November 3, 2025

New Mexico Oil Conservation Division
506 W. Texas Ave
Artesia, NM 88210

RE: **Spud Muffin 31 30 #738H – Site Characterization & Remediation Plan**
Incident Number: nAPP2431628896
GPS: 32.2551108°, -104.016727°
Lea County, New Mexico
ESRR Project No. VP-15995/ 2657

To Whom It May Concern:

Earth Systems Response & Restoration (ESRR), on behalf of Devon Energy (Devon), presents the following Site Characterization & Remediation Plan (SCRP) detailing subsequent soil sampling activities and a scope of work to address soil impacts associated with an inadvertent release of produced water and crude oil at the Spud Muffin 31 30 #738H (Site). Devon proposes this SCRP, detailing remediation objectives to mitigate environmental impacts at the Site.

Site Location

The Site is located in Unit P, Section 31, Township 23 South, Range 29 East, in Eddy County, New Mexico (32.2551108°, -104.016727°) and is associated with oil and gas exploration and production operations on Private Land (**Figure 1**).

Incident Description & Background

On November 11, 2024, a leak developed on a subsurface flowline, causing the release of approximately 81 barrels (bbls) of produced water and 5 bbls of crude oil onto a Devon operated pad. A vacuum truck was immediately dispatched to the Site and recovered 3 bbls of fluids. ESRR conducted initial site assessment activities and mapped the observed release footprint on November 11, 2024, hereafter referred to as the Area of Concern (AOC) (**Figure 2**). Devon gave notice to the New Mexico Oil Conservation Division (NMOCD) on November 11, 2024, by Notification of Release (NOR) and was subsequently assigned Incident Number nAPP2431628896. A Corrective Action Form C-141 (Form C-141) was submitted on November 12, 2024.

Timeline of Events

- ***November 20 and 21, 2024*** **-** ESRR performed initial delineation activities.
- ***February 7, 2025*** **-** Devon requested an extension of the February 10, 2025 deadline, to allow additional time for further delineation and/ or remediation activities. Devon was granted a 90-day extension by the NMOCD for May 8, 2025.
- ***March 24 and 25, 2025*** **-** ESRR performed additional delineation activities via a truck mounted drill rig equipped with hollow stem augers.

- ***April 25, 2025*** - ESRR requested guidance from the NMOCD regarding background sampling. NMOCD provided the following conditions:
    - *"Background samples need to have a minimum of 4 sampling points and should be collected in 1 ft increments starting at surface, down to the deepest depth Devon believes impacts from the release to be. For each, a grab sample should be gathered in endemic areas previously undisturbed by oil and gas activities, nominally uphill from the release area, no closer than 50 feet but no further than several hundred feet from any edge of the impacted or disturbed areas. The samples must be tested for all Table I constituents. Should BTEX or TPH show up in any background samples they are not true backgrounds, as that area has been previously disturbed by oil and gas activities."*
- ***April 29, 2025*** - NMOCD approved the locations for background sampling.
- ***May 7, 2025*** - Devon requested an additional extension of the May 8, 2025 deadline, to allow additional time for a temporary depth to groundwater (DTW) well and/or background sample collection via drilling. Devon was granted a 90-day extension by the NMOCD for August 6, 2025.
- ***June 12, 2025*** - ESRR oversaw drilling of the temporary DTW well.
- ***August 5, 2025*** - Devon requested an additional extension of the August 6, 2025 deadline, to allow additional time for background soil sample collection via drilling. Devon was granted a final 90-day extension by the NMOCD for November 4, 2025.
- ***September 10, 2025*** - ESRR performed background sampling activities via a track mounted drill rig equipped with hollow stem augers.

Site Characterization

ESRR characterized the Site according to Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). The following proximities were estimated:

- Between 1,000 feet and ½ mile of any continuously flowing watercourse or any other significant watercourse;
- Between 1,000 feet and ½ mile of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark);
- Between 1 and 5 miles of any occupied permanent residence, school, hospital, institution or church;
- Between 1 and 5 miles of any spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes;
- Between 1 and 5 miles of any other freshwater well or spring;
- Greater than 5 miles of any incorporated municipal boundary or a defined municipal fresh water well field covered under a municipal ordinance;
- Between 1,000 feet and ½ mile of any wetland;
- Greater than 5 miles of any subsurface mine;
- Between 1 and 5 miles of an unstable area (i.e. critical/ high karst potential); and
- Between ½ and 1 mile of a 100-year floodplain.

Receptor details used to determine the Site characterization are included in **Figure 1A** and **Figure 1B**. **Referenced Well Records** for the closest depth to water well are attached.

Based on the temporary DTW drilling, DTW is estimated to be less than 50 feet below ground surface (bgs). The following Closure Criteria was applied:

Constituents of Concern (COCs)	Closure Criteria‡
Chloride	600 milligram per kilogram (mg/kg)
Total Petroleum Hydrocarbon (TPH)	100 mg/kg
Benzene	10 mg/kg
Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX)	50 mg/kg

‡*The reclamation concentration requirements of 600 mg/kg Chloride and 100 mg/kg TPH apply to the top 4 feet of areas to be immediately reclaimed following remediation pursuant to NMAC 19.15.17.13.*
TPH= Gasoline Range Organics + Diesel Range Organics + Oil Range Organics
Laboratory Analytical Methods used: Environmental Protection Agency (EPA) 300.0, EPA 8015 NM, EPA 8021 B

Delineation Activities

During November 2024, ESRR conducted initial delineation activities to assess the presence or absence of soil impacts associated with the AOC. Twenty-one delineation boreholes (HA-1 through HA-19) were advanced via hand auger within and surrounding the AOC. Delineation activities were driven by field screening soil for chloride utilizing QuanTab® test strips. A minimum of two soil samples were collected from each delineation borehole, representing the highest observed field screening concentrations and/ or the greatest depth. Delineation soil samples were placed directly into lab provided pre-cleaned jars, packed with minimal void space, labeled, and placed on ice. The delineation soil samples were transported under strict chain-of-custody procedures, to Eurofins in Carlsbad, New Mexico, for analysis of the COCs.

Laboratory analytical results for delineation soil samples (HA-8, HA-13, and HA-15) were compliant with Site Closure Criteria and/or the reclamation standard helping define the horizontal periphery of the AOC.

Laboratory analytical results for delineation soil samples collected within and around the AOC (HA-1 through HA-7, HA-9 through HA-12, and HA-17 through HA-19) indicated TPH-GRO+TPH-DRO+TPH-ORO and/or Chloride were above the Site Closure Criteria and/or the reclamation standard. Elevated TPH-GRO+TPH-DRO+TPH-ORO is characterized by concentrations ranging from 104 to 4,420 mg/kg, specifically for TPH-DRO and/ or TPH-GRO. Elevated Chloride is characterized by concentrations ranging from 709 mg/kg to 8,150 mg/kg.

During March 2025, ESRR performed continued delineation of all soil sample locations via a truck mounted drill rig, with the addition of four soil sample locations (HA-20 through HA-23) in an attempt to achieve full vertical delineation and to better define the vertical and horizontal periphery of the AOC. Laboratory analytical results are summarized in **Table 1**, included in the attachments. The locations of all delineation soil samples are shown in **Figure 2**. **Photographic Documentation** of all activities are attached.

Background Soil Sampling Activities

During September 2025, ESRR conducted background soil sampling activities to establish values of naturally occurring chloride within the native soils and to set appropriate remediation target levels. Four background boreholes (BG-01 through BG-04) were advanced via a track mounted drill rig within NMOCD approved *"…endemic areas previously undisturbed by oil and gas activities, nominally uphill from the release area, no closer than 50 feet but no further than several hundred feet from any edge of the impacted or disturbed areas…"*

Background soil samples were collected every foot up to 6 feet bgs followed by every 2 feet to a total depth of 26 or 28 feet bgs. The background soil samples were collected, handled, transported, and analyzed as previously described.

The location of each background soil sample borehole is shown in **Figure 3** and the laboratory analytical results are summarized in **Table 1A**, included in the attachments. The mean, range, and standard deviation values were estimated for each background soil sample borehole as listed below:

- **BG-01 -** *Chloride: Mean (1,362 mg/kg); Range (1,673 mg/kg); Standard Deviation (1,337.8 mg/kg)*
- **BG-02 -** *Chloride: Mean (1,378 mg/kg); Range (955 mg/kg); Standard Deviation (1,428 mg/kg)*
- **BG-03 -** *Chloride: Mean (881 mg/kg); Range (427 mg/kg); Standard Deviation (902.7 mg/kg)*
- **BG-04 -** *Chloride: Mean (1,660 mg/kg); Range (2,065 mg/kg); Standard Deviation (1,801 mg/kg)*

Proposed Remediation Plan

Based on the results from the completed delineation and background soil sampling activities, Devon proposes the following remedial actions:

1. Devon proposes to remove any impacted soil greater than the Site Closure Criteria within the top 4-feet bgs.
2. Devon proposes that chloride levels found in delineation soil sample locations (HA-1 through HA-23) at depths of 4 feet or greater be considered as naturally occurring and left in place. As such, approximately 839 cubic yards of impacted soil are anticipated to be excavated and removed from the Site (**Figure 4**). Following the removal of impacted soil, five-point composite soil samples will be collected at a sampling frequency of 200 square feet from the excavation floor and sidewalls and will be submitted to Eurofins in Carlsbad, New Mexico, for analysis of COCs.
    i. Devon requests that the upper bound background value for BG-04 (*Range: 2,065 mg/kg*) be accepted as the closure criteria for any confirmation floor samples collected at 4 feet bgs.
3. Impacted soil will be transported to a nearby state-regulated landfill facility for disposal under Devon approved waste manifests. Once remediation activities are complete and receipt of final confirmation soil sample results indicates soil concentrations below the Site Closure Criteria and/ or the reclamation standard, Devon will have the excavation backfilled with clean, locally sourced soil and restored to "*as close to its original state*" as possible.

Proposed Schedule

Devon anticipates remediation and restoration activities to commence within 90 days of approval of this SCRP. Upon favorable laboratory analytical results of all confirmation samples, ESRR will complete a Closure Request Report detailing excavation activities and subsequent soil sampling activities for incident number nAPP2431628896.

If you have any questions or comments, please do not hesitate to contact Gilbert Moreno at (832) 541-7719 or gmoreno@earthsys.net. **Documentation and correspondence notifications** and **Executed chain-of-custody forms and laboratory analytical reports** are attached.

Sincerely,

EARTH SYSTEMS RESPONSE & RESTORATION

Gilbert Moreno
Carlsbad Operations Manager/ Project Geologist

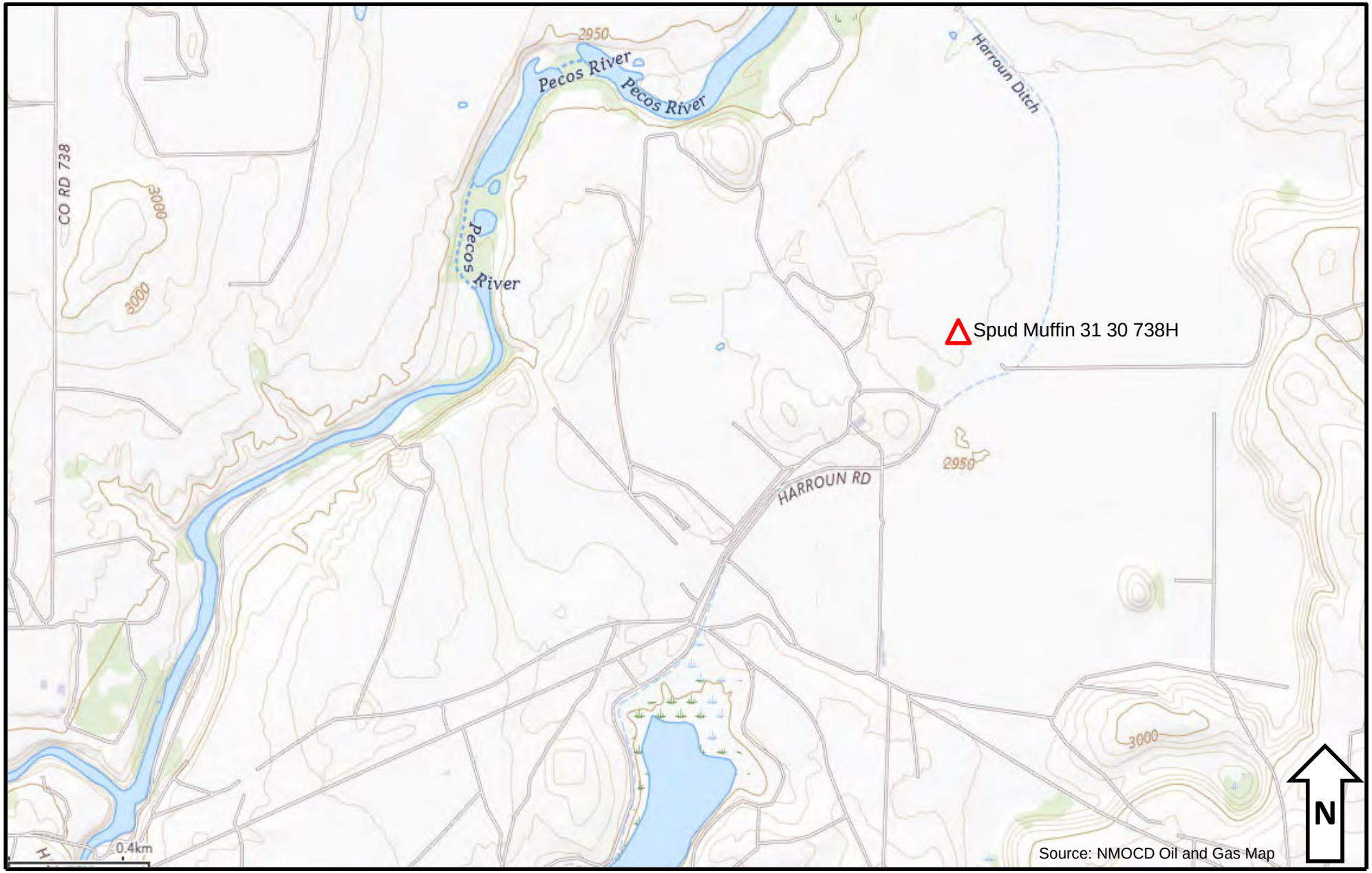
Kris Williams, CHMM, REM
Principal

cc: Jim Raley, Devon Energy

Attachments:

