *+	< 0.00105	31.2	J	31.2	J	206
SW 91H-3	3/3/2023	1-2		<0.000403 *+	0.000705 J	41.4	J	41.4	J	135
SW 91H-6	5/3/2023	0-1	1	<0.000402 *+	< 0.00105	15.6	J	15.6	J	1,440
SW 91H-0	3/3/2023	1-2		<0.000411 *+	< 0.00108	<16.1		<16.1		566
SW 91H-7	5/3/2023	0-1	1	<0.000395 *+	< 0.00104	<15.4		<15.4		95
SW 91H-/	3/3/2023	1-2		<0.000409 *+	< 0.00107	16.7	J	16.7	J	418
SW 91H-BG1	5/3/2023	0-1	1	<0.000389 *+	< 0.00102	26.5	J	26.5	J	41.6
CMIOINIO	6/5/2022	0-1		< 0.000493	< 0.00129	24.9	J *-	24.9	J *-	95.6
SW 91H-8	6/5/2023	1-2	1	< 0.000406	< 0.00106	24.9	J *-	24.9	J *-	233
CMIOINE	6/5/2022	0-1	D1 2	< 0.000424	< 0.00111	27.5	J *-	27.5	J *-	174
SW 91H-9	6/5/2023	1-2	Phase 2	< 0.000496	< 0.0013	52.4	J *-	52.4	J *-	236
CW OILL 10	6/5/2022	0-1	1	< 0.000455	< 0.00119	23.1	J *-	23.1	J *-	72.8
SW 91H-10	6/5/2023	1-2	1	< 0.000403	< 0.00106	36.3	J *-	36.3	J *-	213

Notes

- 1. Value is the sum of detected benzene, ethylbenzene, toluene, and total xylenes (BTEX). If no BTEX constituent was detected above the laboratory Method Detection Limit (MDL), the maximum MDL is reported.
- 2. Value is the sum of detected TPH (GRO) and TPH (DRO). If no TPH (GRO) and TPH (DRO) was detected above the laboratory Method Detection Limit (MDL), the maximum MDL is reported.
- 3. Value is the sum of detected TPH (GRO), TPH (DRO) and TPH (MRO). If no TPH (GRO), TPH (DRO) or TPH (MRO) was detected above the laboratory Method Detection Limit (MDL), the maximum MDL is reported

50

1,000

NSE

2,500

100

10,000

600

- 4. Remediation Closure Criteria for soils impacted by a release from Table I of 19.15.29 NMAC. Criteria are based on minimum depth to groundwater between 51 and 100 ft-bgs.
- 5. Reclamation Closure Criteria from Table I of 19.15.29 NMAC. Reclamation Closure Criteria apply to the upper four feet of soil according to 19.15.29.13(D)(1) NMAC.

ft-bgs - Feet below ground surface.

NSE - Denotes no standard established.

 $\,$ mg/kg - Denotes milligram per kilogram.

Remediation Closure Criteria 4

Reclamation Closure Criteria 5

Bolded values were detected above the laboratory Reporting Limit (RL).

Denotes analyte exceeded Reclamation Closure Criteria.

Denotes analyte exceeded Remediation and Reclamation Closure Criteria.

Qualifier Definitions

- < Denotes analyte not detected above laboratory Method Detection Limit (MDL).
- $*+\ LCS$ and/or LCSD is outside acceptance limits, high biased.
- *- LCS and/or LCSD is outside acceptance limits, low biased.
- F1 MS and/or MSD recovery exceeds control limits.
- J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

TABLE 3 SUMMARY OF SOIL FIELD SCREENING RESULTS - RECLAMATION ACTIONS REMEDIATION CLOSURE REPORT AND RECLAMATION REPORT SEAWOLF 1 12 FEDERAL 91H APRIL 29, 2018 RELEASE DEVON ENERGY CORPORATION

CEC PROJECT NUMBER: 331-072

			Field Site		Field Screeni	ng Parameter	
Sample ID	Sample Date	Depth	Assessment Phase	Soil EC ¹ (mS/cm)	Chloride ² (mg/kg)	VOCs ³ (ppm)	TPH⁴ (ppm)
SW 91H-Sidewall 1	2/1/2024	0-3	Confirmation	732			
SW 91H-Sidewall 2	2/1/2024	0-3	Confirmation	1100	-		
SW 91H-Sidewall 3	2/1/2024	0-4	Confirmation	623			
SW 91H-Bottom 1	2/1/2024	3	Confirmation	488			
SW 91H-Bottom 2	2/1/2024	4	Confirmation	1190			
SW 91H-Bottom 3	2/1/2024	4	Confirmation	1298			
SW 91H-Bottom 4	2/1/2024	3	Confirmation	1310			
SW 91H-Bottom 5	2/1/2024	4	Confirmation	1366			
SW 91H-Bottom 6	2/1/2024	4	Confirmation	1390	-		
SW 91H-Bottom 7	2/1/2024	2	Confirmation	999	-		
SW 91H-Bottom 8	2/1/2024	3	Confirmation	618			
SW 91H-Bottom 9	2/1/2024	2	Confirmation	996	-		
Backfill Sample 1	2/21/2024	N/A	Confirmation	53	-		
Backfill Sample 2	2/21/2024	N/A	Confirmation	151			
Backfill Sample 3	2/21/2024	N/A	Confirmation	288	-		
Backfill Sample 4	2/21/2024	N/A	Confirmation	180			

Notes:

- 1. Soil electrical conductivity collected using a Field Scout Soil Conductivity Probe with automatic temperature compensation.
- 2. Chloride readings collected from Quantab ® titrator strips by creating an aqueous solution of 50 grams of soil to 100 mL of distilled water. For readings collected from 1:2 aqueous solution, actual titrator readings were doubled to calculate the actual chloride concentration.
- 3. Volatile Organic Compounds (VOCs) were measured in the headspace using a photoionization detector.
- 4. Total Petroleum Hydrocarbons (TPH) were measured using a Dexsil PetroFLAG meter with a response setting of 5.
- -- Denotes parameter not anlayzed.

Received by OCD: 8/20/2024 11:46:00 AM

TABLE 4

SUMMARY OF LABORATORY ANALYTICAL RESULTS - SOIL CONFIRMATION SAMPLING REMEDIATION CLOSURE REPORT AND RECLAMATION REPORT SEAWOLF 1 12 FEDERAL 91H APRIL 29, 2018 RELEASE DEVON ENERGY CORPORATION CEC PROJECT NUMBER: 331-072

			Volatile Orga	nic Compounds	Total Petroleum	Anions	
Sample ID	Sample Date	Depth (ft bgs))	Benzene (mg/kg)	Total BTEX ¹ (mg/kg)	TPH (GRO+DRO) ² (mg/kg)	TPH (GRO + DRO + MRO) ³ (mg/kg)	Chloride (mg/kg)
SW 91H-Sidewall 1	2/1/2024	0-3	0.00116 J	0.00116 J	55.3 J, B	55.3 J, B	202
SW 91H-Sidewall 2	2/1/2024	0-3	< 0.000499	< 0.00131	51.1 J, B	51.1 J, B	187
SW 91H-Sidewall 3	2/1/2024	0-4	<0.000482 *-	< 0.00126	57.9 J, B	57.9 J, B	335
SW 91H-Bottom 1	2/1/2024	3	< 0.000504	< 0.00132	28.4 J	28.4 J	199
SW 91H-Bottom 2	2/1/2024	4	< 0.00053	< 0.00139	52.2 J, B	52.2 J, B	354
SW 91H-Bottom 3	2/1/2024	4	< 0.000547	< 0.00143	64 J, B	64 J, B	219
SW 91H-Bottom 4	2/1/2024	3	< 0.000442	< 0.00116	46.7 J, B	46.7 J, B	356
SW 91H-Bottom 5	2/1/2024	4	< 0.00056	< 0.00147	74.9 J, B	74.9 J, B	432
SW 91H-Bottom 6	2/1/2024	4	< 0.000482	< 0.00126	60 J, B	60 J, B	301
SW 91H-Bottom 7	2/1/2024	2	< 0.000494	< 0.0013	60.6 J, B	60.6 J, B	159
SW 91H-Bottom 8	2/1/2024	3	< 0.000492	0.000839 J	66.1 J, B	66.1 J, B	104
SW 91H-Bottom 9	2/1/2024	2	< 0.000548	0.00126 J	70.5 J, B	70.5 J, B	224
Remediation Closure Crit	Remediation Closure Criteria ⁴			50	1,000	2,500	10,000
Reclamation Closure Crite	eria ⁵		10	50	NSE	100	600

Notes:

- 1. Value is the sum of detected benzene, ethylbenzene, toluene, and total xylenes (BTEX). If no BTEX constituent was detected above the laboratory Method Detection Limit (MDL), the maximum MDL is reported.
- 2. Value is the sum of detected TPH (GRO) and TPH (DRO). If no TPH (GRO) and TPH (DRO) was detected above the laboratory Method Detection Limit (MDL), the maximum MDL is reported.
- 3. Value is the sum of detected TPH (GRO), TPH (DRO) and TPH (MRO). If no TPH (GRO), TPH (DRO) or TPH (MRO) was detected above the laboratory Method Detection Limit (MDL), the maximum MDL is reported.
- 4. Remediation Closure Criteria for soils impacted by a release from Table I of 19.15.29 NMAC. Criteria are based on minimum depth to groundwater between 51 and 100 ft-bgs.
- 5. Reclamation Closure Criteria from Table I of 19.15.29 NMAC. Reclamation Closure Criteria apply to the upper four feet of soil according to 19.15.29.13(D)(1) NMAC.

ft-bgs - Feet below ground surface.

 $\ensuremath{\mathsf{NSE}}$ - No standard established.

mg/kg - Milligrams per kilogram.

Bolded values were detected above the laboratory Reporting Limit (RL).

- Denotes analyte exceeded Reclamation Closure Criteria.
- Denotes analyte exceeded Remediation and Reclamation Closure Criteria.

Qualifier Definitions

- < Analyte not detected above laboratory Method Detection Limit (MDL).
- *- LCS and/or LCSD is outside acceptance limits, low biased.
- B Compound was found in the blank and sample.
- J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.



Page 18 of 202

APPENDIX A

RELEASE NOTIFICATION AND OCD RESPONSE

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

Form C-141 Revised April 3, 2017

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe. NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

					iiita 1 C	, INIVI 0/J	003						
Release Notification and Corrective Action													
						OPERATOR							
							Contact: Stephen Richards, Completions Foreman						
Address: PO Box 250, Artesia, NM 88211							Telephone No. (575)252-3717						
Facility Nar	ne: Seawo	lf 1 12 Feder	ral 91H			Facility Typ	e: Oil						
Surface Ow	ner: Feder	al		Mineral C)wner:]	Federal			API No	. 30-025-4	3768		
				LOCA	TIO	OF REI	FASE						
Unit Letter	Section	Township	Range	Feet from the		South Line	Feet from the	East/W	est Line	County	-		
D		-						Duou III	COL LINC	County			
D	1	26S	33E					L		Lea			
	I	_atitude3	2.079227	N	Lor	igitude10	03.532492 W		N	IAD83			
				NAT	URE	OF REL	EASE						
Type of Relea	ase: Produce	ed Water					Release: 10 bbls		Volume F	Recovered: ()		
Source of Re	lease: Frac t	ank overflow					lour of Occurrence			Hour of Dis		:	
Was Immedia	ate Notice C	iven?				4/29/18, 1 If YES, To	1:30 PM MST		4/29/18,	11:30 PM M	IST		
			Yes [No Not Re	equired	N/A	Whom:						
By Whom? N	J/A					Date and H	Iour N/A						
Was a Watero	course Reac		5			If YES, Volume Impacting the Watercourse.							
		لا	Yes 🗵	No		N/A DECEMEN							
If a Watercou	irse was Imp	pacted, Descri	ibe Fully.	k			RECEIV	ED-					
N/A							By Olivia	Yu at	10:23	am, M	av 1	4, 2018	
Describe Cau	se of Proble	em and Remed	dial Action	n Taken *	-							<u> </u>	
A contractor	failed to shu	it down the w	ater transf	er pump at the Icl	nabod Fi	esh Water po	ond. The employe	ee on loca	tion did n	ot verify tha	at wate	r was shut off	
and the tanks	ran over. U	Jpon discover	y the pum	ps were immediat	tely shut	down.				,			
Describe Are	a Affected a	ind Cleanup A	Action Tak	cen.*									
Approximate	ly 10 barrels	s of produced	water ran	over the tanks an	d was re	leased to the	pad surface. No p	oroduced v	water was	recovered.	All re	leased fluids	
stayed on the	well pad lo	cation. An en	vironmen	tal contractor will	be cont	acted to assis	t with delineation	and reme	ediation e	fforts.			
I hereby certi	fy that the in	nformation gi	ven above	is true and comp	lete to th	e best of my	knowledge and u	nderstand	l that purs	uant to NM	OCD r	ules and	
regulations al	l operators	are required to	o report ar	nd/or file certain re	elease no	otifications ar	nd perform correct	tive actio	ns for rele	eases which	may er	ndanger	
should their o	or the envir	onment. The	acceptance	ce of a C-141 report investigate and re	ort by the	NMOCD m	arked as "Final Re	eport" do	es not reli	eve the oper	rator of	f liability	
or the enviror	nment. In a	ddition, NMO	CD accep	tance of a C-141	report de	oes not reliev	e the operator of i	responsib	ility for co	, surface wa	vith an	man nearm v other	
federal, state,	or local lav	vs and/or regu	lations.									· · · · · · · · · · · · · · · · · · ·	
							OIL CON	SERVA	ATION	DIVISIO	<u>N</u>		
Signature:	N .	11											
Signature:	Denise J	Menoud				Approved by	Environmental S ₁	pecialist:	U	4			
Printed Name	: Denise M	enoud								U			
			-				E/14/2010						
Title: Admin	Field Suppo	ort		· · · · ·		Approval Dat	e: 5/14/2018	Ex	epiration 1	Date:	-		
E-mail Addre	ss: denise.n	nenoud@dvn.	com			Conditions of	Approval:				_/		
Dots: 5/11/6	2010	DI. /-	75\744 -	- 4 4			ned directive	•		Attached			
Date: 5/11/2 Attach Addit		Phone: (5	75)746-5	544	Ľ								
A MUNITARIUM	Tollar Shee	12 11 14CC288	aı y		F-	1RP-505	7 nOY1	81343	7455	71			

pOY1813437677

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _5/11/2018_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-5057__ has been assigned. Please refer to this case number in all future correspondence.

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

The responsible person shall complete <u>division-approved corrective action</u> for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District _1_ office in __Hobbs____ on or before _6/14/2018_. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

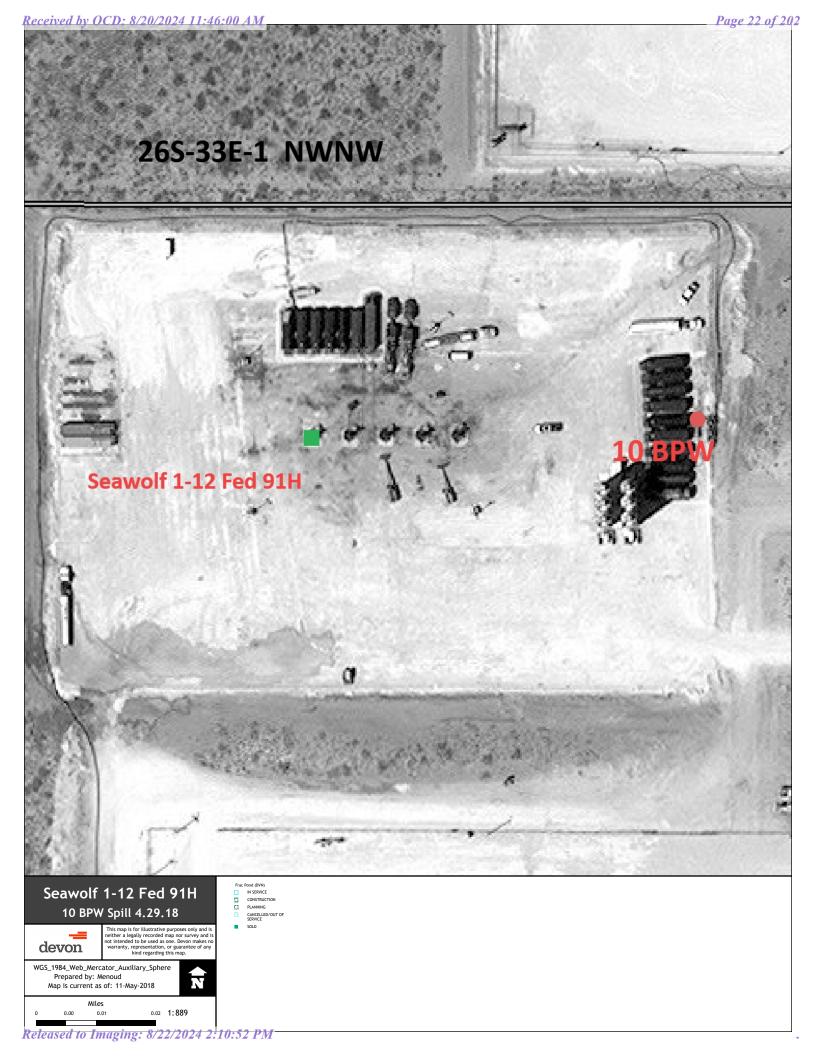
for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- •Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.
- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.
- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold

OCD Environmental Bureau Chief 1220 South St. Francis Drive Santa Fe, New Mexico 87505 505-476-3465 jim.griswold@state.nm.us



APPENDIX B

SENSITIVE RECEPTOR MAP

Seawolf 1 12 Federal 91H Well Pad C-4628 Temporary Well Location Approximate Point of Release LEGEND APPROXIMATE POINT OF RELEASE TEMPORARY WELL LOCATION NHD STREAM Miles NWI WETLAND SEAWOLF 1 12 91H WELL PAD **DEVON ENERGY CORPORATION REFERENCES** REMEDIATION CLOSURE REPORT ESRI WORLD IMAGERY / ARCGIS MAP SERVICE:
<LINK>HTTP://GOTO.ARCGISONLINE.COM/MAPS/WORLD_IMAGERY,</LINK>
ACCESSED 7/26/2024. AND RECLAMATION CLOSURE REPORT SEAWOLF 1 12 FEDERAL 91H Civil & Environmental Consultants, Inc. LEA COUNTY, NEW MEXICO NHD FLOWLINES NEW MEXICO, U.S. GEOLOGICAL SERVICE, NATIONAL HYDROGRAPHY DATASET (NHD) 700 Cherrington Parkway Moon Township, PA 15108 (412) 429-2324 · (800) 365-2324 · fax: (412) 429-2114 SENSITIVE RECEPTOR MAP FLOWLINES FOR NEW MEXICO, 2022. www.cecinc.com U.S. FISH & WILDLIFE SERVICE, NATIONAL WETLANDS INVENTORY (NWI) DATABASE FOR NEW MEXICO, 2021. JLR | CHECKED BY: LDC | APPROVED BY: RJV* FIGURE NO: DRAWN BY: **B-1** DATE: 7/26/2024 1"=1 mile PROJECT NO: 331-072 SCALE: 'Hand signature on file

APPENDIX C TEMPORARY WELL C-4626 RECORDS



2904 W 2nd St. Roswell, NM 88201 voice: 575.624.2420 fax: 575.624.2421 www.atkinseng.com

June 8, 2022

DII-NMOSE 1900 W 2nd Street Roswell, NM 88201

Hand Delivered to the DII Office of the State Engineer

Re: Well Record C-4628 Pod1at Seawolf 1-12 CTB 1

To whom it may concern:

Attached please find a well log & record and a plugging record, in duplicate, for a one (1) soil borings, C-4628 Pod1.

If you have any questions, please contact me at 575.499.9244 or lucas@atkinseng.com.

Sincerely,

Lucas Middleton

Enclosures: as noted above

Groon Middle



WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

NO	OSE POD NO POD 1 (TV		0.)		WELL TAG ID NO N/A	D .		OSE FILE NO(C-4628	S).				
OCATI	WELL OWNE Devon Ene		8)	PHONE (OPTI 575-748-183	•								
WELL L	WELL OWNE 6488 7 Riv							CITY Artesia			state NM	88210	ZIP
GENERAL AND WELL LOCATION	WELL LOCATIO	N LA	DI	egrees minutes seconds 32 4 46.64 N			* ACCURACY REQUIRED: ONE TENTH OF A SECOND						
VERA	(FROM GP	s) L(ONGITUDE	103 31 34.28 W * DATUM REQUI					QUIRED: WG	S 84			
1. GE	DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHJIP, RANGE) WHERE AVAILABLE NW NW NE Sec. 1 T26S R33S NMPM												
	LICENSE NO 124		NAME OF LICENSED		Jackie D. Atkins	s				WELL DRILI tkins Engin		/PANY ssociates, I	nc.
	DRILLING ST		DRILLING ENDED 6/9/2022		OMPLETED WELL (I	FT)		LE DEPTH (FT) ±55	DEPTH W.	ATER FIRST	ENCOUN N/A	TERED (FT)	
Z	COMPLETED WELL IS: ARTESIAN ORY HOLE SHALLOW (UNCONFINED)										DA	TE STATIC 1 6/13/2	
VIIO	DRILLING FLUID: AIR MUD ADDITIVES - SPECIFY: DRILLING FLUID: ROTARY HAMMER CARLETOOL OTHER - SPECIFY: Hollow Stem Auger CHECK HERE IF PITLESS ADAPTER IS												
)RM	DRILLING METHOD: ROTARY HAMMER CABLE TOOL OTHER - SPECIFY:								Auger	CHECK H INSTALLI	ERE IF PI ED	TLESS ADAF	TER IS
INFC	DEPTH (feet bgl) BORE HOLE			CASING	I LIKALIE I			ASING	CASI	NG	CASING	ASING WALL SLOTHICKNESS SIZE	
2. DRILLING & CASING INFORMATION	FROM	ТО	DIAM (inches)		each casing string sections of screen		CONNECTION TYPE (add coupling diameter)		INSIDE DIAM. (inches)			THICKNESS (inches)	
& C	0	55	±6.5		Boring-HSA								
ING													
RIL													
2. D													
			-	-									
			-										
	DEPTH	(feet bgl)	BORE HOLE	L	IST ANNULAR S	SEAL MA	TERIAL A	AND	AM	OUNT		METHO	D OF
[AL	FROM	то	DIAM. (inches)	GRA	VEL PACK SIZE	E-RANGI	BY INTE	RVAL	(cut	oic feet)		PLACEM	
ANNULAR MATERIAL													
MA													
LAR				-									
									-		_		
3. AD				1							_		
67				<u> </u>									
E∪D	OSE INTER	NAT TIO	F.	-				WR_?	0 WELL RI	ECORD &	LOG (V	ersion 01/2	8/2022)
	NO.	TAL USI			POD N	O.		TRN					
LOC	ATION							WELL TAG I	D NO.	e e/ 11 / 2	m mana	PAGE	1 OF 2
							-		LUBE LV	1 151 150 1	D /37/	/ PM /	

	DEPTH (f	feet bgl)		COT OP ANT	D TYPE OF MATERIAL E	ACOUNTERED -		WATER	ESTIMATED
	THICKNESS INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES							BEARING?	YIELD FOR WATER-
	FROM	ТО	(feet)	(attach sup	plemental sheets to fully de	escribe all units)		(YES / NO)	BEARING ZONES (gpm)
	0	4	4	Sand, Fine-grained	l, poorly graded, unconsolida	ated 7.5 YR 5/4, Brow	n	Y √N	
	4	14	10	Sand, Fine-grained,	Y ✓N				
	14	19	5	Y ✓N					
	19	55	36	y √n					
			Y N						
3								Y N	
4. HYDROGEOLOGIC LOG OF WELL								Y N	
Q.								Y N	
8								Y N	
ည္က								Y N	
8								Y N	
98								Y N	
Š.								Y N	
								Y N	
4								Y N	
								Y N	
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	*							Y N	
								Y N	
								Y N	
								Y N	
	METHOD U	SED TO ES	TIMATE YIELD	OF WATER-BEARING	G STRATA:		тот	AL ESTIMATED	
	PUMI	P A	IR LIFT	BAILER OT	HER - SPECIFY:		WEI	L YIELD (gpm):	0.00
NO.	WELL TES	T TEST	RESULTS - ATT T TIME, END TI	ACH A COPY OF DAT ME, AND A TABLE SH	'A COLLECTED DURING ' HOWING DISCHARGE AN	WELL TESTING, IN D DRAWDOWN OV	CLUDI ER TH	NG DISCHARGE N E TESTING PERIO	ИЕТНОD, D.
RVISION	MISCELLA	NEOUS IN	ORMATION: T	emporary well materia	al removed and soil boring	hackfilled using d	rill cut	tinos from total de	onth to ten feet
PER			be	elow ground surface(b	gs), then hydrated benton	ite chips ten feet bg	s to su	rface.	par to ten not
TEST; RIG SUPE			27 Se	awolf 1-12 CTB 1					
X									
EST	PRINT NAN	(E(S) OF D	RILL RIG SUPER	VISOR(S) THAT PRO	VIDED ONSITE SUPERVI	SION OF WELL CON	ISTRU	CTION OTHER TH	AN LICENSEE:
S. T.	Shane Eldri			(1,001(0) 111111 1110					
	Shane Eldin	ugo, Camo	ion i runt			112			
URE	CORRECT	RECORD O	F THE ABOVE I	DESCRIBED HOLE AN	EST OF HIS OR HER KNO ID THAT HE OR SHE WIL PLETION OF WELL DRILL	L FILE THIS WELL	LIEF, T RECOR	HE FOREGOING IS RD WITH THE STA	S A TRUE AND ATE ENGINEER
6. SIGNATURE	Jack A	Atkins		Jac	ckie D. Atkins			6/16/2022	
قَعَ		SIGNAT	URE OF DRILLE	ER / PRINT SIGNEE	NAME	-8 -8		DATE	
						117D 44 17		CORD A LOCA	nin- 01 00 0000
	R OSE INTER .E NO.	NAL USE			POD NO.	TRN NO.	SLL KE	CORD & LOG (Ver	S10ft U1/28/2U22)
-	CATION				1357.3.	WELL TAG ID NO.			PAGE 2 OF 2
							~ Ott	99 July 1 mg	



PLUGGING RECORD



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

-	NERAL / WELL OWNERSHIP:
Well	Ingineer Well Number: C-4628 wner: Devon Energy Phone No.: 575-748-1838
Mail	g address: 6488 7 Rivers Hwy
City:	Artesia State: New Mexico Zip code: 88210
rr v	FIT DITICONC INFODMATION.
1)	ELL PLUGGING INFORMATION: Name of well drilling company that plugged well: Jackie D. Atkins (Atkins Engineering Associates Inc.)
2)	New Mexico Well Driller License No.: 1249 Expiration Date: 04/30/23
3)	Well plugging activities were supervised by the following well driller(s)/rig supervisor(s):Shane Eldridge, Cameron Pruitt
4)	Date well plugging began: 6/13/2022 Date well plugging concluded: 6/13/2022
5)	GPS Well Location: Latitude: 32 deg, 4 min, 46.64 sec Longitude: 103 deg, 31 min, 34.28 sec, WGS 84
6)	Depth of well confirmed at initiation of plugging as:55 ft below ground level (bgl), by the following manner: water level probe
7)	Static water level measured at initiation of plugging:n/a ft bgl
8)	Date well plugging plan of operations was approved by the State Engineer:
9)	Were all plugging activities consistent with an approved plugging plan?Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

Version: September 8, 2009 Page 1 of 2 10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

O-10' Hydrated Bentonite Approx. 15 gallons 15 gallons Augers	
<u> </u>	
10'-55' Drill Cuttings Approx. 71 gallons 71 gallons Boring	
MULTIPLY BY AND OBTAIN cubic feet x 7.4805 = gallons cubic yards x 201.97 = gallons	

III. SIGNATURE:

J Jackie D. Atkins	that I am familiar with the rules of the Office of the State	
ı,, süy	and all of the statements in this Plugging Record and attachments	
0 . 0 . 00 .	id an of the statements in this I rugging Record and attachments	
are true to the best of my knowledge and belief.	theire a	
July XIO		
V	6/16/2022	
	Signature of Well Driller Date	56

Version: September 8, 2009 Page 2 of 2

WR-20 Well Record and Log_2022-01-28-forsig

n

Final Audit Report

2022-06-16

Created:

2022-06-16

By:

Lucas Middleton (lucas@atkinseng.com)

Status:

Signed

Transaction ID:

CBJCHBCAABAA5h_Mq_hHlnyQhNmN3hkX09Fm6A5MlLxW

"WR-20 Well Record and Log_2022-01-28-forsign" History

- Document created by Lucas Middleton (lucas@atkinseng.com) 2022-06-16 4:59:31 PM GMT- IP address: 24.49.110.136
- Document emailed to Jack Atkins (jack@atkinseng.com) for signature 2022-06-16 5:00:16 PM GMT
- Email viewed by Jack Atkins (jack@atkinseng.com) 2022-06-16 5:04:06 PM GMT- IP address: 64.90.153.232
- Document e-signed by Jack Atkins (jack@atkinseng.com)

 Signature Date: 2022-06-16 5:05:04 PM GMT Time Source: server- IP address: 64.90.153.232
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DSE OIT JUN 16 2022 PM2120

APPENDIX D

NMOCD CORRESPONDENCE

From: Buchanan, Michael, EMNRD

To: <u>Campbell, Laura</u>; <u>Enviro, OCD, EMNRD</u>

Cc: <u>Bratcher, Michael, EMNRD</u>

Subject: RE: [EXTERNAL] RE: Devon Energy Seawolf 1 12 Fed 81H/91H (nOY1802255736 / nOY1813437455) - 48 Hour

Notification

Date: Friday, June 2, 2023 4:33:03 PM

Attachments: image001.ipq image002.png

http://www.emnrd.nm.gov/ocd

Received.

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.

Mike Buchanan • Environmental Specialist

Environmental Bureau
EMNRD - Oil Conservation Division
8801 Horizon Blvd. NE | Albuquerque, NM 87113
| michael.buchanan@emnrd.nm.gov



From: Campbell, Laura <lcampbell@cecinc.com>

Sent: Thursday, June 1, 2023 3:05 PM

To: Enviro, OCD, EMNRD < OCD. Enviro@emnrd.nm.gov>

Cc: Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>; Nobui, Jennifer, EMNRD

<Jennifer.Nobui@emnrd.nm.gov>

Subject: RE: [EXTERNAL] RE: Devon Energy Seawolf 1 12 Fed 81H/91H (nOY1802255736 /

nOY1813437455) - 48 Hour Notification

Hello,

CEC will be collecting additional site characterization samples from the two spills referenced above on Tuesday, June 6. We plan to be onsite around 8am.

Thanks,

Laura

Laura D. Campbell | Project Manager

Civil & Environmental Consultants, Inc. 700 Cherrington Parkway, Moon Township, PA 15108 direct 412.249.1547 office 412.429.2324 mobile 412.584.7176 www.cecinc.com



From: Enviro, OCD, EMNRD < OCD.Enviro@emnrd.nm.gov>

Sent: Friday, April 28, 2023 4:36 PM

To: Campbell, Laura < lcampbell@cecinc.com>

Cc: Bratcher, Michael, EMNRD < <u>mike.bratcher@emnrd.nm.gov</u>>; Nobui, Jennifer, EMNRD

<Jennifer.Nobui@emnrd.nm.gov>

Subject: RE: [EXTERNAL] RE: Devon Energy Seawolf 1 12 Fed 81H/91H (nOY1802255736 /

nOY1813437455) - 48 Hour Notification

Laura,

Please be aware that notification requirements are **two business days**, per rule. You may proceed on your schedule. This, and all correspondence, should be included in the closure report to insure inclusion in the project file.

JH

Jocelyn Harimon • Environmental Specialist

Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | <u>Jocelyn.Harimon@emnrd.nm.gov</u>

http://www.emnrd.nm.gov



From: Campbell, Laura < lcampbell@cecinc.com>

Sent: Friday, April 28, 2023 1:27 PM

To: Enviro, OCD, EMNRD < OCD. Enviro@emnrd.nm.gov >

Cc: Valli, Bo < bvalli@cecinc.com>

Subject: [EXTERNAL] RE: Devon Energy Seawolf 1 12 Fed 81H/91H (nOY1802255736 /

nOY1813437455) - 48 Hour Notification

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

Good afternoon.

On behalf of Devon Energy, CEC will be conducting sampling at the site referenced above (two releases on the same site) on Tuesday, May 2. The sampling is primarily intended for site assessment/characterization, but notification is being provided in the event that no remediation is

required and the samples are submitted as part of the closure report.

Please let me know if you any questions. Thank you, Laura

Laura D. Campbell | Project Manager Civil & Environmental Consultants, Inc. 700 Cherrington Parkway, Moon Township, PA 15108 direct 412.249.1547 office 412.429.2324 mobile 412.584.7176 www.cecinc.com



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APPENDIX E

SOPS FOR FIELD SCREENING

06-03-02 FIELD CHLORIDE CONCENTRATION SCREENING IN SOIL SAMPLES

I. SCOPE AND APPLICABILITY: This procedure is used for estimation of chloride concentrations in soil samples.

II. PROJECT-SPECIFIC REQUIREMENTS

- A. SAMPLES TO BE SCREENED: Screening locations are described in the SQAPP.
- **B. MONITORING INSTRUMENTS:** Screening will be conducted using Quantab® chloride titrators (or equivalent).
- C. OTHER REQUIREMENTS: None

III. METHODOLOGY

- A. Place split soil sample in a stainless steel mixing bowl, remove rock fragments and organic material and completely homogenize with a stainless steel spoon.
- B. Using a portable battery operated scale, weigh 50 grams of soil and place into a plastic or glass container. Using a graduated cylinder, add distilled water to the container and shake for one minute or longer. In order to simplify the math, it is customary to add distilled water in quantities of either 50 mL (equivalent to 1 to 1 weight ratio of water to soil), 100 mL (equivalent to 2 to 1 weight ratio of water to soil), or 150 mL (equivalent to 3 to 1 weight ratio of water to soil). In highly cohesive soil, shaking may not completely disaggregate the soil. In this case, a gloved hand can be used to break up the soil to release the chloride from the soil provided that none of the soil and distilled water mixture splashes out of the container or is removed by cohesion to the glove. Once the soil is disaggregated, allow the sample mixture to settle so that heavy particles drop out.
- C. Insert the lower end of a low-range chloride Quantab® titrator (or equivalent) in the aqueous solution that contains the disaggregated soil. The reaction is complete when the moisture sensitive yellow band across the top of the titrator turns dark. The length of the white chloride column on the strip represents the titrator unit value. If the white chloride column reaches the top of the strip, the chloride concentration in the solution exceeds the low-range titrator. If this exceedance occurs, use a high-range titrator strip.
- D. Convert the unit value read on the titrator to chloride concentration in water in milligrams/Liter (mg/L) using the table provided on the titrator bottle. Multiply the chloride concentration in mg/L obtained from the table by the appropriate factor of 1, 2 or 3 based on the weight ratio of water to soil used in Section B. to calculate the chloride concentration in soil in milligrams per kilogram (mg/kg). Note that the soil chloride concentration calculated using this method is based on wet weight whereas laboratories typically report chloride concentrations in dry weight. The wet weight result is typically satisfactory for field screening. The wet weight soil chloride concentration reported using this method can be converted to a dry weight if the percent moisture content of the original soil sample is known. Simply multiply the calculated wet weight chloride result arrived at using this method by 1 + moisture content of the original soil sample.
- E. Using the remaining aqueous solution, collect field parameter measurements including total dissolved solids (TDS) and specific conductance.

06-03-02 Page 1 3/13

IV. PRECAUTIONS AND COMMON PROBLEMS

- A. If laboratory analysis is to be performed, the material submitted for laboratory analysis should be similar to the sample selected for field chloride screening.
- B. Turbid solutions will clog the capillary pores of the titrator and cause very slow or incomplete reactions.
- C. Each Quantab® lot is calibrated independently. The chloride concentration table on the bottle from which the strip was removed must be used as values may differ from those of other bottles.
- D. Dropping the titrator strip to the bottom of the container when taking readings should be avoided because the sediment on the bottom of the container often clogs the strip. It is customary to suspend the titrator strip off of the bottom of the container using a clothes pin or similar clipping device.
- V. DOCUMENTATION: Record the readings on the Field Screening Log.
- VI. REFERENCES: None.

06-03-02 Page 2 3/13

06-03-01 ORGANIC VAPORS IN HEADSPACE OVER SOIL

I. SCOPE AND APPLICABILITY: This procedure is used to obtain field measurements of VOCs in the headspace above a soil sample.

II. PROJECT-SPECIFIC REQUIREMENTS

- **A. SAMPLES TO BE SCREENED:** Screening locations are described in the SI-QAPP.
- **B. MONITORING INSTRUMENTS:** Screening will be conducted using a photoionization detector (PID) with a 10.6 eV lamp.
- **C. OTHER REQUIREMENTS:** PID is to be calibrated daily in the field with proper documentation. calibration records will be maintained on the daily field activity log.

III. METHODOLOGY

- A. Use the non-viable split when performing field screening.
- B. Break up cohesive samples inside the ziplock bag to expose additional surface area.
- C. Allow to stand for at least 15 minutes. If temperatures are below 40 F, keep the samples in a warm place. Do not leave the samples in direct sunlight during hot weather.
- D. To take the headspace reading, open the seal just enough to insert a probe, slip the probe in, and record the initial reading.

IV. PRECAUTIONS AND COMMON PROBLEMS

- A. This screening does not replace any monitoring required by the Site Health and Safety Plan.
- B. Do not expose samples to extreme temperatures.
- V. **DOCUMENTATION:** Record the results of field screening along with ambient conditions on the Field Screening Log.
- VI. REFERENCES: None.

06-03-01 Page 1 11/95

06-03-02 FIELD CHLORIDE CONCENTRATION SCREENING IN SOIL

I. SCOPE AND APPLICABILITY: This procedure is used for estimation of chloride concentrations on aqueous extracts prepared from soil samples.

II. PROJECT-SPECIFIC REQUIREMENTS

- A. SAMPLES TO BE SCREENED: Screening locations are described in the SQAPP.
- **B. MONITORING INSTRUMENTS:** Screening will be conducted using Quantab® chloride titrators (or equivalent).
- C. OTHER REQUIREMENTS: None

III. METHODOLOGY FOR WATER

- A. Place the water sample into a container.
- B. Insert the lower end of a low-range chloride Quantab® titrator (or equivalent) in the aqueous solution. The reaction is complete when the moisture sensitive yellow band across the top of the titrator turns dark. The length of the white chloride column on the strip represents the titrator unit value. If the white chloride column reaches the top of the strip, the chloride concentration in the solution exceeds the low-range titrator. If this exceedance occurs, use a high-range titrator strip.
- C. Convert the unit value read on the titrator to chloride concentration in milligrams/Liter (mg/L) using the table provided on the titrator bottle.

IV. METHODOLOGY FOR SOIL

- A. Place split soil sample in a stainless steel mixing bowl, remove rock fragments and organic material and completely homogenize with a stainless steel spoon.
- B. Using a portable battery operated scale, weigh 50 grams of soil and place into a plastic or glass container. Using a graduated cylinder, add 100 milliliters (mL) of distilled water to the container and shake for one minute or longer. Allow the sample mixture to settle so that heavy particles drop out.
- C. Insert the lower end of a low-range chloride Quantab® titrator (or equivalent) in the aqueous solution. The reaction is complete when the moisture sensitive yellow band across the top of the titrator turns dark. The length of the white chloride column on the strip represents the titrator unit value. If the white chloride column reaches the top of the strip, the chloride concentration in the solution exceeds the low-range titrator. If this exceedance occurs, use a high-range titrator strip.
- D. Convert the unit value read on the titrator to chloride concentration in milligrams/Liter (mg/L) using the table provided on the titrator bottle. Multiply the chloride concentration in mg/L obtained from the table by two (2) to calculate the chloride concentration in soil in milligrams per kilogram (mg/kg).
- E. Using the remaining aqueous solution, collect field parameter measurements including total dissolved solids (TDS) and specific conductance.

06-03-02 Page 1 3/13

V. PRECAUTIONS AND COMMON PROBLEMS

- A. If laboratory analysis is to be performed, the material submitted for laboratory analysis should be similar to the sample selected for field chloride screening.
- B. Turbid solutions will clog the capillary pores of the titrator and cause very slow or incomplete reactions.
- C. Each Quantab® lot is calibrated independently. The chloride concentration table on the bottle from which the strip was removed must be used as values may differ from those of other bottles.
- VI. DOCUMENTATION: Record the readings on the Field Screening Log.
- VI. REFERENCES: None.