- Figure 1 - Site Map
- Figure 1A - Ground Water
- Figure 1B - Karst Potential
- Figure 2 - Delineation Soil Sample Locations
- Figure 3 - Background Soil Sample Locations
- Figure 4 - Proposed Excavation Extent
- Referenced Well Records
- Table 1
- Table 1A
- Photographic Documentation
- NMOCD Email Documentation & Correspondance
- Executed Chain-of-Custody Forms and Laboratory Analytical Reports

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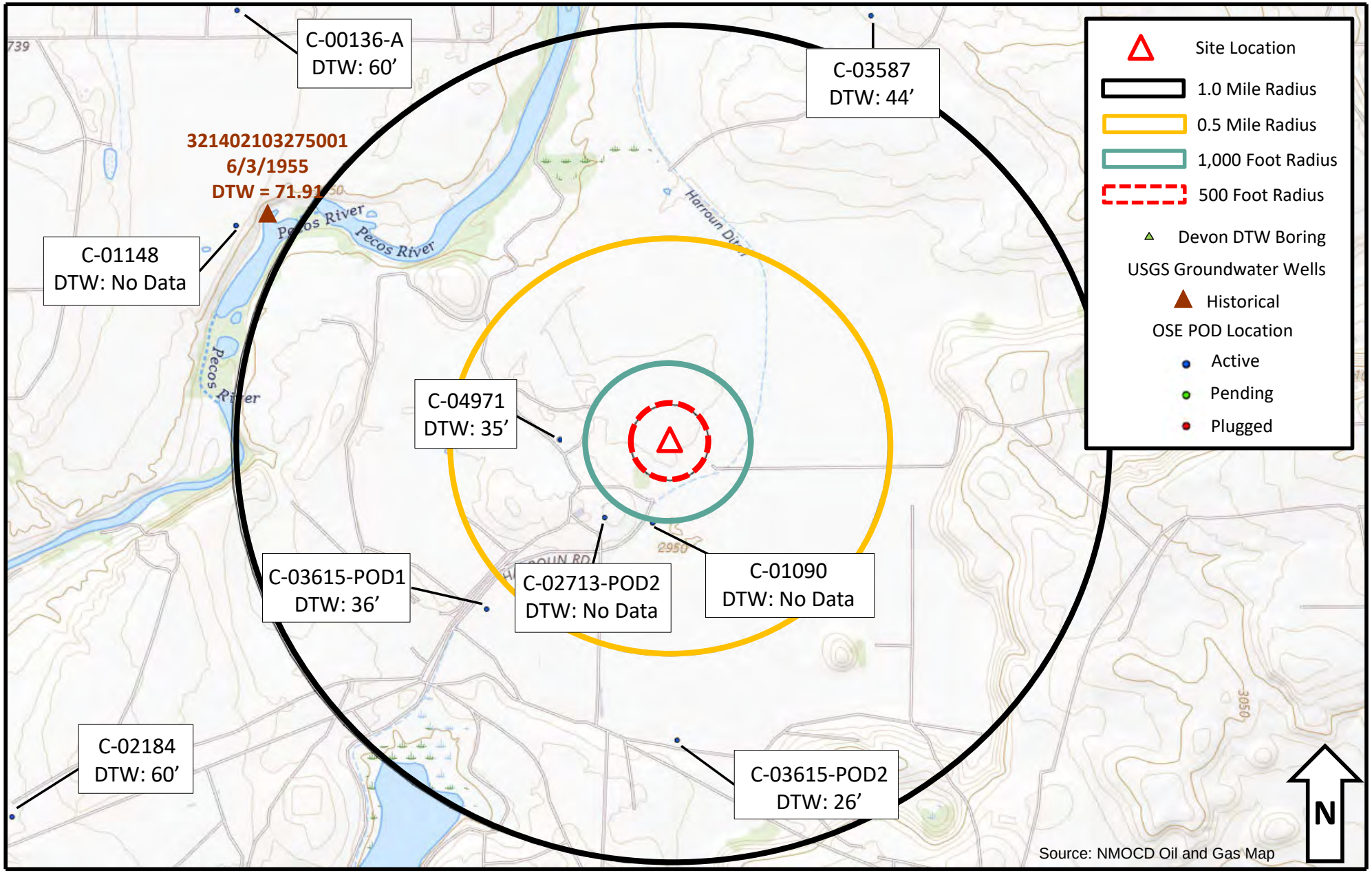
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Figure 1 – Site Map

Devon Energy – Spud Muffin 31 30 #738H
GPS: 32.2551108°, -104.016727°
Eddy County, New Mexico

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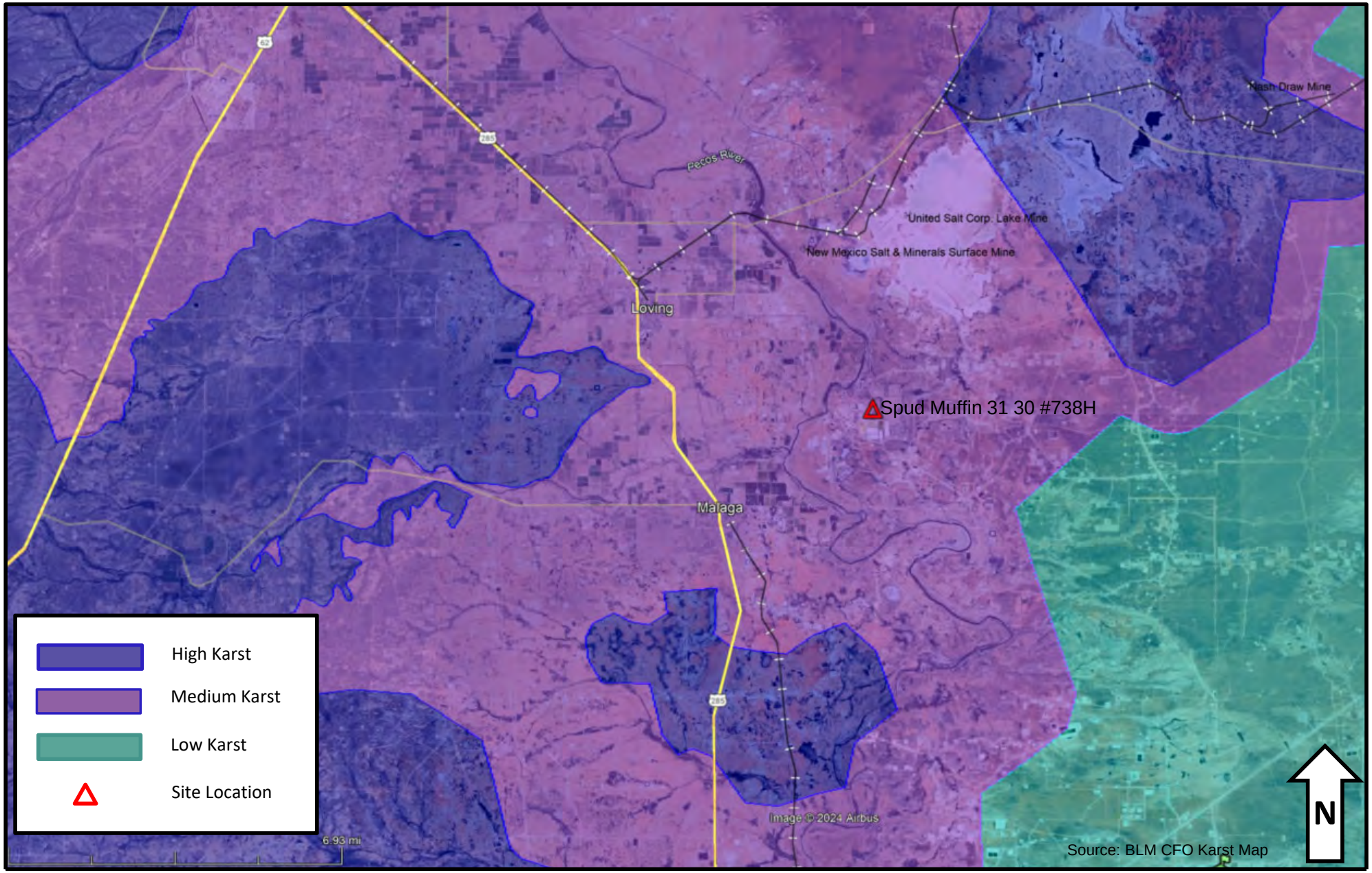
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Figure 1A – Ground Water

Devon Energy – Spud Muffin 31 30 #738H
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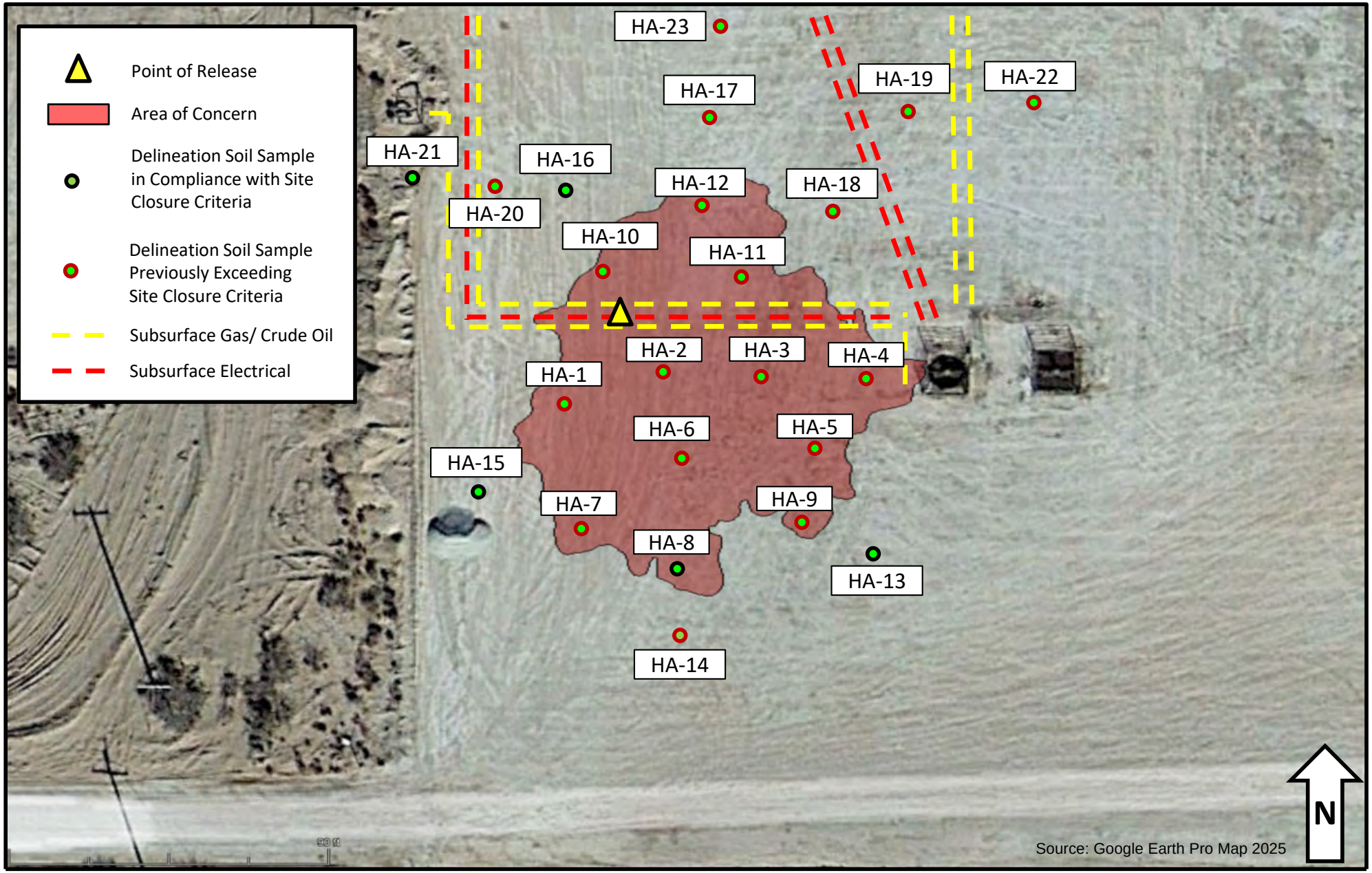
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Figure 1B – Karst Potential

Devon Energy – Spud Muffin 31 30 #738H
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Eddy County, New Mexico

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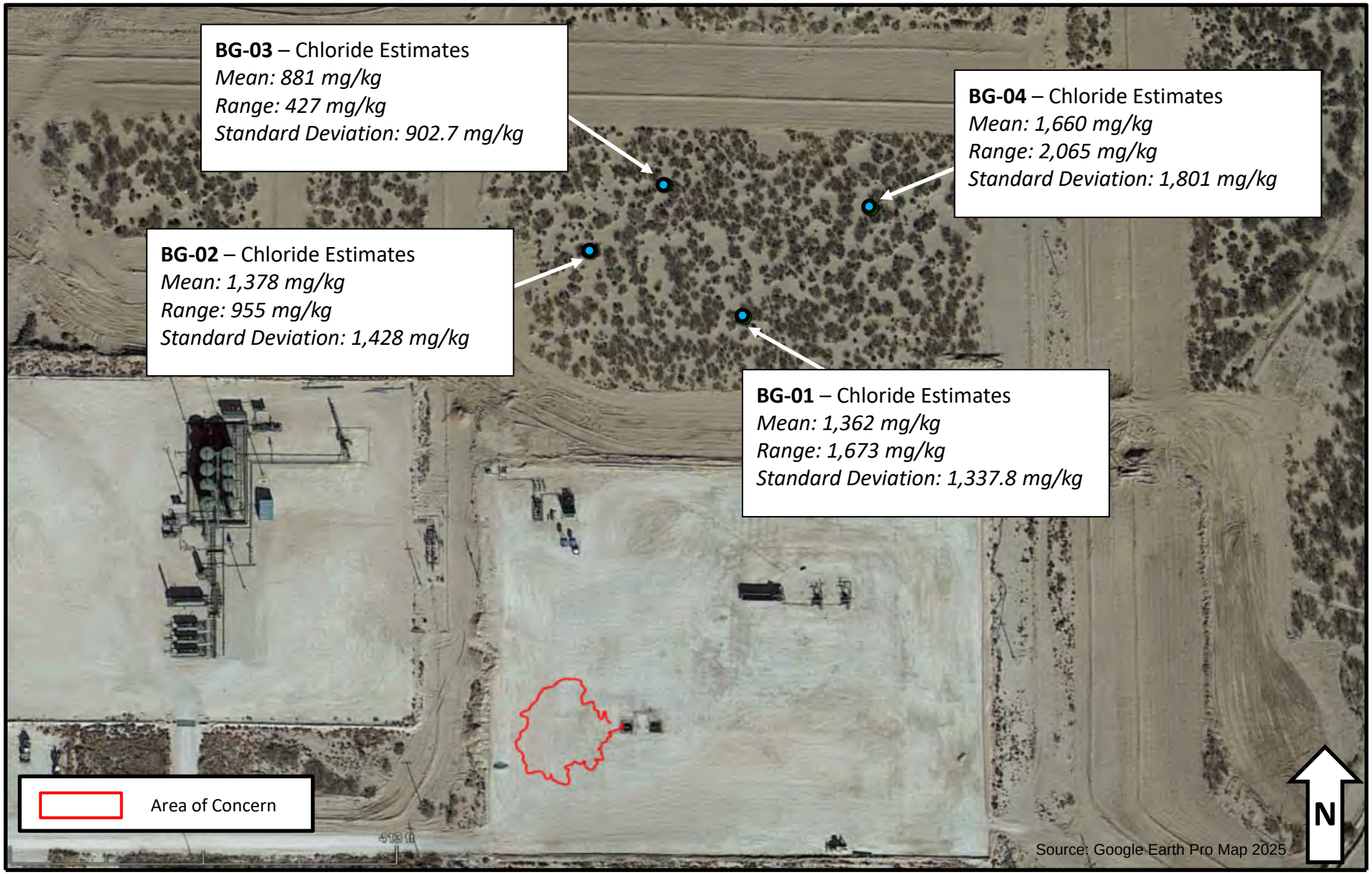
Earth Systems Response & Restoration

Figure 2 – Delineation Soil Sample Locations

Devon Energy – Spud Muffin 31 30 #738H
GPS: 32.2551108°, -104.016727°
Eddy County, New Mexico

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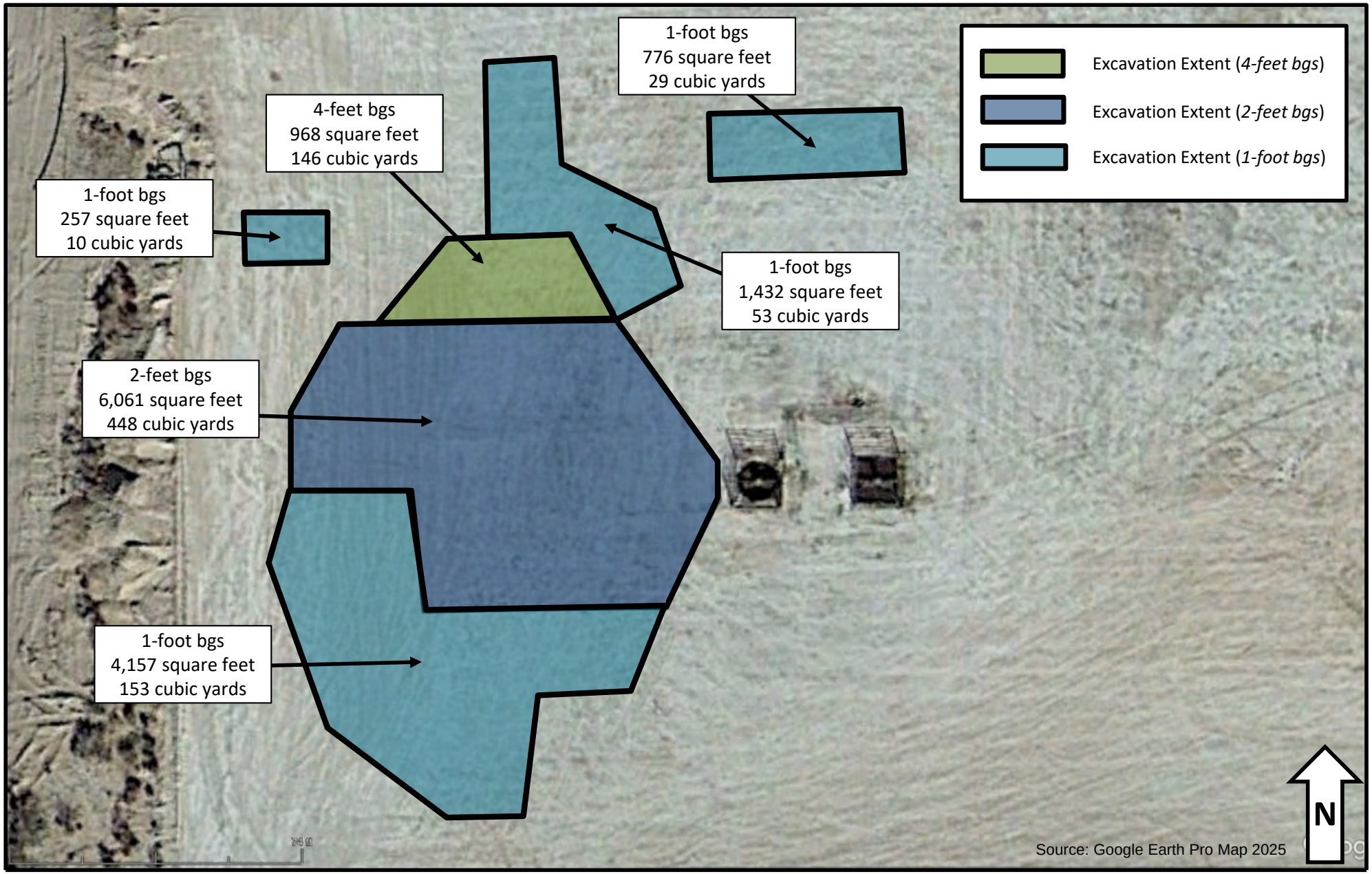
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Figure 3 – Background Soil Sample Locations

Devon Energy – Spud Muffin 31 30 #738H
GPS: 32.2551108°, -104.016727°
Eddy County, New Mexico

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Figure 4 – Proposed Excavation Extent

Devon Energy – Spud Muffin 31 30 #738H
GPS: 32.2551108°, -104.016727°
Eddy County, New Mexico

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WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
POD 1 (TW-1)	N/A	C-4971

WELL OWNER NAME(S)	PHONE (OPTIONAL)
Devon Energy	575-689-7597

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
5315 Buena Vista Dr	Carlsbad	NM	88220

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	15	18.8	N
	LONGITUDE	104	1	16.0	W

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

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

SE SW SE Sec. 31 T23S R29E, NMPM, SPUD MUFFIN 31 30 #304H -30-015-53831

2. DRILLING & CASING INFORMATION

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

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
06/12/2025	06/12/2025	Temporary Well Material	±40	±35

COMPLETED WELL IS: ☐ ARTESIAN *add Centralizer info below ☐ DRY HOLE ☑ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 35.7

DATE STATIC MEASURED: 06/12/2025

DRILLING FLUID: ☐ AIR ☐ MUD ADDITIVES – SPECIFY:

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

CHECK HERE IF PITLESS ADAPTER IS INSTALLED ☐

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	40	±6.25	Soil Boring	--	--	--	--

OSE DII ROSWELL NM
25 JUL '25 AM10:51

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL *(if using Centralizers for Artesian wells- indicate the spacing below)	AMOUNT (cubic feet)	METHOD OF PLACEMENT
			N/A		

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 09/22/2022)

FILE NO. C-04971	POD NO. 1	TRN NO. 786108	
LOCATION 23S.29E.31.434		WELL TAG ID NO. —	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	1	1	Caliche, fine-coarse, sub angular gravel, Tan, dry	Y ✓ N	
1	15	14	Sand, fine-grained, some silt, Light brown, dry	Y ✓ N	
15	35	20	Sand,very fine-grained, some silt, some clay and gravels, brown, moist	Y ✓ N	
35	40	5	Clay, medium plastic, fine, cohesive, trace sand, Brown, very moist	✓ Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

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

TOTAL ESTIMATED WELL YIELD (gpm):

5. TEST; RIG SUPERVISION

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

MISCELLANEOUS INFORMATION: Plugged using Type I/II Neat Cement Slurry from total depth to surface, see attached Plugging Record.No pump test.

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

Cameron Pruitt

6. SIGNATURE

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

Jack Atkins (Jul 22, 2025 12:52 MDT) — Jackie D. Atkins — 07/22/2025

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 09/22/2022)

FILE NO. C-04971	POD NO. 1	TRN NO. 786108	
LOCATION 23S. 29E. 31.434		WELL TAG ID NO. —	PAGE 2 OF 2

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Table 1
SOIL SAMPLE ANALYTICAL RESULTS
Spud Muffin 31 30 #738H
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria for Soils Impacted by a Release (NMAC 19.15.29)			10	50	NE	NE	NE	100	600
Delineation Soil Samples - nAPP2431628896									
HA-1	11/20/24	0.5	<0.00199	0.254	<49.8	<49.8	<49.8	<49.8	**3,870**
HA-1	11/20/24	1	<0.00201	0.188	<50.0	<50.0	<50.0	<50.0	450
HA-1	11/20/24	2	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	47.4
HA-1	11/20/24	3	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	64.2
HA-1	11/20/24	4	<0.00200	0.00627	<49.8	55.7	<49.8	55.7	111
HA-2	11/20/24	0.5	<0.0504	13.7	1,130	2,880	<50.0	**4,010**	**6,950**
HA-2	11/20/24	1	<0.00202	0.226	<49.9	231	<49.9	**231**	**2,690**
HA-2	11/20/24	2	<0.00199	0.00751	<50.0	<50.0	<50.0	<50.0	114
HA-2	11/20/24	3	<0.00198	<0.00396	<49.7	<49.7	<49.7	<49.7	34.4
HA-2	11/20/24	4	<0.00202	<0.00404	<49.8	<49.8	<49.8	<49.8	42.3
HA-2	03/24/25	6	<0.00202	<0.00404	<49.7	<49.7	<49.7	<49.7	**829**
HA-2	03/24/25	8	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	**1,700**
HA-2	03/24/25	11	<0.00200	<0.00401	<49.6	<49.6	<49.6	<49.6	**2,010**
HA-2	03/24/25	16	<0.00200	<0.00399	<49.7	<49.7	<49.7	<49.7	**2,300**
HA-2	03/24/25	21	<0.00198	<0.00396	<49.8	<49.8	<49.8	<49.8	**2,460**
HA-2	03/24/25	26	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	**1,910**
HA-3	11/20/24	0.5	<0.0497	26.6	1,510	2,790	<49.8	**4,300**	**8,150**
HA-3	11/20/24	1	<0.00199	0.0773	<49.8	62.2	<49.8	62.2	510
HA-3	11/20/24	2	<0.00200	<0.00401	<49.7	<49.7	<49.7	<49.7	363
HA-3	11/20/24	3	<0.00200	0.00447	<49.8	<49.8	<49.8	<49.8	26.2
HA-3	11/20/24	4	<0.00200	<0.00400	<49.7	<49.7	<49.7	<49.7	65.9
HA-4	11/20/24	0.5	<0.00198	1.03	179	1,790	<49.8	**1,970**	**1,350**
HA-4	11/20/24	1	<0.00201	0.0103	<49.9	<49.9	<49.9	<49.9	**617**
HA-4	11/20/24	2	<0.00201	<0.00402	<49.7	<49.7	<49.7	<49.7	83.7
HA-4	11/20/24	3	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	131
HA-4	11/20/24	4	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	238
HA-5	11/20/24	0.5	<0.00198	4.78	361	1,460	<50.0	**1,820**	**5,090**
HA-5	11/20/24	1	<0.00198	0.114	<49.8	152	<49.8	**152**	**819**
HA-5	11/20/24	2	<0.00202	0.00653	<49.7	<49.7	<49.7	<49.7	93.7
HA-5	11/20/24	3	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	110