Table of Contents

Introduction to the PetroFLAG Hydrocarbon Analysis System	3
Using the PetroFLAG System	5
Choosing the Correct Response Factor	5
Analyzing High Concentration Samples	6
Converting Response Factors for Data Already Collected	6
Temperature Effects on Measurements	6
Effects of Soil Water Content on PetroFLAG Result	7
Sample Preparation	8
Calibration	8
Preparing Blanks and Standards	8
QA/QC	8
The PetroFLAG Test Procedure	10
Analyzer Operation	11
Selecting a Calibration Curve	11
Reading the Blank and Standard	12
Taking a Reading	12
Power Requirement	12
Analyzer Operation Examples	13
Standard Operation	13
Standard Operation - Changing Response Factor Without Recalibrating	13
Standard Operation With Recalibration	14
Special Operating Conditions	15
Replacing Battery	15
Operation of the Meter After the Battery Has Been Disconnected	15
Meter Left to Turn Off in Other Mode	15
Helpful Suggestions and Safety Precautions	16
Appendix A: PetroFLAG Response Curves	18
Appendix B: Comparison with Laboratory Methods	19
Appendix C: Determining the Response Factor for Hydrocarbons Not Listed in Table 1	20
Appendix D: Error Conditions	21
Appendix E: Meter Specifications	22
Meter Warranty	23

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Introduction to the PetroFLAG® Hydrocarbon Analysis System

NOTE: PLEASE READ THE ENTIRE MANUAL BEFORE ATTEMPTING TO RUN THIS TEST

The PetroFLAG hydrocarbon analysis system is a broad spectrum field analytical tool suitable for any type of hydrocarbon contamination regardless of the source or state of degradation¹. Unlike other field screening methods, the PetroFLAGsystem does not target specific compounds such as BTEX (Benzene, Toluene, Methylbenzene and Xylene) or PNAs (Poly-Nuclear Aromatics) that may be part of some hydrocarbon mixture. This makes the PetroFLAG system a very versatile analytical method that can be used on most hydrocarbon spills without prior knowledge of the BTEX or PNA content of the contaminant. The PetroFLAG system uses patented chemistry to respond to the broadest range of hydrocarbons possible. The PetroFLAG system is most sensitive to heavier hydrocarbons such as oils and greases and less sensitive to the lighter more volatile hydrocarbon fuels. The specially designed PetroFLAG analyzer allows the user to select, in the field, the response factor that is appropriate for the suspected contaminant at each site. The response factors for a number of contaminants are listed in Table 1. Using the selected response factor, the analyzer compensates for the relative response of each analyte and displays the correct concentration in ppm. The response curves for some typical hydrocarbon contaminants are plotted in Appendix A.

All chemical methods for hydrocarbon analysis in soil that are currently in use, whether they be field screening or laboratory methods, depend on solvent extraction to remove the hydrocarbons from the soil sample. The extraction efficiency for each method is a function of the solvent used and the extraction procedure. This efficiency is also dependent on

many other factors such as the soil type, water content, pH, etc. Many EPA SW-846 methods use chlorinated solvents or Freon as extraction solvents. These solvents were originally chosen for their extraction efficiency of polar organic compounds and may not be appropriate for hydrocarbons. Furthermore, special measures need to be taken with these lab methods when the soil is wet.² The extraction efficiencies may be as low as 1% in some cases.

The extraction solvent used in the PetroFLAG system has been carefully developed to give consistent extraction efficiencies over the range of soil types and conditions most commonly encountered in the field. The PetroFLAG solvent system contains no chlorofluorocarbons or chlorinated solvents. The extraction efficiency is unaffected by soil moisture and, in most cases, is up to 15%(w/w).

Because the PetroFLAG system has such a broad response spectrum, there are situations where it will indicate a higher hydrocarbon concentration than other methods. This can be due to the higher extraction efficiency of the PetroFLAG extraction solution or the broader response range of the detection system. SW-846 method 8015B, for example, targets only a very narrow range of

¹Brake fluid, phosphate ester based hydraulic oil, and other soluble fluids, will not be detected by the PetroFLAG system.

²USEPA SW846 Method 3550A Ultrasonic Extraction Rev 1, November 1992

³Lee, W.E. III, Houchin, C.A. and Albergo, N., "TRPH Discrimination of Petroleum and Nonpetroleum Organic Materials", *American Environmental Lab*, December 1993.

⁴The presence of water will cause a dilution effect resulting in a lower response. This effect can be corrected for, if the water content is known. (For a more complete discussion see "Using the PetroFLAG System: Effects of Soil Water Content on PetroFLAG Result")

hydrocarbons typically in the "Diesel" or "Gasoline" range (DRO or GRO). This method does not detect oils or greases unless the analyst changes the method and specifically looks for the heavier compounds. Requesting 8015B for diesel range hydrocarbons may result in under reporting of the actual total hydrocarbon contamination when oils or greases are present. Method 418.1 is a more general method and detects any Freon extractable compounds that contain a C-H bond. This method has relatively poor extraction efficiencies with many soil types. For a more complete discussion of the comparability of hydrocarbon methods see Appendix B.

Since the PetroFLAG system responds to the full range of hydrocarbons it will also detect some naturally occurring hydrocarbon-like compounds. (Method 418.1 uses a silica column to remove some of these compounds, but will still detect naturally occurring terpenes and creosotes, etc.) Therefore, in situations where high organic content is suspected, background levels outside the spill site should be determined. This will help to identify any naturally occurring sources of hydrocarbons that may cause a positive interference with the test. In cases where there exists a high natural organic background, a "Background Correction" can, in limited circumstances, be used to correct readings for this positive interference. Note: Because of the broad spectrum screening nature of the test, naturally occurring waxes and oils can cause high readings; however, false negatives or under-reported levels are very unlikely.

The PetroFLAG system is a valuable field analytical tool when used as part of a systematic sampling plan. As part of any site work, always have the hydrocarbon contamination characterized at some point during the project by for example, sending confirmation samples for closure to a certified laboratory. Since each laboratory method for petroleum hydrocarbons has a different target analyte and different response characteristics, use only appropriate methods for comparison. Furthermore, since the proficiency of laboratory methods for petroleum hydrocarbons varies from one laboratory to another; it is important to verify that the lab you use is proficient with the method you request. Always ask for QA/QC data and verify that the blanks, duplicates and spikes are within

specification for the method. When using a lab that is new to you, send them proficiency samples of known concentrations and varying water content.

Lab results often contain one or more samples that are designated "ND" (none detected) without a qualifier. This type of reporting is misleading because information on the limit of quantification is not included. The designation "ND" never means zero ppm and should be followed by an indication of the detection limits of the method used to obtain the result, e.g., ND<40 ppm. In many cases the detection limits for a method will vary with sample size, dilution factors or extraction procedures and may not be the same for all samples in the sample batch. The detection limits for some of the common lab TPH methods are on the order of 40-50 ppm. Therefore, when comparing laboratory data it is important to know the realized detection limits implied in any "ND" results.

Using the PetroFLAG System

The PetroFLAG analyzer has been specifically designed to be used with the unique patented chemistry of the PetroFLAG system. The meter is shipped fully calibrated, preset with response factor 5. This calibration is sufficient to begin screening

measurements; however, in order to achieve optimum performance we recommend that the analyzer be calibrated with each batch of samples, or at least daily. The PetroFLAG analyzeris easy to calibrate and a calibration standard is included with every refill pack.

The PetroFLAG analyzer stores two independent calibration equations in separate memory locations. Each calibration has a unique designation, "1C" or "2C". One way to effectively use this feature is to use one for a "low temp." calibration and one for a "high temp." calibration. This practice is very useful when working at field locations where the ambient temperature varies by more than 10°C over the course of the day. One calibration, run at the lower temperature in the morning, could be stored under "1C" and later as the temperature rises, triggering a temperature warning, a new calibration can be run and stored under "2C". (See below under "Temperature Effects")-

ter is The microprocessor in the PetroFLAG analyzer uses

The microprocessor in the PetroFLAG analyzer uses the calibration data to convert the optical reading into a preliminary concentration. The selected

Choosing the Correct Response Factor

response factor is then used to calculate the correct concentration for the analyte of interest. Therefore, it is important to choose the response factor that is appropriate for the particular hydrocarbon or class of hydrocarbons present at the site. The response factor can be changed at any time without affecting the stored calibrations. (See "Analyzer Operation Examples: Standard Operation-Changing Response Factor Without Recalibrating")

If the contaminant is known or suspected, choose the appropriate response factor from Table 1 and set that response factor on the analyzer. (See "Analyzer Operation" below.) there is a mixture of hydrocarbons, use the most conservative response factor (i.e. the lowest) for contaminants known to be present. If the contaminants

unknown, choose a conservative response factor based on those hydrocarbons that are likely to be on the site. Examination of Table 1, indicates that the majority of typical contaminants are in response category 5 or above.

Table 1: Response Factors and Method Detection Limits for Common Hydrocarbons

Hydrocarbon Type	Method Detectio n Limit (ppm)	Response Setting
Transformer Oil	15	10
Grease	15	9
Hydraulic Fluid	10	8
Transmission Fluid	19	8
Motor Oil	19	7
#2 Fuel Oil	25	7
#6 Fuel Oil	18	6
Diesel Fuel	13	5
Gear Oil	22	5
Low Aromatic Diesel	27	4
Pennsylvania Crude Oil	20	4
Kerosene	28	4
Jet A	27	4
Weathered Gasoline	200*+	2

^{*}See Appendix A

⁺Due to the non-linear response curve of Gasoline, quantification below 1000 ppm may underestimate the true contamination

Analyzing High Concentration Samples

The PetroFLAG Hydrocarbon Analyzer is preprogrammed to warn the user of an over-range condition. If the over-range reading is outside of the linear range (± 10 precision), but still within the quantifiable range (±20% precision), the reading will be displayed blinking. This reading can be used as an indication that the concentration in the sample is not less than the displayed value. Since the response curve for most analytes is non-linear at high concentrations, the concentration in the sample may be higher than the displayed value. If the over-range condition is outside of the quantifiable range of the meter, the display will show a blinking "EEEE". Either error indication can be cleared by simply inserting the next vial and pressing the <READ/ON> key.

Accurate results can be difficult to obtain when 10 gram soil samples with high contaminant concentrations are used since they may cause a over-range condition on the PetroFLAG analyzer. To quantify these high contaminant samples, extract fresh soil samples of 1 gram size and reanalyze. Then multiply the result by 10 to obtain the concentration in the sample. Using this procedure, it is possible to measure oils containing up to 50,000 ppm of light hydrocarbon contamination or 10,000 ppm of a heavier hydrocarbon. For readings at higher concentrations, a "high range kit" is available.

<u>NOTE</u>: The use of either smaller samples or "high range kits" will affect the precision and accuracy of the method as well as raise the MDL (<u>M</u>inimum <u>D</u>etection <u>L</u>imit) in proportion to the dilution factor.

Converting Response Factors for Data Already Collected

Collected data can be easily converted to the correct reading when it has been determined that the wrong response factor has been used. To make this conversion, multiply the measured value by the response factor initially used to make the measurement and divide by the new response factor.

Temperature Effects on Measurements

The PetroFLAG analyzer is equipped with an onboard temperature sensor to measure the ambient temperature while measurements are being made. The software uses the temperature readings to correct the optical readings for drift caused by the temperature fluctuations. The corrections have been determined for their effects on the turbidity development and the temperature drift of the electronics.

The PetroFLAG analyzer can be used at temperatures from 4°C to 45°C. The temperature corrections are valid for temperatures within 10°C of the calibration temperature. If a calibration is run with each batch of samples, the temperature correction is not significant and measurements can be made at any temperature within the usable range of the instrument. However, if no calibration is run and the ambient temperature deviates from the calibration temperature by more than 10°C, an error condition will result. The analyzer will display "Err4" which can only be cleared by pressing the <NEXT> key. Pressing of the <NEXT> key will clear the error and display the current reading. This reading can be recorded but it should be noted that the ambient temperature was outside of the acceptable 10°C window. Any other samples remaining in the series can be read, however, the same error condition will most likely occur. The meter must be recalibrated to eliminate this error condition.

The ambient temperature should be checked before starting to avoid a temperature error when a calibration is not run with the samples.. This can be done by taking a reading without inserting a vial into the meter. If a reading is displayed, the temperature is within range and additional readings can proceed. If an error is displayed, the meter must be recalibrated before proceeding.

As previously mentioned, the storage of two calibrations, each at a different temperature, will reduce the number of recalibrations necessary as the temperature changes. If the two calibrations are stored under "1C" and "2C" and are run at temperatures levels 20°C apart, the effective temperature range for measurements now becomes 40°C.

Effects of Soil Water Content on PetroFLAG Result

The presence of water in a soil sample will have a definite effect on the reporting value in the final PetroFLAG result. As with all field measurements, the PetroFLAG system result is calculated based on the sample weight "as received". If there is water present in the sample, this will produce a "wet weight" result causing an apparent under reporting by the PetroFLAG technique when compared to a laboratory reporting on a "dry weight" basis.

To correct for the difference between "wet weight" vs. "dry weight" results, simply divide the PetroFLAG value by the "fraction solids" (FS), where fraction solids is:

$$FS = Dry \ Weight/Wet \ Weight$$
 or:
$$FS = (100 - \%water)/100$$

Furthermore, when reporting the wet weight vs. dry weight results, the presence of water in a soil sample will cause a "dilution effect". Since the PetroFLAG solvent system is miscible with water, the water in the soil will be extracted into the solvent phase. The aliquot filtered into the developer vial will, therefore, be diluted by the presence of the water. To a first approximation, the correction for this "dilution effect" is made by multiplying the PetroFLAG result by one plus the "fraction water" in the sample, R'=R(1+FW), where fraction water (FW) is:

FW=(Wet Weight - Dry Weight)/Wet Weight or:

FW = % water/100

The equation below can be used to achieve an overall correction that includes both the conversion of the PetroFLAG result to a "dry weight" value and the correction for the dilution effect:

$$R'=R((2/FS) - 1)$$

where:

R' = "Dry Weight" Corrected Result

R = Result displayed by PetroFLAG unit

FS = Fraction Solids

where:

FS = (100 - % water)/100

The above correction is applicable for typical soil types containing up to approximately 15% water by weight. For heavy clays or samples with higher water content, the effect of water content will vary with the analyte and should be determined specifically for each site.

In many cases, the effects of water content can be overcome by using a smaller sample size. This approach is the simplest and can be used effectively when a reduction in precision resulting from a smaller sample size still satisfies the overall data quality objective.

In some soils with high water content, the PetroFLAG response will be reduced both by the poor extraction efficiency of the analyte and a simple dilution. In these soils, the effect of water content on the extraction efficiency can sometimes be reduced by the addition of anhydrous sodium sulfate.

To treat such soils with sodium sulfate, weigh out the appropriate amount of soil sample (10 grams for a standard analysis) followed by the addition of up to 10 grams of anhydrous sodium sulfate. Mix the system thoroughly by stirring and/or shaking the sample until a free-flowing mixture is formed. Add the extraction solvent from a break-top ampule and then, follow the standard analysis procedure.

Treatment with sodium sulfate can improve the extraction efficiency, but will not correct for either the dilution effect or the wet weight/dry weight reporting error. The actual water content in the sample should be determined at some point so that the above corrections for wet weight and the dilution effect can be applied to the final result.

Sample Preparation

Each 10-pack of soil reagents contains reagents and supplies for 10 tests. In addition, one blank and one calibration standard are included. Samples can be run individually or by batch. For optimum performance and throughput, samples should be run in groups of 10 samples, once the meter has been calibrated with a blank and a standard. The meter does not need to be recalibrated, provided that the operating conditions and reaction times are maintained. Total time to analyze 10-15 samples is approximately 20-25 minutes.

Calibration

To insure accurate quantification and repeatable results, it is recommended that the PetroFLAG meter be recalibrated with each batch of 10 samples or, at least, daily. The meter is easily calibrated using an extraction solvent ampule as a blank and the calibration standard (supplied with each ten-pack of reagents).

After exiting the calibration mode, all additional readings made by the PetroFLAG analyzer will automatically incorporate the selected response factor. Therefore, rereading of the calibration standard will result in an incorrect reading unless the response factor being used is 10 and within the correct development time of the sample.

<u>NOTE</u>: Once the *blank* and *calibration standard* have been read, discard them. They will fade with time and cannot be reused; DO NOT USE THEM TO RECALIBRATE THE METER OR TO CHECK THE EXISTING CALIBRATION.

Preparing Blanks and Standards

The following description summarizes the procedure for preparing the blank and calibration standard.

Read the step-by-step instructions below completely before beginning the calibration process.

To prepare a blank and a calibration standard, first label two soil tubes, one as the "blank" and the other as the "standard". Add to the blank tube the contents of a break-top ampule labeled "Extraction Solvent". Add the contents of the break-top ampule labeled "Calibration Standard" to the standard soil tube. Process the blank and standard exactly as soil samples as described below. (See "The PetroFLAG Test Procedure")

QA/QC

Performing periodic calibrations of the PetroFLAG meter is one of the most important quality control checks that can be made. In addition to calibrating the PetroFLAG meter, performance of periodic calibration also serves as a quality control check of the entire analysis system. Each time a calibration is performed the individual operator needs to prepare a fresh set of standards following the entire analysis procedure. To complete a valid calibration, the resulting test standards must meet the QC acceptance criteria stored in the meter. Each time a calibration is carried out, the meter verifies if the operator is performing the test correctly, e.g., following the correct order of steps in sample preparation, holding to the timing requirements, operating the meter correctly, etc. while the meter checks its basic operation. As each calibration is made, the intensity of the test solution is compared to the stored values for acceptance. If the optics have degraded or the electronics are out of specification the calibration will be flagged as an

The most important factor affecting the accuracy of PetroFLAGmeasurements is operator error followed by the ambient temperature determination. If the temperature varies by more than 10°C from the calibration temperature, the accuracy of the resulting measurement will be affected. Therefore, during each measurement made by the meter, the current ambient temperature is compared to the temperature determined at calibration. If the difference is more than 10°C, a warning is flashed alerting the operator of the temperature drift. This QC check is transparent to the user unless an error condition exists.

The internal check of the optical system is also transparent to the user. The PetroFLAG meter is designed with two independent optical channels. If, during a measurement, both channels do not agree, an error condition will be generated.

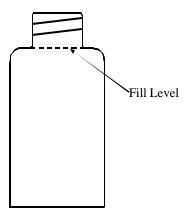
Along with these QC checks, which are performed automatically by the PetroFLAG meter, additional QA/QC procedures should be developed to provide assurances that the data quality objectives for each project are met. The most important part of any SOP (Standard Operating Procedure) should include provisions for ensuring that confirmatory samples are sent to a qualified lab for verification as to the type of hydrocarbon contamination present. This will also serve as a check of the response factor being used. When PetroFLAG meter results are determined to be either high or low when correlated to laboratory data, then a new response factor should be calculated and used. If the PetroFLAG results are not well correlated with the lab, then the field techniques should be examined to determine possible sources of error. A lack of correlation may be the result of inhomogeneous samples or may be due to splitting technique, etc.

A program of field QA/QC should be developed that is compatible with the competing requirements of each user. It should include, a minimum of periodic soil blanks, equipment blanks, soil spikes, and dupes. Other procedures should be implemented depending on the specific requirements of each site.

The PetroFLAG Test Procedure

- 1) Label the soil extraction tubes (plastic tubes with colored caps) and developer vials (small glass vials with black caps) with the appropriate sample ID. Use the self-adhesive labels to label the screw cap of the developer vial. Do not write in the center 1/3 of the developer vial as this may obscure the optical path when the readings are made
- 2) Weigh 10 grams (± 0.1 gram) samples of all unknown soils into each of the labeled color-capped polypropylene tubes.
- 3) Set timer for 5 minutes. Add one break-top ampule of extraction solvent (blue polypropylene top) to the first tube. Start 5 minute timer and shake for 15 seconds. A separate ampule of extraction solvent is added to each of the remaining sample tubes when additional samples are being analyzed. Shake each tube for 15 seconds ensuring that the soil samples are fully wet. Shake each tube intermittently for a total of 4 minutes, then allow each tube to stand for the remaining 1 minute.
- 4) Verify that the filter disk is firmly attached to the syringe barrel. Remove the cap from the first labeled developer vial. Carefully decant the liquid from the polypropylene soil tube into the syringe barrel minimizing the transfer of soil particles, as this may plug the filter. Insert the plunger into the syringe barrel. Discard the first few drops from the filter into a waste container by pressing the plunger. Next, add the soil extract drop-wise to the developer solution until the meniscus just enters the neck of the vial (see figure). Shake the vial for 10 seconds, start the 10 minute timer and proceed to the next sample. Read the samples as close to the 10 minute time period as possible. Record this reading. Do NOT attempt to reread the sample as sample variation will occur due to fading of the solution over time. Do not let the developer vials stand longer than 20 minutes before reading, as this may result in lower than actual values.

- 5) If meter is off, turn on the meter by pressing <READ/ON> key and calibrate (optional, see Analyzer Operation).
- 6) To read, wipe the vial, place into the meter and press the <READ/ON> key. Be sure that the outside of the vial is clean before reading. Record result on work sheet. Read vials in the same order as they were prepared.



6 mL Developer Vial

Analyzer Operation

The PetroFLAG analyzer is controlled by a low-power consumption micro-computer with a pre-loaded operating program which is stored in EEPROM memory. The program cannot be lost regardless of battery condition. The meter stores two calibration curves in separate memory locations. These calibration curves can be independently updated and the response factors can be changed without losing the calibrations.

The PetroFLAG meter is configured to allow easy access to the program modes. The currently active mode is indicated on the LCD display while a reading is in progress. The response factor and the active calibration can be changed from the MAIN MENU using the fourkeys on the keypad. The four keys are:

SCROLL

Scrolls through menu choices.



Exits the read mode or skips a menu option without changing or executing. (Also used to clear error conditions.)



Turns the meter on and starts a reading.



Selects a menu choice. Manually turns meter off (only in the *read* mode).

When the PetroFLAG analyzer is turned on, the unit will return to the last mode it was in prior to being shut down. Under normal operating conditions, the analyzer will power up in the *read* mode. When the analyzer powers up in the *read* mode, the screen will display the last measured value for two seconds, and then, display the currently selected calibration curve ("1C" or "2C") and response factor (1-15). The meter is now ready to resume measurement. Simply insert a new sample vial into the meter and

push the <READ/ON> key. The display will initially indicate the calibration curve (either "1C" or "2C") and the response factor (1-15) that is currently selected. Next, the term "CALC" will flash on the screen and after 5 seconds, the measured concentration in ppm will be displayed.

<u>NOTE</u>: If the battery is disconnected and then reconnected, the meter will automatically return to the MAIN MENU. If the calibration curve and response factor displayed are the desired parameters, the MAIN MENU can be exited while retaining the calibration data by pushing the <NEXT> key. To return to the read mode, continue pressing the <NEXT> key until the display shows the calibration curve and the response factor continuously without blinking.

If you wish to exit the *read* mode, push the <NEXT> key and the operation is returned to the MAIN MENU. The <NEXT> key is also used to skip a step where a menu selection is required. To change a flashing menu option, push the <SCROLL> key while the option is flashing. To store the currently flashing menu choice, push the <SELECT> key. This stores the current choice and moves the flashing cursor to the next program mode.

Selecting a Calibration Curve

Either of the two calibration curves, identified as "1C" and "2C", can be selected from the MAIN MENU. From either calibration curve any response factor can be selected. To change the response factor or to recalibrate the unit, use the <NEXT> key to enter the MAIN MENU screen. Immediately upon entering this menu three decimal points and the response factor are displayed. Next, the first two characters on the screen indicates the calibration curve that is currently selected ("1C" or "2C") is displayed. They will blink, indicating that a new curve may be selected. Use the <SCROLL> key to scroll to the next calibration curve. Push the <SELECT/OFF> key to select the curve.

The response factor will then blink. Use the <"SCROLL> key to scroll to the desired response factor for the target analyte and press the <SELECT/OFF> key.

Reading the Blank and Standard

After the response factor has been selected, the screen will read "CALC" for five seconds and then display the calibration temperature. temperature will remain on the screen until either the <NEXT> key or the <READ/ON> key is pressed. The screen will then prompt you for the "blank" vial by displaying "-bL-". Insert the blank vial in the meter and press the <READ/ON> key (See "Preparing Blanks and Standards" under "Using the PetroFLAGHydrocarbon Analysis System). After 5 seconds the screen display should read "0" for 2 seconds. The screen will then prompt for the calibration standard, "-CSd". Insert the calibration standard in the meter, press the <READ/ON> key and after 5 seconds, the calibration is complete. The meter will then re-read the calibration standard to verify a valid calibration and display "1000". If the concentration of the calibration standard is not correct using the newly calculated equation, an error message will flash until the <NEXT> key is pushed. If an error condition exists, the previously stored calibration constants will be retained until a valid calibration is completed (See Appendix C, Table 1: Error Conditions).

Taking a Reading

After calibration, the meter will then display the calibration curve in use ("1C" or "2C") and the current response factor selected. The meter is ready to read the first sample by inserting the sample vial into the meter and pressing the <READ/ON> key. After reading the sample, the meter will display the concentration in parts per million (ppm) until either the <READ/ON> key or the <NEXT> key is pushed. If no key is pushed for a period of five minutes, the meter will turn off automatically. If the meter turns off automatically, the meter can be reactivated by pressing the <READ/ON> key and the unit will return to the operation mode last used. The meter can be turned off manually by using the <SELECT/OFF> key, while in the *read* mode only.

The optical system on the PetroFLAG analyzer is covered with a screw cap to keep out stray light. To remove this screw cap from the vial holder, simply unscrew it 1/4 of a turn counter-clockwise. To make a measurement, insert the developer vial into the

unit, place the screw cap over the vial, and while pressing down on the cap (depressing the spring in the bottom of the vial holder), rotate the cap clockwise. Turn the cap until it is snug, but do not over-tighten.

Power Requirement

The PetroFLAG analyzer is powered by one 9V alkaline battery (included). This battery should last for several thousand readings. If a low battery condition exists "LP" will appear on the display.

Analyzer Operation Examples

Outlined below are step-by-step examples of how to use the PetroFLAG analyzer. Under normal operating conditions the meter will power up in the *read* mode. The examples given here categorized as "standard operation" assume that the meter was last operated in the *read* mode. If the meter was left in another mode for longer than five minutes or the batteries were removed, see below for special cases.

Standard Operation:

(Whenever the last operation mode was *read*, the calibration data is current and the last-used response factor is valid.)

1) Turn the meter on by pressing:



The last reading will be displayed for 2 seconds. The display will show the calibration curve and response factor currently selected. The meter is now in the *read* mode.

- 2) Remove the screw cap, insert developer vial to be read and retighten cap.
- 3) To begin reading press:



The display will show the calibration curve and response factor currently selected (blinking), the display will read "CALC" for 3 seconds, and the final result will be displayed.

4) The result will be displayed until the next reading is taken. To make the next reading: remove the vial and repeat steps 2 and 3 above.

Standard Operation/Changing Response Factor Without Recalibrating:

(Whenever the last operation mode was *read* and a different response factor is desired.)

1) Turn the meter on by pressing:



The last reading will be displayed for 2 seconds. The display will show the calibration curve and response factor currently selected. The meter is now in the *read* mode.

2) Return the operation to the MAIN MENU by pressing:



Three decimal points will be displayed along with the current response factor. The calibration curve designation will begin blinking.

3) The response factor entry mode is activated by pressing:



The response factor will begin to blink indicating that it may be changed.

4) Scroll to the desired response factor by pressing:



The next response factor will be displayed. Continue pressing the <SCROLL> key until the desired response factor is displayed. (Response factors scroll in descending order, i.e., 15-1)

5) When the desired response factor is reached, select it by pressing:



The new response factor has been selected. The meter will calculate and display the current temperature.

6) Move to the next screen by pressing:



The meter will prompt for the blank to be entered and the calibration procedure to begin by displaying "-bL-".

7) Skip this calibration procedure and move directly to the *read* mode, saving the new response factor but not recalibrating, by pressing (This exits the calibration mode without affecting the current calibration data):



The meter will display the current calibration curve and the selected response factor and is ready to read a sample using the new response factor.

8) Proceed with the reading of a sample by following the above procedure for "Standard Operation" beginning at step 2.

Standard Operation With Recalibration:

(Where the last operational mode was the *read* mode and the meter is to be recalibrated.)

Prior to performing this calibration procedure, prepare the *blank* and *standard* as described in the manual under "Using the PetroFLAG Hydrocarbon Analysis System-Preparing Blanks and Standards". They may also be prepared along with the unknown samples in order to save time.

1) Turn the meter on by pressing:



The last reading will be displayed for 2 seconds. The display will show the calibration curve and response factor currently selected. The meter is now in the *read* mode.

2) Return the operation to the MAIN MENU by pressing:



Three decimal points will be displayed along with the current response factor. The calibration curve designation will begin blinking, indicating that it may be changed.

(If the displayed calibration curve is the one to be redetermined, skip directly to the response factor input by pressing the < NEXT> key.)

OTHERWISE

3) Scroll to the calibration curve that is to be redetermined by pressing:



The display will show the next calibration curve designation.

4) When the desired calibration curve is determined, select it by pressing:



The calibration curve is selected and the meter will prompt for the input of the response factor.

5) If the response factor displayed is not the desired one, use the <SCROLL> key as described the previous section above under "Standard Operation - Changing Response Factor Without Recalibrating". If the response factor is correct, skip this step by pressing:



The meter will calculate and display the current temperature.

6) Move to the next screen by pressing:



The meter will prompt for the blank to be entered and the calibration procedure to begin by displaying "-bL-".

7) Remove the screw cap and insert the prepared blank vial, replace the cap and begin calibration by pressing:



The display will blink showing the selected calibration curve and response factor. The meter will display "0" for three seconds and prompt for the calibration standard by displaying "-CSd".

8) Remove the screw cap and blank vial and insert the calibration standard vial. Read the calibration standard by pressing:



The display will blink showing the selected calibration curve and response factor. The display will read "1000" for three seconds and display the currently selected calibration curve and response factor continuously. The meter is now in the read mode.

9) Proceed with reading the unknown samples by following the procedure for "Standard Operation" above, beginning with step 2.

Special Operating Conditions:

Replacement of Battery:

<u>NOTE</u>: Use ONLY 9V Alkaline or 9V Lithium battery. Use of carbon/zinc battery will cause the PetroFLAG meter to malfunction.

Open the battery compartment by sliding the compartment door back (indicated by the arrow on the back of the unit). Lift out the old battery from the compartment and carefully unsnap the battery from the wire harness/connector. Replace with a fresh alkaline battery by snapping the wire harness/connector onto the new battery making sure the polarity is correct (The snaps will only go on one way). Reinsert the battery and connector into the compartment being careful not to twist/damage the connector wires. Replace compartment door by sliding the door forward until the latch clicks.

Operation of the Meter After the Battery has been Disconnected:

When the battery has been disconnected the microprocessor will automatically return to the MAIN MENU once the battery has been reconnected. The meter, however, will not be in a *read* mode but is calibrated for use, unless other factors warrant recalibration. The operations to be performed will determine the exact steps to be followed. The steps to follow are described above in the various sections of "Analyzer Operation Examples."

Meter Left to Turn Off in Other Mode:

When the meter is left in any "screen" for five minutes the meter will shut off automatically. The meter will return to last active screen when the <READ/ON> key is pressed.

Helpful Suggestions and Safety Precautions

When PetroFLAG test results indicate no hydrocarbons are present, the sample can be sent in for certified laboratory confirmatory analysis. All environmental soil sampling used for final closure should be performed using methods that are approved by the local regulating agency.

Personal protection should be worn during soil sampling and testing. A minimum of latex gloves and goggles should be worn.

Decontamination stations should be set up using appropriate cleaners and rinsing solutions. Soil sampling equipment not supplied with the reagent pack should be decontaminated between sampling locations to prevent the possibility of cross contamination.

All reagents and sampling scoops supplied with the kit are single-use disposable items. Therefore, <u>do</u> <u>not</u> reuse spoons, tubes, filters, or vials. The electronic balance is *NOT* disposable.

Checkambient temperature BEFORE extracting soils, when a calibration procedure is not planned for the current batch of test samples.

Make sure the filter disks are screwed on tightly before adding the soil extract to a filter syringe.

<u>Do not</u> leave the PetroFLAG analyzer in direct sunlight when not in use. Store the instrument in the protective carrying case with the lid closed.

Make sure that the contamination at the site is characterized at some time during the investigation.

Avoid sampling organic matter. Scrape away organic material (leaves, sticks, etc.) before sampling.

Avoid sampling directly under pine, cedar, and fir trees unless the sample is collected below the organic layer. Do not collect samples from areas where tree roots have been encountered.

Avoid sampling directly beneath creosote bushes, sage brush and other oil bearing plants.

Commonly Asked Questions

What are the response factors?

A response factor (RF) is the relationship between the analyte of interest and the calibration standard. The turbidity formed in the development solution by the sample is compared to the calibration standard followed by a calculation which determines the correct concentration for your contaminant. For Example: Equal concentrations of diesel and mineral oil do not produce the same level of turbidity. A RF value of 10 for mineral oil divided by the RF value of 5 for diesel produces a result of 2. This means that mineral oil forms twice the turbidity of diesel at the same concentration. Stated another way, 250ppm mineral oil forms the same turbidity as 500 ppm diesel. For more information please see Appendix A in the Manual.

Why doesn't my calibration standard read 1000ppm when I re-read it after calibrating?

This is directly related to the first question. The calibration standard is 1000 ppm mineral oil, therefore, if you read it on any RF other than 10 you will get a different number.

How long are my samples good for after they develop for 10 minutes?

The PetroFLAG development process is a temporary reaction, therefore, readings should be taken right at the end of the 10 minute development period. The turbidity will continue to develop for period of time, after which the solution will begin to fade. Do NOT attempt to reread the sample as results may vary due to these changes in the solution. No measurements should be taken after 20 minutes. This means you must record your data as it is generated because you cannot save your sample vials for future analysis.

After I prepare a set of calibration solutions how long are they good for?

Since the PetroFLAG development chemistry fades over time they are only good for a single use and the 10 minute time window should be adhered to.

The screen is displaying an error code, what does it mean?

See the reference table in Appendix D for a list of "Error Conditions".

What can I do if my reading is over-range?

Process a new sample using a 1 gram soil sample and multiply the end result by 10. This sample dilution will allow you to read up to 10,000-15,000 ppm on most samples (1-1.5%).

The meter is "stuck" in the calibration program mode with the "1C" or "2C" characters flashing?

The meter will not allow normal calibration procedure or sample measurement when the <READ/ON> key is pressed, but returns to a flashing "1C" or "2C" screen. This is usually caused by use of a non-alkaline battery. Replacement with a fresh 9V Alkaline battery should eliminate the problem and the meter should return to normal operation.

Caution

When opening the break-top ampules *DO NOT* remove the plastic sleeve from the top. It is there for your protection. Removing it may result in personal injury.

The Extraction Solvent and Calibration Standards contain methanol and are Flammable and Poisonous.

Wear rubber gloves and safety glasses while performing tests.

Dispose of all used reagents and soil properly.

Read the Material Safety Data Sheet before performing test.

Manufacturer's Warranty

The reagents and supplies used in the PetroFLAG test are warranted to be free of defects in material and workmanship until the expiration date stamped on the box. Manufacturer's sole and exclusive liability under this warranty shall be limited to replacement of any materials that are proved to be defective. Manufacturer shall not be liable for any incidental or consequential damages.

Reliable test results are highly dependent upon the care with which the directions are followed and, consequently, cannot be guaranteed.

Appendix A: PetroFLAG Response Curves

Most fuels, lubes and greases are complex mixtures of various hydrocarbons having a broad range of physical and chemical properties. The PetroFLAG system will detect a majority of the ecologically important hydrocarbon mixtures. The PetroFLAG responses to some typical hydrocarbon contaminants are plotted in figure 1⁵.

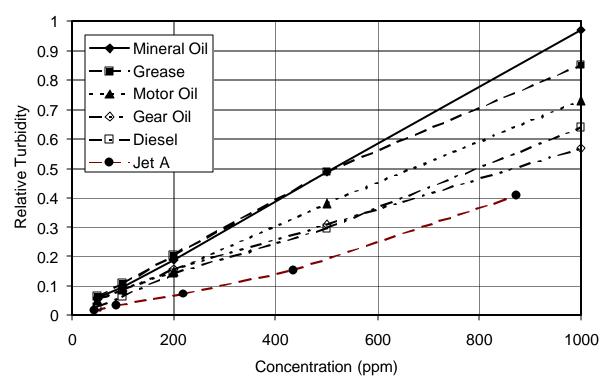


Figure 1: Relative Intensity Data for Common Analytes

⁵The lower limit of quantification, using a 10 gram sample size, is 1000 ppm for gasoline (linear range from 1000 ppm to 5,000 ppm). Brake fluid, phosphate ester based hydraulic oil, or other water soluble compounds will not be detected by the PetroFLAG system.

Appendix B: Comparison with Laboratory Methods

In field trials, the PetroFLAG system was used at sites contaminated with diesel fuel or with oil and grease. In both cases the PetroFLAG results correlated very well with EPA laboratory methods. Both EPA methods 8015B and 418.1 were used to analyze the samples from the diesel site. The resulting correlations were 89% and 92% respectively⁶. The samples from the oil and grease site were analyzed using EPA method 418.1 for soil. The lab results confirmed the PetroFLAG results with no false negatives and only 2 false positives (10%). When comparing the field results and the lab results for the field split samples, the correlation between the PetroFLAG data and EPA method 418.1 for the laboratory split samples was 90% ⁷.

When comparing the PetroFLAG field results with laboratory results using EPA methods it is important to keep in mind that EPA laboratory methods for TPH are known to have variable extraction efficiency. The extraction efficiency achieved using EPA laboratory methods varies with soil type and moisture content. In addition, the degree to which moisture affects the extraction is dependent on how the individual laboratory is implementing the method. It is, therefore, important to verify that the lab used for comparison is performing the method properly and that the recovery is known.

Another important factor affecting laboratory confirmation analysis is the inhomogeneous nature

of soil samples. Whenever possible, homogenize samples using standard methods⁸ before taking "splits" to send to the lab for confirmation.

⁶Wright, Keith A., "Evaluation of a New Field Test Kit for Determining Total Petroleum Hydrocarbon Concentrations in Soil at a Site Contaminated by Diesel Fuel", Presented at the AEHS Conference on "Hydrocarbon Contaminated Soils", January 11-13, 1995, New Orleans, LA.

⁷Wright, Keith A. and Jermstad, David B., "Evaluation of a Rapid Field Analytical Test Kit for Assessing Hydrocarbon Soil Contamination", Presented at the "Third International Conference On-Site Analysis", January 22-25, 1995 Houston, TX.

⁸See for example: Pitard, Francis F., <u>Pierre Gy's Sampling Theory and Sampling Practice</u>, Volumes 1 and 2, CRC Press, Inc., Boca Raton, FL, 1992).

Appendix C: Determining the Response Factor for Hydrocarbons Not Listed in Table 1

The response factors listed in Table 1 are calculated from response curves similar to those in Figure 1 in Appendix A. The response factor is equal to the slope of the response curve multiplied by 10. The slope of the response curve for the analyte is calculated from the response of the specific analyte relative to the response of the calibration standard. The calibration standard has a slope of one and a response factor of 10 on the PetroFLAG meter. Multiplying the slope of a specific analyte's response curve by 10 yields the appropriate response factor for that analyte.

When a suspected contaminant is not listed in Table 1, there are a few methods that may be used to determine the response factor. The method used is determined by the information and facilities available. The most accurate method would be to replicate the data in Figure 1 for the specific analyte, and then calculate the response factor from the slope of the response curve.

Initially, prepare soil standards from a single homogeneous batch of clean soil spiked at a minimum of 5 different concentrations between 100 and 1000 ppm. (For light hydrocarbons, a higher concentration range can be used.) Next, analyze the soil standards in triplicate using a calibrated PetroFLAG meter set to a response factor of 10. Plot the results with the true spiked concentrations on the "X" axis and the meter readings on the "Y" axis. The slope of the regression line (least squares line) through the data points multiplied by 10 is the response factor that should be used for this analyte. To avoid a low bias and false negatives, round the resulting number down to the nearest whole number when selecting the response factor for the meter. This method can be used if either the contaminant is known or a sample of the neat product is available.

<u>NOTE</u>: When the soil used to prepare the spiked soil standards is not actually clean but contains some hydrocarbons, the curve will have a positive intercept. This result should not affect the calculated response factor provided that the highest

spiked standard does not read higher than 1000 ppm on the PetroFLAG meter.

When the contaminant is unknown and a sample of the pure product is not available, then an alternative method can be used. The PetroFLAG results, with the meter set to response factor 10, can be compared with laboratory results from split samples analyzed in triplicate. This method requires extreme care in the homogenizing of the bulk material and also, the preparation of the split samples. Improper sample preparation can result in errors of 100 to 200% or greater. To minimize the effects of this sample variation, as many samples as possible should be analyzed (greater than 20) and the concentrations used should be evenly distributed over the range of 100 to 1000 ppm. Once the data has been collected, plot the data as described above using the laboratory reference method results as the known concentration. The slope of the regression line multiplied by 10 is then the response factor.

<u>NOTE</u>: This method is not as precise as the spike method and any bias in the laboratory method will result in an error in determining this response factor. It is important to check both the laboratory method and the lab performing the analysis thoroughly before using it as the reference method. (See Appendix B)

If the facilities are not available to perform these tests contact Dexsil for advice.