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Earth Systems Response & Restoration

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Table 1
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Spud Muffin 31 30 #738H
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria for Soils Impacted by a Release (NMAC 19.15.29)			10	50	NE	NE	NE	100	600
Delineation Soil Samples - nAPP2431628896									
HA-6	11/20/24	0.5	<0.00198	13.1	1,210	3,210	<49.8	**4,420**	**3,020**
HA-6	11/20/24	1	<0.00201	0.148	<49.8	103	<49.8	**103**	**658**
HA-6	11/20/24	2	<0.00200	0.0148	<50.0	<50.0	<50.0	<50.0	88.3
HA-6	11/20/24	3	<0.00200	<0.00399	<49.7	<49.7	<49.7	<49.7	173
HA-7	11/20/24	0.5	<0.00199	<0.00398	<49.9	418	<49.9	**418**	**3,280**
HA-7	11/20/24	1	<0.00202	<0.00404	<49.8	<49.8	<49.8	<49.8	395
HA-7	11/20/24	2	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	43.5
HA-8	11/20/24	0.5	<0.00202	<0.00404	<50.0	69	<50.0	69	55.3
HA-8	11/20/24	1	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	411
HA-8	11/20/24	2	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	42.2
HA-8	11/20/24	3	<0.00202	<0.00404	<50.0	<50.0	<50.0	<50.0	202
HA-9	11/20/24	0.5	<0.00198	<0.00396	<49.8	104	<49.8	**104**	**2,320**
HA-9	11/20/24	1	<0.00199	0.0155	<49.9	<49.9	<49.9	<49.9	400
HA-9	11/20/24	2	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	113
HA-9	11/20/24	3	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	121
HA-10	11/20/24	0.5	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	**3,390**
HA-10	11/20/24	1	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	**843**
HA-10	11/20/24	2	<0.00202	<0.00404	<49.9	<49.9	<49.9	<49.9	176
HA-10	11/20/24	3	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	209
HA-10	11/20/24	4	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	316
HA-11	11/20/24	0.5	<0.0397	9.70	605	2,410	<50.0	**3,020**	**3,490**
HA-11	11/20/24	1	<0.00202	<0.00404	<49.8	<49.8	<49.8	<49.8	**4,580**
HA-11	11/20/24	2	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	470
HA-11	11/20/24	3	<0.00198	<0.00397	<49.8	<49.8	<49.8	<49.8	381
HA-11	11/20/24	5	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	360
HA-12	11/20/24	0.5	<0.0500	7.27	429	3,740	<49.8	**4,170**	**3,990**
HA-12	11/20/24	2	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	**1,060**
HA-12	11/20/24	4	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	**767**
HA-12	11/21/24	6	<0.00200	<0.00401	<50.5	<50.5	<50.5	<50.5	**822**
HA-12	11/21/24	8	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	**1,080**
HA-12	11/21/24	10	<0.00198	<0.00396	<49.7	<49.7	<49.7	<49.7	**1,340**
HA-12	03/24/25	11	<0.00202	<0.00404	<49.8	58.3	<49.8	58.3	**1,510**

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Earth Systems Response & Restoration

Table 1
SOIL SAMPLE ANALYTICAL RESULTS
Spud Muffin 31 30 #738H
Eddy County, New Mexico

devon WPXENERGY

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria for Soils Impacted by a Release (NMAC 19.15.29)			10	50	NE	NE	NE	100	600
Delineation Soil Samples - nAPP2431628896									
HA-12	03/24/25	16	<0.00200	<0.00401	<49.6	<49.6	<49.6	<49.6	**2,480**
HA-12	03/24/25	21	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	**2,980**
HA-12	03/24/25	26	<0.00201	<0.00402	<49.7	<49.7	<49.7	<49.7	**1,830**
HA-13	11/20/24	0.5	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	234
HA-13	11/20/24	2	<0.00202	0.139	<49.9	<49.9	<49.9	<49.9	437
HA-14	11/20/24	0.5	<0.00199	0.0142	<50.0	330	<50.0	**330**	411
HA-14	11/20/24	2	<0.00198	<0.00397	<49.9	<49.9	<49.9	<49.9	104
HA-15	11/20/24	0.5	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	144
HA-15	11/20/24	2	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	144
HA-16	11/21/24	0.5	<0.00200	<0.00401	<50.2	<50.2	<50.2	<50.2	233
HA-16	11/21/24	2	<0.00199	<0.00398	<50.1	<50.1	<50.1	<50.1	17.1
HA-16	11/21/24	4	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	21.5
HA-16	11/21/24	6	<0.00200	<0.00400	<49.9	<49.9	<49.9	<49.9	208
HA-16	11/21/24	8	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	**709**
HA-16	03/24/25	11	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	**1,390**
HA-16	03/24/25	16	<0.00201	<0.00402	<55.2	<55.2	<55.2	<55.2	**1,940**
HA-16	03/24/25	21	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	**3,190**
HA-16	03/24/25	26	<0.00198	<0.00396	<49.7	<49.7	<49.7	<49.7	**3,290**
HA-17	11/21/24	0.5	<0.00202	<0.00403	<49.8	<49.8	<49.8	<49.8	**1,790**
HA-17	11/21/24	2	<0.00200	<0.00401	<49.7	<49.7	<49.7	<49.7	52.1
HA-17	11/21/24	4	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	539
HA-17	11/21/24	5	<0.00200	<0.00399	<49.7	<49.7	<49.7	<49.7	**742**
HA-17	11/21/24	8	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	**1,030**
HA-18	11/21/24	0.5	<0.00198	<0.00396	<49.8	<49.8	<49.8	<49.8	**941**
HA-18	11/21/24	2	<0.00199	<0.00398	<50.3	<50.3	<50.3	<50.3	31.9
HA-18	11/21/24	4	<0.00200	<0.00399	<50.4	<50.4	<50.4	<50.4	77.5
HA-18	11/21/24	6	<0.00200	<0.00400	<49.9	<49.9	<49.9	<49.9	462
HA-18	11/21/24	8	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	**859**
HA-18	11/21/24	10	0.00206	<0.00398	<50.0	<50.0	<50.0	<50.0	**851**
HA-18	03/24/25	11	<0.00198	<0.00397	<49.6	<49.6	<49.6	<49.6	**1,780**
HA-18	03/24/25	16	<0.00202	<0.00403	<49.7	<49.7	<49.7	<49.7	**2,660**
HA-18	03/24/25	21	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	**3,120**

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Earth Systems Response & Restoration

Table 1
SOIL SAMPLE ANALYTICAL RESULTS
Spud Muffin 31 30 #738H
Eddy County, New Mexico

devon WPXENERGY

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria for Soils Impacted by a Release (NMAC 19.15.29)			10	50	NE	NE	NE	100	600
Delineation Soil Samples - nAPP2431628896									
HA-18	03/24/25	26	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	**976**
HA-19	11/21/24	0.5	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	**913**
HA-19	11/21/24	2	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	165
HA-19	11/21/24	4	<0.00200	<0.00400	<49.8	<49.8	<49.8	<49.8	518
HA-19	11/21/24	6	<0.00200	<0.00400	<49.7	<49.7	<49.7	<49.7	**855**
HA-19	11/21/24	8	<0.00200	<0.00400	<49.8	<49.8	<49.8	<49.8	**1,070**
HA-19	11/21/24	10	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	**1,060**
HA-19	03/24/25	11	<0.00200	<0.00399	<49.6	<49.6	<49.6	<49.6	**1,520**
HA-19	03/24/25	16	<0.00200	<0.00401	<55.6	<55.6	<55.6	<55.6	**2,150**
HA-19	03/24/25	21	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	**791**
HA-19	03/24/25	26	<0.00199	<0.00398	<50.2	<50.2	<50.2	<50.2	**2,100**
HA-20	03/24/25	0.5	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	**750**
HA-20	03/24/25	2	<0.00201	<0.00402	<49.6	<49.6	<49.6	<49.6	155
HA-20	03/24/25	4	<0.00200	<0.00401	<49.8	<49.8	<49.8	<49.8	66.8
HA-20	03/24/25	6	<0.00200	<0.00399	<49.7	<49.7	<49.7	<49.7	105
HA-20	03/24/25	8	<0.00198	<0.00396	<49.6	<49.6	<49.6	<49.6	283
HA-20	03/24/25	11	<0.00199	<0.00398	<49.7	<49.7	<49.7	<49.7	**1,530**
HA-20	03/24/25	16	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	**2,200**
HA-20	03/24/25	21	<0.00200	<0.00399	<49.6	<49.6	<49.6	<49.6	**3,070**
HA-20	03/24/25	26	<0.00198	<0.00397	<50.0	<50.0	<50.0	<50.0	**2,410**
HA-21	03/24/25	0.5	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	444
HA-21	03/24/25	2	<0.00200	<0.00401	<49.6	<49.6	<49.6	<49.6	124
HA-21	03/24/25	4	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	156
HA-21	03/24/25	6	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	**903**
HA-21	03/24/25	8	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	**1,610**
HA-22	03/25/25	0.5	<0.00198	<0.00397	<498	<498	<498	<498	**609**
HA-22	03/25/25	2	<0.00202	<0.00403	<49.6	<49.6	<49.6	<49.6	286
HA-22	03/25/25	4	<0.00199	<0.00398	<50.5	<50.5	<50.5	<50.5	**759**
HA-22	03/25/25	6	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	548
HA-22	03/25/25	8	<0.00202	<0.00404	<49.6	<49.6	<49.6	<49.6	**1,710**
HA-22	03/25/25	11	<0.00200	<0.00400	<49.9	<49.9	<49.9	<49.9	**1,630**
HA-22	03/25/25	16	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	**2,540**

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Earth Systems Response & Restoration

Table 1
SOIL SAMPLE ANALYTICAL RESULTS
Spud Muffin 31 30 #738H
Eddy County, New Mexico

devon WPXENERGY

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria for Soils Impacted by a Release (NMAC 19.15.29)			10	50	NE	NE	NE	100	600
Delineation Soil Samples - nAPP2431628896									
HA-22	03/25/25	21	<0.00201	<0.00402	<50.4	<50.4	<50.4	<50.4	**1,770**
HA-22	03/25/25	26	<0.00202	<0.00403	<50.1	<50.1	<50.1	<50.1	**2,120**
HA-23	03/25/25	0.5	<0.00201	<0.00402	<49.7	224	<49.7	**224**	**1,350**
HA-23	03/25/25	2	<0.00200	<0.00401	<50.2	<50.2	<50.2	<50.2	223
HA-23	03/25/25	4	<0.00200	<0.00399	<50.4	<50.4	<50.4	<50.4	**623**
HA-23	03/25/25	6	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	**655**
HA-23	03/25/25	8	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	**1,490**
HA-23	03/25/25	11	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	**1,520**
HA-23	03/25/25	16	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	**2,910**
HA-23	03/25/25	21	<0.00198	<0.00397	<49.8	<49.8	<49.8	<49.8	**2,780**
HA-23	03/25/25	26	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	**2,210**

Notes:
bgs: below ground surface
mg/kg: milligrams per kilogram
BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes
GRO: Gasoline Range Organics
DRO: Diesel Range Organics
ORO: Oil Range Organics
NMOCD: New Mexico Oil Conservation Division

NMAC: New Mexico Administrative Code
Text in "grey" represents excavated soil samples
Concentrations in **bold and highlighted** exceed the NMOCD Table I Closure Criteria and/or Reclamation Standard‡ for Soils Impacted by a Release
‡The reclamation concentration requirements of 600 mg/kg chloride and 100 mg/kg TPH apply to the top 4 feet of areas to be immediately reclaimed following remediation pursuant to NMAC 19.15.17.13.