Appendix D: Error Conditions

Table 2: Error Conditions

Message	Cause	Solution
Flashing Concentration Reading [Applies to Unknown Measurements]	Over range condition. Sample concentration outside of linear range.	Use smaller sample (1 gram recommended) and rerun.
Flashing "EEEE" [Applies to Unknown Measurements]	Sensor over range condition. Sample concentration too high.	Use smaller sample (1 gram recommended) and rerun.
"Err0" [Applies to Calibration Mode]	Blank and Calibration Standard vials mixed up. Blank or Calibration Standard outside of QC window (bL too high or CSd too low).	Check calibration vials. Rerun and/or make up new ones.
"Err1" [Applies to All Modes]	Readings from the two optical channels do not agree.	Check vial and reread. If error remains, rerun using another vial.
"Err2" [Applies to Unknown Measurements]	Sample is reading lower than the blank, e.g., Calibration Blank soil unusually high background or not zero.	Recalibrate using true Blank soil.
"Err3" [Applies to Calibration Mode]	Blank or Calibration Standard outside of QC window (bL too low or CSd too high).	Recalibrate using fresh calibration solutions.
"Err4" [Applies to Unknown Measurements]	Absolute temperature difference between calibration and reading exceeds 10°C.	Recalibrate at current temperature.
"Err5" [Applies to All Modes]	Ambient temperature outside of operating range. (4°C - 45°C)	Remove meter and reagents to climate controlled environment to recalibrate/rerun.
"LP"	Low Power	Replace battery.

Appendix E: Meter Specifications

A/D Resolution: 0.5 ppm

Display Resolution: 1 ppm

Precision: Analyte Dependent

From MDL to Max Linear Range (MLR) ±10% +5 ppm

From Max Linear Range to Max Quantifiable Range (MQR) \pm 20%

Measurement Range: 10-10,000 ppm (linear range analyte dependent)

Operating Temperature: 4°C to 45°C

Quantification Limit: Analyte Dependent Approx. Approx.

 Response Factor
 MLR (ppm)*
 MQR (ppm)*

 15
 730
 1,460

 10
 1,000
 2,000

 5
 2,000
 4,000

 2
 5,000
 10,000

Program Storage: EEPROM

Calibration Storage: EEPROM

Display: 4 digit ½ inch seven segment LCD

Batteries: One 9V Alkaline (included) [Use only Alkaline or Lithium type]

Battery Life: Approx. 4000 measurements or 1 year (using a 550 mAh alkaline battery)

Dimensions: length=5.75" width=3.5" height=2"

Weight: 9.85 oz (280 g)

^{*}Actual limits realized in the field are temperature and device dependent. PetroFLAG meter automatically warns user when each limit has been reached.

APPENDIX F

LABORATORY REPORTS

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Laura Campbell Civil & Environmental Consultants Inc 700 Cherrington Parkway Moon Township, Pennsylvania 15108

Generated 5/9/2023 10:29:06 PM

JOB DESCRIPTION

Seawolf 112 91H SDG NUMBER Jal NM

JOB NUMBER

880-27936-1

Eurofins Midland 1211 W. Florida Ave Midland TX 79701

Eurofins Midland

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 5/9/2023 10:29:06 PM

Authorized for release by Travis Richter, Project Manager <u>Travis.Richter@et.eurofinsus.com</u> (281)794-7216 •

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Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 112 91H

Laboratory Job ID: 880-27936-1 SDG: Jal NM

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Client Sample Results	6
Surrogate Summary	18
QC Sample Results	20
QC Association Summary	25
Lab Chronicle	30
Certification Summary	39
Method Summary	40
Sample Summary	41
Chain of Custody	42
Receipt Checklists	44

Eurofins Midland 5/9/2023

Definitions/Glossary

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Qualifiers

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GC	v	U	А

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
П	Indicates the analyte was analyzed for but not detected

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

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
	applicable.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

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Toxicity Equivalent Quotient (Dioxin)

Too Numerous To Count

TEQ

TNTC

Case Narrative

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Job ID: 880-27936-1

Laboratory: Eurofins Midland

Narrative

Job Narrative 880-27936-1

Comments

No additional comments.

Receipt

The samples were received on 5/3/2023 4:56 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 was 4.4° C.

GC VOA

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-52692 recovered above the upper control limit for Ethylbenzene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data ha been reported. The associated samples are impacted: (CCV 880-52692/2), (CCV 880-52692/20), (CCV 880-52692/33), (CCV 880-52692/51) and (CCV 880-52692/64).

Method 8021B: The laboratory control sample duplicate (LCSD) for preparation batch 880-52616 and analytical batch 880-5269 recovered outside control limits for the following analytes: Benzene. These analytes were biased high in the LCSD and were no detected in the associated samples; therefore, the data have been reported.

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

GC Semi VOA

Method 8015B NM: Surrogate recovery for the following samples were outside control limits: (880-27936-A-1-H MS) and (880-27936-A-1-I MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performe

Method 8015B NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-52799 and analytic batch 880-52788 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

General Chemistry

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-52683 and analytical batch 880-52777 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.

The associated samples are: SW91H-3 (2-3) (880-27936-11), SW91H-4 (0-1) (880-27936-12), SW91H-4 (1-2) (880-27936-13), SW91H-5 (0-1) (880-27936-14), SW91H-5 (1-2) (880-27936-15), SW91H-6 (0-1) (880-27936-16), SW91H-6 (1-2) (880-27936-1 SW91H-7 (0-1) (880-27936-18), SW91H-7 (1-2) (880-27936-19), SW91H BG-1 (880-27936-20), (880-27936-A-11-C MS) and (880-27936-A-11-D MSD).

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

Organic Prep

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

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

Eurofins Midland 5/9/2023

Dil Fac

Client Sample Results

Client: Civil & Environmental Consultants Inc

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

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-1 (0-1) Lab Sample ID: 880-27936-1 Date Collected: 05/03/23 08:30

Result Qualifier

Matrix: Solid

Analyzed

Date Received: 05/03/23 16:56 Percent Solids: 97.8

MDL Unit

D

Prepared

Benzene	<0.000391	U *+	0.00203	0.000391	mg/Kg	-	05/04/23 13:21	05/06/23 02:41	1
Toluene	<0.000463	U	0.00203	0.000463	mg/Kg	₽	05/04/23 13:21	05/06/23 02:41	1
Ethylbenzene	<0.000574	U	0.00203	0.000574	mg/Kg	₽	05/04/23 13:21	05/06/23 02:41	1
m-Xylene & p-Xylene	<0.00103	U	0.00406	0.00103	mg/Kg	₽	05/04/23 13:21	05/06/23 02:41	1
o-Xylene	<0.000350	U	0.00203	0.000350	mg/Kg	₽	05/04/23 13:21	05/06/23 02:41	1
Xylenes, Total	<0.00103	U	0.00406	0.00103	mg/Kg	₩	05/04/23 13:21	05/06/23 02:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		70 - 130				05/04/23 13:21	05/06/23 02:41	1
1,4-Difluorobenzene (Surr)	96		70 - 130				05/04/23 13:21	05/06/23 02:41	1
Method: SW846 8015B NM - Dies Analyte	sei Kange Orga	nics (DRO)	((3(2)						
	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	Result <15.3		• •		Unit mg/Kg	<u>D</u>	Prepared 05/08/23 08:51	Analyzed 05/08/23 11:13	Dil Fac
Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	<15.3		RL	15.3			<u>.</u>		1 1
(GRO)-C6-C10 Diesel Range Organics (Over	<15.3	U J F1	RL 51.1	15.3 15.3	mg/Kg	*	05/08/23 08:51	05/08/23 11:13	1 1 1
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	<15.3 33.9	U J F1	RL 51.1	15.3 15.3	mg/Kg mg/Kg	— —	05/08/23 08:51 05/08/23 08:51	05/08/23 11:13 05/08/23 11:13	Dil Fac 1 1 Dil Fac
(GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	<15.3 33.9 <15.3	U J F1	RL 51.1 51.1	15.3 15.3	mg/Kg mg/Kg	— —	05/08/23 08:51 05/08/23 08:51 05/08/23 08:51	05/08/23 11:13 05/08/23 11:13 05/08/23 11:13	1 1 1

Method: EPA 300.0 - Anions, Ion C	hromatograp	hy - Soluble	9						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	263		5.13	0.405	mg/Kg	<u></u>		05/06/23 16:04	1

Client Sample ID: SW91H-1 (1-2)

Date Collected: 05/03/23 08:31

Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-2 **Matrix: Solid**

Percent Solids: 94.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000407	U *+	0.00211	0.000407	mg/Kg		05/04/23 13:21	05/06/23 03:02	1
Toluene	<0.000482	U	0.00211	0.000482	mg/Kg	₽	05/04/23 13:21	05/06/23 03:02	1
Ethylbenzene	<0.000597	U	0.00211	0.000597	mg/Kg	₽	05/04/23 13:21	05/06/23 03:02	1
m-Xylene & p-Xylene	<0.00107	U	0.00423	0.00107	mg/Kg	₽	05/04/23 13:21	05/06/23 03:02	1
o-Xylene	< 0.000363	U	0.00211	0.000363	mg/Kg	₽	05/04/23 13:21	05/06/23 03:02	1
Xylenes, Total	<0.00107	U	0.00423	0.00107	mg/Kg	₩	05/04/23 13:21	05/06/23 03:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130				05/04/23 13:21	05/06/23 03:02	1
1,4-Difluorobenzene (Surr)	98		70 - 130				05/04/23 13:21	05/06/23 03:02	1

Method: SW846 8015B NM - Diese	l Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<15.8	U	52.8	15.8	mg/Kg	₩	05/08/23 08:51	05/08/23 12:19	1
Diesel Range Organics (Over C10-C28)	23.0	J	52.8	15.8	mg/Kg	₽	05/08/23 08:51	05/08/23 12:19	1
Oll Range Organics (Over C28-C36)	<15.8	U	52.8	15.8	mg/Kg	₽	05/08/23 08:51	05/08/23 12:19	1

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Client Sample Results

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-1 (1-2)

Date Collected: 05/03/23 08:31 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-2

Matrix: Solid

Percent Solids: 94.5

Surrogate	%Recovery	Qualifier Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	109	70 - 130	05/08/23 08:51	05/08/23 12:19	1
o-Terphenyl	82	70 - 130	05/08/23 08:51	05/08/23 12:19	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Chloride 686 5.35 0.422 mg/Kg 05/06/23 16:20

Client Sample ID: SW91H-1 (2-3) Lab Sample ID: 880-27936-3

Date Collected: 05/03/23 08:35 **Matrix: Solid** Date Received: 05/03/23 16:56 Percent Solids: 87.8

Method: SW846 8021B - Volatile Or	ganic Comp	ounds (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000437	U *+	0.00227	0.000437	mg/Kg		05/04/23 13:21	05/06/23 03:22	1
Toluene	<0.000517	U	0.00227	0.000517	mg/Kg	₽	05/04/23 13:21	05/06/23 03:22	1
Ethylbenzene	<0.000641	U	0.00227	0.000641	mg/Kg	₽	05/04/23 13:21	05/06/23 03:22	1
m-Xylene & p-Xylene	<0.00115	U	0.00454	0.00115	mg/Kg	\$	05/04/23 13:21	05/06/23 03:22	1
o-Xylene	<0.000390	U	0.00227	0.000390	mg/Kg	₽	05/04/23 13:21	05/06/23 03:22	1
Xylenes, Total	<0.00115	U	0.00454	0.00115	mg/Kg	₽	05/04/23 13:21	05/06/23 03:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 _ 130				05/04/23 13:21	05/06/23 03:22	1
1,4-Difluorobenzene (Surr)	96		70 - 130				05/04/23 13:21	05/06/23 03:22	1

Method: SW846 8015B NM - Dies	sel Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<17.0	U	56.8	17.0	mg/Kg	<u></u>	05/08/23 08:51	05/08/23 12:40	1
(GRO)-C6-C10									
Diesel Range Organics (Over	23.7	J	56.8	17.0	mg/Kg	₩	05/08/23 08:51	05/08/23 12:40	1
C10-C28)									
Oll Range Organics (Over C28-C36)	<17.0	U	56.8	17.0	mg/Kg	₽	05/08/23 08:51	05/08/23 12:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	112		70 - 130				05/08/23 08:51	05/08/23 12:40	1

Method: EPA 300.0 - Anions, Ion C	hromatography - Soluble						
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2070	28.3	2.24 mg/Kg	— <u> </u>		05/06/23 16:25	5

70 - 130

85

Lab Sample ID: 880-27936-4 Client Sample ID: SW91H-1 (3-4) Date Collected: 05/03/23 08:37 **Matrix: Solid** Date Received: 05/03/23 16:56 Percent Solids: 92.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000419	U *+	0.00217	0.000419	mg/Kg	*	05/04/23 13:21	05/06/23 03:43	1
Toluene	< 0.000496	U	0.00217	0.000496	mg/Kg	₽	05/04/23 13:21	05/06/23 03:43	1
Ethylbenzene	<0.000614	U	0.00217	0.000614	mg/Kg	₽	05/04/23 13:21	05/06/23 03:43	1
m-Xylene & p-Xylene	<0.00110	U	0.00435	0.00110	mg/Kg	₽	05/04/23 13:21	05/06/23 03:43	1
o-Xylene	0.000391	J	0.00217	0.000374	mg/Kg	₽	05/04/23 13:21	05/06/23 03:43	1
Xylenes, Total	<0.00110	U	0.00435	0.00110	mg/Kg	₽	05/04/23 13:21	05/06/23 03:43	1

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05/08/23 08:51

05/08/23 12:40

o-Terphenyl

Client Sample Results

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-1 (3-4)

Date Collected: 05/03/23 08:37 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-4

Matrix: Solid

Percent Solids: 92.1

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130				05/04/23 13:21	05/06/23 03:43	1
1,4-Difluorobenzene (Surr)	93		70 - 130				05/04/23 13:21	05/06/23 03:43	1
- Method: SW846 8015B NM - Dies	sel Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<16.2	U	54.0	16.2	mg/Kg	<u></u>	05/08/23 08:51	05/08/23 13:02	1
Diesel Range Organics (Over C10-C28)	20.2	J	54.0	16.2	mg/Kg	₽	05/08/23 08:51	05/08/23 13:02	1
Oll Range Organics (Over C28-C36)	<16.2	U	54.0	16.2	mg/Kg	₽	05/08/23 08:51	05/08/23 13:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane			70 - 130				05/08/23 08:51	05/08/23 13:02	1
o-Terphenyl	89		70 - 130				05/08/23 08:51	05/08/23 13:02	1
- Method: EPA 300.0 - Anions, Ion	Chromatograp	hy - Solubl	e						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2180		26.9	2.13	mg/Kg	<u></u>		05/06/23 16:31	5

Client Sample ID: SW91H-1 (4-5) Lab Sample ID: 880-27936-5

Date Collected: 05/03/23 10:20

Matrix: Solid

Date Received: 05/03/23 16:56 Percent Solids: 94.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.000410	U *+	0.00213	0.000410	mg/Kg	*	05/04/23 13:21	05/06/23 04:03	-
Toluene	<0.000485	U	0.00213	0.000485	mg/Kg	₽	05/04/23 13:21	05/06/23 04:03	
Ethylbenzene	0.000617	J	0.00213	0.000601	mg/Kg	₽	05/04/23 13:21	05/06/23 04:03	
m-Xylene & p-Xylene	<0.00107	U	0.00426	0.00107	mg/Kg	₩	05/04/23 13:21	05/06/23 04:03	
o-Xylene	< 0.000366	U	0.00213	0.000366	mg/Kg	₩	05/04/23 13:21	05/06/23 04:03	
Xylenes, Total	<0.00107	U	0.00426	0.00107	mg/Kg	₽	05/04/23 13:21	05/06/23 04:03	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	125		70 - 130				05/04/23 13:21	05/06/23 04:03	
1,4-Difluorobenzene (Surr)	98		70 - 130				05/04/23 13:21	05/06/23 04:03	
		, ,	• •	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Mothod: SW946 9045D NM Dies	nal Banga Orga	nice (DBO)	(CC)						
Analyte Gasoline Range Organics		Qualifier	(GC) RL 53.0	MDL 15.9	Unit mg/Kg	<u>D</u>	Prepared 05/08/23 08:51	Analyzed 05/08/23 13:24	
Analyte Gasoline Range Organics (GRO)-C6-C10		Qualifier U	RL 53.0	15.9	mg/Kg	*	05/08/23 08:51	05/08/23 13:24	
Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result	Qualifier U	RL	15.9			<u>.</u>		
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)		Qualifier U J	RL 53.0	15.9 15.9	mg/Kg	*	05/08/23 08:51	05/08/23 13:24	
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result <15.9	Qualifier U J	RL 53.0	15.9 15.9	mg/Kg	— —	05/08/23 08:51 05/08/23 08:51	05/08/23 13:24 05/08/23 13:24	
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result <15.9 20.6 <15.9	Qualifier U J	RL 53.0 53.0	15.9 15.9	mg/Kg	— —	05/08/23 08:51 05/08/23 08:51 05/08/23 08:51	05/08/23 13:24 05/08/23 13:24 05/08/23 13:24	Dil Fa
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate	Result <15.9 20.6 <15.9 %Recovery	Qualifier U J	RL 53.0 53.0 53.0	15.9 15.9	mg/Kg	— —	05/08/23 08:51 05/08/23 08:51 05/08/23 08:51 Prepared	05/08/23 13:24 05/08/23 13:24 05/08/23 13:24 Analyzed	Dil Fa
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 J U Qualifier	RL 53.0 53.0 53.0 53.0 Limits 70 - 130 70 - 130	15.9 15.9	mg/Kg	— —	05/08/23 08:51 05/08/23 08:51 05/08/23 08:51 Prepared 05/08/23 08:51	05/08/23 13:24 05/08/23 13:24 05/08/23 13:24 Analyzed 05/08/23 13:24	Dil Fa
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	Qualifier U J U Qualifier	RL 53.0 53.0 53.0 53.0 Limits 70 - 130 70 - 130	15.9 15.9	mg/Kg mg/Kg mg/Kg	— —	05/08/23 08:51 05/08/23 08:51 05/08/23 08:51 Prepared 05/08/23 08:51	05/08/23 13:24 05/08/23 13:24 05/08/23 13:24 Analyzed 05/08/23 13:24	Dil Fa

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Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-2 (0-1)

Date Collected: 05/03/23 08:45 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-6

Matri	x: Solid
Percent Soli	ds: 98.0

Method: SW846 8021B - Volatile (Organic Comp	ourius (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000391	U *+	0.00203	0.000391	mg/Kg	<u></u>	05/04/23 13:21	05/06/23 04:23	1
Toluene	< 0.000463	U	0.00203	0.000463	mg/Kg	₽	05/04/23 13:21	05/06/23 04:23	1
Ethylbenzene	< 0.000574	U	0.00203	0.000574	mg/Kg	₽	05/04/23 13:21	05/06/23 04:23	1
m-Xylene & p-Xylene	<0.00103	U	0.00406	0.00103	mg/Kg	₽	05/04/23 13:21	05/06/23 04:23	1
o-Xylene	0.000433	J	0.00203	0.000350	mg/Kg	₽	05/04/23 13:21	05/06/23 04:23	1
Xylenes, Total	<0.00103	U	0.00406	0.00103	mg/Kg	₩	05/04/23 13:21	05/06/23 04:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130				05/04/23 13:21	05/06/23 04:23	1
1,4-Difluorobenzene (Surr)	95		70 - 130				05/04/23 13:21	05/06/23 04:23	1
- Method: SW846 8015B NM - Dies	el Range Orga	nice (DPO)	(00)						
		ilics (DICO)	(GC)						
Analyte		Qualifier	(GC) RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
		Qualifier	• •		Unit mg/Kg	<u>D</u>	Prepared 05/08/23 08:51	Analyzed 05/08/23 13:46	Dil Fac
Analyte	Result	Qualifier	RL						Dil Fac
Analyte Gasoline Range Organics	Result	Qualifier U	RL	15.3					Dil Fac

Method: EPA 300.0 - Anions, Ion C	hromatograp	hy - Soluble	•						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	367		5.13	0.405	mg/Kg	*		05/06/23 16:52	1

Limits

70 - 130

70 - 130

%Recovery Qualifier

105

76

Client Sample ID: SW91H-2 (1-2)

Date Collected: 05/03/23 08:47 Date Received: 05/03/23 16:56

Surrogate

o-Terphenyl

1-Chlorooctane

Lab Sample ID: 880-27936-7

Analyzed

05/08/23 13:46

05/08/23 13:46

Prepared

05/08/23 08:51

05/08/23 08:51

Matrix: Solid

Dil Fac

Percent Solids: 96.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000398	U *+	0.00207	0.000398	mg/Kg	*	05/04/23 13:21	05/06/23 04:44	1
Toluene	< 0.000471	U	0.00207	0.000471	mg/Kg	₽	05/04/23 13:21	05/06/23 04:44	1
Ethylbenzene	<0.000584	U	0.00207	0.000584	mg/Kg	₽	05/04/23 13:21	05/06/23 04:44	1
m-Xylene & p-Xylene	<0.00104	U	0.00413	0.00104	mg/Kg	₽	05/04/23 13:21	05/06/23 04:44	1
o-Xylene	< 0.000355	U	0.00207	0.000355	mg/Kg	₽	05/04/23 13:21	05/06/23 04:44	1
Xylenes, Total	<0.00104	U	0.00413	0.00104	mg/Kg	₽	05/04/23 13:21	05/06/23 04:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	122		70 - 130				05/04/23 13:21	05/06/23 04:44	1
1,4-Difluorobenzene (Surr)	104		70 - 130				05/04/23 13:21	05/06/23 04:44	1

Method: SW846 8015B NM - Diese	l Range Orga	nics (DRO) (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<15.6	U	51.9	15.6	mg/Kg	<u> </u>	05/08/23 08:51	05/08/23 14:07	1
Diesel Range Organics (Over C10-C28)	15.9	J	51.9	15.6	mg/Kg	₽	05/08/23 08:51	05/08/23 14:07	1
Oll Range Organics (Over C28-C36)	<15.6	U	51.9	15.6	mg/Kg	₽	05/08/23 08:51	05/08/23 14:07	1

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-2 (1-2)

Date Collected: 05/03/23 08:47 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-7

Matrix: Solid

Percent Solids: 96.2

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	110	70 - 130	05/08/23 08:51	05/08/23 14:07	1
o-Terphenyl	83	70 - 130	05/08/23 08:51	05/08/23 14:07	1

Method: EPA 300.0 - Anions, Ion C	hromatography	y - Soluble						
Analyte	Result Q	tualifier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	254	5.21	0.411	mg/Kg	ф		05/06/23 16:58	1

Lab Sample ID: 880-27936-8 Client Sample ID: SW91H-2 (2-3)

Date Collected: 05/03/23 08:52 **Matrix: Solid** Date Received: 05/03/23 16:56 Percent Solids: 92.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000417		0.00217	0.000417			05/04/23 13:21	05/06/23 05:04	1
Toluene	<0.000494	U	0.00217	0.000494	mg/Kg	₩	05/04/23 13:21	05/06/23 05:04	1
Ethylbenzene	< 0.000613	U	0.00217	0.000613	mg/Kg	₩	05/04/23 13:21	05/06/23 05:04	1
m-Xylene & p-Xylene	<0.00110	U	0.00434	0.00110	mg/Kg	₽	05/04/23 13:21	05/06/23 05:04	1
o-Xylene	< 0.000373	U	0.00217	0.000373	mg/Kg	₽	05/04/23 13:21	05/06/23 05:04	1
Xylenes, Total	<0.00110	U	0.00434	0.00110	mg/Kg	₩	05/04/23 13:21	05/06/23 05:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	124		70 - 130				05/04/23 13:21	05/06/23 05:04	1
1,4-Difluorobenzene (Surr)	101		70 ₋ 130				05/04/23 13:21	05/06/23 05:04	1

Method: SW846 8015B NM - Dies	or runge orge	iiiioo (Bitto)	(33)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<16.2	U	54.1	16.2	mg/Kg		05/08/23 08:51	05/08/23 14:29	1
Diesel Range Organics (Over C10-C28)	17.0	J	54.1	16.2	mg/Kg	₽	05/08/23 08:51	05/08/23 14:29	1
Oll Range Organics (Over C28-C36)	<16.2	U	54.1	16.2	mg/Kg	₽	05/08/23 08:51	05/08/23 14:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	114		70 - 130				05/08/23 08:51	05/08/23 14:29	1
o-Terphenyl	87		70 - 130				05/08/23 08:51	05/08/23 14:29	1

Method: EPA 300.0 - Anions, Ion C	hromatograph	y - Soluble							
Analyte	Result C	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	294		5.42	0.428	mg/Kg	<u></u>		05/06/23 17:03	1

Client Sample ID: SW91H-3 (0-1) Lab Sample ID: 880-27936-9 Date Collected: 05/03/23 08:58 **Matrix: Solid** Date Received: 05/03/23 16:56 Percent Solids: 98.8

atile Organic Comp	ounds (GC)							
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<0.000392	U *+	0.00204	0.000392	mg/Kg	₽	05/04/23 13:21	05/06/23 05:25	1
< 0.000464	U	0.00204	0.000464	mg/Kg	₽	05/04/23 13:21	05/06/23 05:25	1
< 0.000575	U	0.00204	0.000575	mg/Kg	₽	05/04/23 13:21	05/06/23 05:25	1
<0.00103	U	0.00407	0.00103	mg/Kg	₽	05/04/23 13:21	05/06/23 05:25	1
< 0.000350	U	0.00204	0.000350	mg/Kg	₩	05/04/23 13:21	05/06/23 05:25	1
< 0.00103	U	0.00407	0.00103	mg/Kg	₩	05/04/23 13:21	05/06/23 05:25	1
	Result <0.000392 <0.000464 <0.000575 <0.00103 <0.000350	Result Qualifier	<0.000392 U*+ 0.00204 <0.000464 U 0.00204 <0.000575 U 0.00204 <0.00103 U 0.00407 <0.000350 U 0.00204	Result Qualifier RL MDL <0.000392	Result Qualifier RL MDL Unit <0.000392	Result Qualifier RL MDL Unit D <0.000392	Result Qualifier RL MDL Unit D Prepared <0.000392	Result Qualifier RL MDL Unit D Prepared Analyzed <0.000392

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-3 (0-1)

Date Collected: 05/03/23 08:58 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-9

Matrix: Solid

Percent Solids: 98.8

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	116		70 - 130				05/04/23 13:21	05/06/23 05:25	1
1,4-Difluorobenzene (Surr)	101		70 - 130				05/04/23 13:21	05/06/23 05:25	1
- Method: SW846 8015B NM - Dies	sel Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	18.3	J	50.5	15.1	mg/Kg	<u></u>	05/08/23 08:51	05/08/23 14:51	1
Diesel Range Organics (Over C10-C28)	17.7	J	50.5	15.1	mg/Kg	₽	05/08/23 08:51	05/08/23 14:51	1
Oll Range Organics (Over C28-C36)	<15.1	U	50.5	15.1	mg/Kg	₽	05/08/23 08:51	05/08/23 14:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	103		70 - 130				05/08/23 08:51	05/08/23 14:51	1
o-Terphenyl	74		70 - 130				05/08/23 08:51	05/08/23 14:51	1
- Method: EPA 300.0 - Anions, Ion	Chromatograp	hy - Solubl	e						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	114		5.09	0.402	mg/Kg	<u></u>		05/06/23 17:08	1

Client Sample ID: SW91H-3 (1-2) Lab Sample ID: 880-27936-10

Date Collected: 05/03/23 09:01 Date Received: 05/03/23 16:56

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000401	U *+	0.00208	0.000401	mg/Kg	₩	05/04/23 13:21	05/06/23 05:45	1
Toluene	< 0.000475	U	0.00208	0.000475	mg/Kg	₽	05/04/23 13:21	05/06/23 05:45	1
Ethylbenzene	<0.000589	U	0.00208	0.000589	mg/Kg	₩	05/04/23 13:21	05/06/23 05:45	1
m-Xylene & p-Xylene	<0.00105	U	0.00417	0.00105	mg/Kg	₩	05/04/23 13:21	05/06/23 05:45	1
o-Xylene	< 0.000359	U	0.00208	0.000359	mg/Kg	₽	05/04/23 13:21	05/06/23 05:45	1
Xylenes, Total	<0.00105	U	0.00417	0.00105	mg/Kg	₽	05/04/23 13:21	05/06/23 05:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130				05/04/23 13:21	05/06/23 05:45	1
1,4-Difluorobenzene (Surr)	90		70 - 130				05/04/23 13:21	05/06/23 05:45	1

o Aylono	-0.000000	U	0.00200	0.00000	9,9	~	00/01/20 10.21	00/00/20 00.10	
Xylenes, Total	<0.00105	U	0.00417	0.00105	mg/Kg	₽	05/04/23 13:21	05/06/23 05:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130				05/04/23 13:21	05/06/23 05:45	1
1,4-Difluorobenzene (Surr)	90		70 - 130				05/04/23 13:21	05/06/23 05:45	1
- Method: SW846 8015B NM - Diesel I	Range Orga	nics (DRO)	(GC)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<15.5	U	51.7	15.5	mg/Kg	<u></u>	05/08/23 08:51	05/08/23 15:13	1
(GRO)-C6-C10									
Diesel Range Organics (Over	18.4	J	51.7	15.5	mg/Kg	₽	05/08/23 08:51	05/08/23 15:13	1
C10-C28)									
Oll Range Organics (Over C28-C36)	<15.5	U	51.7	15.5	mg/Kg	₽	05/08/23 08:51	05/08/23 15:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	95		70 - 130				05/08/23 08:51	05/08/23 15:13	1
o-Terphenyl	71		70 - 130				05/08/23 08:51	05/08/23 15:13	1
- Method: EPA 300.0 - Anions, Ion Ch	romatogran	hy - Solubl	e						
Analyte	٠.	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	363		5.17	0.408	mg/Kg	— <u> </u>		05/06/23 17:14	

Eurofins Midland

Matrix: Solid

Percent Solids: 96.3

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-3 (2-3)

Date Collected: 05/03/23 09:05 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-11

Matrix	: Solid
Percent Solid	s: 93.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000412	U *+	0.00214	0.000412	mg/Kg	☼	05/04/23 13:21	05/06/23 07:35	1
Toluene	<0.000487	U	0.00214	0.000487	mg/Kg	☼	05/04/23 13:21	05/06/23 07:35	1
Ethylbenzene	0.000655	J	0.00214	0.000604	mg/Kg	☼	05/04/23 13:21	05/06/23 07:35	1
m-Xylene & p-Xylene	<0.00108	U	0.00428	0.00108	mg/Kg	₩	05/04/23 13:21	05/06/23 07:35	1
o-Xylene	0.000578	J	0.00214	0.000368	mg/Kg	☼	05/04/23 13:21	05/06/23 07:35	1
Xylenes, Total	<0.00108	U	0.00428	0.00108	mg/Kg	₽	05/04/23 13:21	05/06/23 07:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130				05/04/23 13:21	05/06/23 07:35	1
1,4-Difluorobenzene (Surr)	100		70 - 130				05/04/23 13:21	05/06/23 07:35	1

1,4-Dilluorobenzene (Surr) -	100		70 - 130				05/04/23 13.21	05/06/23 07.35	,
Method: SW846 8015B NM - Dies	el Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<16.1	U	53.6	16.1	mg/Kg	*	05/08/23 08:51	05/08/23 15:56	1
Diesel Range Organics (Over C10-C28)	<16.1	U	53.6	16.1	mg/Kg	₩	05/08/23 08:51	05/08/23 15:56	1
Oll Range Organics (Over C28-C36)	<16.1	U	53.6	16.1	mg/Kg	₩	05/08/23 08:51	05/08/23 15:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	110		70 - 130				05/08/23 08:51	05/08/23 15:56	1
o-Terphenyl	83		70 - 130				05/08/23 08:51	05/08/23 15:56	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble								
Analyte	Result Qualif	ier RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1220	5.32	0.421	mg/Kg	<u> </u>		05/06/23 17:19	1

Client Sample ID: SW91H-4 (0-1)

Date Collected: 05/03/23 11:18

Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-12 Matrix: Solid

Percent Solids: 88.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000432	U *+	0.00224	0.000432	mg/Kg	₩	05/04/23 13:21	05/06/23 07:56	1
Toluene	<0.000511	U	0.00224	0.000511	mg/Kg	₩	05/04/23 13:21	05/06/23 07:56	1
Ethylbenzene	< 0.000633	U	0.00224	0.000633	mg/Kg	₩	05/04/23 13:21	05/06/23 07:56	1
m-Xylene & p-Xylene	<0.00113	U	0.00448	0.00113	mg/Kg	₽	05/04/23 13:21	05/06/23 07:56	1
o-Xylene	<0.000386	U	0.00224	0.000386	mg/Kg	₩	05/04/23 13:21	05/06/23 07:56	1
Xylenes, Total	<0.00113	U	0.00448	0.00113	mg/Kg	₽	05/04/23 13:21	05/06/23 07:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		70 - 130				05/04/23 13:21	05/06/23 07:56	1
1,4-Difluorobenzene (Surr)	96		70 - 130				05/04/23 13:21	05/06/23 07:56	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	23.5	J	56.3	16.9	mg/Kg	— <u> </u>	05/08/23 08:51	05/08/23 16:18	1
Diesel Range Organics (Over C10-C28)	20.0	J	56.3	16.9	mg/Kg	₽	05/08/23 08:51	05/08/23 16:18	1
Oll Range Organics (Over C28-C36)	<16.9	U	56.3	16.9	mg/Kg	₽	05/08/23 08:51	05/08/23 16:18	1

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-4 (0-1)

Date Collected: 05/03/23 11:18 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-12

Matrix: Solid

Percent Solids: 88.7

				Dil Fac
111	70 - 130	05/08/23 08:51	05/08/23 16:18	1
80	70 - 130	05/08/23 08:51	05/08/23 16:18	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac

Chloride 115 5.66 0.447 mg/Kg © 05/06/23 17:35 1

Client Sample ID: SW91H-4 (1-2)

Lab Sample ID: 880-27936-13

Date Collected: 05/03/23 11:16

Date Received: 05/03/23 16:56

Matrix: Solid
Percent Solids: 93.6

Method: SW846 8021B - Volati	ile Organic Comp	ounds (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000410	U *+	0.00213	0.000410	mg/Kg	*	05/04/23 13:21	05/06/23 08:16	1
Toluene	<0.000486	U	0.00213	0.000486	mg/Kg	₽	05/04/23 13:21	05/06/23 08:16	1
Ethylbenzene	<0.000602	U	0.00213	0.000602	mg/Kg	₩	05/04/23 13:21	05/06/23 08:16	1
m-Xylene & p-Xylene	<0.00108	U	0.00426	0.00108	mg/Kg	₽	05/04/23 13:21	05/06/23 08:16	1
o-Xylene	< 0.000367	U	0.00213	0.000367	mg/Kg	₩	05/04/23 13:21	05/06/23 08:16	1
Xylenes, Total	<0.00108	U	0.00426	0.00108	mg/Kg	₽	05/04/23 13:21	05/06/23 08:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130				05/04/23 13:21	05/06/23 08:16	1
1 4-Difluorobenzene (Surr)	99		70 - 130				05/04/23 13:21	05/06/23 08:16	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	21.9		53.4		mg/Kg	— -	05/08/23 08:51	05/08/23 16:40	1
(GRO)-C6-C10 Diesel Range Organics (Over	<16.0	U	53.4	16.0	mg/Kg	₽	05/08/23 08:51	05/08/23 16:40	1
C10-C28) OII Range Organics (Over C28-C36)	<16.0	U	53.4	16.0	mg/Kg	₩	05/08/23 08:51	05/08/23 16:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	114		70 - 130				05/08/23 08:51	05/08/23 16:40	1
o-Terphenyl	86		70 - 130				05/08/23 08:51	05/08/23 16:40	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble										
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Chloride	445		5.35	0.423	mg/Kg	*		05/06/23 17:40	1

 Client Sample ID: SW91H-5 (0-1)

 Date Collected: 05/03/23 11:45
 Matrix: Solid

 Date Received: 05/03/23 16:56
 Percent Solids: 96.5

atile Organic Comp	ounds (GC)							
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<0.000401	U *+	0.00208	0.000401	mg/Kg	₽	05/04/23 13:21	05/06/23 08:37	1
< 0.000475	U	0.00208	0.000475	mg/Kg	₩	05/04/23 13:21	05/06/23 08:37	1
<0.000589	U	0.00208	0.000589	mg/Kg	₩	05/04/23 13:21	05/06/23 08:37	1
<0.00105	U	0.00417	0.00105	mg/Kg	₽	05/04/23 13:21	05/06/23 08:37	1
<0.000358	U	0.00208	0.000358	mg/Kg	₩	05/04/23 13:21	05/06/23 08:37	1
<0.00105	U	0.00417	0.00105	mg/Kg	₩	05/04/23 13:21	05/06/23 08:37	1
	Result <0.000401 <0.000475 <0.000589 <0.00105 <0.000358	Result Qualifier U *+	<0.000401 U*+ 0.00208 <0.000475 U 0.00208 <0.000589 U 0.00208 <0.00105 U 0.00417 <0.000358 U 0.00208	Result Qualifier RL MDL <0.000401	Result Qualifier RL MDL Unit <0.000401	Result Qualifier RL MDL Unit D <0.000401	Result Qualifier RL MDL Unit D Prepared <0.000401	Result Qualifier RL MDL Unit D Prepared Analyzed <0.000401

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-5 (0-1)

Date Collected: 05/03/23 11:45 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-14

Matrix: Solid

Percent Solids: 96.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130	05/04/23 13:21	05/06/23 08:37	1
1,4-Difluorobenzene (Surr)	99		70 - 130	05/04/23 13:21	05/06/23 08:37	1

Method: SW846 8015B NM - Dies	sel Range Orga	nics (DRO)) (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<15.5	U	51.6	15.5	mg/Kg	*	05/08/23 08:51	05/08/23 17:01	1
Diesel Range Organics (Over C10-C28)	31.2	J	51.6	15.5	mg/Kg	₩	05/08/23 08:51	05/08/23 17:01	1
Oll Range Organics (Over C28-C36)	<15.5	U	51.6	15.5	mg/Kg	₩	05/08/23 08:51	05/08/23 17:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	109		70 - 130				05/08/23 08:51	05/08/23 17:01	1

o-Terphenyl	81		70 - 130				05/08/23 08:51	05/08/23 17:01	1
Method: EPA 300.0 - Anions, Ion C	hromatograp	hy - Soluble	•						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	206		5.15	0.407	mg/Kg			05/06/23 17:57	1

Client Sample ID: SW91H-5 (1-2) Lab Sample ID: 880-27936-15

Date Collected: 05/03/23 11:34 **Matrix: Solid** Date Received: 05/03/23 16:56 Percent Solids: 95.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000403	U *+	0.00209	0.000403	mg/Kg	₩	05/04/23 13:21	05/06/23 08:57	1
Toluene	<0.000477	U	0.00209	0.000477	mg/Kg	₽	05/04/23 13:21	05/06/23 08:57	1
Ethylbenzene	0.000705	J	0.00209	0.000591	mg/Kg	₽	05/04/23 13:21	05/06/23 08:57	1
m-Xylene & p-Xylene	<0.00106	U	0.00418	0.00106	mg/Kg	₽	05/04/23 13:21	05/06/23 08:57	1
o-Xylene	<0.000360	U	0.00209	0.000360	mg/Kg	₽	05/04/23 13:21	05/06/23 08:57	1
Xylenes, Total	<0.00106	U	0.00418	0.00106	mg/Kg	₽	05/04/23 13:21	05/06/23 08:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4 Duamanthianahanaan (O.m.)							05/04/00 40 04	05/00/00 00 57	

Method: SW846 8015B NM - Diese	l Range Organics (D	RO) (GC)			
1,4-Difluorobenzene (Surr)	102	70 - 130	05/04/23 13:21	05/06/23 08:57	1
4-Bromofluorobenzene (Surr)	121	70 - 130	05/04/23 13:21	05/06/23 08:57	1

Method: SW846 8015B NM - Diese	ei Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	20.8	J	52.2	15.7	mg/Kg	<u></u>	05/08/23 08:51	05/08/23 17:23	1
Diesel Range Organics (Over C10-C28)	20.6	J	52.2	15.7	mg/Kg	₽	05/08/23 08:51	05/08/23 17:23	1
Oll Range Organics (Over C28-C36)	<15.7	U	52.2	15.7	mg/Kg	₩	05/08/23 08:51	05/08/23 17:23	1

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	113	70 - 130	05/08/23 08:51	05/08/23 17:23	1
o-Terphenyl	85	70 - 130	05/08/23 08:51	05/08/23 17:23	1

Method: EPA 300.0 - Anions, Ion Ch	romatography - Soluble							
Analyte	Result Qualifier	RL	MDL U	Jnit	D	Prepared	Analyzed	Dil Fac
Chloride	135	5.25	0.415 n	mg/Kg	☼		05/06/23 18:02	1

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-6 (0-1)

86

Date Collected: 05/03/23 11:59 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-16

Matrix: Solid Percent Solids: 95.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000402	U *+	0.00209	0.000402	mg/Kg	— <u></u>	05/04/23 13:21	05/06/23 09:18	1
Toluene	< 0.000476	U	0.00209	0.000476	mg/Kg	₽	05/04/23 13:21	05/06/23 09:18	1
Ethylbenzene	<0.000589	U	0.00209	0.000589	mg/Kg	₽	05/04/23 13:21	05/06/23 09:18	1
m-Xylene & p-Xylene	<0.00105	U	0.00417	0.00105	mg/Kg	₩	05/04/23 13:21	05/06/23 09:18	1
o-Xylene	0.000362	J	0.00209	0.000359	mg/Kg	₽	05/04/23 13:21	05/06/23 09:18	1
Xylenes, Total	<0.00105	U	0.00417	0.00105	mg/Kg	₽	05/04/23 13:21	05/06/23 09:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130				05/04/23 13:21	05/06/23 09:18	1
1,4-Difluorobenzene (Surr)	89		70 - 130				05/04/23 13:21	05/06/23 09:18	1

Method: SW846 8015B NM - Dies	el Range Orga	nics (DRO)) (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<15.6	U	52.2	15.6	mg/Kg	<u></u>	05/08/23 08:51	05/08/23 17:45	1
Diesel Range Organics (Over C10-C28)	15.6	J	52.2	15.6	mg/Kg	₽	05/08/23 08:51	05/08/23 17:45	1
Oll Range Organics (Over C28-C36)	<15.6	U	52.2	15.6	mg/Kg	₽	05/08/23 08:51	05/08/23 17:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	114		70 - 130				05/08/23 08:51	05/08/23 17:45	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble										
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Chloride	1440		5.22	0.412	mg/Kg	<u></u>		05/06/23 18:08	1

70 - 130

Client Sample ID: SW91H-6 (1-2)

o-Terphenyl

Lab Sample ID: 880-27936-17 **Matrix: Solid**

05/08/23 08:51

05/08/23 17:45

Date Collected: 05/03/23 12:01 Date Received: 05/03/23 16:56 Percent Solids: 93.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000411	U *+	0.00214	0.000411	mg/Kg	*	05/04/23 13:21	05/06/23 09:38	1
Toluene	<0.000487	U	0.00214	0.000487	mg/Kg	₽	05/04/23 13:21	05/06/23 09:38	1
Ethylbenzene	<0.000603	U	0.00214	0.000603	mg/Kg	₽	05/04/23 13:21	05/06/23 09:38	1
m-Xylene & p-Xylene	<0.00108	U	0.00427	0.00108	mg/Kg	₩	05/04/23 13:21	05/06/23 09:38	1
o-Xylene	0.000484	J	0.00214	0.000367	mg/Kg	₩	05/04/23 13:21	05/06/23 09:38	1
Xylenes, Total	<0.00108	U	0.00427	0.00108	mg/Kg	₩	05/04/23 13:21	05/06/23 09:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130				05/04/23 13:21	05/06/23 09:38	1
1,4-Difluorobenzene (Surr)	98		70 ₋ 130				05/04/23 13:21	05/06/23 09:38	1

Method: SW846 8015B NM - Diesel	Range Orga	nics (DRO) (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<16.1	U	53.6	16.1	mg/Kg	<u></u>	05/08/23 08:51	05/08/23 18:06	1
Diesel Range Organics (Over C10-C28)	<16.1	U	53.6	16.1	mg/Kg	₩	05/08/23 08:51	05/08/23 18:06	1
OII Range Organics (Over C28-C36)	<16.1	U	53.6	16.1	mg/Kg	₩	05/08/23 08:51	05/08/23 18:06	1

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-6 (1-2)

Date Collected: 05/03/23 12:01

Lab Sample ID: 880-27936-17

Matrix: Solid

Date Received: 05/03/23 16:56 Percent Solids: 93.1

Surrogate 1-Chlorooctane o-Terphenyl	%Recovery Qualified	r <u>Limits</u> 70 - 130 70 - 130			Prepared 05/08/23 08:51 05/08/23 08:51	Analyzed 05/08/23 18:06 05/08/23 18:06	Dil Fac 1 1
Method: EPA 300.0 - Anions, Ion Cl Analyte	nromatography - So Result Qualifie		MDL Unit	D	Prepared	Analyzed	Dil Fac

 Chloride
 566
 5.32
 0.420 mg/Kg
 ® 05/06/23 18:13
 1

 Client Sample ID: SW91H-7 (0-1)
 Lab Sample ID: 880-27936-18

Date Collected: 05/03/23 12:05

Date Received: 05/03/23 16:56

Matrix: Solid
Percent Solids: 97.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000395	U *+	0.00205	0.000395	mg/Kg	₩	05/04/23 13:21	05/06/23 09:59	1
Toluene	<0.000468	U	0.00205	0.000468	mg/Kg	₽	05/04/23 13:21	05/06/23 09:59	1
Ethylbenzene	<0.000579	U	0.00205	0.000579	mg/Kg	₩	05/04/23 13:21	05/06/23 09:59	1
m-Xylene & p-Xylene	<0.00104	U	0.00410	0.00104	mg/Kg	₩	05/04/23 13:21	05/06/23 09:59	1
o-Xylene	<0.000353	U	0.00205	0.000353	mg/Kg	₽	05/04/23 13:21	05/06/23 09:59	1
Xylenes, Total	<0.00104	U	0.00410	0.00104	mg/Kg	₽	05/04/23 13:21	05/06/23 09:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		70 - 130				05/04/23 13:21	05/06/23 09:59	1
1,4-Difluorobenzene (Surr)	97		70 - 130				05/04/23 13:21	05/06/23 09:59	1

Method: SW846 8015B NM - Dies	sel Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<15.4	U	51.2	15.4	mg/Kg		05/08/23 08:51	05/08/23 18:28	1
Diesel Range Organics (Over C10-C28)	<15.4	U	51.2	15.4	mg/Kg	₽	05/08/23 08:51	05/08/23 18:28	1
Oll Range Organics (Over C28-C36)	<15.4	U	51.2	15.4	mg/Kg	₽	05/08/23 08:51	05/08/23 18:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	107		70 - 130				05/08/23 08:51	05/08/23 18:28	1
o-Terphenyl	80		70 - 130				05/08/23 08:51	05/08/23 18:28	1

Method: EPA 300.0 - Anions, Ion C	hromatography - Solub	le						
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	95.0	5.09	0.402	mg/Kg	<u></u>		05/06/23 18:18	1

 Client Sample ID: SW91H-7 (1-2)

 Date Collected: 05/03/23 12:12
 Matrix: Solid

 Date Received: 05/03/23 16:56
 Percent Solids: 94.8

atile Organic Comp	ounds (GC)							
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<0.000409	U *+	0.00212	0.000409	mg/Kg	₽	05/04/23 13:21	05/06/23 10:19	1
<0.000484	U	0.00212	0.000484	mg/Kg	₩	05/04/23 13:21	05/06/23 10:19	1
<0.000600	U	0.00212	0.000600	mg/Kg	₩	05/04/23 13:21	05/06/23 10:19	1
<0.00107	U	0.00425	0.00107	mg/Kg	₩	05/04/23 13:21	05/06/23 10:19	1
< 0.000365	U	0.00212	0.000365	mg/Kg	₩	05/04/23 13:21	05/06/23 10:19	1
<0.00107	U	0.00425	0.00107	mg/Kg	₩	05/04/23 13:21	05/06/23 10:19	1
	Result <0.000409 <0.000484 <0.000600 <0.00107 <0.000365	Result Qualifier	<0.000409 U*+ 0.00212 <0.000484 U 0.00212 <0.000600 U 0.00212 <0.00107 U 0.00425 <0.000365 U 0.00212	Result Qualifier RL MDL <0.000409	Result Qualifier RL MDL Unit <0.000409	Result Qualifier RL MDL Unit D <0.000409	Result Qualifier RL MDL Unit D Prepared <0.000409	Result Qualifier RL MDL Unit D Prepared Analyzed <0.000409

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-7 (1-2)

Date Collected: 05/03/23 12:12 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-19

Matrix: Solid

Percent Solids: 94.8

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130				05/04/23 13:21	05/06/23 10:19	1
1,4-Difluorobenzene (Surr)	97		70 - 130				05/04/23 13:21	05/06/23 10:19	1
Method: SW846 8015B NM - Dies	el Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	16.7	J	52.8	15.8	mg/Kg	<u> </u>	05/08/23 08:51	05/08/23 18:50	1
Diesel Range Organics (Over C10-C28)	<15.8	U	52.8	15.8	mg/Kg	₩	05/08/23 08:51	05/08/23 18:50	1
Oll Range Organics (Over C28-C36)	<15.8	U	52.8	15.8	mg/Kg	₩	05/08/23 08:51	05/08/23 18:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	112		70 - 130				05/08/23 08:51	05/08/23 18:50	1
o-Terphenyl	86		70 - 130				05/08/23 08:51	05/08/23 18:50	1

Client Sample ID: SW91H BG-1

Date Collected: 05/03/23 09:18

Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-20

Matrix: Solid

Percent Solids: 99.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	<0.000389		0.00202	0.000389	mg/Kg	— <u></u>	05/04/23 13:21	05/06/23 10:40	
Toluene	< 0.000461	U	0.00202	0.000461	mg/Kg	₩	05/04/23 13:21	05/06/23 10:40	
Ethylbenzene	< 0.000571	U	0.00202	0.000571	mg/Kg	₩	05/04/23 13:21	05/06/23 10:40	,
m-Xylene & p-Xylene	<0.00102	U	0.00404	0.00102	mg/Kg		05/04/23 13:21	05/06/23 10:40	
o-Xylene	<0.000348	U	0.00202	0.000348	mg/Kg	₽	05/04/23 13:21	05/06/23 10:40	1
Xylenes, Total	<0.00102	U	0.00404	0.00102	mg/Kg	₽	05/04/23 13:21	05/06/23 10:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130				05/04/23 13:21	05/06/23 10:40	1
1,4-Difluorobenzene (Surr)	102		70 ₋ 130				05/04/23 13:21	05/06/23 10:40	1
Method: SW846 8015B NM - Dies	sel Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL		<u>D</u>	Prepared	Analyzed	
Analyte Gasoline Range Organics		Qualifier	•	MDL 15.1	Unit mg/Kg	D			
Analyte	Result	Qualifier U	RL				Prepared	Analyzed	1
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result <15.1	Qualifier U J	RL 50.4	15.1	mg/Kg	*	Prepared 05/08/23 08:51	Analyzed 05/08/23 19:11	
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result <15.1 26.5	Qualifier U J	RL 50.4	15.1 15.1	mg/Kg	— -	Prepared 05/08/23 08:51 05/08/23 08:51	Analyzed 05/08/23 19:11 05/08/23 19:11	
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result <15.1 26.5 <15.1	Qualifier U J	50.4 50.4	15.1 15.1	mg/Kg	— -	Prepared 05/08/23 08:51 05/08/23 08:51 05/08/23 08:51	Analyzed 05/08/23 19:11 05/08/23 19:11 05/08/23 19:11	Dil Fac
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate	Result <15.1 26.5 <15.1 %Recovery	Qualifier U J	50.4 50.4 50.4 <i>Limits</i>	15.1 15.1	mg/Kg	— -	Prepared 05/08/23 08:51 05/08/23 08:51 05/08/23 08:51 Prepared	Analyzed 05/08/23 19:11 05/08/23 19:11 05/08/23 19:11 Analyzed	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36) Surrogate 1-Chlorooctane o-Terphenyl Method: EPA 300.0 - Anions, Ion	Result	Qualifier U Qualifier Ohy - Soluble	RL 50.4 50.4 50.4 Limits 70 - 130 70 - 130	15.1 15.1 15.1	mg/Kg mg/Kg mg/Kg	***************************************	Prepared 05/08/23 08:51 05/08/23 08:51 05/08/23 08:51 Prepared 05/08/23 08:51 05/08/23 08:51	Analyzed 05/08/23 19:11 05/08/23 19:11 05/08/23 19:11 Analyzed 05/08/23 19:11 05/08/23 19:11	Dil Fac
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	Qualifier U J U Qualifier	50.4 50.4 50.4 Limits 70 - 130 70 - 130	15.1 15.1	mg/Kg mg/Kg mg/Kg	— -	Prepared 05/08/23 08:51 05/08/23 08:51 05/08/23 08:51 Prepared 05/08/23 08:51	Analyzed 05/08/23 19:11 05/08/23 19:11 05/08/23 19:11 Analyzed 05/08/23 19:11	Dil Fa

Surrogate Summary

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

		BFB1	DFBZ1	Percent Surrogate Recovery (Acceptance Limit
ab Sample ID	Client Sample ID	(70-130)	(70-130)	
80-27936-1	SW91H-1 (0-1)	95	96	
30-27936-1 MS	SW91H-1 (0-1)	115	107	
80-27936-1 MSD	SW91H-1 (0-1)	114	90	
80-27936-2	SW91H-1 (1-2)	105	98	
30-27936-3	SW91H-1 (2-3)	109	96	
80-27936-4	SW91H-1 (3-4)	115	93	
80-27936-5	SW91H-1 (4-5)	125	98	
0-27936-6	SW91H-2 (0-1)	108	95	
0-27936-7	SW91H-2 (1-2)	122	104	
30-27936-8	SW91H-2 (2-3)	124	101	
0-27936-9	SW91H-3 (0-1)	116	101	
0-27936-10	SW91H-3 (1-2)	105	90	
30-27936-11	SW91H-3 (2-3)	105	100	
30-27936-12	SW91H-4 (0-1)	110	96	
0-27936-13	SW91H-4 (1-2)	102	99	
0-27936-14	SW91H-5 (0-1)	106	99	
30-27936-15	SW91H-5 (1-2)	121	102	
30-27936-16	SW91H-6 (0-1)	113	89	
0-27936-17	SW91H-6 (1-2)	114	98	
80-27936-18	SW91H-7 (0-1)	113	97	
30-27936-19	SW91H-7 (1-2)	109	97	
30-27936-20	SW91H BG-1	119	102	
CS 880-52616/1-A	Lab Control Sample	110	100	
CSD 880-52616/2-A	Lab Control Sample Dup	117	113	
B 880-52616/5-A	Method Blank	96	110	
B 880-52673/5-A	Method Blank	102	105	

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits
		1CO1	OTPH1	
_ab Sample ID	Client Sample ID	(70-130)	(70-130)	
80-27936-1	SW91H-1 (0-1)	105	77	
80-27936-1 MS	SW91H-1 (0-1)	187 S1+	131 S1+	
80-27936-1 MSD	SW91H-1 (0-1)	180 S1+	127	
80-27936-2	SW91H-1 (1-2)	109	82	
880-27936-3	SW91H-1 (2-3)	112	85	
880-27936-4	SW91H-1 (3-4)	117	89	
880-27936-5	SW91H-1 (4-5)	114	85	
880-27936-6	SW91H-2 (0-1)	105	76	
880-27936-7	SW91H-2 (1-2)	110	83	
880-27936-8	SW91H-2 (2-3)	114	87	
880-27936-9	SW91H-3 (0-1)	103	74	
80-27936-10	SW91H-3 (1-2)	95	71	
80-27936-11	SW91H-3 (2-3)	110	83	

Surrogate Summary

Client: Civil & Environmental Consultants Inc Job ID: 880-27936-1 Project/Site: Seawolf 112 91H

SDG: Jal NM

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
_ab Sample ID	Client Sample ID	(70-130)	(70-130)	
380-27936-12	SW91H-4 (0-1)	111	80	
380-27936-13	SW91H-4 (1-2)	114	86	
380-27936-14	SW91H-5 (0-1)	109	81	
380-27936-15	SW91H-5 (1-2)	113	85	
380-27936-16	SW91H-6 (0-1)	114	86	
380-27936-17	SW91H-6 (1-2)	111	84	
380-27936-18	SW91H-7 (0-1)	107	80	
380-27936-19	SW91H-7 (1-2)	112	86	
380-27936-20	SW91H BG-1	104	75	
_CS 880-52799/2-A	Lab Control Sample	96	74	
_CSD 880-52799/3-A	Lab Control Sample Dup	99	75	
MB 880-52799/1-A	Method Blank	102	80	

1CO = 1-Chlorooctane OTPH = o-Terphenyl

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-52616/5-A

Analysis Batch: 52692

Matrix: Solid

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 52616

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		05/04/23 13:21	05/06/23 02:13	1
Toluene	<0.000456	U	0.00200	0.000456	mg/Kg		05/04/23 13:21	05/06/23 02:13	1
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		05/04/23 13:21	05/06/23 02:13	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		05/04/23 13:21	05/06/23 02:13	1
o-Xylene	< 0.000344	U	0.00200	0.000344	mg/Kg		05/04/23 13:21	05/06/23 02:13	1
Xylenes, Total	< 0.00101	U	0.00400	0.00101	mg/Kg		05/04/23 13:21	05/06/23 02:13	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prep	ared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130	05/04/2	3 13:21	05/06/23 02:13	1
1,4-Difluorobenzene (Surr)	110		70 - 130	05/04/2	3 13:21	05/06/23 02:13	1

Lab Sample ID: LCS 880-52616/1-A

Matrix: Solid

Analysis Batch: 52692

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 52616

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1271		mg/Kg		127	70 - 130	
Toluene	0.100	0.1089		mg/Kg		109	70 - 130	
Ethylbenzene	0.100	0.09057		mg/Kg		91	70 - 130	
m-Xylene & p-Xylene	0.200	0.2041		mg/Kg		102	70 - 130	
o-Xylene	0.100	0.09966		mg/Kg		100	70 - 130	

LCS LCS

Surrogate	%Recovery Qualifie	r Limits
4-Bromofluorobenzene (Surr)	110	70 - 130
1,4-Difluorobenzene (Surr)	100	70 - 130

Lab Sample ID: LCSD 880-52616/2-A

Matrix: Solid

Analysis Batch: 52692

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 52616

LCSD LCSD RPD Spike %Rec Analyte Added Result Qualifier Unit %Rec Limits Limit Benzene 0.100 0.1481 *+ mg/Kg 148 70 - 130 15 35 Toluene 0.100 0.1118 mg/Kg 112 70 - 130 3 35 Ethylbenzene 0.100 0.09785 mg/Kg 98 70 - 130 8 35 0.200 m-Xylene & p-Xylene 0.2320 mg/Kg 116 70 - 130 13 35 0.100 0.1143 o-Xylene mg/Kg 114 70 - 130 35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	117		70 - 130
1.4-Difluorobenzene (Surr)	113		70 - 130

Lab Sample ID: 880-27936-1 MS

Matrix: Solid

Analysis Batch: 52692

Client Sample ID: SW91H-1 (0-1)

Prep Type: Total/NA

Prep Batch: 52616

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.000391	U *+	0.102	0.1264		mg/Kg	*	124	70 - 130	
Toluene	< 0.000463	U	0.102	0.1026		mg/Kg	₽	101	70 - 130	

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Page 20 of 44

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

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

Lab Sample ID: 880-27936-1 MS

Lab Sample ID: 880-27936-1 MSD

Matrix: Solid

Analysis Batch: 52692

Client Sample ID: SW91H-1 (0-1)

Prep Type: Total/NA

Prep Batch: 52616

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.000574	U	0.102	0.09574		mg/Kg	*	94	70 - 130	
m-Xylene & p-Xylene	<0.00103	U	0.204	0.2094		mg/Kg	₽	103	70 - 130	
o-Xylene	< 0.000350	U	0.102	0.1068		mg/Kg	₩	105	70 - 130	

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	115		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Client Sample ID: SW91H-1 (0-1)

Prep Type: Total/NA

Prep Batch: 52616

Matrix: Solid Analysis Batch: 52692 Sample Sample Spike MSD MSD RPD

Result Qualifier Added %Rec RPD Limit Analyte Result Qualifier Unit D Limits 0.102 Benzene <0.000391 U*+ 0.1099 mg/Kg Ä 107 70 - 130 14 35 Toluene < 0.000463 0.102 0.1014 mg/Kg ₽ 99 70 - 130 1 35 Ethylbenzene <0.000574 0.102 0.08890 mg/Kg 87 70 - 130 35 U 77 0.205 70 - 130 35 m-Xylene & p-Xylene <0.00103 U 0.1971 mq/Kq ₩ 96 6 0.102 <0.000350 U 0.1002 98 70 - 130 o-Xylene mg/Kg Ü

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	114		70 - 130
1,4-Difluorobenzene (Surr)	90		70 - 130

Lab Sample ID: MB 880-52673/5-A

Matrix: Solid

Analysis Batch: 52692

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

Prep Batch: 52673

MB MB MDL Unit Result Qualifier Dil Fac Analyte RL Prepared Analyzed Benzene <0.000385 U 0.00200 0.000385 mg/Kg 05/05/23 09:47 05/05/23 14:17 Toluene <0.000456 U 0.00200 0.000456 mg/Kg 05/05/23 09:47 05/05/23 14:17 Ethylbenzene <0.000565 U 0.00200 0.000565 mg/Kg 05/05/23 09:47 05/05/23 14:17 m-Xylene & p-Xylene <0.00101 U 0.00400 0.00101 mg/Kg 05/05/23 09:47 05/05/23 14:17 0.00200 0.000344 mg/Kg 05/05/23 09:47 05/05/23 14:17 o-Xylene <0.000344 U 0.00400 Xylenes, Total <0.00101 U 0.00101 mg/Kg 05/05/23 09:47 05/05/23 14:17

MB MB

MB MB

<15.0 U

Result Qualifier

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130	05/05/23 09:47	05/05/23 14:17	1
1,4-Difluorobenzene (Surr)	105		70 - 130	05/05/23 09:47	05/05/23 14:17	1

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

Lab Sample ID: MB 880-52799/1-A

Matrix: Solid

Analysis Batch: 52788

Gasoline Range Organics

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

Prepared

05/08/23 08:00

Prep Batch: 52799

Analyzed 05/08/23 08:37

(GRO)-C6-C10

Analyte

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RL

50.0

MDL Unit

mg/Kg

15.0

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

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

Lab Sample ID: MB 880-52799/1-A

Lab Sample ID: LCS 880-52799/2-A

Matrix: Solid

Matrix: Solid

Analysis Batch: 52788

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 52799

ı		IIID	11.10							
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Diesel Range Organics (Over	<15.0	U	50.0	15.0	mg/Kg		05/08/23 08:00	05/08/23 08:37	1
	C10-C28)									
	OII Range Organics (Over C28-C36)	<15.0	U	50.0	15.0	mg/Kg		05/08/23 08:00	05/08/23 08:37	1

MB MB

MR MR

	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	1-Chlorooctane	102		70 - 130	05/08/23 08:00	05/08/23 08:37	1
Į	o-Terphenyl	80		70 - 130	05/08/23 08:00	05/08/23 08:37	1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 52799

Analysis Batch: 52788 LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Gasoline Range Organics 1000 954.6 95 70 - 130 mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 1000 948.8 mg/Kg 95 70 - 130 C10-C28)

LCS LCS

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	74		70 - 130

Lab Sample ID: LCSD 880-52799/3-A

Matrix: Solid

Analysis Batch: 52788

Prep Type: Total/NA Prep Batch: 52799

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics	1000	851.1		mg/Kg		85	70 - 130	11	20	
(GRO)-C6-C10										
Diesel Range Organics (Over	1000	869.7		mg/Kg		87	70 - 130	9	20	
C10-C28)										

	LOOD	LUUD			
Surrogate	%Recovery	Qualifier	Limits		
1-Chlorooctane	99		70 - 130		
o-Terphenyl	75		70 - 130		

Lab Sample ID: 880-27936-1 MS Client Sample ID: SW91H-1 (0-1)

Matrix: Solid

Analysis Batch: 52788

Prep Type: Total/NA

Prep Batch: 52799

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits Gasoline Range Organics <15.3 U 1020 898.0 ₩ 88 70 - 130 mg/Kg (GRO)-C6-C10 1020 726.0 F1 70 - 130 Diesel Range Organics (Over 33.9 JF1 mg/Kg ₽ 68

C10-C28)

	IVIS	IVIS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	187	S1+	70 - 130
o-Terphenyl	131	S1+	70 - 130

Spike

babbA

1020

1020

MSD MSD

861.6

702.2 F1

LCS LCS

Result Qualifier

mg/Kg

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

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

Lab Sample ID: 880-27936-1 MSD

Matrix: Solid

Gasoline Range Organics

Diesel Range Organics (Over

Analysis Batch: 52788

Client Sample ID: SW91H-1 (0-1)

Prep Type: Total/NA

Prep Batch: 52799

3

RPD RPD Limit Unit D %Rec Limits mg/Kg Ä 84 70 - 130 4 20

66

70 - 130

C10-C28)

(GRO)-C6-C10

Analyte

MSD MSD

33.9 JF1

Sample Sample

<15.3 U

Result Qualifier

Surrogate	%Recovery	Qualifier	Limits		
1-Chlorooctane	180	S1+	70 - 130		
o-Terphenyl	127		70 - 130		

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-52683/1-A

Matrix: Solid

Analysis Batch: 52777

Client Sample ID: Method Blank

Prep Type: Soluble

мв мв

Result Qualifier RL MDL Unit Analyte D Prepared Analyzed Dil Fac Chloride <0.395 U 5.00 0.395 mg/Kg 05/06/23 15:48

Lab Sample ID: LCS 880-52683/2-A

Matrix: Solid

Analysis Batch: 52777

Client Sample ID:	Lab Control Sample	
	Prep Type: Soluble	

%Rec

Lab Sample ID: LCSD 880-52683/3-A

Matrix: Solid

Analysis Batch: 52777

Analyte	Added	Result	Qualifier Unit	D	%Rec	Limits
Chloride	250	250.0	mg/Kg		100	90 - 110

Spike

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

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	250	251.4		mg/Kg		101	90 - 110	1	20

Lab Sample ID: 880-27936-1 MS

Matrix: Solid

Analysis Batch: 52777

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	263		257	510.8		ma/Ka	<u> </u>	97	90 - 110	

Lab Sample ID: 880-27936-1 MSD

Matrix: Solid

Analysis Batch: 52777

Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	263		257	510.8		mg/Kg	₩	97	90 - 110	
- -										

Client Sample ID: SW91H-1 (0-1) **Prep Type: Soluble**

Client Sample ID: SW91H-1 (0-1)

Prep Type: Soluble

Sample Sample Spike MSD MSD %Rec RPD Result Qualifier Added Result Qualifier RPD Analyte %Rec Limits Limit Unit 257 511.3 97 Chloride 263 90 - 110 mg/Kg

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20

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-27936-11 MS

Lab Sample ID: 880-27936-11 MSD

Matrix: Solid

Analysis Batch: 52777

Matrix: Solid

Client Sample ID: SW91H-3 (2-3)

Prep Type: Soluble

Sample Sample Spike MS MS %Rec Result Qualifier Added Result Qualifier Analyte Unit D %Rec Limits Chloride 1220 266 1436 4 mg/Kg ₩ 82 90 - 110

Client Sample ID: SW91H-3 (2-3)

Prep Type: Soluble

Analysis Batch: 52777 Sample Sample Spike MSD MSD %Rec RPD Result Qualifier Added Result Qualifier Limits RPD Limit Analyte Unit D %Rec ₩ Chloride 1220 266 1435 4 mg/Kg 81 90 - 110 0 20

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1 SDG: Jal NM

GC VOA

Prep Batch: 52616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
880-27936-1	SW91H-1 (0-1)	Total/NA	Solid	5035	
880-27936-2	SW91H-1 (1-2)	Total/NA	Solid	5035	
880-27936-3	SW91H-1 (2-3)	Total/NA	Solid	5035	
880-27936-4	SW91H-1 (3-4)	Total/NA	Solid	5035	
880-27936-5	SW91H-1 (4-5)	Total/NA	Solid	5035	
880-27936-6	SW91H-2 (0-1)	Total/NA	Solid	5035	
880-27936-7	SW91H-2 (1-2)	Total/NA	Solid	5035	
880-27936-8	SW91H-2 (2-3)	Total/NA	Solid	5035	
880-27936-9	SW91H-3 (0-1)	Total/NA	Solid	5035	
880-27936-10	SW91H-3 (1-2)	Total/NA	Solid	5035	
880-27936-11	SW91H-3 (2-3)	Total/NA	Solid	5035	
880-27936-12	SW91H-4 (0-1)	Total/NA	Solid	5035	
880-27936-13	SW91H-4 (1-2)	Total/NA	Solid	5035	
880-27936-14	SW91H-5 (0-1)	Total/NA	Solid	5035	
880-27936-15	SW91H-5 (1-2)	Total/NA	Solid	5035	
880-27936-16	SW91H-6 (0-1)	Total/NA	Solid	5035	
880-27936-17	SW91H-6 (1-2)	Total/NA	Solid	5035	
880-27936-18	SW91H-7 (0-1)	Total/NA	Solid	5035	
880-27936-19	SW91H-7 (1-2)	Total/NA	Solid	5035	
880-27936-20	SW91H BG-1	Total/NA	Solid	5035	
MB 880-52616/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-52616/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-52616/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-27936-1 MS	SW91H-1 (0-1)	Total/NA	Solid	5035	
880-27936-1 MSD	SW91H-1 (0-1)	Total/NA	Solid	5035	

Prep Batch: 52673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-52673/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 52692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-27936-1	SW91H-1 (0-1)	Total/NA	Solid	8021B	52616
880-27936-2	SW91H-1 (1-2)	Total/NA	Solid	8021B	52616
880-27936-3	SW91H-1 (2-3)	Total/NA	Solid	8021B	52616
880-27936-4	SW91H-1 (3-4)	Total/NA	Solid	8021B	52616
880-27936-5	SW91H-1 (4-5)	Total/NA	Solid	8021B	52616
880-27936-6	SW91H-2 (0-1)	Total/NA	Solid	8021B	52616
880-27936-7	SW91H-2 (1-2)	Total/NA	Solid	8021B	52616
380-27936-8	SW91H-2 (2-3)	Total/NA	Solid	8021B	52616
380-27936-9	SW91H-3 (0-1)	Total/NA	Solid	8021B	52616
380-27936-10	SW91H-3 (1-2)	Total/NA	Solid	8021B	52616
380-27936-11	SW91H-3 (2-3)	Total/NA	Solid	8021B	52616
380-27936-12	SW91H-4 (0-1)	Total/NA	Solid	8021B	52616
380-27936-13	SW91H-4 (1-2)	Total/NA	Solid	8021B	52616
380-27936-14	SW91H-5 (0-1)	Total/NA	Solid	8021B	52616
880-27936-15	SW91H-5 (1-2)	Total/NA	Solid	8021B	52616
880-27936-16	SW91H-6 (0-1)	Total/NA	Solid	8021B	52616
380-27936-17	SW91H-6 (1-2)	Total/NA	Solid	8021B	52616
380-27936-18	SW91H-7 (0-1)	Total/NA	Solid	8021B	52616
880-27936-19	SW91H-7 (1-2)	Total/NA	Solid	8021B	52616

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1 SDG: Jal NM

GC VOA (Continued)

Analysis Batch: 52692 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-27936-20	SW91H BG-1	Total/NA	Solid	8021B	52616
MB 880-52616/5-A	Method Blank	Total/NA	Solid	8021B	52616
MB 880-52673/5-A	Method Blank	Total/NA	Solid	8021B	52673
LCS 880-52616/1-A	Lab Control Sample	Total/NA	Solid	8021B	52616
LCSD 880-52616/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	52616
880-27936-1 MS	SW91H-1 (0-1)	Total/NA	Solid	8021B	52616
880-27936-1 MSD	SW91H-1 (0-1)	Total/NA	Solid	8021B	52616

GC Semi VOA

Analysis Batch: 52788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-27936-1	SW91H-1 (0-1)	Total/NA	Solid	8015B NM	52799
880-27936-2	SW91H-1 (1-2)	Total/NA	Solid	8015B NM	52799
880-27936-3	SW91H-1 (2-3)	Total/NA	Solid	8015B NM	52799
880-27936-4	SW91H-1 (3-4)	Total/NA	Solid	8015B NM	52799
880-27936-5	SW91H-1 (4-5)	Total/NA	Solid	8015B NM	52799
880-27936-6	SW91H-2 (0-1)	Total/NA	Solid	8015B NM	52799
880-27936-7	SW91H-2 (1-2)	Total/NA	Solid	8015B NM	52799
880-27936-8	SW91H-2 (2-3)	Total/NA	Solid	8015B NM	52799
880-27936-9	SW91H-3 (0-1)	Total/NA	Solid	8015B NM	52799
880-27936-10	SW91H-3 (1-2)	Total/NA	Solid	8015B NM	52799
880-27936-11	SW91H-3 (2-3)	Total/NA	Solid	8015B NM	52799
880-27936-12	SW91H-4 (0-1)	Total/NA	Solid	8015B NM	52799
880-27936-13	SW91H-4 (1-2)	Total/NA	Solid	8015B NM	52799
880-27936-14	SW91H-5 (0-1)	Total/NA	Solid	8015B NM	52799
880-27936-15	SW91H-5 (1-2)	Total/NA	Solid	8015B NM	52799
880-27936-16	SW91H-6 (0-1)	Total/NA	Solid	8015B NM	52799
880-27936-17	SW91H-6 (1-2)	Total/NA	Solid	8015B NM	52799
880-27936-18	SW91H-7 (0-1)	Total/NA	Solid	8015B NM	52799
880-27936-19	SW91H-7 (1-2)	Total/NA	Solid	8015B NM	52799
880-27936-20	SW91H BG-1	Total/NA	Solid	8015B NM	52799
MB 880-52799/1-A	Method Blank	Total/NA	Solid	8015B NM	52799
LCS 880-52799/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	52799
LCSD 880-52799/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	52799
880-27936-1 MS	SW91H-1 (0-1)	Total/NA	Solid	8015B NM	52799
880-27936-1 MSD	SW91H-1 (0-1)	Total/NA	Solid	8015B NM	52799

Prep Batch: 52799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-27936-1	SW91H-1 (0-1)	Total/NA	Solid	8015NM Prep	
880-27936-2	SW91H-1 (1-2)	Total/NA	Solid	8015NM Prep	
880-27936-3	SW91H-1 (2-3)	Total/NA	Solid	8015NM Prep	
880-27936-4	SW91H-1 (3-4)	Total/NA	Solid	8015NM Prep	
880-27936-5	SW91H-1 (4-5)	Total/NA	Solid	8015NM Prep	
880-27936-6	SW91H-2 (0-1)	Total/NA	Solid	8015NM Prep	
880-27936-7	SW91H-2 (1-2)	Total/NA	Solid	8015NM Prep	
880-27936-8	SW91H-2 (2-3)	Total/NA	Solid	8015NM Prep	
880-27936-9	SW91H-3 (0-1)	Total/NA	Solid	8015NM Prep	
880-27936-10	SW91H-3 (1-2)	Total/NA	Solid	8015NM Prep	
880-27936-11	SW91H-3 (2-3)	Total/NA	Solid	8015NM Prep	

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Page 26 of 44

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

GC Semi VOA (Continued)

Prep Batch: 52799 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-27936-12	SW91H-4 (0-1)	Total/NA	Solid	8015NM Prep	
880-27936-13	SW91H-4 (1-2)	Total/NA	Solid	8015NM Prep	
880-27936-14	SW91H-5 (0-1)	Total/NA	Solid	8015NM Prep	
880-27936-15	SW91H-5 (1-2)	Total/NA	Solid	8015NM Prep	
880-27936-16	SW91H-6 (0-1)	Total/NA	Solid	8015NM Prep	
880-27936-17	SW91H-6 (1-2)	Total/NA	Solid	8015NM Prep	
880-27936-18	SW91H-7 (0-1)	Total/NA	Solid	8015NM Prep	
880-27936-19	SW91H-7 (1-2)	Total/NA	Solid	8015NM Prep	
880-27936-20	SW91H BG-1	Total/NA	Solid	8015NM Prep	
MB 880-52799/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-52799/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-52799/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-27936-1 MS	SW91H-1 (0-1)	Total/NA	Solid	8015NM Prep	
880-27936-1 MSD	SW91H-1 (0-1)	Total/NA	Solid	8015NM Prep	

HPLC/IC

Leach Batch: 52683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
880-27936-1	SW91H-1 (0-1)	Soluble	Solid	DI Leach	
880-27936-2	SW91H-1 (1-2)	Soluble	Solid	DI Leach	
880-27936-3	SW91H-1 (2-3)	Soluble	Solid	DI Leach	
880-27936-4	SW91H-1 (3-4)	Soluble	Solid	DI Leach	
880-27936-5	SW91H-1 (4-5)	Soluble	Solid	DI Leach	
880-27936-6	SW91H-2 (0-1)	Soluble	Solid	DI Leach	
880-27936-7	SW91H-2 (1-2)	Soluble	Solid	DI Leach	
880-27936-8	SW91H-2 (2-3)	Soluble	Solid	DI Leach	
880-27936-9	SW91H-3 (0-1)	Soluble	Solid	DI Leach	
880-27936-10	SW91H-3 (1-2)	Soluble	Solid	DI Leach	
880-27936-11	SW91H-3 (2-3)	Soluble	Solid	DI Leach	
880-27936-12	SW91H-4 (0-1)	Soluble	Solid	DI Leach	
880-27936-13	SW91H-4 (1-2)	Soluble	Solid	DI Leach	
880-27936-14	SW91H-5 (0-1)	Soluble	Solid	DI Leach	
880-27936-15	SW91H-5 (1-2)	Soluble	Solid	DI Leach	
880-27936-16	SW91H-6 (0-1)	Soluble	Solid	DI Leach	
880-27936-17	SW91H-6 (1-2)	Soluble	Solid	DI Leach	
880-27936-18	SW91H-7 (0-1)	Soluble	Solid	DI Leach	
880-27936-19	SW91H-7 (1-2)	Soluble	Solid	DI Leach	
880-27936-20	SW91H BG-1	Soluble	Solid	DI Leach	
MB 880-52683/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-52683/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-52683/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-27936-1 MS	SW91H-1 (0-1)	Soluble	Solid	DI Leach	
880-27936-1 MSD	SW91H-1 (0-1)	Soluble	Solid	DI Leach	
880-27936-11 MS	SW91H-3 (2-3)	Soluble	Solid	DI Leach	
880-27936-11 MSD	SW91H-3 (2-3)	Soluble	Solid	DI Leach	

Analysis Batch: 52777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-27936-1	SW91H-1 (0-1)	Soluble	Solid	300.0	52683
880-27936-2	SW91H-1 (1-2)	Soluble	Solid	300.0	52683

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1 SDG: Jal NM

HPLC/IC (Continued)

Analysis Batch: 52777 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-27936-3	SW91H-1 (2-3)	Soluble	Solid	300.0	52683
880-27936-4	SW91H-1 (3-4)	Soluble	Solid	300.0	52683
880-27936-5	SW91H-1 (4-5)	Soluble	Solid	300.0	52683
880-27936-6	SW91H-2 (0-1)	Soluble	Solid	300.0	52683
880-27936-7	SW91H-2 (1-2)	Soluble	Solid	300.0	52683
880-27936-8	SW91H-2 (2-3)	Soluble	Solid	300.0	52683
880-27936-9	SW91H-3 (0-1)	Soluble	Solid	300.0	52683
880-27936-10	SW91H-3 (1-2)	Soluble	Solid	300.0	52683
880-27936-11	SW91H-3 (2-3)	Soluble	Solid	300.0	52683
880-27936-12	SW91H-4 (0-1)	Soluble	Solid	300.0	52683
880-27936-13	SW91H-4 (1-2)	Soluble	Solid	300.0	52683
880-27936-14	SW91H-5 (0-1)	Soluble	Solid	300.0	52683
880-27936-15	SW91H-5 (1-2)	Soluble	Solid	300.0	52683
880-27936-16	SW91H-6 (0-1)	Soluble	Solid	300.0	52683
880-27936-17	SW91H-6 (1-2)	Soluble	Solid	300.0	52683
880-27936-18	SW91H-7 (0-1)	Soluble	Solid	300.0	52683
880-27936-19	SW91H-7 (1-2)	Soluble	Solid	300.0	52683
880-27936-20	SW91H BG-1	Soluble	Solid	300.0	52683
MB 880-52683/1-A	Method Blank	Soluble	Solid	300.0	52683
LCS 880-52683/2-A	Lab Control Sample	Soluble	Solid	300.0	52683
LCSD 880-52683/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	52683
880-27936-1 MS	SW91H-1 (0-1)	Soluble	Solid	300.0	52683
880-27936-1 MSD	SW91H-1 (0-1)	Soluble	Solid	300.0	52683
880-27936-11 MS	SW91H-3 (2-3)	Soluble	Solid	300.0	52683
880-27936-11 MSD	SW91H-3 (2-3)	Soluble	Solid	300.0	52683

General Chemistry

Analysis Batch: 52687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
880-27936-1	SW91H-1 (0-1)	Total/NA	Solid	D2216	_
380-27936-2	SW91H-1 (1-2)	Total/NA	Solid	D2216	
380-27936-3	SW91H-1 (2-3)	Total/NA	Solid	D2216	
880-27936-4	SW91H-1 (3-4)	Total/NA	Solid	D2216	
880-27936-5	SW91H-1 (4-5)	Total/NA	Solid	D2216	
880-27936-6	SW91H-2 (0-1)	Total/NA	Solid	D2216	
880-27936-7	SW91H-2 (1-2)	Total/NA	Solid	D2216	
380-27936-8	SW91H-2 (2-3)	Total/NA	Solid	D2216	
880-27936-9	SW91H-3 (0-1)	Total/NA	Solid	D2216	
880-27936-10	SW91H-3 (1-2)	Total/NA	Solid	D2216	
880-27936-11	SW91H-3 (2-3)	Total/NA	Solid	D2216	
880-27936-12	SW91H-4 (0-1)	Total/NA	Solid	D2216	
880-27936-13	SW91H-4 (1-2)	Total/NA	Solid	D2216	
80-27936-14	SW91H-5 (0-1)	Total/NA	Solid	D2216	
880-27936-15	SW91H-5 (1-2)	Total/NA	Solid	D2216	
80-27936-16	SW91H-6 (0-1)	Total/NA	Solid	D2216	
880-27936-17	SW91H-6 (1-2)	Total/NA	Solid	D2216	
880-27936-18	SW91H-7 (0-1)	Total/NA	Solid	D2216	
80-27936-19	SW91H-7 (1-2)	Total/NA	Solid	D2216	
80-27936-20	SW91H BG-1	Total/NA	Solid	D2216	
MB 880-52687/1	Method Blank	Total/NA	Solid	D2216	