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Earth Systems Response & Restoration

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Table 1A
SOIL SAMPLE ANALYTICAL RESULTS
Spud Muffin 31 30 #738H
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria for Soils Impacted by a Release (NMAC 19.15.29)			10	50	NE	NE	NE	100	600
Background Soil Samples - nAPP2431628896									
BG-01	09/10/25	0.5	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	98.6
BG-01	09/10/25	1	<0.00198	<0.00396	<50.1	<50.1	<50.1	<50.1	33
BG-01	09/10/25	2	<0.00201	<0.00402	<50.1	<50.1	<50.1	<50.1	151
BG-01	09/10/25	3	<0.00202	<0.00404	<49.8	<49.8	<49.8	<49.8	274
BG-01	09/10/25	4	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	**857**
BG-01	09/10/25	5	<0.00200	<0.00399	<49.7	<49.7	<49.7	<49.7	**987**
BG-01	09/10/25	6	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	**1,030**
BG-01	09/10/25	8	<0.00202	<0.00403	<49.8	<49.8	<49.8	<49.8	**1,130**
BG-01	09/10/25	12	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	**1,140**
BG-01	09/10/25	16	<0.00198	<0.00397	<49.9	<49.9	<49.9	<49.9	**1,580**
BG-01	09/10/25	20	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	**1,460**
BG-01	09/10/25	24	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	**1,540**
BG-01	09/10/25	28	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	**2,530**
BG-02	09/10/25	0.5	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	17.2
BG-02	09/10/25	1	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	21.8
BG-02	09/10/25	2	<0.00202	<0.00404	<50.0	<50.0	<50.0	<50.0	16.1
BG-02	09/10/25	3	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	30.2
BG-02	09/10/25	4	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	103
BG-02	09/10/25	5	<0.00198	<0.00397	<49.8	<49.8	<49.8	<49.8	36.3
BG-02	09/10/25	6	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	284
BG-02	09/10/25	8	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	**795**
BG-02	09/10/25	12	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	**1,140**
BG-02	09/10/25	16	<0.00202	<0.00404	<49.9	<49.9	<49.9	<49.9	**1,750**
BG-02	09/10/25	20	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	**1,730**
BG-02	09/10/25	24	<0.00198	<0.00396	<49.8	<49.8	<49.8	<49.8	**1,120**
BG-02	09/10/25	28	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	**1,730**
BG-03	09/10/25	0.5	<0.00200	<0.00399	<50.1	<50.1	<50.1	<50.1	21.1
BG-03	09/10/25	1	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	13.3
BG-03	09/10/25	2	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	39.4
BG-03	09/10/25	3	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	44.5
BG-03	09/10/25	4	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	323
BG-03	09/10/25	5	<0.00201	<0.00402	<50.1	<50.1	<50.1	<50.1	**603**

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Earth Systems Response & Restoration

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Table 1A
SOIL SAMPLE ANALYTICAL RESULTS
Spud Muffin 31 30 #738H
Eddy County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria for Soils Impacted by a Release (NMAC 19.15.29)			10	50	NE	NE	NE	100	600
Background Soil Samples - nAPP2431628896									
BG-03	09/10/25	6	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	**1,030**
BG-03	09/10/25	8	<0.00198	<0.00396	<50.1	<50.1	<50.1	<50.1	**1,010**
BG-03	09/10/25	12	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	195
BG-03	09/10/25	16	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	366
BG-03	09/10/25	20	<0.00198	<0.00397	<49.9	<49.9	<49.9	<49.9	377
BG-03	09/10/25	24	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	353
BG-03	09/10/25	28	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	434
BG-04	09/10/25	0.5	<0.00198	<0.00396	<49.8	<49.8	<49.8	<49.8	12
BG-04	09/10/25	1	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<10.1
BG-04	09/10/25	2	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<10.1
BG-04	09/10/25	3	<0.00198	<0.00396	<49.9	<49.9	<49.9	<49.9	<9.96
BG-04	09/10/25	4	<0.00198	<0.00396	<49.8	<49.8	<49.8	<49.8	21.9
BG-04	09/10/25	5	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	482
BG-04	09/10/25	6	<0.00198	<0.00397	<49.9	<49.9	<49.9	<49.9	**954**
BG-04	09/10/25	8	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	**765**
BG-04	09/10/25	12	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	**2,040**
BG-04	09/10/25	16	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	**1,410**
BG-04	09/10/25	20	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	**1,310**
BG-04	09/10/25	24	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	**2,310**
BG-04	09/10/25	26	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	**2,830**

Notes:
bgs: below ground surface
mg/kg: milligrams per kilogram
BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes
GRO: Gasoline Range Organics
DRO: Diesel Range Organics
ORO: Oil Range Organics
NMOCD: New Mexico Oil Conservation Division

NMAC: New Mexico Administrative Code
Text in "grey" represents excavated soil samples
Concentrations in **bold and highlighted** exceed the NMOCD Table I Closure Criteria and/or Reclamation Standard‡ for Soils Impacted by a Release
‡The reclamation concentration requirements of 600 mg/kg chloride and 100 mg/kg TPH apply to the top 4 feet of areas to be immediately reclaimed following remediation pursuant to NMAC 19.15.17.13.



PHOTO 1: Northwestern view during initial site assessment activities. 11/11/2024



PHOTO 2: Northeastern view during initial site assessment activities. 11/11/2024



PHOTO 3: Northwestern view during initial delineation activities. 11/20/2024



PHOTO 4: Southwestern view during initial delineation activities. 11/21/2024



PHOTO 5: Northwestern view during initial delineation activities. 11/21/2024



PHOTO 6: Aerial view following initial delineation activities. 11/21/2024



PHOTO 7: Northwestern view during additional delineation activities. 3/24/2025



PHOTO 8: Northwestern view during additional delineation activities. 3/24/2025



PHOTO 9: Northeastern view during additional delineation activities. 3/24/2025

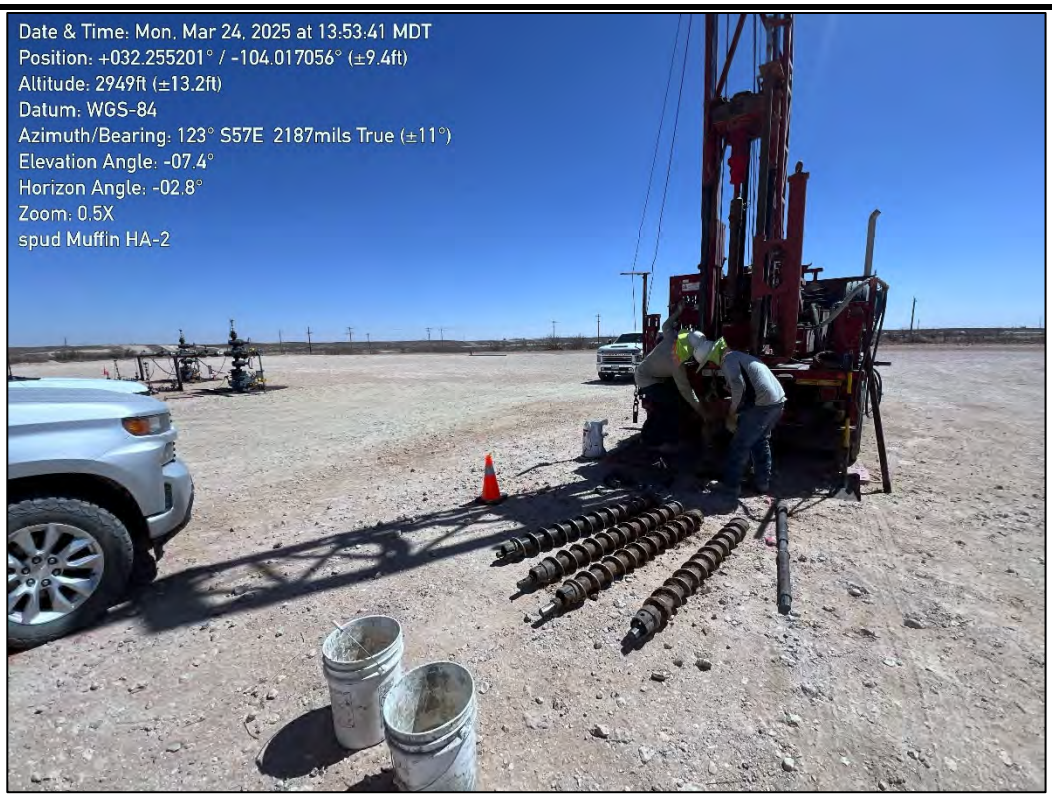


PHOTO 10: Southeastern view during additional delineation activities. 3/24/2025

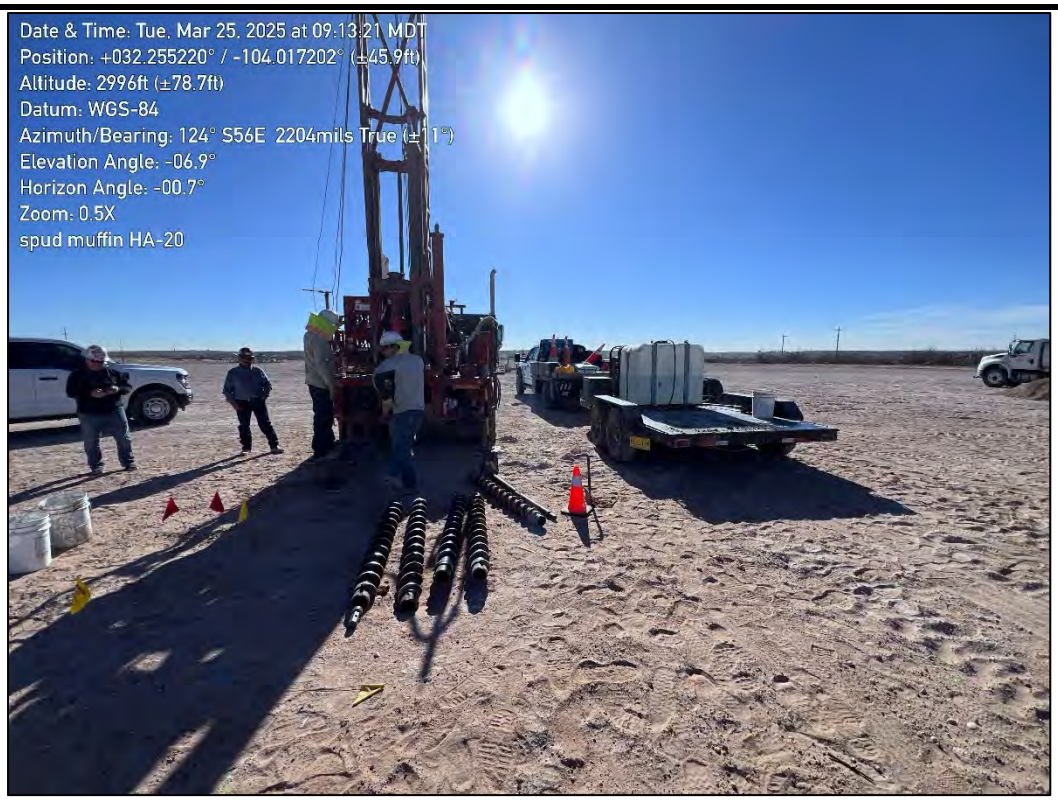


PHOTO 11: Southeastern view during additional delineation activities. 3/25/2025



PHOTO 12: Southeastern view during additional delineation activities. 3/25/2025

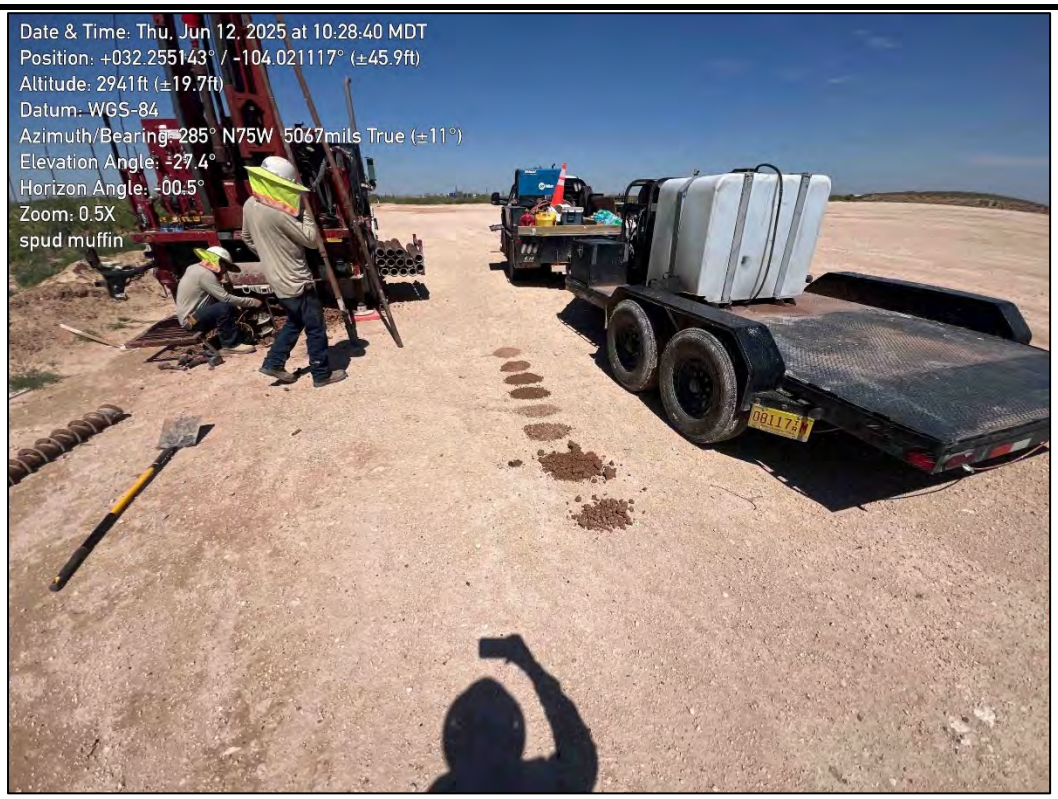


PHOTO 13: Northwestern view during DTW drilling. 6/12/2025

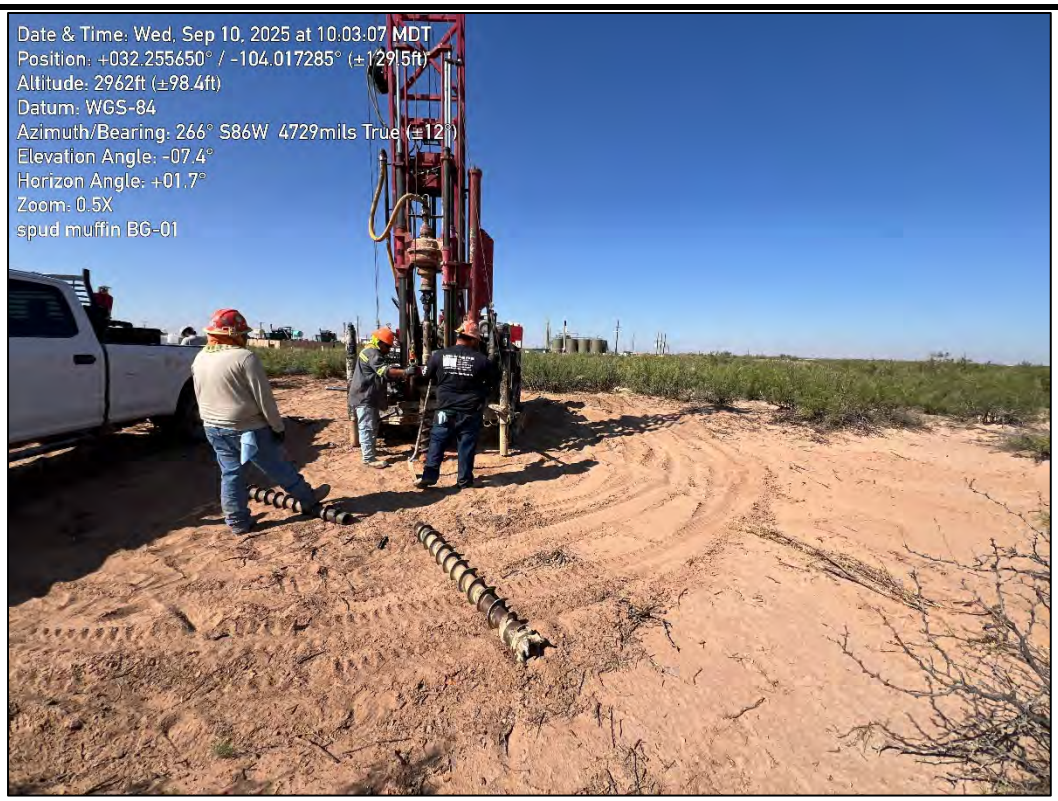


PHOTO 14: Southwestern view during background sampling activities. 9/10/2025



PHOTO 15: Northeastern view during background sampling activities. 9/10/2025

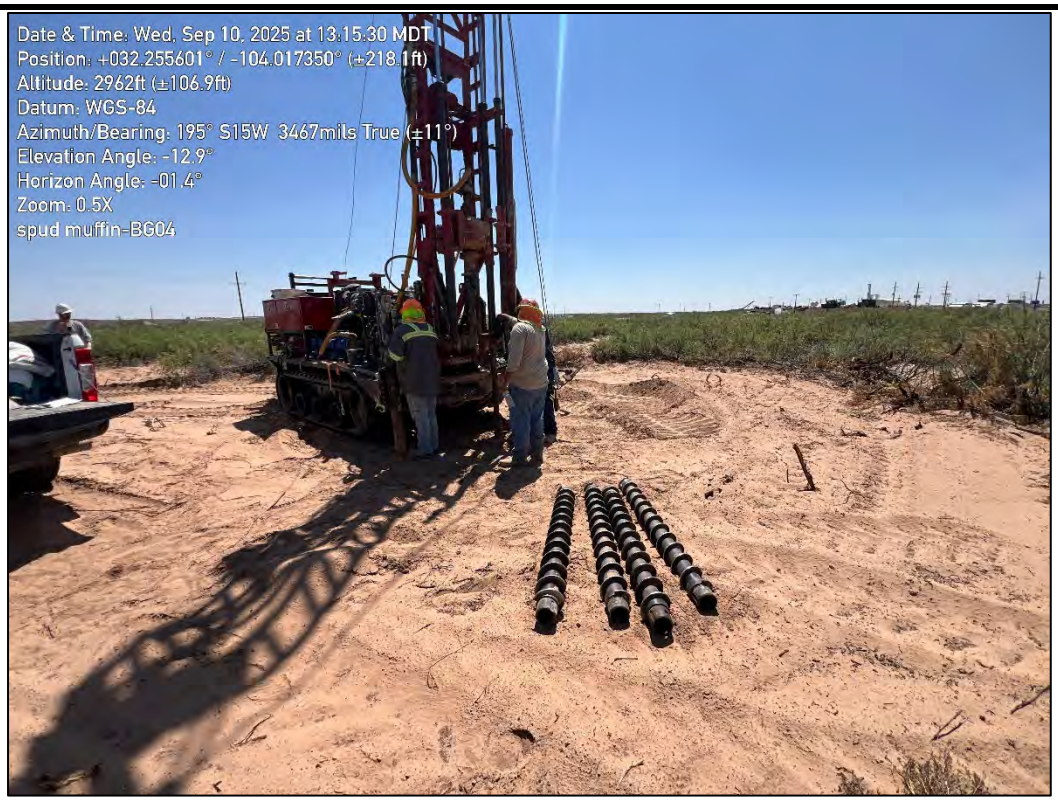


PHOTO 16: Southwestern view during background sampling activities. 9/10/2025

Outlook

RE: [EXTERNAL] Spud Muffin 31 30 #738H - Extension Request - nAPP2431628896

From Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Date Fri 2/7/2025 9:13 AM
To Gilbert Moreno <gmoreno@earthsys.net>
Cc Raley, Jim <Jim.Raley@dvn.com>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>

Hi Gilbert,

The extension request for NAPP2431628896 SPUD MUFFIN 31 30 #738H is approved. The new due date to submit your closure report or remediation plan to the OCD is May 8, 2025. 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.

Kind regards,

Shelly

Shelly Wells * Environmental Specialist-Advanced
Environmental Bureau
EMNRD-Oil Conservation Division
1220 S. St. Francis Drive|Santa Fe, NM 87505
(505)469-7520 Shelly.Wells@emnrd.nm.gov
http://www.emnrd.state.nm.us/OCD/

From: Gilbert Moreno <gmoreno@earthsys.net>
Sent: Friday, February 7, 2025 8:43 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Raley, Jim <Jim.Raley@dvn.com>
Subject: [EXTERNAL] Spud Muffin 31 30 #738H - Extension Request - nAPP2431628896

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

Hello,

Earth Sytems R & R (ESRR) on behalf of WPX Energy Permian (WPX) is requesting an extension to the current deadline for a report required in 19.15.29.12.B(1) NMAC at the Spud Muffin 31 30 #738H (Site).

A produced water release was discovered on November 11th, 2024, and was subsequently assigned Incident Number nAPP2431628896. Initial delineation activities were completed by ESRR on November 2024. Due to unforeseen soil impacts near the area of concern, WPX has had to reassess and determine options for further delineation. Additional delineation via mechanical equipment and/ or hollow stem auger drilling, is set to begin the week of March 24th, 2025.

WPX requests an extension of the February 10th, 2025, deadline for the release associated with Incident Number nAPP2431628896, to allow additional time for further delineation and/ or remediation activities, and for ESRR to complete a subsequent corrective action closure report or remediation plan.

Thanks,

Gilbert Moreno | Carlsbad Operations Manager- Project Geologist
1910 Resource Ct | Carlsbad NM, 88220
O. 575.323.9034 M. (832) 541-7719 | gmoreno@earthsys.net



Outlook

RE: [EXTERNAL] Spud Muffin 31 30 #738H - Extension Request - nAPP2431628896

From Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Date Wed 5/7/2025 11:46 AM
To Gilbert Moreno <gmoreno@earthsys.net>
Cc Raley, Jim <jim.raley@dvn.com>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>

Hi Gilbert,

The extension request for NAPP2431628896 SPUD MUFFIN 31 30 #738H is approved. The new due date to submit your updated remediation plan or closure report to the OCD is August 6, 2025. 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.

Kind regards,

Shelly

Shelly Wells * Environmental Specialist-Advanced
Environmental Bureau
EMNRD-Oil Conservation Division
1220 S. St. Francis Drive|Santa Fe, NM 87505
(505)469-7520 Shelly.Wells@emnrd.nm.gov
http://www.emnrd.state.nm.us/OCD/

From: Gilbert Moreno <gmoreno@earthsys.net>
Sent: Wednesday, May 7, 2025 11:18 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Raley, Jim <jim.raley@dvn.com>
Subject: [EXTERNAL] Spud Muffin 31 30 #738H - Extension Request - nAPP2431628896

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Hello,

Earth Sytems R & R (ESRR) on behalf of WPX Energy Permian (WPX) is requesting an additional extension to the current deadline for a report required in 19.15.29.12.B(1) NMAC at the Spud Muffin 31 30 #738H (Site).

A produced water release was discovered on November 11th, 2024, and was subsequently assigned Incident Number nAPP2431628896. Additional delineation activities via drill rig were completed on March 24th and 25th, 2025. Upon further review by WPX, it has been determined that a DTW well be drilled to further assist in understanding the subsurface and to help with determining the correct closure criteria. In addition, if deemed necessary, background samples will be collected by split spoon sampling via hollow stem auger drill rig, in the previously approved locations.

WPX requests an extension of the May 8th, 2025, deadline for the release associated with Incident Number nAPP2431628896, to allow additional time for DTW and/ or background drilling to further investigation impacts and assist ESRR with completing a subsequent corrective action closure report or remediation plan.

Thanks,

Gilbert Moreno | Carlsbad Operations Manager- Project Geologist
1910 Resource Ct | Carlsbad NM, 88220
O. 575.323.9034 M. (832) 541-7719 | gmoreno@earthsys.net



Outlook

RE: [EXTERNAL] Spud Muffin 31 30 #738H - Extension Request - nAPP2431628896

From Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Date Tue 8/5/2025 9:19 AM
To Gilbert Moreno <gmoreno@earthsys.net>
Cc Raley, Jim <jim.raley@dvn.com>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>

Hi Gilbert,

This is the third and FINAL extension that will be granted for this release. A remediation plan or remediation closure report must be submitted to the OCD Permitting website no later than November 4, 2025. Please include a copy of this and all notifications in the report to ensure the notifications are documented in the project file.

Kind regards,

Shelly

Shelly Wells * Environmental Specialist-Advanced
Environmental Bureau
EMNRD-Oil Conservation Division
1220 S. St. Francis Drive|Santa Fe, NM 87505
(505)469-7520 Shelly.Wells@emnrd.nm.gov
http://www.emnrd.state.nm.us/OCD/

From: Gilbert Moreno <gmoreno@earthsys.net>
Sent: Tuesday, August 5, 2025 7:44 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Raley, Jim <jim.raley@dvn.com>
Subject: [EXTERNAL] Spud Muffin 31 30 #738H - Extension Request - nAPP2431628896

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

Hello,

Earth Sytems R & R (ESRR) on behalf of WPX Energy Permian (WPX) is requesting a final extension to the current deadline for a report required in 19.15.29.12.B(1) NMAC at the Spud Muffin 31 30 #738H (Site).

A produced water release was discovered on November 11, 2024, and was subsequently assigned Incident Number nAPP2431628896. The depth to groundwater well was drilled on June 6, 2025, confirming the closure criteria. Due to surface rights ownerships, Devon requires Oxy permission to access the NMOCD approved background sampling locations north of the area of concern, which has taken longer than anticipated. Upon access approval, Devon is tentatively scheduled for background sampling to commence August 27, 2025.

WPX requests an extension of the August 6, 2025, deadline for the release associated with Incident Number nAPP2431628896, to allow additional time for background drilling to assist ESRR with completing a remediation plan.

Regards,

Gilbert Moreno | Carlsbad Operations Manager- Project Geologist
1910 Resource Ct | Carlsbad NM, 88220
O. 575.323.9034 M. (832) 541-7719 | gmoreno@earthsys.net



Outlook

RE: [EXTERNAL] Guidance

From Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Date Tue 4/29/2025 11:01 AM
To Gilbert Moreno <gmoreno@earthsys.net>

Looks great!

Shelly Wells * Environmental Specialist-Advanced
Environmental Bureau
EMNRD-Oil Conservation Division
1220 S. St. Francis Drive|Santa Fe, NM 87505
(505)469-7520 Shelly.Wells@emnrd.nm.gov
http://www.emnrd.state.nm.us/OCD/

From: Gilbert Moreno <gmoreno@earthsys.net>
Sent: Tuesday, April 29, 2025 10:59 AM
To: Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Subject: Re: [EXTERNAL] Guidance

Will do.

Locations updated below and referenced on both historical and most recent aerial imagery on Google Earth.

12/2019



8/2024



Gilbert Moreno | Carlsbad Operations Manager- Project Geologist
1910 Resource Ct | Carlsbad NM, 88220
O. 575.323.9034 M. (832) 541-7719 | gmoreno@earthsys.net

Earth Systems
Response & Restoration

From: Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Sent: Tuesday, April 29, 2025 9:50 AM
To: Gilbert Moreno <gmoreno@earthsys.net>
Subject: RE: [EXTERNAL] Guidance

Hi Gilbert,

If you could move the westernmost point about 20 feet east out of the line that looks like was put in in 2019 (refer to Google earth imagery from 12/21/2019) that would be more amenable. Then when you collect the samples, you can average the data at each of the depths to get a background chloride average for each depth.