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Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

General Chemistry (Continued)

Analysis Batch: 52687 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-27936-2 DU	SW91H-1 (1-2)	Total/NA	Solid	D2216	
880-27936-11 DU	SW91H-3 (2-3)	Total/NA	Solid	D2216	

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Lab Chronicle

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-1 (0-1)

Date Collected: 05/03/23 08:30 Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-1

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D2216		1			52687	05/05/23 09:59	KS	EET MID

Client Sample ID: SW91H-1 (0-1)

Date Collected: 05/03/23 08:30

Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-1 Matrix: Solid

Percent Solids: 97.8

	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 02:41	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 11:13	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 16:04	SMC	EET MID

Client Sample ID: SW91H-1 (1-2)

Date Collected: 05/03/23 08:31

Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-2

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	D2216		1			52687	05/05/23 09:59	KS	EET MID

Client Sample ID: SW91H-1 (1-2)

Date Collected: 05/03/23 08:31

Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-2

Matrix: Solid Percent Solids: 94.5

	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 03:02	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 12:19	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 16:20	SMC	EET MID

Client Sample ID: SW91H-1 (2-3)

Date Collected: 05/03/23 08:35

Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysi	D2216		1			52687	05/05/23 09:59	KS	EET MID

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-1 (2-3)

Date Collected: 05/03/23 08:35 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-3

Matrix: Solid

Percent Solids: 87.8

	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 03:22	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 12:40	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	52777	05/06/23 16:25	SMC	EET MID

Client Sample ID: SW91H-1 (3-4)

Date Collected: 05/03/23 08:37 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-4

Matrix: Solid

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
l	Total/NA	Analysis	D2216		1			52687	05/05/23 09:59	KS	EET MID

Client Sample ID: SW91H-1 (3-4)

Date Collected: 05/03/23 08:37 Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-4

Matrix: Solid

Percent Solids: 92.1

	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 03:43	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 13:02	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	52777	05/06/23 16:31	SMC	EET MID

Client Sample ID: SW91H-1 (4-5)

Date Collected: 05/03/23 10:20 Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-5

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	D2216		1			52687	05/05/23 09:59	KS	EET MID

Client Sample ID: SW91H-1 (4-5)

Date Collected: 05/03/23 10:20

Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-5 **Matrix: Solid**

Percent Solids: 94.4

	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 04:03	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 13:24	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 16:36	SMC	EET MID

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-2 (0-1)

Date Collected: 05/03/23 08:45 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-6

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	D2216		1			52687	05/05/23 09:59	KS	EET MID

Client Sample ID: SW91H-2 (0-1)

Date Collected: 05/03/23 08:45

Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-6

Matrix: Solid Percent Solids: 98.0

_	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 04:23	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 13:46	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 16:52	SMC	EET MID

Client Sample ID: SW91H-2 (1-2)

Date Collected: 05/03/23 08:47

Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-7

Matrix: Solid

Batch Batch Dil Initial Final Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab 52687 Total/NA Analysis D2216 05/05/23 09:59 KS EET MID

Client Sample ID: SW91H-2 (1-2)

Date Collected: 05/03/23 08:47

Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-7
Matrix: Solid

Percent Solids: 96.2

	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 04:44	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 14:07	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 16:58	SMC	EET MID

Client Sample ID: SW91H-2 (2-3)

Date Collected: 05/03/23 08:52

Date Received: 05/03/23 16:56

Sam	ple	ID:	880-27936-8	3
			Matrix: Solid	t

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D2216		1			52687	05/05/23 09:59	KS	EET MID

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Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-2 (2-3)

Date Collected: 05/03/23 08:52 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-8

Matrix: Solid

Percent Solids: 92.0

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 05:04	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 14:29	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 17:03	SMC	EET MID

Client Sample ID: SW91H-3 (0-1)

Date Collected: 05/03/23 08:58 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-9

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	D2216		1			52687	05/05/23 09:59	KS	EET MID

Client Sample ID: SW91H-3 (0-1)

Date Collected: 05/03/23 08:58 Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-9

Matrix: Solid

Percent Solids: 98.8

	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 05:25	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 14:51	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 17:08	SMC	EET MID

Client Sample ID: SW91H-3 (1-2)

Date Collected: 05/03/23 09:01 Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-10

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	D2216		1			52687	05/05/23 09:59	KS	EET MID

Client Sample ID: SW91H-3 (1-2)

Date Collected: 05/03/23 09:01

Lab Sample ID: 880-27936-10

Matrix: Solid

Date Received: 05/03/23 16:56 Percent Solids: 96.3

	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 05:45	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 15:13	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 17:14	SMC	EET MID

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-3 (2-3)

Date Collected: 05/03/23 09:05 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-11

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D2216		1			52687	05/05/23 09:59	KS	EET MID

Client Sample ID: SW91H-3 (2-3)

Date Collected: 05/03/23 09:05

Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-11

Matrix: Solid Percent Solids: 93.2

	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 07:35	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 15:56	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 17:19	SMC	EET MID

Client Sample ID: SW91H-4 (0-1)

Date Collected: 05/03/23 11:18

Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-12

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	D2216		1			52687	05/05/23 09:59	KS	EET MID

Client Sample ID: SW91H-4 (0-1)

Date Collected: 05/03/23 11:18

Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-12

Matrix: Solid Percent Solids: 88.7

	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 07:56	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 16:18	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 17:35	SMC	EET MID

Client Sample ID: SW91H-4 (1-2)

Date Collected: 05/03/23 11:16

Date Received: 05/03/23 16:56

Lab Sample ID: 8	80-27936-13

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysi	D2216		1			52687	05/05/23 09:59	KS	EET MID

Lab Chronicle

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

SDG: Jal NM

Client Sample ID: SW91H-4 (1-2)

Date Collected: 05/03/23 11:16 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-13

Lab Sample ID: 880-27936-14

Lab Sample ID: 880-27936-14

Matrix: Solid

Matrix: Solid

Percent Solids: 93.6

Job ID: 880-27936-1

	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 08:16	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 16:40	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 17:40	SMC	EET MID

Client Sample ID: SW91H-5 (0-1)

Date Collected: 05/03/23 11:45 Date Received: 05/03/23 16:56

Dil Batch Batch Initial Final Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA Analysis D2216 52687 05/05/23 09:59 KS **EET MID**

Client Sample ID: SW91H-5 (0-1)

Date Collected: 05/03/23 11:45

Matrix: Solid Date Received: 05/03/23 16:56 Percent Solids: 96.5

	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 08:37	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 17:01	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 17:57	SMC	EET MID

Client Sample ID: SW91H-5 (1-2)

Date Collected: 05/03/23 11:34

Date Received: 05/03/23 16:56

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D2216		1			52687	05/05/23 09:59	KS	EET MID

Client Sample ID: SW91H-5 (1-2)

Date Collected: 05/03/23 11:34

Date Received: 05/03/23 16:56 Percent Solids: 95.8

	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 08:57	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 17:23	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 18:02	SMC	EET MID

Eurofins Midland

Lab Sample ID: 880-27936-15

Matrix: Solid

Lab Sample ID: 880-27936-15 Matrix: Solid Client Sample ID: SW91H-6 (0-1)

Date Collected: 05/03/23 11:59 Date Received: 05/03/23 16:56 Lab Sample ID: 880-27936-16

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	D2216		1			52687	05/05/23 09:59	KS	EET MID

Client Sample ID: SW91H-6 (0-1)

Date Collected: 05/03/23 11:59 Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-16 **Matrix: Solid**

Percent Solids: 95.5

	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 09:18	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 17:45	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 18:08	SMC	EET MID

Client Sample ID: SW91H-6 (1-2)

Date Collected: 05/03/23 12:01

Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-17

Matrix: Solid

Final Batch Prepared

Batch Batch Dil Initial Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab 52687 Total/NA Analysis D2216 05/05/23 09:59 KS EET MID

Client Sample ID: SW91H-6 (1-2)

Date Collected: 05/03/23 12:01

Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-17 Matrix: Solid

Percent Solids: 93.1

	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 09:38	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 18:06	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 18:13	SMC	EET MID

Client Sample ID: SW91H-7 (0-1)

Date Collected: 05/03/23 12:05

Date Received: 05/03/23 16:56

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NIA	Analysis	D2216					52687	05/05/23 09:59	KS.	FET MID

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Client Sample ID: SW91H-7 (0-1)

Date Collected: 05/03/23 12:05 Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-18

Matrix: Solid

Percent Solids: 97.3

_	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 09:59	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 18:28	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 18:18	SMC	EET MID

Client Sample ID: SW91H-7 (1-2)

Date Collected: 05/03/23 12:12 Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-19 **Matrix: Solid**

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
l	Total/NA	Analysis	D2216		1			52687	05/05/23 09:59	KS	EET MID

Client Sample ID: SW91H-7 (1-2)

Date Collected: 05/03/23 12:12 Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-19 **Matrix: Solid**

Percent Solids: 94.8

	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 10:19	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 18:50	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 18:24	SMC	EET MID

Client Sample ID: SW91H BG-1

Date Collected: 05/03/23 09:18

Date Received: 05/03/23 16:56

Lab Sample	ID: 880-27936-20
	Matrix: Solid

Dil **Batch** Batch Initial Final Batch Prepared Method Amount Prep Type Type Run Factor Amount Number or Analyzed Analyst Lab EET MID D2216 52687 05/05/23 10:00 Total/NA Analysis 1 KS

Client Sample ID: SW91H BG-1

Date Collected: 05/03/23 09:18

Date Received: 05/03/23 16:56

Lab Sample ID: 880-27936-20

Matrix: Solid Percent Solids: 99.1

	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	52616	05/04/23 13:21	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	52692	05/06/23 10:40	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	52799	05/08/23 08:51	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	52788	05/08/23 19:11	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	52683	05/05/23 09:55	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	52777	05/06/23 18:29	SMC	EET MID

Lab Chronicle

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Laboratory References:

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

Job ID: 880-27936-1 SDG: Jal NM

Accreditation/Certification Summary

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Laboratory: Eurofins Midland

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

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

Method Summary

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1

SDG: Jal NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
D2216	Percent Moisture	ASTM	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.

Laboratory References:

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

Eurofins Midland

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Sample Summary

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 91H

Job ID: 880-27936-1 SDG: Jal NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-27936-1	SW91H-1 (0-1)	Solid	05/03/23 08:30	05/03/23 16:56
880-27936-2	SW91H-1 (1-2)	Solid	05/03/23 08:31	05/03/23 16:56
880-27936-3	SW91H-1 (2-3)	Solid	05/03/23 08:35	05/03/23 16:56
880-27936-4	SW91H-1 (3-4)	Solid	05/03/23 08:37	05/03/23 16:56
880-27936-5	SW91H-1 (4-5)	Solid	05/03/23 10:20	05/03/23 16:56
880-27936-6	SW91H-2 (0-1)	Solid	05/03/23 08:45	05/03/23 16:56
880-27936-7	SW91H-2 (1-2)	Solid	05/03/23 08:47	05/03/23 16:56
880-27936-8	SW91H-2 (2-3)	Solid	05/03/23 08:52	05/03/23 16:56
880-27936-9	SW91H-3 (0-1)	Solid	05/03/23 08:58	05/03/23 16:56
880-27936-10	SW91H-3 (1-2)	Solid	05/03/23 09:01	05/03/23 16:56
880-27936-11	SW91H-3 (2-3)	Solid	05/03/23 09:05	05/03/23 16:56
880-27936-12	SW91H-4 (0-1)	Solid	05/03/23 11:18	05/03/23 16:56
880-27936-13	SW91H-4 (1-2)	Solid	05/03/23 11:16	05/03/23 16:56
880-27936-14	SW91H-5 (0-1)	Solid	05/03/23 11:45	05/03/23 16:56
880-27936-15	SW91H-5 (1-2)	Solid	05/03/23 11:34	05/03/23 16:56
880-27936-16	SW91H-6 (0-1)	Solid	05/03/23 11:59	05/03/23 16:56
880-27936-17	SW91H-6 (1-2)	Solid	05/03/23 12:01	05/03/23 16:56
880-27936-18	SW91H-7 (0-1)	Solid	05/03/23 12:05	05/03/23 16:56
880-27936-19	SW91H-7 (1-2)	Solid	05/03/23 12:12	05/03/23 16:56
880-27936-20	SW91H BG-1	Solid	05/03/23 09:18	05/03/23 16:56

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eurofins Environment Testing Xenco

Address

Bill to (if different) Company Name

URION DINECT P

Program: UST/PST PRP Brownfields State of Project:

RRC □

Superfund 🗌

www.xenco.com

Work Order Comments

Project Manager Company Name

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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Xenco Environment Testing

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Project Manager

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Sample Comments		Cont Cl	Sampled Depth Comp C	Matrix Sampled S	Sample Identification	Sample
NaOH+Ascorbic Acid SAPC	M B	15		Corrected Temperature	S	Total Containers.
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Na ₂ S ₂ O ₃ NaSO 3	<u> </u>	de od B	Dr.	N/A Correction Factor	Yes No	Cooler Custody Seals
NaHSO A NABIS	<u>e</u>	ram		o Thermometer ID:	ed Intact: Yes No	Samples Received Intact:
		eters	Wet ice Yes No	Yes No	EIPT Temp Blank.	SAMPLE RECEIPT
H,SO, H, NAOH NA		Ÿ	the lab, if received by 4.30pm	163	3//16	PO#
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Preservative Codes	ANALYSIS REQUEST		Turn Around	-112911	Stawalt	Project Name

Login Sample Receipt Checklist

Client: Civil & Environmental Consultants Inc

Job Number: 880-27936-1

SDG Number: Jal NM

Login Number: 27936 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	
ls 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	N/A	

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<6mm (1/4").

Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Laura Campbell Civil & Environmental Consultants Inc 700 Cherrington Parkway Moon Township, Pennsylvania 15108

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JOB DESCRIPTION

Seawolf 1 12 Federal 91H SDG NUMBER Jal, NM

JOB NUMBER

880-29219-1

Eurofins Midland 1211 W. Florida Ave Midland TX 79701

Eurofins Midland

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

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Authorized for release by Travis Richter, Project Manager <u>Travis.Richter@et.eurofinsus.com</u> (281)794-7216 ľ

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Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H Laboratory Job ID: 880-29219-1 SDG: Jal, NM

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Client Sample Results	6
Surrogate Summary	10
QC Sample Results	11
QC Association Summary	15
Lab Chronicle	17
Certification Summary	20
Method Summary	21
Sample Summary	22
Chain of Custody	23
Receipt Checklists	25

2

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6

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Definitions/Glossary

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H

Job ID: 880-29219-1

SDG: Jal, NM

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
	 ::

LCS and/or LCSD is outside acceptance limits, low biased.

Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H Job ID: 880-29219-1 SDG: Jal, NM

Job ID: 880-29219-1

Laboratory: Eurofins Midland

Narrative

Job Narrative 880-29219-1

Receipt

The samples were received on 6/7/2023 9:36 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.3° C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: SW91H-8 (0-1) (880-29219-1), SW91H-8 (1-2) (880-29219-2), SW91H-9 (0-1) (880-29219-3), SW91H-9 (1-2) (880-29219-4), SW91H-10 (0-1) (880-29219-5) and SW91H-10 (1-2) (880-29219-6).

GC VOA

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-55345 recovered above the upper control limit for Benzene, Toluene, Ethylbenzene, m-Xylene & p-Xylene and o-Xylene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 880-55345/2).

Method 8021B: Surrogate recovery for the following sample was outside control limits: (LCSD 880-55038/2-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.

GC Semi VOA

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.

General Chemistry

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

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Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H Job ID: 880-29219-1

Percent Solids: 77.7

SDG: Jal, NM

Client Sample ID: SW91H-8 (0-1)

Date Collected: 06/05/23 14:07 Date Received: 06/07/23 09:36 Lab Sample ID: 880-29219-1 Matrix: Solid

Sample Depth: 0-1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000493	U	0.00256	0.000493	mg/Kg	-	06/08/23 13:22	06/12/23 20:32	1
Toluene	<0.000584	U	0.00256	0.000584	mg/Kg	₽	06/08/23 13:22	06/12/23 20:32	1
Ethylbenzene	<0.000724	U	0.00256	0.000724	mg/Kg	☼	06/08/23 13:22	06/12/23 20:32	1
m-Xylene & p-Xylene	<0.00129	U	0.00513	0.00129	mg/Kg	₽	06/08/23 13:22	06/12/23 20:32	1
o-Xylene	<0.000441	U	0.00256	0.000441	mg/Kg	☼	06/08/23 13:22	06/12/23 20:32	1
Xylenes, Total	<0.00129	U	0.00513	0.00129	mg/Kg	₩	06/08/23 13:22	06/12/23 20:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130				06/08/23 13:22	06/12/23 20:32	1
1,4-Difluorobenzene (Surr)	81		70 - 130				06/08/23 13:22	06/12/23 20:32	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics (GRO)-C6-C10	<19.2	U	64.2	19.2	mg/Kg	₽	06/08/23 08:45	06/09/23 16:58	
Diesel Range Organics (Over C10-C28)	24.9	J *-	64.2	19.2	mg/Kg	₽	06/08/23 08:45	06/09/23 16:58	,
Oll Range Organics (Over C28-C36)	<19.2	U	64.2	19.2	mg/Kg	₽	06/08/23 08:45	06/09/23 16:58	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1-Chlorooctane	85		70 - 130				06/08/23 08:45	06/09/23 16:58	

Method: EPA 300.0 - Anions, Ion (Chromatography - Soluble						
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	95.6	6.45	0.509 mg/Kg	₽		06/08/23 22:13	1

70 - 130

88

Client Sample ID: SW91H-8 (1-2)

Date Collected: 06/05/23 14:11 Date Received: 06/07/23 09:36

o-Terphenyl

Date Received: 06/07/23 09:36 Sample Depth: 1-2

Lab Sample ID: 88	0-29219-2
N	Matrix: Solid

06/08/23 08:45 06/09/23 16:58

Percent Solids: 94.0

Method: SW846 8021B - Volati	le Organic Comp	ounds (GC))						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000406	U	0.00211	0.000406	mg/Kg	₽	06/08/23 13:22	06/12/23 20:58	1
Toluene	<0.000480	U	0.00211	0.000480	mg/Kg	₽	06/08/23 13:22	06/12/23 20:58	1
Ethylbenzene	<0.000595	U	0.00211	0.000595	mg/Kg	₽	06/08/23 13:22	06/12/23 20:58	1
m-Xylene & p-Xylene	<0.00106	U	0.00421	0.00106	mg/Kg	₽	06/08/23 13:22	06/12/23 20:58	1
o-Xylene	< 0.000362	U	0.00211	0.000362	mg/Kg	₽	06/08/23 13:22	06/12/23 20:58	1
Xylenes, Total	<0.00106	U	0.00421	0.00106	mg/Kg	₽	06/08/23 13:22	06/12/23 20:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	123		70 _ 130				06/08/23 13:22	06/12/23 20:58	1
1,4-Difluorobenzene (Surr)	87		70 - 130				06/08/23 13:22	06/12/23 20:58	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)									
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
<15.9	U	53.1	15.9	mg/Kg	*	06/08/23 08:45	06/09/23 17:20	1	
24.9	J *-	53.1	15.9	mg/Kg	₽	06/08/23 08:45	06/09/23 17:20	1	
_	Result <15.9	Result Qualifier	Result Qualifier RL <15.9	Result Qualifier RL MDL <15.9	Result Qualifier RL MDL Unit <15.9	Result Qualifier RL MDL Unit D <15.9	Result Qualifier RL MDL Unit D mg/Kg Prepared <15.9	Result Qualifier RL MDL Unit D mg/Kg Prepared O6/08/23 08:45 Analyzed O6/09/23 17:20	

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H

Job ID: 880-29219-1

SDG: Jal, NM

Client Sample ID: SW91H-8 (1-2)

Lab Sample ID: 880-29219-2

Date Collected: 06/05/23 14:11 Date Received: 06/07/23 09:36

Matrix: Solid Percent Solids: 94.0

Sample Depth: 1-2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oll Range Organics (Over C28-C36)	<15.9	U	53.1	15.9	mg/Kg	*	06/08/23 08:45	06/09/23 17:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	86		70 - 130				06/08/23 08:45	06/09/23 17:20	1
o-Terphenyl	88		70 - 130				06/08/23 08:45	06/09/23 17:20	1

Method: EPA 300.0 - Anions, Ion Cl	hromatography - Soluble						
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	233	5.34	0.422 mg/Kg	#		06/08/23 22:29	1

Client Sample ID: SW91H-9 (0-1)

Lab Sample ID: 880-29219-3

Date Collected: 06/05/23 14:14 Date Received: 06/07/23 09:36

Matrix: Solid Percent Solids: 90.8

1,4-Difluorobenzene (Surr)

Sample Depth: 0-1

Method: SW846 8021B - Volati	ile Organic Comp	ounds (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000424	U	0.00220	0.000424	mg/Kg	-	06/08/23 13:22	06/12/23 21:24	1
Toluene	<0.000502	U	0.00220	0.000502	mg/Kg	₽	06/08/23 13:22	06/12/23 21:24	1
Ethylbenzene	<0.000622	U	0.00220	0.000622	mg/Kg	₽	06/08/23 13:22	06/12/23 21:24	1
m-Xylene & p-Xylene	<0.00111	U	0.00440	0.00111	mg/Kg	₽	06/08/23 13:22	06/12/23 21:24	1
o-Xylene	< 0.000379	U	0.00220	0.000379	mg/Kg	₽	06/08/23 13:22	06/12/23 21:24	1
Xylenes, Total	<0.00111	U	0.00440	0.00111	mg/Kg	₽	06/08/23 13:22	06/12/23 21:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	119		70 - 130				06/08/23 13:22	06/12/23 21:24	1

70 - 130

87

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<16.5	U	54.9	16.5	mg/Kg	#	06/08/23 08:45	06/09/23 17:42	-
(GRO)-C6-C10									
Diesel Range Organics (Over	27.5	J *-	54.9	16.5	mg/Kg	☼	06/08/23 08:45	06/09/23 17:42	•
C10-C28)									
Oll Range Organics (Over C28-C36)	<16.5	U	54.9	16.5	mg/Kg	₽	06/08/23 08:45	06/09/23 17:42	•
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1-Chlorooctane	85		70 - 130				06/08/23 08:45	06/09/23 17:42	
o-Terphenyl	89		70 - 130				06/08/23 08:45	06/09/23 17:42	

Method: EPA 300.0 - Anions, Ion C	hromatography - Sol	luble						
Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	174	5.49	0.434	mg/Kg	₽		06/08/23 22:35	1

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H Job ID: 880-29219-1

Percent Solids: 78.0

SDG: Jal, NM

Client Sample ID: SW91H-9 (1-2)

Date Collected: 06/05/23 14:00 Date Received: 06/07/23 09:36 Lab Sample ID: 880-29219-4
Matrix: Solid

Sample Depth: 1-2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000496	U	0.00258	0.000496	mg/Kg	-	06/08/23 13:22	06/12/23 21:49	1
Toluene	<0.000587	U	0.00258	0.000587	mg/Kg	₩	06/08/23 13:22	06/12/23 21:49	1
Ethylbenzene	<0.000728	U	0.00258	0.000728	mg/Kg	₩	06/08/23 13:22	06/12/23 21:49	1
m-Xylene & p-Xylene	<0.00130	U	0.00515	0.00130	mg/Kg	₽	06/08/23 13:22	06/12/23 21:49	1
o-Xylene	< 0.000443	U	0.00258	0.000443	mg/Kg	₽	06/08/23 13:22	06/12/23 21:49	1
Xylenes, Total	<0.00130	U	0.00515	0.00130	mg/Kg	₽	06/08/23 13:22	06/12/23 21:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130				06/08/23 13:22	06/12/23 21:49	1
1,4-Difluorobenzene (Surr)	95		70 - 130				06/08/23 13:22	06/12/23 21:49	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	29.4	J	64.1	19.2	mg/Kg	₩	06/08/23 08:45	06/09/23 18:05	1
Diesel Range Organics (Over C10-C28)	23.0	J *-	64.1	19.2	mg/Kg	₩	06/08/23 08:45	06/09/23 18:05	1
Oll Range Organics (Over C28-C36)	<19.2	U	64.1	19.2	mg/Kg	₩	06/08/23 08:45	06/09/23 18:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	99		70 - 130				06/08/23 08:45	06/09/23 18:05	1
o-Terphenyl	104		70 - 130				06/08/23 08:45	06/09/23 18:05	1

Method: EPA 300.0 - Anions, Ion 0	Chromatography - Soluble						
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	236	6.35	0.502 mg/Kg	<u> </u>		06/08/23 22:40	1

Client Sample ID: SW91H-10 (0-1)

Date Collected: 06/05/23 14:05

Date Received: 06/07/23 09:36 Sample Depth: 0-1

Lab	Sample	ID:	880-29219-5
			Madeiro Callal

06/08/23 13:22 06/12/23 22:15

Matrix: Solid Percent Solids: 84.7

Method: SW846 8021B - Volat	ile Organic Comp	ounds (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000455	U	0.00237	0.000455	mg/Kg	\$	06/08/23 13:22	06/12/23 22:15	1
Toluene	< 0.000539	U	0.00237	0.000539	mg/Kg	₽	06/08/23 13:22	06/12/23 22:15	1
Ethylbenzene	<0.000668	U	0.00237	0.000668	mg/Kg	₽	06/08/23 13:22	06/12/23 22:15	1
m-Xylene & p-Xylene	<0.00119	U	0.00473	0.00119	mg/Kg	₽	06/08/23 13:22	06/12/23 22:15	1
o-Xylene	< 0.000407	U	0.00237	0.000407	mg/Kg	₽	06/08/23 13:22	06/12/23 22:15	1
Xylenes, Total	<0.00119	U	0.00473	0.00119	mg/Kg	₽	06/08/23 13:22	06/12/23 22:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		70 - 130				06/08/23 13:22	06/12/23 22:15	1

Method: SW846 8015B NM - Dies	el Range Orga	nics (DRO) (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics	<17.7	U	58.9	17.7	mg/Kg	*	06/08/23 08:45	06/09/23 18:26	1
(GRO)-C6-C10									
Diesel Range Organics (Over	23.1	J *-	58.9	17.7	mg/Kg	₩	06/08/23 08:45	06/09/23 18:26	1
C10-C28)									

70 - 130

84

Eurofins Midland

1,4-Difluorobenzene (Surr)

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1 /

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H Job ID: 880-29219-1

SDG: Jal, NM

Client Sample ID: SW91H-10 (0-1)

Lab Sample ID: 880-29219-5

Date Collected: 06/05/23 14:05 Date Received: 06/07/23 09:36 Matrix: Solid Percent Solids: 84.7

Sample Depth: 0-1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oll Range Organics (Over C28-C36)	<17.7	U	58.9	17.7	mg/Kg	*	06/08/23 08:45	06/09/23 18:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	87		70 - 130				06/08/23 08:45	06/09/23 18:26	1
o-Terphenyl	91		70 - 130				06/08/23 08:45	06/09/23 18:26	1

Method: EPA 300.0 - Anions, Ion C	hromatography - Soluble						
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	72.8	5.88	0.464 mg/Kg	₩		06/08/23 22:45	1

Client Sample ID: SW91H-10 (1-2)

Lab Sample ID: 880-29219-6

06/08/23 13:22 06/12/23 22:41

Date Collected: 06/05/23 14:10 Date Received: 06/07/23 09:36 Matrix: Solid Percent Solids: 96.2

Sample Depth: 1-2

1,4-Difluorobenzene (Surr)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000403	U	0.00210	0.000403	mg/Kg	<u></u>	06/08/23 13:22	06/12/23 22:41	1
Toluene	<0.000478	U	0.00210	0.000478	mg/Kg	₩	06/08/23 13:22	06/12/23 22:41	1
Ethylbenzene	<0.000592	U	0.00210	0.000592	mg/Kg	₩	06/08/23 13:22	06/12/23 22:41	1
m-Xylene & p-Xylene	<0.00106	U	0.00419	0.00106	mg/Kg	₽	06/08/23 13:22	06/12/23 22:41	1
o-Xylene	<0.000360	U	0.00210	0.000360	mg/Kg	₩	06/08/23 13:22	06/12/23 22:41	1
Xylenes, Total	<0.00106	U	0.00419	0.00106	mg/Kg	₽	06/08/23 13:22	06/12/23 22:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	125		70 - 130				06/08/23 13:22	06/12/23 22:41	1

70 - 130

89

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	15.8	J	51.9	15.6	mg/Kg	#	06/08/23 08:45	06/09/23 18:48	,
Diesel Range Organics (Over C10-C28)	20.5	J *-	51.9	15.6	mg/Kg	₽	06/08/23 08:45	06/09/23 18:48	1
Oll Range Organics (Over C28-C36)	<15.6	U	51.9	15.6	mg/Kg	₽	06/08/23 08:45	06/09/23 18:48	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	89		70 - 130				06/08/23 08:45	06/09/23 18:48	-
o-Terphenyl	91		70 - 130				06/08/23 08:45	06/09/23 18:48	

Method: EPA 300.0 - Anions, Ion C	hromatography - So	oluble						
Analyte	Result Qualifie	er RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	213	5.15	0.406	mg/Kg	#		06/08/23 23:01	1

Surrogate Summary

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H

Job ID: 880-29219-1

SDG: Jal, NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

		BFB1	DFBZ1	Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-29219-1	SW91H-8 (0-1)	108	81	
880-29219-1 MS	SW91H-8 (0-1)	111	103	
880-29219-1 MSD	SW91H-8 (0-1)	123	92	
880-29219-2	SW91H-8 (1-2)	123	87	
880-29219-3	SW91H-9 (0-1)	119	87	
880-29219-4	SW91H-9 (1-2)	116	95	
880-29219-5	SW91H-10 (0-1)	113	84	
380-29219-6	SW91H-10 (1-2)	125	89	
_CS 880-55038/1-A	Lab Control Sample	109	102	
CSD 880-55038/2-A	Lab Control Sample Dup	113	8 S1-	
MB 880-55038/5-A	Method Blank	66 S1-	80	
Surrogate Legend				

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits)
		1CO1	OTPH1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-29219-1	SW91H-8 (0-1)	85	88	
880-29219-2	SW91H-8 (1-2)	86	88	
880-29219-3	SW91H-9 (0-1)	85	89	
880-29219-4	SW91H-9 (1-2)	99	104	
880-29219-5	SW91H-10 (0-1)	87	91	
880-29219-6	SW91H-10 (1-2)	89	91	
LCS 880-55008/2-A	Lab Control Sample	88	85	
LCSD 880-55008/3-A	Lab Control Sample Dup	87	85	
MB 880-55008/1-A	Method Blank	113	120	
Surrogate Legend				

OTPH = o-Terphenyl

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H

Job ID: 880-29219-1

SDG: Jal, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-55038/5-A

Lab Sample ID: LCS 880-55038/1-A

Matrix: Solid

Matrix: Solid

Analysis Batch: 55345

Analysis Batch: 55345

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 55038

	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		06/08/23 13:22	06/12/23 20:06	1
Toluene	<0.000456	U	0.00200	0.000456	mg/Kg		06/08/23 13:22	06/12/23 20:06	1
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		06/08/23 13:22	06/12/23 20:06	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		06/08/23 13:22	06/12/23 20:06	1
o-Xylene	<0.000344	U	0.00200	0.000344	mg/Kg		06/08/23 13:22	06/12/23 20:06	1
Xylenes, Total	<0.00101	U	0.00400	0.00101	mg/Kg		06/08/23 13:22	06/12/23 20:06	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	66	S1-	70 - 130	06/08/23 13:22	06/12/23 20:06	1
1,4-Difluorobenzene (Surr)	80		70 - 130	06/08/23 13:22	06/12/23 20:06	1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 55038

Prep Type: Total/NA

35

35

LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.1224 mg/Kg 122 70 - 130 Toluene 0.100 0.1119 mg/Kg 112 70 - 130 0.100 109 Ethylbenzene 0.1089 mg/Kg 70 - 130 70 - 130 0.200 108 m-Xylene & p-Xylene 0.2156 mg/Kg 0.100 o-Xylene 0.1103 mg/Kg 110 70 - 130

LCS LCS

Surrogate	%Recovery Qualifi	ier Limits
4-Bromofluorobenzene (Surr)	109	70 - 130
1,4-Difluorobenzene (Surr)	102	70 - 130

Client Sample ID: Lab Control Sample Dup

115

118

Matrix: Solid

Analyte

Benzene

Toluene

o-Xylene

Ethylbenzene

m-Xylene & p-Xylene

Analysis Batch: 55345

Lab Sample ID: LCSD 880-55038/2-A

Prep Batch: 55038 LCSD LCSD RPD Spike %Rec Added Result Qualifier Unit %Rec Limits Limit 0.100 0.1249 mg/Kg 125 70 - 130 2 35 0.100 0.1170 mg/Kg 117 70 - 130 35 0.100 0.1163 mg/Kg 116 70 - 130 35

mg/Kg

mg/Kg

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	113		70 - 130
1,4-Difluorobenzene (Surr)	8	S1-	70 - 130

Lab Sample ID: 880-29219-1 MS

Matrix: Solid

Analysis Batch: 55345

Client Sample ID: SW91H-8 (0-1)

70 - 130

70 - 130

Prep Type: Total/NA

Prep Batch: 55038

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	<0.000493	U	0.130	0.1529		mg/Kg	<u></u>	118	70 - 130	
Toluene	<0.000584	U	0.130	0.1277		mg/Kg	₽	98	70 - 130	

0.200

0.100

0.2307

0.1178

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H

Job ID: 880-29219-1

SDG: Jal, NM

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

Lab Sample ID: 880-29219-1 MS

Matrix: Solid

Analysis Batch: 55345

Client Sample ID: SW91H-8 (0-1)	Client	Sample	ID:	SW91H-8	(0-1)
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Prep Type: Total/NA

Prep Batch: 55038

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethylbenzene	<0.000724	U	0.130	0.1126		mg/Kg	*	87	70 - 130	
m-Xylene & p-Xylene	<0.00129	U	0.260	0.2196		mg/Kg	₽	84	70 - 130	
o-Xylene	<0.000441	U	0.130	0.1157		mg/Kg	₽	89	70 - 130	

MS MS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	111	70 - 130
1,4-Difluorobenzene (Surr)	103	70 - 130

Client Sample ID: SW91H-8 (0-1)

Prep Type: Total/NA

Prep Batch: 55038

Matrix: Solid

Analysis Batch: 55345

Lab Sample ID: 880-29219-1 MSD

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	<0.000493	U	0.128	0.1491		mg/Kg	— <u>-</u>	117	70 - 130	2	35
Toluene	<0.000584	U	0.128	0.1240		mg/Kg	₽	97	70 - 130	3	35
Ethylbenzene	<0.000724	U	0.128	0.1019		mg/Kg	₽	80	70 - 130	10	35
m-Xylene & p-Xylene	<0.00129	U	0.256	0.1985		mg/Kg	₽	78	70 - 130	10	35
o-Xylene	< 0.000441	U	0.128	0.1088		mg/Kg	₽	85	70 - 130	6	35

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	123		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

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

Lab Sample ID: MB 880-55008/1-A

Matrix: Solid

Analysis Batch: 55080

Client	Sample	ID:	Method	Blank
Oliolit	Oumpi	,	mounou	Diam

Prep Type: Total/NA

Prep Batch: 55008

	IVID	IVID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<15.0	U	49.9	15.0	mg/Kg		06/08/23 08:45	06/09/23 07:48	1
Diesel Range Organics (Over C10-C28)	<15.0	U	49.9	15.0	mg/Kg		06/08/23 08:45	06/09/23 07:48	1
Oll Range Organics (Over C28-C36)	<15.0	U	49.9	15.0	mg/Kg		06/08/23 08:45	06/09/23 07:48	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepa	ared	Analyzed	Dil Fac	
1-Chlorooctane	113		70 - 130	06/08/23	3 08:45	06/09/23 07:48	1	
o-Terphenyl	120		70 - 130	06/08/23	3 08:45	06/09/23 07:48	1	

Lab Sample ID: LCS 880-55008/2-A

Matrix: Solid

Analysis Batch: 55080

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

Prep Batch: 55008

	Spike	LCS	LCS				%Rec
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Gasoline Range Organics	1000	754.3		mg/Kg		75	70 - 130
(GRO)-C6-C10							
Diocal Pango Organics (Over	1000	673 /	*_	ma/Ka		67	70 130

C10-C28)

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H

Job ID: 880-29219-1

SDG: Jal, NM

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

Lab Sample ID: LCS 880-55008/2-A **Client Sample ID: Lab Control Sample Matrix: Solid**

Prep Type: Total/NA Analysis Batch: 55080 Prep Batch: 55008

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	88		70 - 130
o-Terphenyl	85		70 - 130

Lab Sample ID: LCSD 880-55008/3-A Client Sample ID: Lab Control Sample Dup

Matrix: Solid Prep Type: Total/NA Analysis Batch: 55080 Prep Batch: 55008

Spike LCSD LCSD %Rec RPD Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit 999 752 3 75 70 - 130O 20 Gasoline Range Organics mg/Kg (GRO)-C6-C10 Diesel Range Organics (Over 999 698.5 70 mg/Kg 70 - 13020 C10-C28)

LCSD LCSD Surrogate %Recovery Qualifier Limits 70 - 130 1-Chlorooctane 87 85 70 - 130 o-Terphenyl

мв мв

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-54963/1-A Client Sample ID: Method Blank **Matrix: Solid**

Prep Type: Soluble

Analysis Batch: 55056

Analyte Result Qualifier RL MDL Unit D Dil Fac Prepared Analyzed Chloride 5.00 <0.395 U 0.395 mg/Kg 06/08/23 21:57

Lab Sample ID: LCS 880-54963/2-A Client Sample ID: Lab Control Sample **Matrix: Solid Prep Type: Soluble**

Analysis Batch: 55056

Spike LCS LCS %Rec Added Analyte Result Qualifier Unit D %Rec Limits Chloride 250 261.8 mg/Kg 105 90 - 110

Lab Sample ID: LCSD 880-54963/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble**

Analysis Batch: 55056

Spike LCSD LCSD %Rec RPD Added Analyte Result Qualifier Unit %Rec Limits RPD Limit Chloride 250 261.7 105 90 - 110 20 mg/Kg

Lab Sample ID: 880-29219-1 MS Client Sample ID: SW91H-8 (0-1) **Prep Type: Soluble**

Matrix: Solid Analysis Batch: 55056

Spike MS MS %Rec Sample Sample Analyte Result Qualifier Added Result Qualifier D %Rec Limits Unit 322 Chloride 95.6 442.7 mg/Kg 108 90 - 110

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H

Job ID: 880-29219-1

SDG: Jal, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-29219-1 MSD

Client Sample ID: SW91H-8 (0-1)

Prep Type: Soluble

Analysis Batch: 55056

Matrix: Solid

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	95.6		322	441.0		mg/Kg	₩	107	90 - 110	0	20

QC Association Summary

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H Job ID: 880-29219-1 SDG: Jal, NM

GC VOA

Prep Batch: 55038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
880-29219-1	SW91H-8 (0-1)	Total/NA	Solid	5035	_
880-29219-2	SW91H-8 (1-2)	Total/NA	Solid	5035	
880-29219-3	SW91H-9 (0-1)	Total/NA	Solid	5035	
880-29219-4	SW91H-9 (1-2)	Total/NA	Solid	5035	
880-29219-5	SW91H-10 (0-1)	Total/NA	Solid	5035	
880-29219-6	SW91H-10 (1-2)	Total/NA	Solid	5035	
MB 880-55038/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-55038/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-55038/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-29219-1 MS	SW91H-8 (0-1)	Total/NA	Solid	5035	
880-29219-1 MSD	SW91H-8 (0-1)	Total/NA	Solid	5035	

Analysis Batch: 55345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-29219-1	SW91H-8 (0-1)	Total/NA	Solid	8021B	55038
880-29219-2	SW91H-8 (1-2)	Total/NA	Solid	8021B	55038
880-29219-3	SW91H-9 (0-1)	Total/NA	Solid	8021B	55038
880-29219-4	SW91H-9 (1-2)	Total/NA	Solid	8021B	55038
880-29219-5	SW91H-10 (0-1)	Total/NA	Solid	8021B	55038
880-29219-6	SW91H-10 (1-2)	Total/NA	Solid	8021B	55038
MB 880-55038/5-A	Method Blank	Total/NA	Solid	8021B	55038
LCS 880-55038/1-A	Lab Control Sample	Total/NA	Solid	8021B	55038
LCSD 880-55038/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	55038
880-29219-1 MS	SW91H-8 (0-1)	Total/NA	Solid	8021B	55038
880-29219-1 MSD	SW91H-8 (0-1)	Total/NA	Solid	8021B	55038

GC Semi VOA

Prep Batch: 55008

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-29219-1	SW91H-8 (0-1)	Total/NA	Solid	8015NM Prep	
880-29219-2	SW91H-8 (1-2)	Total/NA	Solid	8015NM Prep	
880-29219-3	SW91H-9 (0-1)	Total/NA	Solid	8015NM Prep	
880-29219-4	SW91H-9 (1-2)	Total/NA	Solid	8015NM Prep	
880-29219-5	SW91H-10 (0-1)	Total/NA	Solid	8015NM Prep	
880-29219-6	SW91H-10 (1-2)	Total/NA	Solid	8015NM Prep	
MB 880-55008/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-55008/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-55008/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 55080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-29219-1	SW91H-8 (0-1)	Total/NA	Solid	8015B NM	55008
880-29219-2	SW91H-8 (1-2)	Total/NA	Solid	8015B NM	55008
880-29219-3	SW91H-9 (0-1)	Total/NA	Solid	8015B NM	55008
880-29219-4	SW91H-9 (1-2)	Total/NA	Solid	8015B NM	55008
880-29219-5	SW91H-10 (0-1)	Total/NA	Solid	8015B NM	55008
880-29219-6	SW91H-10 (1-2)	Total/NA	Solid	8015B NM	55008
MB 880-55008/1-A	Method Blank	Total/NA	Solid	8015B NM	55008
LCS 880-55008/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	55008
LCSD 880-55008/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	55008

Eurofins Midland

Page 15 of 25

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QC Association Summary

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H Job ID: 880-29219-1 SDG: Jal, NM

, NM

HPLC/IC

Leach Batch: 54963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-29219-1	SW91H-8 (0-1)	Soluble	Solid	DI Leach	
880-29219-2	SW91H-8 (1-2)	Soluble	Solid	DI Leach	
880-29219-3	SW91H-9 (0-1)	Soluble	Solid	DI Leach	
880-29219-4	SW91H-9 (1-2)	Soluble	Solid	DI Leach	
880-29219-5	SW91H-10 (0-1)	Soluble	Solid	DI Leach	
880-29219-6	SW91H-10 (1-2)	Soluble	Solid	DI Leach	
MB 880-54963/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-54963/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-54963/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-29219-1 MS	SW91H-8 (0-1)	Soluble	Solid	DI Leach	
880-29219-1 MSD	SW91H-8 (0-1)	Soluble	Solid	DI Leach	

Analysis Batch: 55056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-29219-1	SW91H-8 (0-1)	Soluble	Solid	300.0	54963
880-29219-2	SW91H-8 (1-2)	Soluble	Solid	300.0	54963
880-29219-3	SW91H-9 (0-1)	Soluble	Solid	300.0	54963
880-29219-4	SW91H-9 (1-2)	Soluble	Solid	300.0	54963
880-29219-5	SW91H-10 (0-1)	Soluble	Solid	300.0	54963
880-29219-6	SW91H-10 (1-2)	Soluble	Solid	300.0	54963
MB 880-54963/1-A	Method Blank	Soluble	Solid	300.0	54963
LCS 880-54963/2-A	Lab Control Sample	Soluble	Solid	300.0	54963
LCSD 880-54963/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	54963
880-29219-1 MS	SW91H-8 (0-1)	Soluble	Solid	300.0	54963
880-29219-1 MSD	SW91H-8 (0-1)	Soluble	Solid	300.0	54963

General Chemistry

Analysis Batch: 55183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-29219-1	SW91H-8 (0-1)	Total/NA	Solid	D2216	
880-29219-2	SW91H-8 (1-2)	Total/NA	Solid	D2216	
880-29219-3	SW91H-9 (0-1)	Total/NA	Solid	D2216	
880-29219-4	SW91H-9 (1-2)	Total/NA	Solid	D2216	
880-29219-5	SW91H-10 (0-1)	Total/NA	Solid	D2216	
880-29219-6	SW91H-10 (1-2)	Total/NA	Solid	D2216	
MB 880-55183/1	Method Blank	Total/NA	Solid	D2216	
880-29219-2 DU	SW91H-8 (1-2)	Total/NA	Solid	D2216	

Client Sample ID: SW91H-8 (0-1)

Date Collected: 06/05/23 14:07 Date Received: 06/07/23 09:36 Lab Sample ID: 880-29219-1

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D2216		1			55183	06/09/23 17:10	KS	EET MID

Client Sample ID: SW91H-8 (0-1)

Date Collected: 06/05/23 14:07

Date Received: 06/07/23 09:36

Lab Sample ID: 880-29219-1

Matrix: Solid Percent Solids: 77.7

	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	55038	06/08/23 13:22	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	55345	06/12/23 20:32	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	55008	06/08/23 08:45	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	55080	06/09/23 16:58	AJ	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	54963	06/07/23 12:22	KS	EET MID
Soluble	Analysis	300.0		1			55056	06/08/23 22:13	CH	EET MID

Client Sample ID: SW91H-8 (1-2)

Date Collected: 06/05/23 14:11

Date Received: 06/07/23 09:36

Lab Sample ID: 880-29219-2

Matrix: Solid

Batch Batch Dil Initial Final Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab 55183 Total/NA Analysis D2216 06/09/23 17:10 KS EET MID

Client Sample ID: SW91H-8 (1-2)

Date Collected: 06/05/23 14:11

Date Received: 06/07/23 09:36

Lab Sample ID: 880-29219-2 Matrix: Solid

Percent Solids: 94.0

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	55038	06/08/23 13:22	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	55345	06/12/23 20:58	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	55008	06/08/23 08:45	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	55080	06/09/23 17:20	AJ	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	54963	06/07/23 12:22	KS	EET MID
Soluble	Analysis	300.0		1			55056	06/08/23 22:29	CH	EET MID

Client Sample ID: SW91H-9 (0-1)

Date Collected: 06/05/23 14:14

Date Received: 06/07/23 09:36

Lab	Sample	ID:	880-29219-3
			Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	D2216		1			55183	06/09/23 17:10	KS	EET MID

SDG: Jal, NM

Client Sample ID: SW91H-9 (0-1)

Date Collected: 06/05/23 14:14 Date Received: 06/07/23 09:36 Lab Sample ID: 880-29219-3

Matrix: Solid

Percent Solids: 90.8

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	55038	06/08/23 13:22	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	55345	06/12/23 21:24	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	55008	06/08/23 08:45	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	55080	06/09/23 17:42	AJ	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	54963	06/07/23 12:22	KS	EET MID
Soluble	Analysis	300.0		1			55056	06/08/23 22:35	CH	EET MID

Client Sample ID: SW91H-9 (1-2)

Date Collected: 06/05/23 14:00 Date Received: 06/07/23 09:36 Lab Sample ID: 880-29219-4

Matrix: Solid

		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
l	Total/NA	Analysis	D2216		1			55183	06/09/23 17:10	KS	EET MID

Client Sample ID: SW91H-9 (1-2)

Date Collected: 06/05/23 14:00 Date Received: 06/07/23 09:36 Lab Sample ID: 880-29219-4

Matrix: Solid

Percent Solids: 78.0

	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	55038	06/08/23 13:22	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	55345	06/12/23 21:49	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	55008	06/08/23 08:45	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	55080	06/09/23 18:05	AJ	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	54963	06/07/23 12:22	KS	EET MID
Soluble	Analysis	300.0		1			55056	06/08/23 22:40	CH	EET MID

Client Sample ID: SW91H-10 (0-1)

Date Collected: 06/05/23 14:05 Date Received: 06/07/23 09:36

Lab Sample ID: 880-29219-5

Matrix: Solid

ſ	_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
1	Total/NA	Analysis	D2216		1			55183	06/09/23 17:10	KS	EET MID

Client Sample ID: SW91H-10 (0-1)

Date Collected: 06/05/23 14:05

Date Received: 06/07/23 09:36

Lab Sample ID: 880-29219-5

Matrix: Solid Percent Solids: 84.7

	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	55038	06/08/23 13:22	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	55345	06/12/23 22:15	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	55008	06/08/23 08:45	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	55080	06/09/23 18:26	AJ	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	54963	06/07/23 12:22	KS	EET MID
Soluble	Analysis	300.0		1			55056	06/08/23 22:45	CH	EET MID

Lab Chronicle

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H

Job ID: 880-29219-1

SDG: Jal, NM

Client Sample ID: SW91H-10 (1-2)

Date Collected: 06/05/23 14:10 Date Received: 06/07/23 09:36 Lab Sample ID: 880-29219-6

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	D2216		1			55183	06/09/23 17:10	KS	EET MID

Client Sample ID: SW91H-10 (1-2)

Lab Sample ID: 880-29219-6 Date Collected: 06/05/23 14:10

Matrix: Solid

Date Received: 06/07/23 09:36 Percent Solids: 96.2

	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	55038	06/08/23 13:22	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	55345	06/12/23 22:41	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	55008	06/08/23 08:45	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	55080	06/09/23 18:48	AJ	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	54963	06/07/23 12:22	KS	EET MID
Soluble	Analysis	300.0		1			55056	06/08/23 23:01	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H

Job ID: 880-29219-1

SDG: Jal, NM

Laboratory: Eurofins Midland

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

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

Method Summary

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H Job ID: 880-29219-1

SDG: Jal, NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
D2216	Percent Moisture	ASTM	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.

Laboratory References:

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

Eurofins Midland

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Sample Summary

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 1 12 Federal 91H

Job ID: 880-29219-1

SDG: Jal, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-29219-1	SW91H-8 (0-1)	Solid	06/05/23 14:07	06/07/23 09:36	0-1
880-29219-2	SW91H-8 (1-2)	Solid	06/05/23 14:11	06/07/23 09:36	1-2
880-29219-3	SW91H-9 (0-1)	Solid	06/05/23 14:14	06/07/23 09:36	0-1
880-29219-4	SW91H-9 (1-2)	Solid	06/05/23 14:00	06/07/23 09:36	1-2
880-29219-5	SW91H-10 (0-1)	Solid	06/05/23 14:05	06/07/23 09:36	0-1
880-29219-6	SW91H-10 (1-2)	Solid	06/05/23 14:10	06/07/23 09:36	1-2

Work Order No: 21126 63

Eurofins 88001737

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 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 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

Chain of Custody

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

. eurofins

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											JOHN A VALIE		- ago -	ō
Project Manager	Laura Campbell Icamp	Icampbell@cecinc com		Bill to (if different)	£	Da	Dale Woodall	_			Work O	rder Co	Work Order Comments	
Company Name	Civil & Environmental Consultants, Inc	onsultants,		Company Name	ē	De	Devon Energy	λί			Program: UST/PST PRF Brownfields	Brownf	ield≰∏ RR(Superfund
Address	700 Cherrington Parkway	ау		Address							State of Project:			
City, State ZIP	Moon Twp, PA, 15108			City, State ZIP		운	Hobbs NM 88240	38240			Reporting LevelⅡ X LevelⅢ PST/UST TRRF	□ PST/I	UST∏ TRRÆ] Level I
Phone	412-249-1547		Email	Dale woodall@dvn com	ll@dvn		Reference	project nan	Reference project name and Devon WO on invoice	on invaice	Deliverables EDD ∝	ADaPT [☐ Other	
Project Name	Seawolf-1-12-Federal-91-H	entreme (Mentionis)		Turn Around	- Special Control Cont	age of the second		THE PERSON NAMED IN COLUMN	ANAL	ANAL YSIS REQUEST	DEST.	THE PERSON NAMED IN COLUMN	Preservative Codes	e Codes
Project Number	CEC 331-072		K Routine	□ Rush	Pres. Code	ON	ON	ON				Ž	None NO	DI Water H ₂ O
Project Location	Jal NM		Due Date									Č		MPOH MP
Sampler's Name	L Campbell		TAT starts the	e day received by	T =	(<u> </u>		HNO, HN
# Od	Devon WO 21126163	1	the lab if received by 4.	eived by 4 30pm		00	Н					Ĭ	01	NaOH Na
SAMPLE RECEIPT		Yes 👠	/ Wet Ice	es) No	letei	q 3(dΤ					Ť	0	
Samples Received Intact	Wes No	Thermometer ID	ar ID	1877	ram	oqį		17				ž	NaHSO4 NABIS	
လ Cooler Custody Seals	Yes No	(VI) Correction Factor	-actor	08,4	F.	϶M		202				ž	Na ₂ S ₂ O ₃ NaSO ₃	
Q Sample Custody Seals	Yes No MA	Femperature Reading	e Reading	5,0		pλ						ıΖ	Zn Acetate+NaOH Zn	l Zn
C Total Containers		Corrected 1	Corrected Temperature	0.3	ı	əpıı		TXE				ž	NaOH+Ascorbic Acid SAPC	cid SAPC
		Date	Time	Grab/	# of	ાપ:						<u>L.</u>		
Sample Identification	rication Matrix	Ñ	Sampled	Depth Com	Comp Cont								Sample Comments	mments
8-H16MS	s (1-0)	6/5/23	FOHI	Q-1 G	2	X	ر کر	イズ					\$	
S-418-8	(1-2)		1411	1 2-1		-								
9-14-18 W	(0-1)		1414	Ů~1									i.	
P-H1PW2	\(2-1\)		14 GO	1-2										
SLN914-16			1402	1-0			_							
SW91H-10	V (1-1) 0	→	1410	1-2	>	>	>	 						
											880-29219 Chain of Custody	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		
												-		
Total 200.7 / 6010	0 200.8 / 6020:	8	8RCRA 13PPM	PM Texas 11	₹	Sb As I	Ba Be	В В	Ca Cr Co C	u Fe Pb	Cu Fe Pb Mg Mn Mo Ni K Se Ag S	SiO, Na	Sr TI Sn U	V Zn
Circle Method(s) and	Circle Method(s) and Metal(s) to be analyzed	zed	TCLP / SPLP 6010	_	8RCRA	Sb As	Ba Be	D PS	. Co Cu Pb	Mn Mo		1631 / 24	51/74	471

6/14/2023

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Login Sample Receipt Checklist

Client: Civil & Environmental Consultants Inc

Job Number: 880-29219-1

SDG Number: Jal, NM

Login Number: 29219 List Source: Eurofins Midland

List Number: 1

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	

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<6mm (1/4").

Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Laura Campbell Civil & Environmental Consultants Inc 700 Cherrington Parkway Moon Township, Pennsylvania 15108

Generated 7/5/2024 4:53:52 PM

JOB DESCRIPTION

Seawolf 112 Fed 91H

JOB NUMBER

880-45371-1

Eurofins Midland 1211 W. Florida Ave Midland TX 79701

Eurofins Midland

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

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Authorized for release by Travis Richter, Project Manager <u>Travis.Richter@et.eurofinsus.com</u> (281)794-7216 1

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Client: Civil & Environmental Consultants Inc
Project/Site: Seawolf 112 Fed 91H

Laboratory Job ID: 880-45371-1

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Client Sample Results	6
Surrogate Summary	8
QC Sample Results	9
QC Association Summary	13
Lab Chronicle	15
Certification Summary	16
Method Summary	17
Sample Summary	18
Chain of Custody	19
Receipt Checklists	20

Definitions/Glossary

Client: Civil & Environmental Consultants Inc

Job ID: 880-45371-1

Project/Site: Seawolf 112 Fed 91H

Qualifiers

GC VOA

Qualifier Description

U Indicates the analyte was analyzed for but not detected.

GC Semi VOA

J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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

HPLC/IC

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.

z Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery

CFL Contains Free Liquid

CFU Colony Forming Unit

CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

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

NC Not Calculated

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

NEG Negative / Absent
POS Positive / Present
PQL Practical Quantitation Limit

PRES Presumptive

QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

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

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

TNTC Too Numerous To Count

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Case Narrative

Client: Civil & Environmental Consultants Inc

Project: Seawolf 112 Fed 91H

Job ID: 880-45371-1

Job ID: 880-45371-1 Eurofins Midland

Job Narrative 880-45371-1

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 6/27/2024 5:40 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 3.1°C.

GC VOA

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

Diesel Range Organics

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-84446 and analytical batch 880-84620 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.

General Chemistry

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

Eurofins Midland

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Client: Civil & Environmental Consultants Inc

Client Sample ID: BF-SW91H-042918

Project/Site: Seawolf 112 Fed 91H

Date Collected: 06/26/24 13:36

Date Received: 06/27/24 17:40

Lab Sample ID: 880-45371-1

Matrix: Solid Percent Solids: 99.6

Job ID: 880-45371-1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00141	U	0.00202	0.00141	mg/Kg		06/30/24 18:35	07/01/24 05:22	1
Toluene	<0.00202	U	0.00202	0.00202	mg/Kg	₽	06/30/24 18:35	07/01/24 05:22	1
Ethylbenzene	<0.00110	U	0.00202	0.00110	mg/Kg	₽	06/30/24 18:35	07/01/24 05:22	1
m-Xylene & p-Xylene	<0.00231	U	0.00404	0.00231	mg/Kg	₩	06/30/24 18:35	07/01/24 05:22	1
o-Xylene	<0.00160	U	0.00202	0.00160	mg/Kg	₩	06/30/24 18:35	07/01/24 05:22	1
Xylenes, Total	<0.00231	U	0.00404	0.00231	mg/Kg	₽	06/30/24 18:35	07/01/24 05:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130				06/30/24 18:35	07/01/24 05:22	1
1,4-Difluorobenzene (Surr)	90		70 - 130				06/30/24 18:35	07/01/24 05:22	1

Method: SW846 8015B NM - Dies Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	17.7	J	49.9	11.0	mg/Kg	*	06/28/24 08:19	06/29/24 17:56	1
Diesel Range Organics (Over C10-C28)	15.6	J	49.9	15.0	mg/Kg	₽	06/28/24 08:19	06/29/24 17:56	1
Oil Range Organics (Over C28-C36)	<12.5	U	49.9	12.5	mg/Kg	₽	06/28/24 08:19	06/29/24 17:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	109		70 - 130				06/28/24 08:19	06/29/24 17:56	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble								
	Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
	Chloride	54.6	5.04	0.398 mg/Kg			07/02/24 02:27	1

70 - 130

109

Client Sample ID: BF-SW91H-090723

Date Collected: 06/26/24 13:44

Date Received: 06/27/24 17:40

o-Terphenyl

Lab	Sample	e ID:	880	-453	371-	2

06/28/24 08:19 06/29/24 17:56

Matrix: Solid Percent Solids: 97.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00141	U	0.00203	0.00141	mg/Kg		06/29/24 13:54	07/01/24 12:32	1
Toluene	<0.00203	U	0.00203	0.00203	mg/Kg	₽	06/29/24 13:54	07/01/24 12:32	1
Ethylbenzene	<0.00111	U	0.00203	0.00111	mg/Kg	₽	06/29/24 13:54	07/01/24 12:32	1
m-Xylene & p-Xylene	<0.00232	U	0.00406	0.00232	mg/Kg	₩	06/29/24 13:54	07/01/24 12:32	1
o-Xylene	< 0.00161	U	0.00203	0.00161	mg/Kg	₩	06/29/24 13:54	07/01/24 12:32	1
Xylenes, Total	<0.00232	U	0.00406	0.00232	mg/Kg	₽	06/29/24 13:54	07/01/24 12:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130				06/29/24 13:54	07/01/24 12:32	1
1,4-Difluorobenzene (Surr)	90		70 - 130				06/29/24 13:54	07/01/24 12:32	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)											
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac		
Gasoline Range Organics (GRO)-C6-C10	27.5	J	50.9	11.2	mg/Kg	*	06/28/24 08:19	06/29/24 18:16	1		
Diesel Range Organics (Over C10-C28)	17.4	J	50.9	15.3	mg/Kg	₩	06/28/24 08:19	06/29/24 18:16	1		
Oil Range Organics (Over C28-C36)	<12.7	U	50.9	12.7	mg/Kg	₩	06/28/24 08:19	06/29/24 18:16	1		

Client: Civil & Environmental Consultants Inc

Client Sample ID: BF-SW91H-090723

Project/Site: Seawolf 112 Fed 91H

Job ID: 880-45371-1

Lab Sample ID: 880-45371-2

Matrix: Solid

Date Collected: 06/26/24 13:44	Matrix: Solid
Date Received: 06/27/24 17:40	Percent Solids: 97.9

Surrogate	%Recovery Qu	ualifier Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	107	70 - 130	_			06/28/24 08:19	06/29/24 18:16	1
o-Terphenyl	111	70 - 130				06/28/24 08:19	06/29/24 18:16	1
Method: EPA 300.0 - Anions Analyte	s, Ion Chromatography Result Qu		L MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	191	4.9	6 0.392	ma/Ka			07/02/24 02:34	1

Surrogate Summary

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 Fed 91H

Job ID: 880-45371-1

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

_				Percent Surrogate
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
880-45371-1	BF-SW91H-042918	108	90	
880-45371-2	BF-SW91H-090723	106	90	
LCS 880-84633/1-A	Lab Control Sample	105	93	
LCS 880-84640/1-A	Lab Control Sample	105	91	
LCSD 880-84633/2-A	Lab Control Sample Dup	103	93	
LCSD 880-84640/2-A	Lab Control Sample Dup	103	93	
MB 880-84633/5-A	Method Blank	105	85	
MB 880-84640/5-A	Method Blank	103	88	
Surrogate Legend				
BFB = 4-Bromofluorobenzer	ne (Surr)			

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid Prep Type: Total/NA

				Percent Surrogate Recovery (Acceptance Limits
		1CO1	OTPH1	
_ab Sample ID	Client Sample ID	(70-130)	(70-130)	
380-45371-1	BF-SW91H-042918	109	109	
380-45371-2	BF-SW91H-090723	107	111	
_CS 880-84446/2-A	Lab Control Sample	81	83	
_CSD 880-84446/3-A	Lab Control Sample Dup	97	99	
MB 880-84446/1-A	Method Blank	139 S1+	152 S1+	

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 Fed 91H

Job ID: 880-45371-1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-84633/5-A

Matrix: Solid

Analysis Batch: 84659

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 84633

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00138	U	0.00198	0.00138	mg/Kg		06/29/24 13:54	07/01/24 11:49	1
Toluene	<0.00198	U	0.00198	0.00198	mg/Kg		06/29/24 13:54	07/01/24 11:49	1
Ethylbenzene	<0.00108	U	0.00198	0.00108	mg/Kg		06/29/24 13:54	07/01/24 11:49	1
m-Xylene & p-Xylene	<0.00227	U	0.00397	0.00227	mg/Kg		06/29/24 13:54	07/01/24 11:49	1
o-Xylene	< 0.00157	U	0.00198	0.00157	mg/Kg		06/29/24 13:54	07/01/24 11:49	1
Xylenes, Total	<0.00227	U	0.00397	0.00227	mg/Kg		06/29/24 13:54	07/01/24 11:49	1

мв мв

	Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1	4-Bromofluorobenzene (Surr)	105	70 - 130	06/29/24 13:54	07/01/24 11:49	1
	1,4-Difluorobenzene (Surr)	85	70 - 130	06/29/24 13:54	07/01/24 11:49	1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 84633

Lab Sample ID: LCS 880-84633/1-A Matrix: Solid

Analysis Batch: 84659

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	0.100	0.1004		mg/Kg		100	70 - 130	
Toluene	0.100	0.09552		mg/Kg		96	70 - 130	
Ethylbenzene	0.100	0.09292		mg/Kg		93	70 - 130	
m-Xylene & p-Xylene	0.200	0.2021		mg/Kg		101	70 - 130	
o-Xylene	0.100	0.1007		mg/Kg		101	70 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Lab Sample ID: LCSD 880-84633/2-A

Matrix: Solid

Analysis Batch: 84659

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 84633

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.1005		mg/Kg		101	70 - 130	0	35	
Toluene	0.100	0.09527		mg/Kg		95	70 - 130	0	35	
Ethylbenzene	0.100	0.09254		mg/Kg		93	70 - 130	0	35	
m-Xylene & p-Xylene	0.200	0.2016		mg/Kg		101	70 - 130	0	35	
o-Xylene	0.100	0.1008		mg/Kg		101	70 - 130	0	35	

LCSD LCSD

Surrogate	%Recovery Qualif	ier Limits
4-Bromofluorobenzene (Surr)	103	70 - 130
1.4-Difluorobenzene (Surr)	93	70 - 130

Lab Sample ID: MB 880-84640/5-A

Matrix: Solid

Analysis Batch: 84639

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 84640

мв мв

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00139	U	0.00200	0.00139	mg/Kg		06/30/24 18:35	06/30/24 21:19	1
Toluene	<0.00200	U	0.00200	0.00200	mg/Kg		06/30/24 18:35	06/30/24 21:19	1

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Page 9 of 20

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 Fed 91H

Job ID: 880-45371-1

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

Lab Sample ID: MB 880-84640/5-A **Matrix: Solid**

Analysis Batch: 84639

Client Sample ID: Method Blank

Prep Type: Total/NA
Prep Batch: 84640
1100 2010 0 10 10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.00109	U	0.00200	0.00109	mg/Kg		06/30/24 18:35	06/30/24 21:19	1
m-Xylene & p-Xylene	<0.00229	U	0.00400	0.00229	mg/Kg		06/30/24 18:35	06/30/24 21:19	1
o-Xylene	<0.00158	U	0.00200	0.00158	mg/Kg		06/30/24 18:35	06/30/24 21:19	1
Xylenes, Total	<0.00229	U	0.00400	0.00229	mg/Kg		06/30/24 18:35	06/30/24 21:19	1

MB MB

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130	06/30/24 18:35	06/30/24 21:19	1
1,4-Difluorobenzene (Surr)	88		70 - 130	06/30/24 18:35	06/30/24 21:19	1

Lab Sample ID: LCS 880-84640/1-A **Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 84639 Prep Batch: 84640

Toluene 0.100 0.1028 mg/Kg 103 70 - 130 Ethylbenzene 0.100 0.09994 mg/Kg 100 70 - 130		Spike LC	S LCS		%Rec
Toluene 0.100 0.1028 mg/Kg 103 70 - 130 Ethylbenzene 0.100 0.09994 mg/Kg 100 70 - 130	Analyte	Added Resu	lt Qualifier Unit	D %Rec	Limits
Ethylbenzene 0.100 0.09994 mg/Kg 100 70 - 130	Benzene	0.100 0.104	8 mg/Kg	105	70 - 130
· · · · · · · · · · · · · · · · · · ·	Toluene	0.100 0.102	8 mg/Kg	103	70 - 130
m-Xylene & n-Xylene 0.200 0.2149 mg/Kg 10.7 70.130	Ethylbenzene	0.100 0.0999	4 mg/Kg	100	70 - 130
107 70 100 mg/kg	m-Xylene & p-Xylene	0.200 0.214	9 mg/Kg	107	70 - 130
o-Xylene 0.100 0.1071 mg/Kg 107 70 - 130	o-Xylene	0.100 0.107	1 mg/Kg	107	70 - 130

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	105	70 - 130
1,4-Difluorobenzene (Surr)	91	70 - 130

Lab Sample ID: LCSD 880-84640/2-A Client Sample ID: Lab Control Sample Dup

Matrix: Solid

Analysis Batch: 84639

Prep Type: Total/NA Prep Batch: 84640

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1023		mg/Kg		102	70 - 130	2	35
Toluene	0.100	0.09916		mg/Kg		99	70 - 130	4	35
Ethylbenzene	0.100	0.09632		mg/Kg		96	70 - 130	4	35
m-Xylene & p-Xylene	0.200	0.2067		mg/Kg		103	70 - 130	4	35
o-Xylene	0.100	0.1032		mg/Kg		103	70 - 130	4	35

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

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

Lab Sample ID: MB 880-84446/1-A

Matrix: Solid

Prep Type: Total/NA **Analysis Batch: 84620** Prep Batch: 84446

мв мв Result Qualifier MDL Unit Prepared <11.0 U 50.0 11.0 mg/Kg 06/28/24 08:19 06/29/24 08:20 Gasoline Range Organics

(GRO)-C6-C10

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Client Sample ID: Method Blank

Client: Civil & Environmental Consultants Inc

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

MB MB

Project/Site: Seawolf 112 Fed 91H

Matrix: Solid

Analysis Batch: 84620

Lab Sample ID: MB 880-84446/1-A

Job ID: 880-45371-1

Prep Type: Total/NA

Prep Batch: 84446

Client	Sample	ID:	Met	hod	Blar
					4 - 1781

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<15.0	U	50.0	15.0	mg/Kg		06/28/24 08:19	06/29/24 08:20	1
Oil Range Organics (Over C28-C36)	<12.5	U	50.0	12.5	mg/Kg		06/28/24 08:19	06/29/24 08:20	1
	MB	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	139	S1+	70 - 130				06/28/24 08:19	06/29/24 08:20	
o-Terphenyl	152	S1+	70 - 130				06/28/24 08:19	06/29/24 08:20	1

Lab Sample ID: LCS 880-84446/2-A **Client Sample ID: Lab Control Sample Matrix: Solid** Prep Type: Total/NA Analysis Batch: 84620 Prep Batch: 84446 LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits

Gasoline Range Organics 1000 894.3 89 70 - 130 mg/Kg (GRO)-C6-C10 1000 812.8 Diesel Range Organics (Over mg/Kg 81 70 - 130C10-C28)

LCS LCS Qualifier Limits Surrogate %Recovery 1-Chlorooctane 70 - 130 81 o-Terphenyl 83 70 - 130

Lab Sample ID: LCSD 880-84446/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid** Prep Type: Total/NA

Analysis Batch: 84620							Prep Batch: 84				
	Spike	LCSD	LCSD				%Rec		RPD		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit		
Gasoline Range Organics	1000	876.2		mg/Kg		88	70 - 130	2	20		
(GRO)-C6-C10											
Diesel Range Organics (Over	1000	870.8		mg/Kg		87	70 - 130	7	20		
C10-C28)											

LCSD LCSD Surrogate %Recovery Qualifier Limits 1-Chlorooctane 97 70 - 130 o-Terphenyl 99 70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-84502/1-A Client Sample ID: Method Blank **Matrix: Solid Prep Type: Soluble**

Analysis Batch: 84722

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.395	U	5.00	0.395	mg/Kg			07/02/24 00:14	1

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 Fed 91H

Job ID: 880-45371-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-84502/2-A

Matrix: Solid

Analysis Batch: 84722

Analyte

Chloride

Client Sample ID: Lab Control Sample	ļ
Prep Type: Soluble	è

Spike LCS LCS %Rec Added Result Qualifier Unit %Rec Limits 250 252.8 mg/Kg 101 90 - 110

Lab Sample ID: LCSD 880-84502/3-A Client Sample ID: Lab Control Sample Dup **Matrix: Solid Prep Type: Soluble**

Analysis Batch: 84722

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	250	253.0	-	mg/Kg		101	90 - 110	0	20

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QC Association Summary

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 112 Fed 91H

Job ID: 880-45371-1

GC VOA

Prep Batch: 84633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-45371-2	BF-SW91H-090723	Total/NA	Solid	5035	
MB 880-84633/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-84633/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-84633/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 84639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-45371-1	BF-SW91H-042918	Total/NA	Solid	8021B	84640
MB 880-84640/5-A	Method Blank	Total/NA	Solid	8021B	84640
LCS 880-84640/1-A	Lab Control Sample	Total/NA	Solid	8021B	84640
LCSD 880-84640/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	84640

Prep Batch: 84640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-45371-1	BF-SW91H-042918	Total/NA	Solid	5035	
MB 880-84640/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-84640/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-84640/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 84659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-45371-2	BF-SW91H-090723	Total/NA	Solid	8021B	84633
MB 880-84633/5-A	Method Blank	Total/NA	Solid	8021B	84633
LCS 880-84633/1-A	Lab Control Sample	Total/NA	Solid	8021B	84633
LCSD 880-84633/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	84633

GC Semi VOA

Prep Batch: 84446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-45371-1	BF-SW91H-042918	Total/NA	Solid	8015NM Prep	
880-45371-2	BF-SW91H-090723	Total/NA	Solid	8015NM Prep	
MB 880-84446/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-84446/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-84446/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 84620

Lab Sample ID 880-45371-1	Client Sample ID BF-SW91H-042918	Prep Type Total/NA	Matrix Solid	Method 8015B NM	Prep Batch 84446
880-45371-2	BF-SW91H-090723	Total/NA	Solid	8015B NM	84446
MB 880-84446/1-A	Method Blank	Total/NA	Solid	8015B NM	84446
LCS 880-84446/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	84446
LCSD 880-84446/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	84446

HPLC/IC

Leach Batch: 84502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-45371-1	BF-SW91H-042918	Soluble	Solid	DI Leach	
880-45371-2	BF-SW91H-090723	Soluble	Solid	DI Leach	
MB 880-84502/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-84502/2-A	Lab Control Sample	Soluble	Solid	DI Leach	

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Page 13 of 20

QC Association Summary

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 Fed 91H

Job ID: 880-45371-1

HPLC/IC (Continued)

Leach Batch: 84502 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-84502/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 84722

Lab Sample ID 880-45371-1	Client Sample ID BF-SW91H-042918	Prep Type Soluble	Matrix Solid	Method 300.0	Prep Batch 84502
880-45371-2	BF-SW91H-090723	Soluble	Solid	300.0	84502
MB 880-84502/1-A	Method Blank	Soluble	Solid	300.0	84502
LCS 880-84502/2-A	Lab Control Sample	Soluble	Solid	300.0	84502
LCSD 880-84502/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	84502

General Chemistry

Analysis Batch: 84547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-45371-1	BF-SW91H-042918	Total/NA	Solid	D2216	
880-45371-2	BF-SW91H-090723	Total/NA	Solid	D2216	
MB 880-84547/1	Method Blank	Total/NA	Solid	D2216	

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Client Sample ID: BF-SW91H-042918 Lab Sample ID: 880-45371-1

Date Collected: 06/26/24 13:36 **Matrix: Solid** Date Received: 06/27/24 17:40

Batch Batch Dil Initial Final Batch Prepared Prep Type Туре Method Run Factor Amount Amount Number or Analyzed Analyst Lab DI Leach 84502 SMC Soluble Leach 4.96 g 50 mL 06/28/24 11:15 **EET MID** 300.0 Soluble Analysis 1 50 mL 50 mL 84722 07/02/24 02:27 СН **EET MID** Total/NA Analysis D2216 84547 06/28/24 14:01 **EET MID** 1

Client Sample ID: BF-SW91H-042918

Lab Sample ID: 880-45371-1 Date Collected: 06/26/24 13:36 **Matrix: Solid** Percent Solids: 99.6 Date Received: 06/27/24 17:40

	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	84640	06/30/24 18:35	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	84639	07/01/24 05:22	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	84446	06/28/24 08:19	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	84620	06/29/24 17:56	SM	EET MID

Lab Sample ID: 880-45371-2 Client Sample ID: BF-SW91H-090723

Date Collected: 06/26/24 13:44 **Matrix: Solid**

Date Received: 06/27/24 17:40

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.04 g	50 mL	84502	06/28/24 11:15	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	84722	07/02/24 02:34	CH	EET MID
Total/NA	Analysis	D2216		1			84547	06/28/24 14:01	СН	EET MID

Client Sample ID: BF-SW91H-090723 Lab Sample ID: 880-45371-2

Date Collected: 06/26/24 13:44 **Matrix: Solid** Date Received: 06/27/24 17:40 Percent Solids: 97.9

	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	84633	06/29/24 13:54	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	84659	07/01/24 12:32	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	84446	06/28/24 08:19	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	84620	06/29/24 18:16	SM	EET MID

Laboratory References:

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

Eurofins Midland

Accreditation/Certification Summary

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 Fed 91H

Job ID: 880-45371-1

Laboratory: Eurofins Midland

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

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

1

4

5

8

11

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14

Method Summary

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 Fed 91H

Job ID: 880-45371-1

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
D2216	Percent Moisture	ASTM	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.

Laboratory References:

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

Eurofins Midland

Released to Imaging: 8/22/2024 2:10:52 PM

2

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7

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12

Sample Summary

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 112 Fed 91H

Job ID: 880-45371-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received		
880-45371-1	BF-SW91H-042918	Solid	06/26/24 13:36	06/27/24 17:40		
880-45371-2	BF-SW91H-090723	Solid	06/26/24 13:44	06/27/24 17:40		

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0

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11

16

11)

Circle Method(s) and Metal(s) to be analyzed

Total 200.7 / 6010

200.8 / 6020:

8RCRA 13PPM Texas 11 Al Sb

TCLP / SPLP 6010: BRCRA SI

service. Eurofine Xenco will be liable only for the cost of samples and shall not assume any responsibility for any Eurofine Xenco. A minimum charge of \$88.00 will be applied to each project and a charge of \$8 for each sample as

Received by: (Signature)

11/17 Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Revised Date 08/25/2020 Rev. 2020 2

Relinquished by (Signature)

HWAT .

ice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client con

13 14

eurofins **Environment Testing**

Phone:

800-26-2324

Email: | wontor bless

City, State ZIP: Address:

Moon Township, Pt, 15108 700 Chemonton Burkman

Seawolf 112 Fed 914

City, State ZIP:

Company Name: Project Manager:

Civil & Environmental Consultants Company Name:

rays Muntaphun

Bill to: (if different)

Sampler's Name: Project Location: Project Number: Project Name:

Cha

Midland, TX (432) EL Paso, TX (91 Hobbs, NM (575 Houston, TX (2)

peny to Eurofina Xanco, its effiliates and subcontractors. It assigns standard terms and conditions losses or expenses incurred by the client if such losses are due to circumstances beyond the control ubmitted to Eurofina Xanco, but not analyzed. These terms will be enforced unless previously negotiated	b As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag	As Ba Be B Cd Ca Cr Co Cu Fe F				-	X X X X	300- 8019 8019 Mois	NB	0D -P	-N	M- ×	tu	11 7	Н	ANALYSIS REQUEST	- 1) 382-7000, Cerreoed, NM (070) 800-3188 te Rock, AR (501) 224-5060	5) 585-3443, Lubbock, TX (808) 794-1296	31) 240-4200, Daltas, TX (214) 902-0300 704-5440, San Antonio, TX (210) 509-3334	ain of Custody
ora. It assigns standard terms and conditions se are due to circumstances beyond the control erms will be enforced unless previously negotiated.	o Ni Se Ag Ti U Hg: 1631/245.1/7470 /7471	Ph Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn						Sample Comments	THE COLOR THE CO	Zi ACOMETE NACOTI AND	Na ₂ S ₂ O ₃ : NaSO ₃	NaHSO ₄ , NABIS	H ₃ PO ₄ : HP		HCL: HC HNO ₃	Preservati	Deliverables: EDD ADAPT Officer	Program: UST/PST PRP Brownfields RRC Superfund	Work Order Comments	Page of	880-453/1 Chain of Custody	Wo Son April 1		
								Page	e 1	9 (of 2	0											7/5/	/202

Sample Custody Seals: Cooler Custody Seals: Samples Received Intact: SAMPLE RECEIPT

Yes No (N/A Temperature Reading:

Corrected Temperature:

Yes No (NA

Correction Factor: Thermometer ID:

Temp Blank: (Yeg)

Yes (No)

Wet ice:

No

Parameters

R-

C

Due Date:

Routine

Rush

Turn Around

TAT starts the day received by the lab, if received by 4:30pm

8

otal Containers:

Sample Identification

Matrix

Sampled Date

Sampled

Time

Depth

Grab/

Comp

Cont * 9,

(daola4)3:36

SURFACE

1.9

00

OF SWOUH-090 3F-SW914-042918

7/5/2024

Login Sample Receipt Checklist

Job Number: 880-45371-1 Client: Civil & Environmental Consultants Inc

List Source: Eurofins Midland Login Number: 45371

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	

APPENDIX G

PHOTOGRAPHIC LOG

331-072 Seawolf 1 12 Federal 91H April 29, 2018 Release Devon Energy Corporation February 1, 2024



Well Pad



View of excavation, facing south



View of excavation, facing east



View of excavation, facing south



View of excavation, facing north

331-072 Seawolf 1 12 Federal 91H April 29, 2018 Release Devon Energy Corporation June 26, 2024



View of backfilled excavation, facing northwest



View of backfilled excavation, facing south



View of backfilled excavation after seeding facing southwest



View of backfilled excavation, facing west



View of backfilled excavation, facing south



View of backfilled excavation after seeding facing northwest



APPENDIX H RESEEDING SPECIFICATION

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be <u>no</u> primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	I <u>b/acre</u>
Sand dropseed (Sporobolus cryptandrus) Sand love grass (Eragrostis trichodes) Plains bristlegrass (Setaria macrostachya)	1.0 1.0 2.0

^{*}Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Laura Campbell Civil & Environmental Consultants Inc 700 Cherrington Parkway Moon Township, Pennsylvania 15108

Generated 2/12/2024 6:39:52 PM

JOB DESCRIPTION

Seawolf 11291 H- Off

JOB NUMBER

820-11923-1

Eurofins Lubbock 6701 Aberdeen Ave. Suite 8 Lubbock TX 79424

Eurofins Lubbock

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.

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

Authorization

Generated 2/12/2024 6:39:52 PM

Authorized for release by Travis Richter, Project Manager Travis.Richter@et.eurofinsus.com (281)794-7216

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 11291 H- Off

Laboratory Job ID: 820-11923-1

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Client Sample Results	7
Surrogate Summary	15
QC Sample Results	17
QC Association Summary	21
Lab Chronicle	24
Certification Summary	29
Method Summary	30
Sample Summary	31
Chain of Custody	32
Receipt Checklists	34

3

4

9

10

12

13

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Definitions/Glossary

Client: Civil & Environmental Consultants Inc

Job ID: 820-11923-1

Project/Site: Seawolf 11291 H- Off

Qualifiers

00	11	~ 4	
GU	v	UA	ĺ

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VO	A
Qualifier	Qualifier Description
В	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.
HPLC/IC	
Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary	
Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)

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

MCL

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

EPA recommended "Maximum Contaminant Level"

NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
00	Quality Control

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

Job ID: 820-11923-1

Case Narrative

Client: Civil & Environmental Consultants Inc

Project: Seawolf 11291 H- Off

Job ID: 820-11923-1 Eurofins Lubbock

Job Narrative 820-11923-1

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 2/2/2024 11:12 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was -0.3°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: Seawolf 91H Off Pad Bottom 1 (820-11923-1), Seawolf 91H Off Pad Bottom 2 (820-11923-2), Seawolf 91H Off Pad Bottom 3 (820-11923-3), Seawolf 91H Off Pad Bottom 4 (820-11923-4), Seawolf 91H Off Pad Bottom 5 (820-11923-5), Seawolf 91H Off Pad Bottom 6 (820-11923-6), Seawolf 91H Off Pad Bottom 7 (820-11923-7), Seawolf 91H Off Pad Bottom 8 (820-11923-8), Seawolf 91H Off Pad Bottom 9 (820-11923-9), Seawolf 91H Off Pad Sidewall 1 (820-11923-10), Seawolf 91H Off Pad Sidewall 2 (820-11923-11) and Seawolf 91H Off Pad Sidewall 3 (820-11923-12).