Kind regards,

Shelly

Shelly Wells * Environmental Specialist-Advanced
Environmental Bureau
EMNRD-Oil Conservation Division
1220 S. St. Francis Drive|Santa Fe, NM 87505

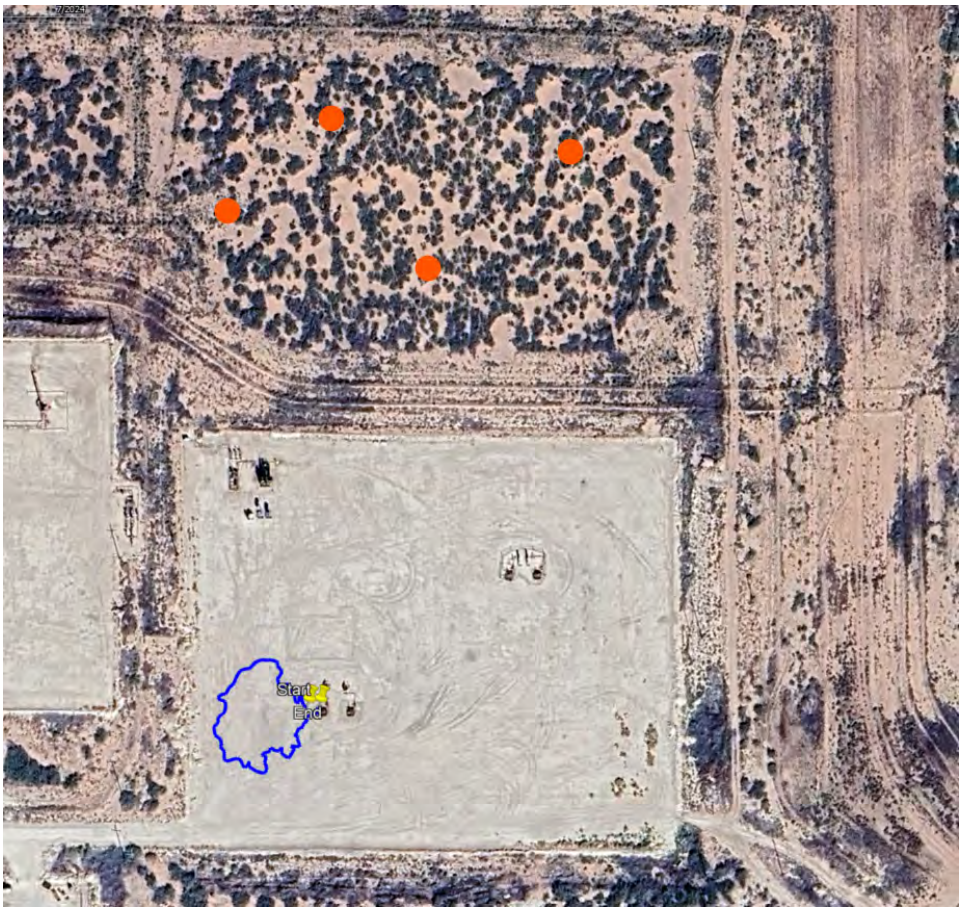
(505)469-7520 Shelly.Wells@emnrd.nm.gov
http://www.emnrd.state.nm.us/OCD/

From: Gilbert Moreno <gmoreno@earthsys.net>
Sent: Tuesday, April 29, 2025 8:03 AM
To: Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Subject: Re: [EXTERNAL] Guidance

Hi Shelly,

Thanks for your patience and help with this.

See below updated sample point map for the background locations in question.



Gilbert Moreno | Carlsbad Operations Manager- Project Geologist
1910 Resource Ct | Carlsbad NM, 88220
O. 575.323.9034 M. (832) 541-7719 | gmoreno@earthsys.net

Earth Systems
Response & Restoration

From: Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Sent: Friday, April 25, 2025 10:48 AM
To: Gilbert Moreno <gmoreno@earthsys.net>
Subject: RE: [EXTERNAL] Guidance

Hi Gilbert,

After looking at this site, I agree with the placement of the north 3 locations. I think the 4th location should be somewhere in the same field. If you want to send an updated sample point map I will review and sign off. I am not too keen on the area south of the pad for background locations.

Sincerely,

Shelly

Shelly Wells * Environmental Specialist-Advanced
Environmental Bureau
EMNRD-Oil Conservation Division
1220 S. St. Francis Drive|Santa Fe, NM 87505
(505)469-7520 Shelly.Wells@emnrd.nm.gov
http://www.emnrd.state.nm.us/OCD/

From: Gilbert Moreno <gmoreno@earthsys.net>
Sent: Friday, April 25, 2025 10:47 AM
To: Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Subject: Re: [EXTERNAL] Guidance

Sorry,

NAPP2431628896
32.2551108,-104.016727

Gilbert Moreno | Carlsbad Operations Manager- Project Geologist
1910 Resource Ct | Carlsbad NM, 88220
O. 575.323.9034 M. (832) 541-7719 | gmoreno@earthsys.net

From: Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Sent: Friday, April 25, 2025 9:45 AM
To: Gilbert Moreno <gmoreno@earthsys.net>
Subject: RE: [EXTERNAL] Guidance

Hi Gilbert,

In order to review I need to know the location of this release and incident number. I use google earth to look at elevation, etc

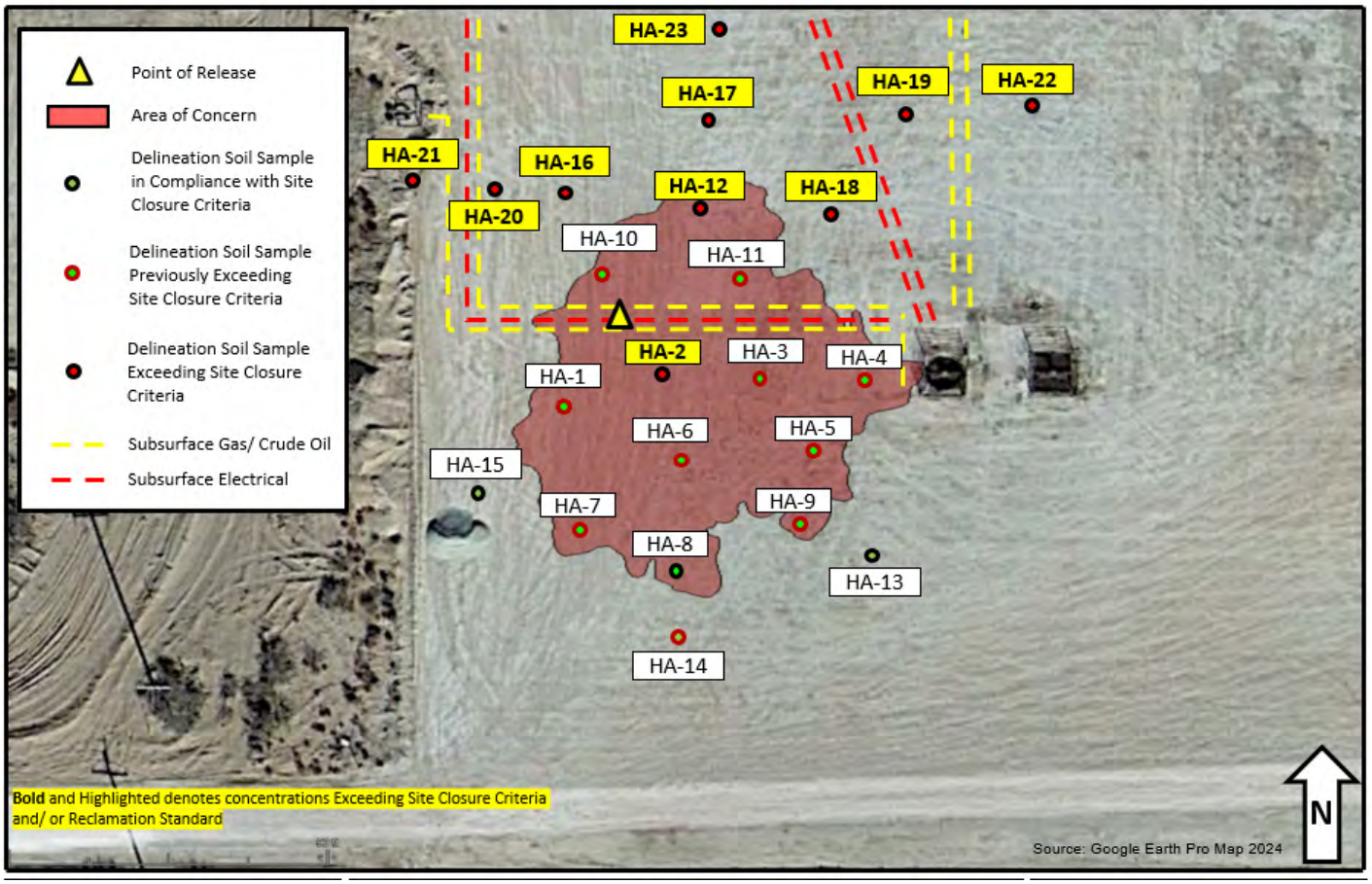
Kind regards,

Shelly

From: Gilbert Moreno <gmoreno@earthsys.net>
Sent: Friday, April 25, 2025 10:09 AM
To: Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Subject: Re: [EXTERNAL] Guidance

See photos below. First will show delineation locations sampled to date for reference. The second will show the BG locations in orange I think might work best. We are on Private Land so I will need permission to access these areas, but I would like to have an idea before I run this up the ladder to Devon.

I appreciate the help! I may have more questions as I draft this report to make sure I touch all the topics needed for approval.





Gilbert Moreno | Carlsbad Operations Manager- Project Geologist

1910 Resource Ct | Carlsbad NM, 88220
O. 575.323.9034 M. (832) 541-7719 | gmoreno@earthsys.net

From: Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Sent: Friday, April 25, 2025 8:54 AM
To: Gilbert Moreno <gmoreno@earthsys.net>
Subject: RE: [EXTERNAL] Guidance

Good morning Gilbert,

Background samples need to have a minimum of 4 sampling points and should be collected in 1 ft increments starting at surface, down to the deepest depth Devon believes impacts from the release to be. For each, a grab sample should be gathered in endemic areas previously undisturbed by oil and gas activities, nominally uphill from the release area, no closer than 50 feet but no further than several hundred feet from any edge of the impacted or disturbed areas. The samples must be tested for all Table I constituents. Should BTEX or TPH show up in any background samples they are not true backgrounds, as that area has been previously disturbed by oil and gas activities.

If you would like, you may send over a map/figure showing where you would like to collect the 4 background samples and I will let you know if OCD approves of their placement prior to drilling. If you need further explanation of anything, feel free to call or email me.

Kind regards,

Shelly

Shelly Wells * Environmental Specialist-Advanced
Environmental Bureau
EMNRD-Oil Conservation Division
1220 S. St. Francis Drive|Santa Fe, NM 87505
(505)469-7520 Shelly.Wells@emnrd.nm.gov
http://www.emnrd.state.nm.us/OCD/

From: Gilbert Moreno <gmoreno@earthsys.net>
Sent: Friday, April 25, 2025 9:44 AM
To: Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Subject: [EXTERNAL] Guidance

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

Hi Shelly,

Hope this email finds you well.

I am dealing with an incident for Devon that I believe may have some naturally occurring chloride below and around our area of concern. We have attempted two delineations, one via hand auger and the second a continuation via drill rig. We reached depths of 26 feet before halting so that we would not encounter shallow groundwater without the right permits in place.

I would like to submit a site characterization/ remediation plan that will include background sampling via drill rig to determine if there is indeed naturally occurring chloride. Can you provide insight on what NMOCD would look for/ accept for background sampling locations? Any help is greatly appreciated.

Thanks!

Gilbert Moreno | Carlsbad Operations Manager- Project Geologist
1910 Resource Ct | Carlsbad NM, 88220
O. 575.323.9034 M. (832) 541-7719 | gmoreno@earthsys.net

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

General Information
Phone: (505) 629-6116

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

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

QUESTIONS

Action 502746

QUESTIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 502746
	Action Type: [NOTIFY] Notification Of Sampling (C-141N)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2431628896**
Incident Name	**NAPP2431628896 SPUD MUFFIN 31 30 #738H @ 30-015-44757**
Incident Type	**Produced Water Release**
Incident Status	**Initial C-141 Approved**
Incident Well	**[30-015-44757] SPUD MUFFIN 31 30 #738H**

Location of Release Source	
Site Name	**SPUD MUFFIN 31 30 #738H**
Date Release Discovered	**11/10/2024**
Surface Owner	**Private**

Sampling Event General Information *Please answer all the questions in this group.*	
What is the sampling surface area in square feet	800
What is the estimated number of samples that will be gathered	40
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	09/10/2025
Time sampling will commence	08:00 AM
Please provide any information necessary for observers to contact samplers	Gilbert Moreno (832) 541-7719
Please provide any information necessary for navigation to sampling site	32.2551108,-104.016727

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

General Information
Phone: (505) 629-6116

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

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

CONDITIONS

Action 502746

CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 502746
	Action Type: [NOTIFY] Notification Of Sampling (C-141N)

CONDITIONS

Created By	Condition	Condition Date
jraley	Failure to notify the OCD of sampling events including any changes in date/time per the requirements of 19.15.29.12.D.(1).(a) NMAC, may result in the remediation closure samples not being accepted.	9/4/2025
jraley	If confirmation sampling is going to take place over multiple days, individual C-141N applications must be submitted for each sampling date. Date ranges are not currently accepted on the C-141N application.	9/4/2025

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Kris Williams
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 12/30/2024 8:56:36 AM Revision 1

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy County

JOB NUMBER

880-51418-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

Released to Imaging: 11/6/2025 3:18:49 PM

my EOL

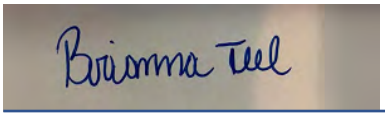
Eurofins Midland

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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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Qualifiers

GC VOA

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

GC Semi VOA

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

Glossary

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

Definitions/Glossary

Client: Earth Systems Response and Restoration
Job ID: 880-51418-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 880-51418-1
Project: Spud Muffin 31 30 #738H

Job ID: 880-51418-1 Eurofins Midland

Job Narrative
880-51418-1

REVISION

The report being provided is a revision of the original report sent on 11/26/2024. The report (revision 1) is being revised due to Revised to correct mislabeled sample IDs..