GC VOA

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-72659 and analytical batch 880-72586 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 8021B: The laboratory control sample duplicate (LCSD) for preparation batch 880-72665 and analytical batch 880-72703 recovered outside control limits for the following analytes: m-Xylene & p-Xylene. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

Method 8021B: Surrogate recovery for the following samples were outside control limits: Seawolf 91H Off Pad Bottom 3 (820-11923-3), Seawolf 91H Off Pad Bottom 4 (820-11923-4), Seawolf 91H Off Pad Bottom 7 (820-11923-7), Seawolf 91H Off Pad Bottom 9 (820-11923-9), Seawolf 91H Off Pad Sidewall 1 (820-11923-10), Seawolf 91H Off Pad Sidewall 2 (820-11923-11), (890-6088-A-21-G), (890-6088-A-21-E MS) and (890-6088-A-21-F MSD). Evidence of matrix interference is present; therefore, reextraction 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 880-72383 and analytical batch 880-72441 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: Seawolf 91H Off Pad Bottom 2 (820-11923-2), Seawolf 91H Off Pad Bottom 3 (820-11923-3), Seawolf 91H Off Pad Bottom 4 (820-11923-4), Seawolf 91H Off Pad Bottom 5 (820-11923-5), Seawolf 91H Off Pad Bottom 6 (820-11923-6), Seawolf 91H Off Pad Bottom 7 (820-11923-7) and (890-6101-A-1-G 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 samples were outside control limits: Seawolf 91H Off Pad Bottom 9 (820-11923-9), Seawolf 91H Off Pad Sidewall 1 (820-11923-10), Seawolf 91H Off Pad Sidewall 2 (820-11923-11) and Seawolf 91H Off Pad Sidewall 3 (820-11923-12). 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 880-72383 and analytical batch 880-72441 contained Diesel

Case Narrative

Client: Civil & Environmental Consultants Inc

Project: Seawolf 11291 H- Off

Job ID: 820-11923-1 (Continued)

Eurofins Lubbock

Job ID: 820-11923-1

Range Organics (Over C10-C28) 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.

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.

General Chemistry

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

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 11291 H- Off

Lab Sample ID: 820-11923-1

Matrix: Solid Percent Solids: 77.1

Job ID: 820-11923-1

Client Sample ID: Seawolf 91H Off Pad Bottom 1

Date Collected: 02/01/24 14:22 Date Received: 02/02/24 11:12

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000504	U	0.00262	0.000504	mg/Kg		02/08/24 13:39	02/09/24 21:55	1
Toluene	< 0.000597	U	0.00262	0.000597	mg/Kg	₽	02/08/24 13:39	02/09/24 21:55	1
Ethylbenzene	< 0.000739	U	0.00262	0.000739	mg/Kg	₽	02/08/24 13:39	02/09/24 21:55	1
m-Xylene & p-Xylene	<0.00132	U *+	0.00523	0.00132	mg/Kg	₩	02/08/24 13:39	02/09/24 21:55	1
o-Xylene	<0.000450	U	0.00262	0.000450	mg/Kg	₽	02/08/24 13:39	02/09/24 21:55	1
Xylenes, Total	<0.00132	U *+	0.00523	0.00132	mg/Kg	₽	02/08/24 13:39	02/09/24 21:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130				02/08/24 13:39	02/09/24 21:55	1
1,4-Difluorobenzene (Surr)	80		70 - 130				02/08/24 13:39	02/09/24 21:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	28.4	J	64.4	19.3	mg/Kg	*	02/05/24 13:43	02/06/24 11:43	1
Diesel Range Organics (Over C10-C28)	<19.3	U	64.4	19.3	mg/Kg	₽	02/05/24 13:43	02/06/24 11:43	1
Oll Range Organics (Over C28-C36)	<19.3	U	64.4	19.3	mg/Kg	₩	02/05/24 13:43	02/06/24 11:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	123		70 - 130				02/05/24 13:43	02/06/24 11:43	1
o-Terphenyl	105		70 - 130				02/05/24 13:43	02/06/24 11:43	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble								
	Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
	Chloride	199	5.03	0.397 mg/Kg			02/05/24 17:01	1

Client Sample ID: Seawolf 91H Off Pad Bottom 2

Date Collected: 02/01/24 15:01

Date Received: 02/02/24 11:12

87

Lab Sample ID: 820-11923-2

02/09/24 23:41

02/08/24 13:39

Matrix: Solid Percent Solids: 72.8

Method: SW846 8021B - Volatile Organi	c Comp	ounds (GC)
Analyte	Result	Qualifier

moundar officionalis	olutilo ol guillo ooliip	oundo (oo	,						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000530	U	0.00275	0.000530	mg/Kg	₩	02/08/24 13:39	02/09/24 23:41	1
Toluene	<0.000628	U	0.00275	0.000628	mg/Kg	₽	02/08/24 13:39	02/09/24 23:41	1
Ethylbenzene	<0.000777	U	0.00275	0.000777	mg/Kg	₽	02/08/24 13:39	02/09/24 23:41	1
m-Xylene & p-Xylene	<0.00139	U *+	0.00550	0.00139	mg/Kg	₽	02/08/24 13:39	02/09/24 23:41	1
o-Xylene	<0.000473	U	0.00275	0.000473	mg/Kg	₽	02/08/24 13:39	02/09/24 23:41	1
Xylenes, Total	<0.00139	U *+	0.00550	0.00139	mg/Kg	₽	02/08/24 13:39	02/09/24 23:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)			70 - 130				02/08/24 13:39	02/09/24 23:41	1

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

Method: SW846 8015B NM - Diesel	Range Orga	nics (DRO) (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	24.3	J	68.1	20.4	mg/Kg	*	02/05/24 13:43	02/06/24 16:06	1
Diesel Range Organics (Over C10-C28)	27.9	JB	68.1	20.4	mg/Kg	₽	02/05/24 13:43	02/06/24 16:06	1
OII Range Organics (Over C28-C36)	<20.4	U	68.1	20.4	mg/Kg	₽	02/05/24 13:43	02/06/24 16:06	1

70 - 130

1,4-Difluorobenzene (Surr)

Client: Civil & Environmental Consultants Inc

Client Sample ID: Seawolf 91H Off Pad Bottom 2

Project/Site: Seawolf 11291 H- Off

Date Collected: 02/01/24 15:01

Date Received: 02/02/24 11:12

Lab Sample ID: 820-11923-2

Job ID: 820-11923-1

Percent Solids: 72.8

Matrix: Solid

Surrogate	%Recovery Qualifie	er Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	133 S1+	70 - 130	02/05/24 13:43	02/06/24 16:06	1
o-Terphenyl	117	70 - 130	02/05/24 13:43	02/06/24 16:06	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble Analyte Result Qualifier RLMDL Unit Prepared Analyzed Dil Fac Chloride 354 5.00 0.395 mg/Kg 02/05/24 17:15

Client Sample ID: Seawolf 91H Off Pad Bottom 3 Lab Sample ID: 820-11923-3

Date Collected: 02/01/24 15:04 **Matrix: Solid** Date Received: 02/02/24 11:12 Percent Solids: 70.1

Method: SW846 8021B - Volati	ile Organic Comp	ounds (GC))						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000547	U	0.00284	0.000547	mg/Kg	*	02/08/24 13:39	02/10/24 00:07	1
Toluene	<0.000648	U	0.00284	0.000648	mg/Kg	₽	02/08/24 13:39	02/10/24 00:07	1
Ethylbenzene	<0.000802	U	0.00284	0.000802	mg/Kg	₽	02/08/24 13:39	02/10/24 00:07	1
m-Xylene & p-Xylene	<0.00143	U *+	0.00568	0.00143	mg/Kg	₽	02/08/24 13:39	02/10/24 00:07	1
o-Xylene	<0.000489	U	0.00284	0.000489	mg/Kg	₽	02/08/24 13:39	02/10/24 00:07	1
Xylenes, Total	<0.00143	U *+	0.00568	0.00143	mg/Kg	₽	02/08/24 13:39	02/10/24 00:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	143	S1+	70 _ 130				02/08/24 13:39	02/10/24 00:07	1
1,4-Difluorobenzene (Surr)	70		70 - 130				02/08/24 13:39	02/10/24 00:07	1

Method: SW846 8015B NM - Dies	el Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	34.5	J	71.4	21.4	mg/Kg	<u></u>	02/05/24 13:43	02/06/24 16:28	1
Diesel Range Organics (Over C10-C28)	29.5	JB	71.4	21.4	mg/Kg	₩	02/05/24 13:43	02/06/24 16:28	1
Oll Range Organics (Over C28-C36)	<21.4	U	71.4	21.4	mg/Kg	₩	02/05/24 13:43	02/06/24 16:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	141	S1+	70 - 130				02/05/24 13:43	02/06/24 16:28	1
o-Terphenyl	122		70 - 130				02/05/24 13:43	02/06/24 16:28	1

	Method: EPA 300.0 - Anions, Ion Cl	hromatograp	hy - Soluble	•						
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
l	Chloride	219		4.97	0.393	mg/Kg			02/05/24 17:20	1

Client Sample ID: Seawolf 91H Off Pad Bottom 4 Lab Sample ID: 820-11923-4 Date Collected: 02/01/24 15:06 **Matrix: Solid**

Date Received: 02/02/24 11:12 Percent Solids: 86.6

Method: SW846 8021B - Volat	ile Organic Comp	ounds (GC)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000442	U	0.00230	0.000442	mg/Kg	₩	02/08/24 13:39	02/10/24 00:34	1
Toluene	<0.000524	U	0.00230	0.000524	mg/Kg	₽	02/08/24 13:39	02/10/24 00:34	1
Ethylbenzene	<0.000649	U	0.00230	0.000649	mg/Kg	₽	02/08/24 13:39	02/10/24 00:34	1
m-Xylene & p-Xylene	<0.00116	U *+	0.00459	0.00116	mg/Kg	₽	02/08/24 13:39	02/10/24 00:34	1
o-Xylene	<0.000395	U	0.00230	0.000395	mg/Kg	₽	02/08/24 13:39	02/10/24 00:34	1
Xylenes, Total	<0.00116	U *+	0.00459	0.00116	mg/Kg	₩	02/08/24 13:39	02/10/24 00:34	1

Client: Civil & Environmental Consultants Inc

Client Sample ID: Seawolf 91H Off Pad Bottom 4

Project/Site: Seawolf 11291 H- Off

Date Collected: 02/01/24 15:06

Date Received: 02/02/24 11:12

Job ID: 820-11923-1

Lab Sample ID: 820-11923-4

Matrix: Solid

Percent Solids: 86.6

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	136	S1+	70 - 130	02/08/24 13:39	02/10/24 00:34	1
1,4-Difluorobenzene (Surr)	78		70 - 130	02/08/24 13:39	02/10/24 00:34	1

•	•				•	
4-Bromofluorobenzene (Surr)	136	S1+	70 - 130	02/08/24 13:39	02/10/24 00:34	1
1,4-Difluorobenzene (Surr)	78		70 - 130	02/08/24 13:39	02/10/24 00:34	1

Method: SW846 8015B NM - Dies	el Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	26.2	J	58.2	17.5	mg/Kg	-	02/05/24 13:43	02/06/24 16:49	1
Diesel Range Organics (Over C10-C28)	20.5	JB	58.2	17.5	mg/Kg	₽	02/05/24 13:43	02/06/24 16:49	1
OII Range Organics (Over C28-C36)	<17.5	U	58.2	17.5	mg/Kg	₽	02/05/24 13:43	02/06/24 16:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	138	S1+	70 - 130				02/05/24 13:43	02/06/24 16:49	1
o-Terphenyl	119		70 - 130				02/05/24 13:43	02/06/24 16:49	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble										
4	nalyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Chloride	356		4.96	0.392	mg/Kg			02/05/24 17:25	1

Client Sample ID: Seawolf 91H Off Pad Bottom 5 Lab Sample ID: 820-11923-5

Date Collected: 02/01/24 15:08 **Matrix: Solid** Date Received: 02/02/24 11:12 Percent Solids: 68.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000560	U	0.00291	0.000560	mg/Kg	*	02/08/24 13:39	02/10/24 01:01	1
Toluene	< 0.000663	U	0.00291	0.000663	mg/Kg	₽	02/08/24 13:39	02/10/24 01:01	1
Ethylbenzene	<0.000822	U	0.00291	0.000822	mg/Kg	₽	02/08/24 13:39	02/10/24 01:01	1
m-Xylene & p-Xylene	<0.00147	U *+	0.00582	0.00147	mg/Kg	₽	02/08/24 13:39	02/10/24 01:01	1
o-Xylene	<0.000500	U	0.00291	0.000500	mg/Kg	₽	02/08/24 13:39	02/10/24 01:01	1
Xylenes, Total	<0.00147	U *+	0.00582	0.00147	mg/Kg	₽	02/08/24 13:39	02/10/24 01:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	124		70 - 130				02/08/24 13:39	02/10/24 01:01	1
1,4-Difluorobenzene (Surr)	82		70 - 130				02/08/24 13:39	02/10/24 01:01	1
Method: SW846 8015B NM - Dies	el Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	45.6	J	73.1	21.9	mg/Kg	*	02/05/24 13:43	02/06/24 17:10	1
Diesel Range Organics (Over C10-C28)	29.3	J B	73.1	21.9	mg/Kg	₽	02/05/24 13:43	02/06/24 17:10	1
•									

C10-C28) OII Range Organics (Over C28-C36)	<21.9	U	73.1	21.9 mg/Kg	₽	02/05/24 13:43	02/06/24 17:10	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	149	S1+	70 - 130			02/05/24 13:43	02/06/24 17:10	1
o-Terphenyl	128		70 - 130			02/05/24 13:43	02/06/24 17:10	1
=								

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble										
	Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
	Chloride	432	5.05	0.399	mg/Kg			02/05/24 17:30	1	

Client: Civil & Environmental Consultants Inc

Client Sample ID: Seawolf 91H Off Pad Bottom 6

Project/Site: Seawolf 11291 H- Off

Date Collected: 02/01/24 15:10

Date Received: 02/02/24 11:12

Job ID: 820-11923-1

Lab Sample ID: 820-11923-6

Matrix: Solid

Percent Solids: 80.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000482	U	0.00250	0.000482	mg/Kg		02/08/24 13:39	02/10/24 01:27	1
Toluene	<0.000570	U	0.00250	0.000570	mg/Kg	₽	02/08/24 13:39	02/10/24 01:27	1
Ethylbenzene	<0.000707	U	0.00250	0.000707	mg/Kg	₽	02/08/24 13:39	02/10/24 01:27	1
m-Xylene & p-Xylene	<0.00126	U *+	0.00500	0.00126	mg/Kg	₩	02/08/24 13:39	02/10/24 01:27	1
o-Xylene	<0.000430	U	0.00250	0.000430	mg/Kg	₽	02/08/24 13:39	02/10/24 01:27	1
Xylenes, Total	<0.00126	U *+	0.00500	0.00126	mg/Kg	₩	02/08/24 13:39	02/10/24 01:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		70 - 130				02/08/24 13:39	02/10/24 01:27	1
1,4-Difluorobenzene (Surr)	70		70 - 130				02/08/24 13:39	02/10/24 01:27	1

Method: SW846 8015B NM - Dies Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	30.2	J	62.7	18.8	mg/Kg	*	02/05/24 13:43	02/06/24 17:31	1
Diesel Range Organics (Over C10-C28)	29.8	JB	62.7	18.8	mg/Kg	₽	02/05/24 13:43	02/06/24 17:31	1
OII Range Organics (Over C28-C36)	<18.8	U	62.7	18.8	mg/Kg	₽	02/05/24 13:43	02/06/24 17:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	154	S1+	70 - 130				02/05/24 13:43	02/06/24 17:31	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
	Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Chloride	301	5.03	0.397	mg/Kg			02/05/24 17:45	1

70 - 130

130

Client Sample ID: Seawolf 91H Off Pad Bottom 7

Date Collected: 02/01/24 15:12

Date Received: 02/02/24 11:12

o-Terphenyl

Lab	Sample	e ID:	820-1	1923-7

Matrix: Solid Percent Solids: 78.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000494	U	0.00257	0.000494	mg/Kg		02/08/24 13:39	02/10/24 01:54	1
Toluene	<0.000585	U	0.00257	0.000585	mg/Kg	₽	02/08/24 13:39	02/10/24 01:54	1
Ethylbenzene	<0.000725	U	0.00257	0.000725	mg/Kg	₽	02/08/24 13:39	02/10/24 01:54	1
m-Xylene & p-Xylene	<0.00130	U *+	0.00514	0.00130	mg/Kg	₩	02/08/24 13:39	02/10/24 01:54	1
o-Xylene	<0.000442	U	0.00257	0.000442	mg/Kg	₽	02/08/24 13:39	02/10/24 01:54	1
Xylenes, Total	<0.00130	U *+	0.00514	0.00130	mg/Kg	\$	02/08/24 13:39	02/10/24 01:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	175	S1+	70 - 130				02/08/24 13:39	02/10/24 01:54	1
1.4-Difluorobenzene (Surr)	101		70 ₋ 130				02/08/24 13:39	02/10/24 01:54	1

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)										
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)-C6-C10	34.4	J	64.0	19.2	mg/Kg	<u></u>	02/05/24 13:43	02/06/24 17:52	1	
Diesel Range Organics (Over C10-C28)	26.2	JB	64.0	19.2	mg/Kg	₽	02/05/24 13:43	02/06/24 17:52	1	
Oll Range Organics (Over C28-C36)	<19.2	U	64.0	19.2	mg/Kg	₽	02/05/24 13:43	02/06/24 17:52	1	

Client: Civil & Environmental Consultants Inc

Client Sample ID: Seawolf 91H Off Pad Bottom 7

Project/Site: Seawolf 11291 H- Off

Date Collected: 02/01/24 15:12

Date Received: 02/02/24 11:12

Job ID: 820-11923-1

Percent Solids: 78.7

Lab Sample ID: 820-11923-7

Matrix: Solid

Lab Sample ID:

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	132	S1+	70 - 130	02/05/24 13:43	02/06/24 17:52	1
o-Terphenyl	115		70 - 130	02/05/24 13:43	02/06/24 17:52	1

 Method: EPA 300.0 - Anions, Ion C	hromatograph	hy - Soluble	•						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	159		4.99	0.394	mg/Kg			02/05/24 17:50	1

Client Sample ID: Seawolf 91H Off Pad Bottom 8 Lab Sample ID: 820-11923-8

Date Collected: 02/01/24 15:14

Date Received: 02/02/24 11:12

Matrix: Solid
Percent Solids: 78.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000492	U	0.00256	0.000492	mg/Kg	<u></u>	02/08/24 13:39	02/10/24 02:21	1
Toluene	0.000839	J	0.00256	0.000583	mg/Kg	₩	02/08/24 13:39	02/10/24 02:21	1
Ethylbenzene	< 0.000723	U	0.00256	0.000723	mg/Kg	₩	02/08/24 13:39	02/10/24 02:21	1
m-Xylene & p-Xylene	<0.00129	U *+	0.00512	0.00129	mg/Kg	₩	02/08/24 13:39	02/10/24 02:21	1
o-Xylene	<0.000440	U	0.00256	0.000440	mg/Kg	₩	02/08/24 13:39	02/10/24 02:21	1
Xylenes, Total	<0.00129	U *+	0.00512	0.00129	mg/Kg	₽	02/08/24 13:39	02/10/24 02:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	125		70 - 130				02/08/24 13:39	02/10/24 02:21	1
1.4-Difluorobenzene (Surr)	84		70 - 130				02/08/24 13:39	02/10/24 02:21	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Gasoline Range Organics (GRO)-C6-C10	33.2	J	63.6	19.1	mg/Kg	*	02/05/24 13:43	02/06/24 18:34	
Diesel Range Organics (Over C10-C28)	32.9	JB	63.6	19.1	mg/Kg	₽	02/05/24 13:43	02/06/24 18:34	
OII Range Organics (Over C28-C36)	<19.1	U	63.6	19.1	mg/Kg	₽	02/05/24 13:43	02/06/24 18:34	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1-Chlorooctane	122		70 - 130				02/05/24 13:43	02/06/24 18:34	
o-Terphenyl	106		70 - 130				02/05/24 13:43	02/06/24 18:34	

Method: EPA 300.0 - Anions, Ion C	hromatograp	hy - Soluble							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	104		4.98	0.393	mg/Kg			02/05/24 17:55	1

Client Sample ID: Seawolf 91H Off Pad Bottom 9

Date Collected: 02/01/24 15:18

Lab Sample ID: 820-11923-9

Matrix: Solid

Date Received: 02/01/24 13:16

Percent Solids: 70.8

Method: SW846 8021B - Volatile Organic Compounds (GC)									
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
<0.000548	U	0.00285	0.000548	mg/Kg	₽	02/08/24 13:39	02/10/24 02:47	1	
< 0.000649	U	0.00285	0.000649	mg/Kg	₩	02/08/24 13:39	02/10/24 02:47	1	
0.00126	J	0.00285	0.000804	mg/Kg	₽	02/08/24 13:39	02/10/24 02:47	1	
<0.00144	U *+	0.00569	0.00144	mg/Kg	₽	02/08/24 13:39	02/10/24 02:47	1	
<0.000489	U	0.00285	0.000489	mg/Kg	₩	02/08/24 13:39	02/10/24 02:47	1	
<0.00144	U *+	0.00569	0.00144	mg/Kg	₩	02/08/24 13:39	02/10/24 02:47	1	
	Result <0.000548 <0.000649 0.00126 <0.00144 <0.000489	Result Qualifier Compounds (GC) Result Qualifier Compounds Compo	Result Qualifier RL <0.000548	Result Qualifier RL MDL <0.000548	Result Qualifier RL MDL Unit <0.000548	Result Qualifier RL MDL Unit D <0.000548	Result Qualifier RL MDL Unit D Prepared <0.000548	Result Qualifier RL MDL Unit D Prepared Analyzed <0.000548	

Eurofins Lubbock

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12

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Client: Civil & Environmental Consultants Inc

Client Sample ID: Seawolf 91H Off Pad Bottom 9

Project/Site: Seawolf 11291 H- Off

Date Collected: 02/01/24 15:18

Date Received: 02/02/24 11:12

Job ID: 820-11923-1

Lab Sample ID: 820-11923-9 Matrix: Solid

Percent Solids: 70.8

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	132	S1+	70 - 130	02/08/24 13:39	02/10/24 02:47	1
1 4-Diffuorobenzene (Surr)	01		70 130	02/08/24 13:30	02/10/24 02:47	1

Surrogate	76Recovery	Qualifier	LIIIIII	Frepareu	Allalyzeu	DII Fac
4-Bromofluorobenzene (Surr)	132	S1+	70 - 130	02/08/24 13:39	02/10/24 02:47	1
1,4-Difluorobenzene (Surr)	91		70 - 130	02/08/24 13:39	02/10/24 02:47	1
_						

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	40.2	J	70.3	21.1	mg/Kg	*	02/05/24 13:43	02/06/24 18:55	1
Diesel Range Organics (Over C10-C28)	30.3	JB	70.3	21.1	mg/Kg	₩	02/05/24 13:43	02/06/24 18:55	1
OII Range Organics (Over C28-C36)	<21.1	U	70.3	21.1	mg/Kg	₩	02/05/24 13:43	02/06/24 18:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	135	S1+	70 - 130				02/05/24 13:43	02/06/24 18:55	1
o-Terphenyl	115		70 - 130				02/05/24 13:43	02/06/24 18:55	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble										
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Chloride	224		5.02	0.397	mg/Kg			02/05/24 18:00	1

Client Sample ID: Seawolf 91H Off Pad Sidewall 1 Lab Sample ID: 820-11923-10

Date Collected: 02/01/24 15:20 **Matrix: Solid** Date Received: 02/02/24 11:12 Percent Solids: 82.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	0.00116	J	0.00240	0.000461	mg/Kg	₩	02/08/24 13:39	02/10/24 03:14	
Toluene	<0.000546	U	0.00240	0.000546	mg/Kg	₽	02/08/24 13:39	02/10/24 03:14	
Ethylbenzene	<0.000677	U	0.00240	0.000677	mg/Kg	₽	02/08/24 13:39	02/10/24 03:14	
m-Xylene & p-Xylene	<0.00121	U *+	0.00479	0.00121	mg/Kg	₩	02/08/24 13:39	02/10/24 03:14	
o-Xylene	0.00112	J	0.00240	0.000412	mg/Kg	₩	02/08/24 13:39	02/10/24 03:14	
Xylenes, Total	<0.00121	U *+	0.00479	0.00121	mg/Kg	₩	02/08/24 13:39	02/10/24 03:14	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
4-Bromofluorobenzene (Surr)	170	S1+	70 - 130				02/08/24 13:39	02/10/24 03:14	
1,4-Difluorobenzene (Surr)	91		70 - 130				02/08/24 13:39	02/10/24 03:14	
Method: SW846 8015B NM - Die	sel Range Orga	nics (DRO)	(GC)						
Method: SW846 8015B NM - Die	sel Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL		Unit mg/Kg	<u>D</u>	Prepared 02/05/24 13:43	Analyzed 02/06/24 19:16	Dil F
Analyte Gasoline Range Organics (GRO)-C6-C10	• •	Qualifier	RL 60.2	18.1	mg/Kg	<u> </u>	02/05/24 13:43	02/06/24 19:16	Dil F
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over	Result	Qualifier J	RL	18.1					Dil F
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28)	Result 31.3	Qualifier J J B	RL 60.2	18.1	mg/Kg	*	02/05/24 13:43	02/06/24 19:16	Dil F
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36)	Result 31.3	Qualifier J J B U	RL 60.2	18.1	mg/Kg	— —	02/05/24 13:43	02/06/24 19:16	
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36) Surrogate	Result 31.3 24.0 <18.1	Qualifier J J B U	RL 60.2 60.2	18.1	mg/Kg	— —	02/05/24 13:43 02/05/24 13:43 02/05/24 13:43	02/06/24 19:16 02/06/24 19:16 02/06/24 19:16	
Method: SW846 8015B NM - Dies Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) Oll Range Organics (Over C28-C36) Surrogate 1-Chlorooctane o-Terphenyl	Result 31.3 24.0 <18.1 %Recovery	Qualifier J J B U Qualifier	RL 60.2 60.2 60.2 <i>Limits</i>	18.1	mg/Kg	— —	02/05/24 13:43 02/05/24 13:43 02/05/24 13:43 Prepared	02/06/24 19:16 02/06/24 19:16 02/06/24 19:16 Analyzed	Dil F
Analyte Gasoline Range Organics (GRO)-C6-C10 Diesel Range Organics (Over C10-C28) OII Range Organics (Over C28-C36) Surrogate 1-Chlorooctane	Result 31.3 24.0 <18.1 %Recovery 141 123	Qualifier J B U Qualifier S1+	RL 60.2 60.2 60.2 Limits 70 - 130 70 - 130	18.1	mg/Kg	— —	02/05/24 13:43 02/05/24 13:43 02/05/24 13:43 Prepared 02/05/24 13:43	02/06/24 19:16 02/06/24 19:16 02/06/24 19:16 02/06/24 19:16 Analyzed 02/06/24 19:16	

Eurofins Lubbock

02/05/24 18:05

5.05

0.399 mg/Kg

202

Chloride

Client: Civil & Environmental Consultants Inc

Client Sample ID: Seawolf 91H Off Pad Sidewall 2

Project/Site: Seawolf 11291 H- Off

Date Collected: 02/01/24 15:22

Date Received: 02/02/24 11:12

Job ID: 820-11923-1

Lab Sample ID: 820-11923-11

Matrix: Solid

Percent Solids: 76.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000499	U	0.00259	0.000499	mg/Kg	— <u></u>	02/08/24 13:39	02/10/24 03:40	1
Toluene	<0.000591	U	0.00259	0.000591	mg/Kg	₽	02/08/24 13:39	02/10/24 03:40	1
Ethylbenzene	< 0.000732	U	0.00259	0.000732	mg/Kg	₽	02/08/24 13:39	02/10/24 03:40	1
m-Xylene & p-Xylene	<0.00131	U *+	0.00518	0.00131	mg/Kg	₽	02/08/24 13:39	02/10/24 03:40	1
o-Xylene	<0.000446	U	0.00259	0.000446	mg/Kg	₽	02/08/24 13:39	02/10/24 03:40	1
Xylenes, Total	<0.00131	U *+	0.00518	0.00131	mg/Kg	₽	02/08/24 13:39	02/10/24 03:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	169	S1+	70 - 130				02/08/24 13:39	02/10/24 03:40	1
1,4-Difluorobenzene (Surr)	97		70 - 130				02/08/24 13:39	02/10/24 03:40	1

Method: SW846 8015B NM - Dies Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	25.6	J	65.1	19.5	mg/Kg	<u></u>	02/05/24 13:43	02/06/24 19:37	1
Diesel Range Organics (Over C10-C28)	25.5	JB	65.1	19.5	mg/Kg	₩	02/05/24 13:43	02/06/24 19:37	1
OII Range Organics (Over C28-C36)	<19.5	U	65.1	19.5	mg/Kg	₩	02/05/24 13:43	02/06/24 19:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	138	S1+	70 - 130				02/05/24 13:43	02/06/24 19:37	

Method: EPA 300.0 - Anions, Ion (Chromatography - Soluble)					
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	187	5.05	0.399 mg/Kg			02/05/24 18:10	1

70 - 130

Client Sample ID: Seawolf 91H Off Pad Sidewall 3

Date Collected: 02/01/24 15:45

o-Terphenyl

Date Received: 02/02/24 11:12

Lab	Sample	ID:	820-	119	23-1	2

Matrix: Solid Percent Solids: 80.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000482	U *-	0.00250	0.000482	mg/Kg		02/08/24 13:05	02/08/24 20:48	1
Toluene	< 0.000571	U	0.00250	0.000571	mg/Kg	₽	02/08/24 13:05	02/08/24 20:48	1
Ethylbenzene	<0.000707	U	0.00250	0.000707	mg/Kg	₽	02/08/24 13:05	02/08/24 20:48	1
m-Xylene & p-Xylene	<0.00126	U	0.00501	0.00126	mg/Kg	₩	02/08/24 13:05	02/08/24 20:48	1
o-Xylene	< 0.000431	U	0.00250	0.000431	mg/Kg	₩	02/08/24 13:05	02/08/24 20:48	1
Xylenes, Total	<0.00126	U	0.00501	0.00126	mg/Kg	₽	02/08/24 13:05	02/08/24 20:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	125		70 - 130				02/08/24 13:05	02/08/24 20:48	1
1,4-Difluorobenzene (Surr)	106		70 - 130				02/08/24 13:05	02/08/24 20:48	1

Method: SW846 8015B NM - Diese	Range Orga	nics (DRO)	(GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	26.6	J	62.5	18.8	mg/Kg	*	02/05/24 13:43	02/06/24 19:59	1
Diesel Range Organics (Over C10-C28)	31.3	JB	62.5	18.8	mg/Kg	₽	02/05/24 13:43	02/06/24 19:59	1
Oll Range Organics (Over C28-C36)	<18.8	U	62.5	18.8	mg/Kg	₩	02/05/24 13:43	02/06/24 19:59	1

Eurofins Lubbock

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Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 11291 H- Off

Date Received: 02/02/24 11:12

Job ID: 820-11923-1

Lab Sample ID: 820-11923-12

Client Sample ID: Seawolf 91H Off Pad Sidewall 3 Date Collected: 02/01/24 15:45 Matrix: Solid

Percent Solids: 80.4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	140	S1+	70 - 130	02/05/24 13:43	02/06/24 19:59	1
o-Terphenyl	119		70 - 130	02/05/24 13:43	02/06/24 19:59	1

o-Terphenyl	119	70 - 130	02/05/24 13:43	02/06/24 19:59	1
Method: EPA 300.0 - Anions, Ion Chromato	graphy - Soluble				

Method: EPA 300.0 - Anions, Ion C	hromatography - Solub	le					
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	335	4.96	0.392 mg/K	g		02/05/24 18:24	1

Surrogate Summary

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 11291 H- Off

Job ID: 820-11923-1

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid Prep Type: Total/NA

		DED4	DED74	Percent Surrogate Recovery (Acceptance Limit
		BFB1	DFBZ1	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
820-11923-1	Seawolf 91H Off Pad Bottom 1	113	80	
820-11923-2	Seawolf 91H Off Pad Bottom 2	115	87	
820-11923-3	Seawolf 91H Off Pad Bottom 3	143 S1+	70	
820-11923-4	Seawolf 91H Off Pad Bottom 4	136 S1+	78	
820-11923-5	Seawolf 91H Off Pad Bottom 5	124	82	
820-11923-6	Seawolf 91H Off Pad Bottom 6	93	70	
820-11923-7	Seawolf 91H Off Pad Bottom 7	175 S1+	101	
820-11923-8	Seawolf 91H Off Pad Bottom 8	125	84	
820-11923-9	Seawolf 91H Off Pad Bottom 9	132 S1+	91	
820-11923-10	Seawolf 91H Off Pad Sidewall	170 S1+	91	
820-11923-11	Seawolf 91H Off Pad Sidewall	169 S1+	97	
320-11923-12	Seawolf 91H Off Pad Sidewall 3	125	106	
LCS 880-72659/1-A	Lab Control Sample	101	100	
_CS 880-72665/1-A	Lab Control Sample	129	94	
LCSD 880-72659/2-A	Lab Control Sample Dup	100	92	
LCSD 880-72665/2-A	Lab Control Sample Dup	144 S1+	82	
MB 880-72659/5-A	Method Blank	119	113	
VID 000-12003/0-/1	Method Blank	79	78	

DFBZ = 1,4-Difluorobenzene (Surr)

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

Matrix: Solid Prep Type: Total/NA

		1001	ОТРН1	Percent Surrogate Recovery (Acceptance Limits)
	011 40 4 15			
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	
820-11923-1	Seawolf 91H Off Pad Bottom 1	123	105	
820-11923-2	Seawolf 91H Off Pad Bottom 2	133 S1+	117	
820-11923-3	Seawolf 91H Off Pad Bottom 3	141 S1+	122	
820-11923-4	Seawolf 91H Off Pad Bottom 4	138 S1+	119	
820-11923-5	Seawolf 91H Off Pad Bottom 5	149 S1+	128	
820-11923-6	Seawolf 91H Off Pad Bottom 6	154 S1+	130	
820-11923-7	Seawolf 91H Off Pad Bottom 7	132 S1+	115	
820-11923-8	Seawolf 91H Off Pad Bottom 8	122	106	
820-11923-9	Seawolf 91H Off Pad Bottom 9	135 S1+	115	
820-11923-10	Seawolf 91H Off Pad Sidewall	141 S1+	123	
820-11923-11	Seawolf 91H Off Pad Sidewall 2	138 S1+	121	
820-11923-12	Seawolf 91H Off Pad Sidewall 3	140 S1+	119	
LCS 880-72383/2-A	Lab Control Sample	89	87	
LCSD 880-72383/3-A	Lab Control Sample Dup	94	89	
MB 880-72383/1-A	Method Blank	169 S1+	146 S1+	

Surrogate Summary

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 11291 H- Off

> 1CO = 1-Chlorooctane OTPH = o-Terphenyl

Job ID: 820-11923-1

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Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 11291 H- Off

Job ID: 820-11923-1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-72659/5-A

Lab Sample ID: LCS 880-72659/1-A

Matrix: Solid

Matrix: Solid

Analysis Batch: 72586

Analysis Batch: 72586

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 72659

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		02/08/24 13:05	02/08/24 14:24	1
Toluene	<0.000456	U	0.00200	0.000456	mg/Kg		02/08/24 13:05	02/08/24 14:24	1
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		02/08/24 13:05	02/08/24 14:24	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		02/08/24 13:05	02/08/24 14:24	1
o-Xylene	< 0.000344	U	0.00200	0.000344	mg/Kg		02/08/24 13:05	02/08/24 14:24	1
Xylenes, Total	< 0.00101	U	0.00400	0.00101	mg/Kg		02/08/24 13:05	02/08/24 14:24	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prep	ared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	119		70 - 130	02/08/2	24 13:05	02/08/24 14:24	1
1,4-Difluorobenzene (Surr)	113		70 - 130	02/08/2	24 13:05	02/08/24 14:24	1

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 72659

Spike LCS LCS Analyte Added Result Qualifier Unit %Rec Limits Benzene 0.100 0.06529 mg/Kg 65 70 - 130 Toluene 0.100 0.07720 mg/Kg 77 70 - 130 0.100 0.07542 75 Ethylbenzene mg/Kg 70 - 130 m-Xylene & p-Xylene 0.200 0.1441 72 70 - 130 mg/Kg 0.100 0.07388 70 - 130 o-Xylene mg/Kg

LCS LCS

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

Lab Sample ID: LCSD 880-72659/2-A

Matrix: Solid

Analysis Batch: 72586

Client Sample ID: Lab Control Sample Dup	Client Sam	ple ID: Lab	Control Sam	ple Dup
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Prep Type: Total/NA

Prep Batch: 72659

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	0.100	0.08369		mg/Kg		84	70 - 130	25	35	
Toluene	0.100	0.08169		mg/Kg		82	70 - 130	6	35	
Ethylbenzene	0.100	0.09071		mg/Kg		91	70 - 130	18	35	
m-Xylene & p-Xylene	0.200	0.1671		mg/Kg		84	70 - 130	15	35	
o-Xylene	0.100	0.08345		mg/Kg		83	70 - 130	12	35	

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits		
4-Bromofluorobenzene (Surr)	100		70 - 130		
1 4-Difluorobenzene (Surr)	92		70 - 130		

Lab Sample ID: MB 880-72665/5-A

Matrix: Solid

Analysis Batch: 72703

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 72665

	IND	IIID							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		02/08/24 13:39	02/09/24 17:31	1
Toluene	< 0.000456	U	0.00200	0.000456	mg/Kg		02/08/24 13:39	02/09/24 17:31	1

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Page 17 of 35

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Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 11291 H- Off

Job ID: 820-11923-1

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

Lab Sample ID: MB 880-72665/5-A **Matrix: Solid**

Analysis Batch: 72703

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 72665

	IVID	o Mid								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		02/08/24 13:39	02/09/24 17:31	1	
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		02/08/24 13:39	02/09/24 17:31	1	
o-Xylene	< 0.000344	U	0.00200	0.000344	mg/Kg		02/08/24 13:39	02/09/24 17:31	1	
Xvlenes, Total	< 0.00101	U	0.00400	0.00101	ma/Ka		02/08/24 13:39	02/09/24 17:31	1	

MB MB

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	79	70 - 130	02/08/24 13:39	02/09/24 17:31	1
1,4-Difluorobenzene (Surr)	78	70 - 130	02/08/24 13:39	02/09/24 17:31	1

Lab Sample ID: LCS 880-72665/1-A

Matrix: Solid

Analysis Batch: 72703

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 72665

Spike	LCS	LCS				%Rec
Added	Result	Qualifier	Unit	D	%Rec	Limits
0.100	0.08486		mg/Kg		85	70 - 130
0.100	0.1105		mg/Kg		111	70 - 130
0.100	0.09889		mg/Kg		99	70 - 130
0.200	0.2361		mg/Kg		118	70 - 130
0.100	0.1088		mg/Kg		109	70 - 130
	Added 0.100 0.100 0.100 0.100 0.200	Added Result 0.100 0.08486 0.100 0.1105 0.100 0.09889 0.200 0.2361	Added Result Qualifier 0.100 0.08486 0.100 0.1105 0.100 0.09889 0.200 0.2361	Added Result Qualifier Unit 0.100 0.08486 mg/Kg 0.100 0.1105 mg/Kg 0.100 0.09889 mg/Kg 0.200 0.2361 mg/Kg	Added Result Qualifier Unit D 0.100 0.08486 mg/Kg 0.100 0.1105 mg/Kg 0.100 0.09889 mg/Kg 0.200 0.2361 mg/Kg	Added Result Qualifier Unit D %Rec 0.100 0.08486 mg/Kg 85 0.100 0.1105 mg/Kg 111 0.100 0.09889 mg/Kg 99 0.200 0.2361 mg/Kg 118

LCS LCS

Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene (Surr)	129	70 - 130
1,4-Difluorobenzene (Surr)	94	70 - 130

Lab Sample ID: LCSD 880-72665/2-A

Matrix: Solid

Analysis Batch: 72703

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 72665

-	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.100	0.1147		mg/Kg		115	70 - 130	30	35
Toluene	0.100	0.1151		mg/Kg		115	70 - 130	4	35
Ethylbenzene	0.100	0.1234		mg/Kg		123	70 - 130	22	35
m-Xylene & p-Xylene	0.200	0.2747	*+	mg/Kg		137	70 - 130	15	35
o-Xylene	0.100	0.1278		mg/Kg		128	70 - 130	16	35

LCSD LCSD

мв мв Result Qualifier

<15.0 U

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	144	S1+	70 - 130
1,4-Difluorobenzene (Surr)	82		70 - 130

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

Lab Sample ID: MB 880-72383/1-A

Matrix: Solid

Gasoline Range Organics

Analysis Batch: 72441

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

Prepared

02/05/24 13:43

Prep Batch: 72383

Analyzed 02/06/24 07:13

(GRO)-C6-C10

Eurofins Lubbock

50.0

MDL Unit

15.0 mg/Kg

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 11291 H- Off

Job ID: 820-11923-1

Prep Type: Total/NA

Prep Batch: 72383

Client Sample ID: Method Blank

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

Lab Sample ID: MB 880-72383/1-A

Matrix: Solid Analysis Batch: 72441

MB MB

Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac 19.29 J. 50.0 15.0 02/05/24 13:43 02/06/24 07:13 Diesel Range Organics (Over mg/Kg C10-C28) OII Range Organics (Over C28-C36) 50.0 02/05/24 13:43 02/06/24 07:13 <15.0 U 15.0 mg/Kg

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	169	S1+	70 - 130	02/05/24 13:43	02/06/24 07:13	1
o-Terphenyl	146	S1+	70 - 130	02/05/24 13:43	02/06/24 07:13	1

Lab Sample ID: LCS 880-72383/2-A Client Sample ID: Lab Control Sample

Matrix: Solid

Prep Type: Total/NA Analysis Batch: 72441 Prep Batch: 72383 LCS LCS Spike Analyte Added Result Qualifier Unit D %Rec Limits Gasoline Range Organics 1000 1004 100 70 - 130 mg/Kg (GRO)-C6-C10

885.4

mg/Kg

89

70 - 130

Client Sample ID: Lab Control Sample Dup

1000

Diesel Range Organics (Over

C10-C28)

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	89		70 - 130
o-Terphenyl	87		70 - 130

Lab Sample ID: LCSD 880-72383/3-A

Matrix: Solid Prep Type: Total/NA **Analysis Batch: 72441** Prep Batch: 72383 Spike LCSD LCSD %Rec RPD

Analyte Added Result Qualifier %Rec Limits RPD Limit Unit D Gasoline Range Organics 1000 998.8 mg/Kg 100 70 - 130 20 (GRO)-C6-C10 Diesel Range Organics (Over 1000 877.0 mg/Kg 88 70 - 130 20 C10-C28)

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	94		70 - 130
o-Terphenyl	89		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-72303/1-A

Matrix: Solid

Analysis Batch: 72396

мв мв

	==						
Analyte	Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.395 U	5.00	0.395 mg/Kg			02/05/24 16:46	1

Eurofins Lubbock

Client Sample ID: Method Blank

Prep Type: Soluble

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 11291 H- Off

Job ID: 820-11923-1

Prep Type: Soluble

Client Sample ID: Lab Control Sample

%Rec

Limits

90 - 110

Client Sample ID: Lab Control Sample Dup

Client Sample ID: Seawolf 91H Off Pad Bottom 1

Client Sample ID: Seawolf 91H Off Pad Bottom 1

Client Sample ID: Seawolf 91H Off Pad Sidewall 2

Client Sample ID: Seawolf 91H Off Pad Sidewall 2

97

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-72303/2-A

Matrix: Solid

Analysis Batch: 72396

Spike LCS LCS Analyte Added Result Qualifier %Rec Unit

250

Lab Sample ID: LCSD 880-72303/3-A

Matrix: Solid

Chloride

Analysis Batch: 72396

Spike LCSD LCSD %Rec RPD Added Analyte Result Qualifier Unit D %Rec Limits RPD Limit Chloride 250 243.1 mg/Kg 97 90 - 110 0

242.8

mg/Kg

Lab Sample ID: 820-11923-1 MS

Matrix: Solid

Analysis Batch: 72396

MS MS Spike %Rec Sample Sample Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Chloride 199 252 435.7 mg/Kg 90 - 110

Lab Sample ID: 820-11923-1 MSD

Matrix: Solid

Analysis Batch: 72396

MSD MSD RPD Sample Sample Spike %Rec Analyte Qualifier Added RPD Limit Result Result Qualifier Unit %Rec Limits Chloride 199 252 436.9 90 - 110 20 mg/Kg

Lab Sample ID: 820-11923-11 MS

Matrix: Solid

Analysis Batch: 72396

Sample Sample Spike MS MS %Rec Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits Chloride 187 253 440.8 mg/Kg 100 90 - 110

Lab Sample ID: 820-11923-11 MSD

Matrix: Solid

Analysis Batch: 72396 Sample Sample Spike MSD MSD %Rec **RPD** Result Qualifier Added %Rec RPD Limit Analyte Result Qualifier Unit D Limits Chloride 187 249 434.3 mg/Kg 99 90 - 110 20

QC Association Summary

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 11291 H- Off

Job ID: 820-11923-1

GC VOA

Analysis Batch: 72586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-11923-12	Seawolf 91H Off Pad Sidewall 3	Total/NA	Solid	8021B	72659
MB 880-72659/5-A	Method Blank	Total/NA	Solid	8021B	72659
LCS 880-72659/1-A	Lab Control Sample	Total/NA	Solid	8021B	72659
LCSD 880-72659/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	72659

Prep Batch: 72659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-11923-12	Seawolf 91H Off Pad Sidewall 3	Total/NA	Solid	5035	
MB 880-72659/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-72659/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-72659/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Prep Batch: 72665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-11923-1	Seawolf 91H Off Pad Bottom 1	Total/NA	Solid	5035	
820-11923-2	Seawolf 91H Off Pad Bottom 2	Total/NA	Solid	5035	
820-11923-3	Seawolf 91H Off Pad Bottom 3	Total/NA	Solid	5035	
820-11923-4	Seawolf 91H Off Pad Bottom 4	Total/NA	Solid	5035	
820-11923-5	Seawolf 91H Off Pad Bottom 5	Total/NA	Solid	5035	
820-11923-6	Seawolf 91H Off Pad Bottom 6	Total/NA	Solid	5035	
820-11923-7	Seawolf 91H Off Pad Bottom 7	Total/NA	Solid	5035	
820-11923-8	Seawolf 91H Off Pad Bottom 8	Total/NA	Solid	5035	
820-11923-9	Seawolf 91H Off Pad Bottom 9	Total/NA	Solid	5035	
820-11923-10	Seawolf 91H Off Pad Sidewall 1	Total/NA	Solid	5035	
820-11923-11	Seawolf 91H Off Pad Sidewall 2	Total/NA	Solid	5035	
MB 880-72665/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-72665/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-72665/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 72703

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-11923-1	Seawolf 91H Off Pad Bottom 1	Total/NA	Solid	8021B	72665
820-11923-2	Seawolf 91H Off Pad Bottom 2	Total/NA	Solid	8021B	72665
820-11923-3	Seawolf 91H Off Pad Bottom 3	Total/NA	Solid	8021B	72665
820-11923-4	Seawolf 91H Off Pad Bottom 4	Total/NA	Solid	8021B	72665
820-11923-5	Seawolf 91H Off Pad Bottom 5	Total/NA	Solid	8021B	72665
820-11923-6	Seawolf 91H Off Pad Bottom 6	Total/NA	Solid	8021B	72665
820-11923-7	Seawolf 91H Off Pad Bottom 7	Total/NA	Solid	8021B	72665
820-11923-8	Seawolf 91H Off Pad Bottom 8	Total/NA	Solid	8021B	72665
820-11923-9	Seawolf 91H Off Pad Bottom 9	Total/NA	Solid	8021B	72665
820-11923-10	Seawolf 91H Off Pad Sidewall 1	Total/NA	Solid	8021B	72665
820-11923-11	Seawolf 91H Off Pad Sidewall 2	Total/NA	Solid	8021B	72665
MB 880-72665/5-A	Method Blank	Total/NA	Solid	8021B	72665
LCS 880-72665/1-A	Lab Control Sample	Total/NA	Solid	8021B	72665
LCSD 880-72665/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	72665

GC Semi VOA

Prep Batch: 72383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-11923-1	Seawolf 91H Off Pad Bottom 1	Total/NA	Solid	8015NM Prep	

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Page 21 of 35

QC Association Summary

Client: Civil & Environmental Consultants Inc Project/Site: Seawolf 11291 H- Off

Job ID: 820-11923-1

GC Semi VOA (Continued)

Prep Batch: 72383 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-11923-2	Seawolf 91H Off Pad Bottom 2	Total/NA	Solid	8015NM Prep	
820-11923-3	Seawolf 91H Off Pad Bottom 3	Total/NA	Solid	8015NM Prep	
820-11923-4	Seawolf 91H Off Pad Bottom 4	Total/NA	Solid	8015NM Prep	
820-11923-5	Seawolf 91H Off Pad Bottom 5	Total/NA	Solid	8015NM Prep	
820-11923-6	Seawolf 91H Off Pad Bottom 6	Total/NA	Solid	8015NM Prep	
820-11923-7	Seawolf 91H Off Pad Bottom 7	Total/NA	Solid	8015NM Prep	
820-11923-8	Seawolf 91H Off Pad Bottom 8	Total/NA	Solid	8015NM Prep	
820-11923-9	Seawolf 91H Off Pad Bottom 9	Total/NA	Solid	8015NM Prep	
820-11923-10	Seawolf 91H Off Pad Sidewall 1	Total/NA	Solid	8015NM Prep	
820-11923-11	Seawolf 91H Off Pad Sidewall 2	Total/NA	Solid	8015NM Prep	
820-11923-12	Seawolf 91H Off Pad Sidewall 3	Total/NA	Solid	8015NM Prep	
MB 880-72383/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-72383/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-72383/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 72441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-11923-1	Seawolf 91H Off Pad Bottom 1	Total/NA	Solid	8015B NM	72383
820-11923-2	Seawolf 91H Off Pad Bottom 2	Total/NA	Solid	8015B NM	72383
820-11923-3	Seawolf 91H Off Pad Bottom 3	Total/NA	Solid	8015B NM	72383
820-11923-4	Seawolf 91H Off Pad Bottom 4	Total/NA	Solid	8015B NM	72383
820-11923-5	Seawolf 91H Off Pad Bottom 5	Total/NA	Solid	8015B NM	72383
820-11923-6	Seawolf 91H Off Pad Bottom 6	Total/NA	Solid	8015B NM	72383
820-11923-7	Seawolf 91H Off Pad Bottom 7	Total/NA	Solid	8015B NM	72383
820-11923-8	Seawolf 91H Off Pad Bottom 8	Total/NA	Solid	8015B NM	72383
820-11923-9	Seawolf 91H Off Pad Bottom 9	Total/NA	Solid	8015B NM	72383
820-11923-10	Seawolf 91H Off Pad Sidewall 1	Total/NA	Solid	8015B NM	72383
820-11923-11	Seawolf 91H Off Pad Sidewall 2	Total/NA	Solid	8015B NM	72383
820-11923-12	Seawolf 91H Off Pad Sidewall 3	Total/NA	Solid	8015B NM	72383
MB 880-72383/1-A	Method Blank	Total/NA	Solid	8015B NM	72383
LCS 880-72383/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	72383
LCSD 880-72383/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	72383

HPLC/IC

Leach Batch: 72303

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
820-11923-1	Seawolf 91H Off Pad Bottom 1	Soluble	Solid	DI Leach	
820-11923-2	Seawolf 91H Off Pad Bottom 2	Soluble	Solid	DI Leach	
820-11923-3	Seawolf 91H Off Pad Bottom 3	Soluble	Solid	DI Leach	
820-11923-4	Seawolf 91H Off Pad Bottom 4	Soluble	Solid	DI Leach	
820-11923-5	Seawolf 91H Off Pad Bottom 5	Soluble	Solid	DI Leach	
820-11923-6	Seawolf 91H Off Pad Bottom 6	Soluble	Solid	DI Leach	
820-11923-7	Seawolf 91H Off Pad Bottom 7	Soluble	Solid	DI Leach	
320-11923-8	Seawolf 91H Off Pad Bottom 8	Soluble	Solid	DI Leach	
820-11923-9	Seawolf 91H Off Pad Bottom 9	Soluble	Solid	DI Leach	
320-11923-10	Seawolf 91H Off Pad Sidewall 1	Soluble	Solid	DI Leach	
820-11923-11	Seawolf 91H Off Pad Sidewall 2	Soluble	Solid	DI Leach	
820-11923-12	Seawolf 91H Off Pad Sidewall 3	Soluble	Solid	DI Leach	
MB 880-72303/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-72303/2-A	Lab Control Sample	Soluble	Solid	DI Leach	

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Page 22 of 35

QC Association Summary

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 11291 H- Off

Job ID: 820-11923-1

HPLC/IC (Continued)

Leach Batch: 72303 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-72303/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
820-11923-1 MS	Seawolf 91H Off Pad Bottom 1	Soluble	Solid	DI Leach	
820-11923-1 MSD	Seawolf 91H Off Pad Bottom 1	Soluble	Solid	DI Leach	
820-11923-11 MS	Seawolf 91H Off Pad Sidewall 2	Soluble	Solid	DI Leach	
820-11923-11 MSD	Seawolf 91H Off Pad Sidewall 2	Soluble	Solid	DI Leach	

Analysis Batch: 72396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-11923-1	Seawolf 91H Off Pad Bottom 1	Soluble	Solid	300.0	72303
820-11923-2	Seawolf 91H Off Pad Bottom 2	Soluble	Solid	300.0	72303
820-11923-3	Seawolf 91H Off Pad Bottom 3	Soluble	Solid	300.0	72303
820-11923-4	Seawolf 91H Off Pad Bottom 4	Soluble	Solid	300.0	72303
820-11923-5	Seawolf 91H Off Pad Bottom 5	Soluble	Solid	300.0	72303
820-11923-6	Seawolf 91H Off Pad Bottom 6	Soluble	Solid	300.0	72303
820-11923-7	Seawolf 91H Off Pad Bottom 7	Soluble	Solid	300.0	72303
820-11923-8	Seawolf 91H Off Pad Bottom 8	Soluble	Solid	300.0	72303
820-11923-9	Seawolf 91H Off Pad Bottom 9	Soluble	Solid	300.0	72303
820-11923-10	Seawolf 91H Off Pad Sidewall 1	Soluble	Solid	300.0	72303
820-11923-11	Seawolf 91H Off Pad Sidewall 2	Soluble	Solid	300.0	72303
820-11923-12	Seawolf 91H Off Pad Sidewall 3	Soluble	Solid	300.0	72303
MB 880-72303/1-A	Method Blank	Soluble	Solid	300.0	72303
LCS 880-72303/2-A	Lab Control Sample	Soluble	Solid	300.0	72303
LCSD 880-72303/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	72303
820-11923-1 MS	Seawolf 91H Off Pad Bottom 1	Soluble	Solid	300.0	72303
820-11923-1 MSD	Seawolf 91H Off Pad Bottom 1	Soluble	Solid	300.0	72303
820-11923-11 MS	Seawolf 91H Off Pad Sidewall 2	Soluble	Solid	300.0	72303
820-11923-11 MSD	Seawolf 91H Off Pad Sidewall 2	Soluble	Solid	300.0	72303

General Chemistry

Analysis Batch: 72304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
820-11923-1	Seawolf 91H Off Pad Bottom 1	Total/NA	Solid	D2216	
820-11923-2	Seawolf 91H Off Pad Bottom 2	Total/NA	Solid	D2216	
820-11923-3	Seawolf 91H Off Pad Bottom 3	Total/NA	Solid	D2216	
820-11923-4	Seawolf 91H Off Pad Bottom 4	Total/NA	Solid	D2216	
820-11923-5	Seawolf 91H Off Pad Bottom 5	Total/NA	Solid	D2216	
820-11923-6	Seawolf 91H Off Pad Bottom 6	Total/NA	Solid	D2216	
820-11923-7	Seawolf 91H Off Pad Bottom 7	Total/NA	Solid	D2216	
820-11923-8	Seawolf 91H Off Pad Bottom 8	Total/NA	Solid	D2216	
820-11923-9	Seawolf 91H Off Pad Bottom 9	Total/NA	Solid	D2216	
820-11923-10	Seawolf 91H Off Pad Sidewall 1	Total/NA	Solid	D2216	
820-11923-11	Seawolf 91H Off Pad Sidewall 2	Total/NA	Solid	D2216	
820-11923-12	Seawolf 91H Off Pad Sidewall 3	Total/NA	Solid	D2216	
MB 880-72304/1	Method Blank	Total/NA	Solid	D2216	
320-11923-1 DU	Seawolf 91H Off Pad Bottom 1	Total/NA	Solid	D2216	
820-11923-11 DU	Seawolf 91H Off Pad Sidewall 2	Total/NA	Solid	D2216	

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12

Project/Site: Seawolf 11291 H- Off

Client Sample ID: Seawolf 91H Off Pad Bottom 1

Date Collected: 02/01/24 14:22 Date Received: 02/02/24 11:12 Lab Sample ID: 820-11923-1

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			4.97 g	50 mL	72303	02/04/24 12:36	CH	EET MID
Soluble	Analysis	300.0		1			72396	02/05/24 17:01	CH	EET MID
Total/NA	Analysis	D2216		1			72304	02/04/24 12:38	СН	EET MID

Client Sample ID: Seawolf 91H Off Pad Bottom 1

Date Collected: 02/01/24 14:22

Date Received: 02/02/24 11:12

Lab Sample ID: 820-11923-1

Matrix: Solid Percent Solids: 77.1

	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	72665	02/08/24 13:39	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72703	02/09/24 21:55	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	72383	02/05/24 13:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72441	02/06/24 11:43	SM	EET MID

Client Sample ID: Seawolf 91H Off Pad Bottom 2

Date Collected: 02/01/24 15:01

Date Received: 02/02/24 11:12

Lab Sample ID: 820-11923-2

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.00 g	50 mL	72303	02/04/24 12:36	CH	EET MID
Soluble	Analysis	300.0		1			72396	02/05/24 17:15	CH	EET MID
Total/NA	Analysis	D2216		1			72304	02/04/24 12:38	CH	EET MID

Client Sample ID: Seawolf 91H Off Pad Bottom 2

Date Collected: 02/01/24 15:01

Date Received: 02/02/24 11:12

Lab Sample ID: 820-11923-2

Matrix: Solid

Percent Solids: 72.8

	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	72665	02/08/24 13:39	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72703	02/09/24 23:41	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	72383	02/05/24 13:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72441	02/06/24 16:06	SM	EET MID

Client Sample ID: Seawolf 91H Off Pad Bottom 3

Date Collected: 02/01/24 15:04

Date Received: 02/02/24 11:12

Matrix: Solid

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.03 g	50 mL	72303	02/04/24 12:36	CH	EET MID
Soluble	Analysis	300.0		1			72396	02/05/24 17:20	CH	EET MID
Total/NA	Analysis	D2216		1			72304	02/04/24 12:38	CH	EET MID

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Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 11291 H- Off

Client Sample ID: Seawolf 91H Off Pad Bottom 3

Lab Sample ID: 820-11923-3 Date Collected: 02/01/24 15:04 **Matrix: Solid** Date Received: 02/02/24 11:12

Percent Solids: 70.1

Lab Sample ID: 820-11923-4

Job ID: 820-11923-1

	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	72665	02/08/24 13:39	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72703	02/10/24 00:07	MNR	EET MID
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	72383	02/05/24 13:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72441	02/06/24 16:28	SM	EET MID

Client Sample ID: Seawolf 91H Off Pad Bottom 4

Date Collected: 02/01/24 15:06 Matrix: Solid

Date Received: 02/02/24 11:12

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.04 g	50 mL	72303	02/04/24 12:36	CH	EET MID
Soluble	Analysis	300.0		1			72396	02/05/24 17:25	CH	EET MID
Total/NA	Analysis	D2216		1			72304	02/04/24 12:38	СН	EET MID

Client Sample ID: Seawolf 91H Off Pad Bottom 4

Lab Sample ID: 820-11923-4 Date Collected: 02/01/24 15:06 **Matrix: Solid**

Date Received: 02/02/24 11:12 Percent Solids: 86.6

	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	72665	02/08/24 13:39	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72703	02/10/24 00:34	MNR	EET MID
Total/NA	Prep	8015NM Prep			9.92 g	10 mL	72383	02/05/24 13:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72441	02/06/24 16:49	SM	EET MID

Client Sample ID: Seawolf 91H Off Pad Bottom 5

Lab Sample ID: 820-11923-5 Date Collected: 02/01/24 15:08 **Matrix: Solid**

Date Received: 02/02/24 11:12

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.95 g	50 mL	72303	02/04/24 12:36	CH	EET MID
Soluble	Analysis	300.0		1			72396	02/05/24 17:30	CH	EET MID
Total/NA	Analysis	D2216		1			72304	02/04/24 12:38	СН	EET MID

Client Sample ID: Seawolf 91H Off Pad Bottom 5

Date Collected: 02/01/24 15:08 Matrix: Solid

Date Received: 02/02/24 11:12 Percent Solids: 68.8

	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	72665	02/08/24 13:39	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72703	02/10/24 01:01	MNR	EET MID
Total/NA	Prep	8015NM Prep			9.95 g	10 mL	72383	02/05/24 13:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72441	02/06/24 17:10	SM	EET MID

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Lab Sample ID: 820-11923-5

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 11291 H- Off

Client Sample ID: Seawolf 91H Off Pad Bottom 6

Date Collected: 02/01/24 15:10 Date Received: 02/02/24 11:12

Lab Sample ID: 820-11923-6

Matrix: Solid

Job ID: 820-11923-1

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.97 g	50 mL	72303	02/04/24 12:36	CH	EET MID
Soluble	Analysis	300.0		1			72396	02/05/24 17:45	CH	EET MID
Total/NA	Analysis	D2216		1			72304	02/04/24 12:38	СН	EET MID

Client Sample ID: Seawolf 91H Off Pad Bottom 6

Date Collected: 02/01/24 15:10

Date Received: 02/02/24 11:12

Lab Sample ID: 820-11923-6

Matrix: Solid Percent Solids: 80.0

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	72665	02/08/24 13:39	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72703	02/10/24 01:27	MNR	EET MID
Total/NA	Prep	8015NM Prep			9.97 g	10 mL	72383	02/05/24 13:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72441	02/06/24 17:31	SM	EET MID

Client Sample ID: Seawolf 91H Off Pad Bottom 7

Date Collected: 02/01/24 15:12

Lab Sample ID: 820-11923-7

Matrix: Solid

Date Received: 02/02/24 11:12

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.01 g	50 mL	72303	02/04/24 12:36	СН	EET MID
Soluble	Analysis	300.0		1			72396	02/05/24 17:50	CH	EET MID
Total/NA	Analysis	D2216		1			72304	02/04/24 12:38	СН	EET MID

Client Sample ID: Seawolf 91H Off Pad Bottom 7

Date Collected: 02/01/24 15:12

Date Received: 02/02/24 11:12

23-7	820-119	ID:	Sample	Lab
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Matrix: Solid

Percent Solids: 78.7

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	72665	02/08/24 13:39	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72703	02/10/24 01:54	MNR	EET MID
Total/NA	Prep	8015NM Prep			9.93 g	10 mL	72383	02/05/24 13:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72441	02/06/24 17:52	SM	EET MID

Client Sample ID: Seawolf 91H Off Pad Bottom 8

Date Collected: 02/01/24 15:14

Date Received: 02/02/24 11:12

		Matrix: Solid	
Lab Samp	ole ID:	820-11923-8	
02/06/24 17:52	SM	EET MID	

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.02 g	50 mL	72303	02/04/24 12:36	CH	EET MID
Soluble	Analysis	300.0		1			72396	02/05/24 17:55	CH	EET MID
Total/NA	Analysis	D2216		1			72304	02/04/24 12:39	СН	EET MID

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Client Sample ID: Seawolf 91H Off Pad Bottom 8

Date Collected: 02/01/24 15:14 Date Received: 02/02/24 11:12

Lab Sample ID: 820-11923-8 Matrix: Solid

Percent Solids: 78.5

_	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	72665	02/08/24 13:39	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72703	02/10/24 02:21	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	72383	02/05/24 13:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72441	02/06/24 18:34	SM	EET MID

Client Sample ID: Seawolf 91H Off Pad Bottom 9

Date Collected: 02/01/24 15:18

Lab Sample ID: 820-11923-9 Matrix: Solid

Date Received: 02/02/24 11:12

_	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	72303	02/04/24 12:36	CH	EET MID
Soluble	Analysis	300.0		1			72396	02/05/24 18:00	CH	EET MID
Total/NA	Analysis	D2216		1			72304	02/04/24 12:39	СН	EET MID

Client Sample ID: Seawolf 91H Off Pad Bottom 9

Date Collected: 02/01/24 15:18

Date Received: 02/02/24 11:12

Lab Sample ID: 820-11923-9

Matrix: Solid

Percent Solids: 70.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	72665	02/08/24 13:39	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72703	02/10/24 02:47	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	72383	02/05/24 13:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72441	02/06/24 18:55	SM	EET MID

Initial

Amount

4.95 g

Final

Amount

50 mL

Batch

Number

72303

72396

72304

Dil

1

Factor

Run

Client Sample ID: Seawolf 91H Off Pad Sidewall 1

Batch

Method

DI Leach

300.0

D2216

Date Collected: 02/01/24 15:20

Date Received: 02/02/24 11:12

Prep Type

Soluble

Soluble

Total/NA

Lab Sample	ID:	820-11923-10
		Matrix: Solid

Prepared or Analyzed Analyst Lab 02/04/24 12:36 СН EET MID 02/05/24 18:05

СН

CH

02/04/24 12:39

Client Sample ID: Seawolf 91H Off Pad Sidewall 1

Date Collected: 02/01/24 15:20

Date Received: 02/02/24 11:12

Batch

Туре

Leach

Analysis

Analysis

Lab Sample ID: 820-11923-10 Matrix: Solid

Percent Solids: 82.9

	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	72665	02/08/24 13:39	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72703	02/10/24 03:14	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	72383	02/05/24 13:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72441	02/06/24 19:16	SM	EET MID

Eurofins Lubbock

EET MID

EET MID

Client: Civil & Environmental Consultants Inc

Client Sample ID: Seawolf 91H Off Pad Sidewall 2

Date Collected: 02/01/24 15:22 Date Received: 02/02/24 11:12

Lab Sample ID: 820-11923-11

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			4.95 g	50 mL	72303	02/04/24 12:36	CH	EET MID
Soluble	Analysis	300.0		1			72396	02/05/24 18:10	CH	EET MID
Total/NA	Analysis	D2216		1			72304	02/04/24 12:39	СН	EET MID

Client Sample ID: Seawolf 91H Off Pad Sidewall 2

Date Collected: 02/01/24 15:22

Date Received: 02/02/24 11:12

Lab Sample ID: 820-11923-11

Matrix: Solid Percent Solids: 76.4

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	72665	02/08/24 13:39	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72703	02/10/24 03:40	MNR	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	72383	02/05/24 13:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72441	02/06/24 19:37	SM	EET MID

Client Sample ID: Seawolf 91H Off Pad Sidewall 3

Date Collected: 02/01/24 15:45

Date Received: 02/02/24 11:12

Lab Sample ID: 820-11923-12

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			5.04 g	50 mL	72303	02/04/24 12:36	CH	EET MID
Soluble	Analysis	300.0		1			72396	02/05/24 18:24	CH	EET MID
Total/NA	Analysis	D2216		1			72304	02/04/24 12:39	CH	EET MID

Client Sample ID: Seawolf 91H Off Pad Sidewall 3

Date Collected: 02/01/24 15:45

Date Received: 02/02/24 11:12

Lab Sample ID: 820-11923-12 **Matrix: Solid**

Percent Solids: 80.4

	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	72659	02/08/24 13:05	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72586	02/08/24 20:48	MNR	EET MID
Total/NA	Prep	8015NM Prep			9.95 g	10 mL	72383	02/05/24 13:43	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72441	02/06/24 19:59	SM	EET MID

Laboratory References:

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

Eurofins Lubbock

Accreditation/Certification Summary

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 11291 H- Off

Job ID: 820-11923-1

Laboratory: Eurofins Midland

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

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

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Method Summary

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 11291 H- Off

Job ID: 820-11923-1

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
D2216	Percent Moisture	ASTM	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.

Laboratory References:

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

Eurofins Lubbock

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Sample Summary

Client: Civil & Environmental Consultants Inc

Project/Site: Seawolf 11291 H- Off

Job ID: 820-11923-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
820-11923-1	Seawolf 91H Off Pad Bottom 1	Solid	02/01/24 14:22	02/02/24 11:12
820-11923-2	Seawolf 91H Off Pad Bottom 2	Solid	02/01/24 15:01	02/02/24 11:12
820-11923-3	Seawolf 91H Off Pad Bottom 3	Solid	02/01/24 15:04	02/02/24 11:12
820-11923-4	Seawolf 91H Off Pad Bottom 4	Solid	02/01/24 15:06	02/02/24 11:12
820-11923-5	Seawolf 91H Off Pad Bottom 5	Solid	02/01/24 15:08	02/02/24 11:12
820-11923-6	Seawolf 91H Off Pad Bottom 6	Solid	02/01/24 15:10	02/02/24 11:12
820-11923-7	Seawolf 91H Off Pad Bottom 7	Solid	02/01/24 15:12	02/02/24 11:12
820-11923-8	Seawolf 91H Off Pad Bottom 8	Solid	02/01/24 15:14	02/02/24 11:12
820-11923-9	Seawolf 91H Off Pad Bottom 9	Solid	02/01/24 15:18	02/02/24 11:12
820-11923-10	Seawolf 91H Off Pad Sidewall 1	Solid	02/01/24 15:20	02/02/24 11:12
820-11923-11	Seawolf 91H Off Pad Sidewall 2	Solid	02/01/24 15:22	02/02/24 11:12
820-11923-12	Seawolf 91H Off Pad Sidewall 3	Solid	02/01/24 15:45	02/02/24 11:12

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Reinquished by: Date: Time: Method of Shipment: Reinquished by: Date/Time Date/Time Company Received by: Method of Shipment: Relinquished by: Date/Time: Date/Time: Company Company Company Relinquished by: Custody Seals Intact: Custody Seals Intact: Custody Seal No.: Cooler Temperature(s) °C and Other Remarks: COOLER Cooler T
Date/Time
Custody Seal No.: Date/Time Company Received by: Date/Time: Date/Time: Custody Seal No.: Cooler Temperature(s) °C and Other Remarks: — C · 2 / ~ C · C — C · 2 / ~ C
Custody Seal No.: Date/Time
Custody Seal No.: —C.2/-C.3

	Billi	ng: Dale	Woodall	Dale. Woodall @ dvn. com	11@dvn.c	WO	
Eurofins Midland 1211 W. Florida Ave Midland, TX 79701 Phone (432) 704-5440	Chain of	Chain of Custody Record	Energy scord	8581-8ht-Ses		🔅 eurofins Enviror	Environment Testing
Client Information	Sampler N. Shapherd		Lab PM: Richter, Travis W	Carrier Tracking No(s):	ig No(s):	COC No: 880-8180-1150.3	
Client Contact: Mr. Nick Shepherd	Phone: 918 527 6599	5-	E-Mail: Travis.Richter@et.eurofinsus.com	State of Origin:	NM	Page: Page 3 of 4	
Company: Civil & Environmental Consultants Inc	PWSID:			Analysis Requested		Job #:	
Address. 4700 Gaillardia Parkway Suite 101	Due Date Requested:					Preservation Codes:	
City: Oklahoma City	TAT Requested (days):					B - NaOH O - AsNaO2 G - Zn Acetate	2.0
State, Zio: OK, 73142	Compliance Project: A Yes A No						. E O
Phone: nshapherd nshapherd	PO#. 331-070			\		G - Amchior T - TSP D H - Ascorbic Acid	S - H2SO4 T - TSP Dodecahydrate
[Campbell@cacinc.com, @cacinc.com	NO#: 21126163		(ก)		81		Φ
Project Name: Seawolf 112 914 - off			isio se ebitol He		enistr	K - EDIA Y - Trizma L - EDA Z - other (specify)	pecify)
Site:	SSOW#:		SD - Chi		100 10	Other:	
	Sample	Sample Matrix Type (wewater, Escoid, Centre)	d Filtered 5 MSMarrio ORGFM_28 MOD_UM BYEX B - BTEX		al Number		
Sample Identification	-	BT=Tissue, A=Air)	300		301	Special Instructions/Note:	s/Note:
Spanolf 94 Hoff pad Sidemall 3	2/1/24 1545 6	Long Solid	2 X 2 X 2 X				
		Solid					
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Possible Hazard Identification Non-Hazard Elammable Skin Irriant Doison B	[] [Joknown	Radiological	Sample Disposal (Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return To Client Schools By Lab Horise For Mon	samples are retain	tained longer than 1 month) Archive For Months	ဟ
Other (specify)			Special Instructions/QC Requirements	'QC Requirements:			
Empty Kit Relinquished by:	Date:		Time:	Method o	Method of Shipment:		
Relinquistry by:	11:01 45 10:11	Сотрапу	Received by	Milest 12	Postpolimer Just	1001	
Relinquished by:	Dete/Time:	Company	Received DY:		Date/fime:	Company	
Relinquished by	Date/Time:	Company	Received by:		Date/Time:	Company	
Custody Seals Intact: Custody Seal No.:			Cooler Temperature	Cooler Temperature(s) °C and Other Remarks:	9	2/-0.3	
						Ver: 01/16/2019	6/2019

Login Sample Receipt Checklist

Client: Civil & Environmental Consultants Inc Job Number: 820-11923-1

List Source: Eurofins Lubbock Login Number: 11923

List Number: 1

Creator: Triplett, Colby

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	

Login Sample Receipt Checklist

Job Number: 820-11923-1 Client: Civil & Environmental Consultants Inc

Login Number: 11923 **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 <6mm (1/4").	N/A	

<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 375524

QUESTIONS

Operator:	OGRID:
DEVON ENERGY PRODUCTION COMPANY, LP	6137
333 West Sheridan Ave.	Action Number:
Oklahoma City, OK 73102	375524
	Action Type:
	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Prerequisites	
Incident ID (n#)	nOY1813437455
Incident Name	NOY1813437455 SEAWOLF 1 12 FEDERAL #091H @ 30-025-43768
Incident Type	Produced Water Release
Incident Status	Reclamation Report Received
Incident Well	[30-025-43768] SEAWOLF 1 12 FEDERAL #091H

Location of Release Source	
Please answer all the questions in this group.	
Site Name	SEAWOLF 1 12 FEDERAL #091H
Date Release Discovered	04/29/2018
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Overflow - Tank, Pit, Etc. Tank (Any) Produced Water Released: 10 BBL Recovered: 0 BBL Lost: 10 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

District I
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1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

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 375524

Phone: (505) 476-3470 Fax: (505) 476-3462	•
QUEST	IONS (continued)
Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137 Action Number: 375524 Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)
QUESTIONS	
Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	No
Reasons why this would be considered a submission for a notification of a major release	Unavailable.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.	e. gas only) are to be submitted on the C-129 form.
Initial Response	
The responsible party must undertake the following actions immediately unless they could create a	safety hazard that would result in injury.
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.
	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: Dale Woodall Title: EHS Professional Email: Dale.Woodall@dvn.com

Date: 08/20/2024

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 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 3

Action 375524

QUESTIONS (continued)

Operator:	OGRID:
DEVON ENERGY PRODUCTION COMPANY, LP	6137
333 West Sheridan Ave.	Action Number:
Oklahoma City, OK 73102	375524
	Action Type:
	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Site Characterization		
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.		
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 51 and 75 (ft.)	
What method was used to determine the depth to ground water	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 and the following surface areas:		
A continuously flowing watercourse or any other significant watercourse	Between 1 and 5 (mi.)	
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	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	Greater than 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	Low	
A 100-year floodplain	Greater than 5 (mi.)	
Did the release impact areas not on an exploration, development, production, or storage site	No	

Remediation Plan		
Please answer all the questions that apply or ar	e indicated. This information must be provided to th	ne appropriate district office no later than 90 days after the release discovery date.
Requesting a remediation plan approv	al with this submission	Yes
Attach a comprehensive report demonstrating th	ne lateral and vertical extents of soil contamination a	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 with	hin a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)		
Chloride (EPA	300.0 or SM4500 Cl B)	2180
TPH (GRO+DRO+MRO) (EPA S	SW-846 Method 8015M)	0
GRO+DRO (EPA	A SW-846 Method 8015M)	0
BTEX (EPA	SW-846 Method 8021B or 8260B)	0
Benzene (EPA	A SW-846 Method 8021B or 8260B)	0
Per Subsection B of 19.15.29.11 NMAC unless t which includes the anticipated timelines for beg		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 remed	iation commence	01/29/2024
On what date will (or did) the final sam	pling or liner inspection occur	02/01/2024
On what date will (or was) the remedia	tion complete(d)	02/01/2024
What is the estimated surface area (in	square feet) that will be reclaimed	1510
What is the estimated volume (in cubic	yards) that will be reclaimed	185
What is the estimated surface area (in	square feet) that will be remediated	1510
What is the estimated volume (in cubic	yards) that will be remediated	185
These estimated dates and measurements are re	ecognized to be the best guess or calculation at the	time of submission and may (be) change(d) over time as more remediation efforts are completed.
The OCD recognizes that proposed remediation	measures may have to be minimally adjusted in ac-	cordance 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

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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 4

Action 375524

QUESTIONS (continued)

Operator:	OGRID:
DEVON ENERGY PRODUCTION COMPANY, LP	6137
333 West Sheridan Ave.	Action Number:
Oklahoma City, OK 73102	375524
	Action Type:
	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

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	JAL LANDFARM [fEEM0112332673]
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: Dale Woodall Title: EHS Professional Email: Dale.Woodall@dvn.com

Date: 08/20/2024

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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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 375524

QUESTIONS (continued)

Operator:	OGRID:
DEVON ENERGY PRODUCTION COMPANY, LP	6137
333 West Sheridan Ave.	Action Number:
Oklahoma City, OK 73102	375524
	Action Type:
	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS, Page 6

Action 375524

QUESTIONS (continued)

Operator:	OGRID:
DEVON ENERGY PRODUCTION COMPANY, LP	6137
333 West Sheridan Ave.	Action Number:
Oklahoma City, OK 73102	375524
	Action Type:
	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	307530
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	01/29/2024
What was the (estimated) number of samples that were to be gathered	26
What was the sampling surface area in square feet	5150

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	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	1510
What was the total volume (cubic yards) remediated	185
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	1510
What was the total volume (in cubic yards) reclaimed	185
Summarize any additional remediation activities not included by answers (above)	see report

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

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

Name: Dale Woodall
Title: EHS Professional
Email: Dale.Woodall@dvn.com
Date: 08/20/2024

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QUESTIONS, Page 7

Action 375524

QUESTIONS (continued)

Operator:	OGRID:
DEVON ENERGY PRODUCTION COMPANY, LP	6137
333 West Sheridan Ave.	Action Number:
Oklahoma City, OK 73102	375524
	Action Type:
	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	Yes
What was the total reclamation surface area (in square feet) for this site	1510
What was the total volume of replacement material (in cubic yards) for this site	185
Per Paragraph (1) of Subsection D of 19.15.29.13 NMAC the reclamation must contain a minimum of four feet of non-waste containing, uncontaminated, earthen material with chloride concentrations less that mg/kg as analyzed by EPA Method 300.0, or other test methods approved by the division. The soil cover must include a top layer, which is either the background thickness of topsoil or one foot of suitable must be establish vegetation at the site, whichever is greater.	
Is the soil top layer complete and is it suitable material to establish vegetation	Yes
On what (estimated) date will (or was) the reseeding commence(d)	03/04/2024
Summarize any additional reclamation activities not included by answers (above)	Backfilling performed from 3/1 to 3/3, 2024. Two feet of topsoil was placed. Seeded with BLM Mix #2.
	eclamation requirements and any conditions or directives of the OCD. This demonstration should be in the form

of attachments (in .pdf format) including a scaled site map, any proposed reseeding plans or relevant field notes, photographs of reclaimed area, and a narrative of the reclamation activities. Refer to 19.15.29.13 NMAC.

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

Name: Dale Woodall
Title: EHS Professional
Email: Dale.Woodall@dvn.com
Date: 08/20/2024

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QUESTIONS, Page 8

Action 375524

QUESTIONS (continued)

Operator:	OGRID:
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333 West Sheridan Ave.	Action Number:
Oklahoma City, OK 73102	375524
	Action Type:
	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Revegetation Report		
Only answer the questions in this group if all surface restoration, reclamation and re-vegetation obligations have been satisfied.		
Requesting a restoration complete approval with this submission	No	
Per Paragraph (4) of Subsection (D) of 19.15.29.13 NMAC for any major or minor release containing liquids, the responsible party must notify the division when reclamation and re-vegetation are complete.		

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CONDITIONS

Action 375524

CONDITIONS

Operator:	OGRID:
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	Action Type:
	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

CONDITIONS

Created By	Condition	Condition Date
scwells	Reclamation approved. Sampling notice was submitted for 1/29/2024 however confirmation samples were collected on 2/1/24.	8/22/2024
scwells	Operator failed to provide proper Sampling Notification pursuant to 19.15.29.12.D.(1).(a) NMAC. Failure to provide proper sampling notice is a compliance issue and OCD may pursue compliance actions pursuant to 19.15.5 NMAC. Operator shall ensure future compliance with 19.15.29.12.D.(1).(a) NMAC	8/22/2024