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 11/22/2024 12:06 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 5.7°C.

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: HA-1 (880-51418-1), HA-1 (880-51418-2), HA-1 (880-51418-3), HA-1 (880-51418-4), HA-1 (880-51418-5), HA-2 (880-51418-6), HA-2 (880-51418-7), HA-2 (880-51418-8), HA-2 (880-51418-9), HA-2 (880-51418-10), HA-3 (880-51418-11), HA-3 (880-51418-12), HA-3 (880-51418-13), HA-3 (880-51418-14), HA-3 (880-51418-15), HA-4 (880-51418-16), HA-4 (880-51418-17), HA-4 (880-51418-18), HA-4 (880-51418-19), HA-4 (880-51418-20), HA-5 (880-51418-21), HA-5 (880-51418-22), HA-5 (880-51418-23), HA-5 (880-51418-24), HA-6 (880-51418-25), HA-6 (880-51418-26), HA-6 (880-51418-27), HA-6 (880-51418-28), HA-7 (880-51418-29), HA-7 (880-51418-30), HA-7 (880-51418-31), HA-8 (880-51418-32), HA-8 (880-51418-33), HA-8 (880-51418-34), HA-8 (880-51418-35), HA-9 (880-51418-36), HA-9 (880-51418-37), HA-9 (880-51418-38), HA-9 (880-51418-39), HA-10 (880-51418-40), HA-10 (880-51418-41), HA-10 (880-51418-42), HA-10 (880-51418-43), HA-10 (880-51418-44), HA-11 (880-51418-45), HA-11 (880-51418-46), HA-11 (880-51418-47), HA-11 (880-51418-48), HA-11 (880-51418-49), HA-12 (880-51418-50), HA-12 (880-51418-51), HA-12 (880-51418-52), HA-13 (880-51418-53), HA-13 (880-51418-54), HA-14 (880-51418-55), HA-14 (880-51418-56), HA-15 (880-51418-57) and HA-15 (880-51418-58).

GC VOA
Method 8021B: Surrogate recovery for the following samples were outside control limits: HA-10 (880-51418-41), HA-10 (880-51418-42), HA-10 (880-51418-43), HA-10 (880-51418-44), HA-11 (880-51418-45), HA-11 (880-51418-46), HA-11 (880-51418-47), HA-11 (880-51418-48), HA-11 (880-51418-49), HA-12 (880-51418-50), HA-12 (880-51418-52), HA-13 (880-51418-53), HA-13 (880-51418-54), HA-14 (880-51418-55), HA-14 (880-51418-56), HA-15 (880-51418-57), HA-15 (880-51418-58) and (880-51418-A-41-E MS). Evidence of matrix interferences is not obvious.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-96418 and analytical batch 880-96439 was outside the upper control limits.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-96418 and analytical batch 880-96439 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: HA-1 (880-51418-1), HA-2 (880-51418-7), HA-3 (880-51418-12) and HA-4 (880-51418-16). Evidence of matrix interferences is not obvious.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-96416 and analytical batch 880-96441 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

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 880-51418-1
Project: Spud Muffin 31 30 #738H

Job ID: 880-51418-1 (Continued) Eurofins Midland

acceptance limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: HA-5 (880-51418-21), HA-5 (880-51418-24), HA-6 (880-51418-26), HA-7 (880-51418-30), HA-10 (880-51418-40) and (880-51418-A-21-E MS). Evidence of matrix interferences is not obvious.

Method 8021B: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with preparation batch 880-96417 and analytical batch 880-96442 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of m-Xylene & p-Xylene and Xylenes, Total in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 8021B: Surrogate recovery for the following samples were outside control limits: HA-2 (880-51418-6) and HA-3 (880-51418-11). Evidence of matrix interferences is not obvious.

Method 8021B: The following samples were diluted due to the nature of the sample matrix: HA-2 (880-51418-6) and HA-3 (880-51418-11). Elevated reporting limits (RLs) are provided.

Method 8021B: Surrogate recovery for the following samples were outside control limits: HA-5 (880-51418-21), HA-6 (880-51418-25), HA-11 (880-51418-45) and HA-12 (880-51418-50). Evidence of matrix interferences is not obvious.

Method 8021B: The following samples were diluted due to the nature of the sample matrix: HA-11 (880-51418-45) and HA-12 (880-51418-50). Elevated reporting limits (RLs) are provided.

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 method blank for preparation batch 880-96407 and analytical batch 880-96491 contained Gasoline Range Organics (GRO)-C6-C10 above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (MB 880-96407/1-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-96407 and analytical batch 880-96491 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8015MOD_NM: The method blank for preparation batch 880-96419 and analytical batch 880-96493 contained Diesel 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.

Method 8015MOD_NM: An incorrect volume of surrogate spiking solution was inadvertently added the following samples: (LCS 880-96419/2-A) and (LCSD 880-96419/3-A). Percent recoveries are based on the amount spiked.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-96383 and analytical batch 880-96449 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: HA-2 (880-51418-6) and HA-3 (880-51418-11). 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: HA-2 (880-51418-8) and HA-3 (880-51418-13). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: HA-11 (880-51418-45) and HA-12 (880-51418-50). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: HA-6 (880-51418-25). Evidence of

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 880-51418-1
Project: Spud Muffin 31 30 #738H

Job ID: 880-51418-1 (Continued) Eurofins Midland

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: HA-6 (880-51418-27), HA-7 (880-51418-30), HA-8 (880-51418-33), HA-8 (880-51418-35) and (CCV 880-96491/32). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The continuing calibration verification (CCV) associated with batch 880-96451 recovered above the upper control limit for Diesel Range Organics (Over C10-C28). An acceptable CCV was ran within the 12 hour window, therefore the data has been qualified and reported. The associated sample is impacted: (CCV 880-96451/71).

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

HPLC/IC

Method 300_ORGFM_28D - Soluble: The Chloride matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-96392 and analytical batch 880-96428 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: HA-5 (880-51418-21), HA-5 (880-51418-22), HA-5 (880-51418-23), HA-5 (880-51418-24), HA-6 (880-51418-25), HA-6 (880-51418-26), HA-6 (880-51418-27), HA-6 (880-51418-28), HA-7 (880-51418-29), HA-7 (880-51418-30), (880-51418-A-21-B MS) and (880-51418-A-21-C MSD).

Method 300_ORGFM_28D - Soluble: The Chloride matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-96391 and analytical batch 880-96408 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: HA-1 (880-51418-1), HA-1 (880-51418-2), HA-1 (880-51418-3), HA-1 (880-51418-4), HA-1 (880-51418-5), HA-2 (880-51418-6), HA-2 (880-51418-7), HA-2 (880-51418-8), HA-2 (880-51418-9), HA-2 (880-51418-10), (880-51418-A-1-B MS) and (880-51418-A-1-E MSD).

Method 300_ORGFM_28D - Soluble: The Chloride matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-96391 and analytical batch 880-96408 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: HA-3 (880-51418-11), HA-3 (880-51418-12), HA-3 (880-51418-13), HA-3 (880-51418-14), HA-3 (880-51418-15), HA-4 (880-51418-16), HA-4 (880-51418-17), HA-4 (880-51418-18), HA-4 (880-51418-19), HA-4 (880-51418-20), (880-51418-A-11-B MS) and (880-51418-A-11-C MSD).

Method 300_ORGFM_28D - Soluble: Due to the high concentration of Chloride, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 880-96396 and analytical batch 880-96496 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

The associated samples are: HA-12 (880-51418-51), (880-51418-A-51-B MS) and (880-51418-A-51-C MSD).

Method 300_ORGFM_28D - Soluble: The Chloride matrix spike (MS) recoveries for preparation batch 880-96396 and analytical batch 880-96496 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

The associated samples are: HA-10 (880-51418-41), HA-10 (880-51418-42), HA-10 (880-51418-43), HA-10 (880-51418-44), HA-11 (880-51418-45), HA-11 (880-51418-46), HA-11 (880-51418-47), HA-11 (880-51418-48), HA-11 (880-51418-49), HA-12 (880-51418-50) and (880-51418-A-41-B MS).

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

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-1

Date Collected: 11/20/24 07:35
Date Received: 11/22/24 12:06
Sample Depth: 0.5

Lab Sample ID: 880-51418-1
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:09	11/23/24 20:27	1
Toluene	**0.0256**		0.00199		mg/Kg		11/22/24 16:09	11/23/24 20:27	1
Ethylbenzene	**0.00785**		0.00199		mg/Kg		11/22/24 16:09	11/23/24 20:27	1
m-Xylene & p-Xylene	**0.171**	**F1**	0.00398		mg/Kg		11/22/24 16:09	11/23/24 20:27	1
o-Xylene	**0.0497**	**F1**	0.00199		mg/Kg		11/22/24 16:09	11/23/24 20:27	1
Xylenes, Total	**0.221**	**F1**	0.00398		mg/Kg		11/22/24 16:09	11/23/24 20:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*132*	*S1+*	*70 - 130*	*11/22/24 16:09*	*11/23/24 20:27*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*11/22/24 16:09*	*11/23/24 20:27*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.254**		0.00398		mg/Kg			11/23/24 20:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/25/24 18:51	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	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 18:51	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 18:51	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 18:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*91*		*70 - 130*	*11/22/24 13:25*	*11/25/24 18:51*	*1*
o-Terphenyl	*70*		*70 - 130*	*11/22/24 13:25*	*11/25/24 18:51*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3870**	**F1**	50.4		mg/Kg			11/23/24 07:48	5

Client Sample ID: HA-1

Date Collected: 11/20/24 07:40
Date Received: 11/22/24 12:06
Sample Depth: 1

Lab Sample ID: 880-51418-2
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:09	11/23/24 20:47	1
Toluene	**0.0152**		0.00201		mg/Kg		11/22/24 16:09	11/23/24 20:47	1
Ethylbenzene	**0.00600**		0.00201		mg/Kg		11/22/24 16:09	11/23/24 20:47	1
m-Xylene & p-Xylene	**0.128**		0.00402		mg/Kg		11/22/24 16:09	11/23/24 20:47	1
o-Xylene	**0.0389**		0.00201		mg/Kg		11/22/24 16:09	11/23/24 20:47	1
Xylenes, Total	**0.167**		0.00402		mg/Kg		11/22/24 16:09	11/23/24 20:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*11/22/24 16:09*	*11/23/24 20:47*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-1

Date Collected: 11/20/24 07:40
Date Received: 11/22/24 12:06
Sample Depth: 1

Lab Sample ID: 880-51418-2

Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*11/22/24 16:09*	*11/23/24 20:47*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.188**		0.00402		mg/Kg			11/23/24 20:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/25/24 19:07	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	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 19:07	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 19:07	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 19:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*100*		*70 - 130*	*11/22/24 13:25*	*11/25/24 19:07*	*1*
o-Terphenyl	*75*		*70 - 130*	*11/22/24 13:25*	*11/25/24 19:07*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**450**		10.0		mg/Kg			11/23/24 08:12	1

Client Sample ID: HA-1

Date Collected: 11/20/24 07:45
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:09	11/23/24 21:07	1
Toluene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:09	11/23/24 21:07	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:09	11/23/24 21:07	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		11/22/24 16:09	11/23/24 21:07	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:09	11/23/24 21:07	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		11/22/24 16:09	11/23/24 21:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*	*11/22/24 16:09*	*11/23/24 21:07*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*11/22/24 16:09*	*11/23/24 21:07*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			11/23/24 21:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/25/24 19:24	1

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-1

Date Collected: 11/20/24 07:45
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-3
Matrix: Solid

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	<49.9	U	49.9		mg/Kg		11/22/24 13:25	11/25/24 19:24	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/22/24 13:25	11/25/24 19:24	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 13:25	11/25/24 19:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*93*		*70 - 130*	*11/22/24 13:25*	*11/25/24 19:24*	*1*
o-Terphenyl	*71*		*70 - 130*	*11/22/24 13:25*	*11/25/24 19:24*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**47.4**		10.1		mg/Kg			11/23/24 08:20	1

Client Sample ID: HA-1

Date Collected: 11/20/24 07:50
Date Received: 11/22/24 12:06
Sample Depth: 3

Lab Sample ID: 880-51418-4
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:09	11/23/24 21:28	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:09	11/23/24 21:28	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:09	11/23/24 21:28	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/22/24 16:09	11/23/24 21:28	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:09	11/23/24 21:28	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/22/24 16:09	11/23/24 21:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*11/22/24 16:09*	*11/23/24 21:28*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*11/22/24 16:09*	*11/23/24 21:28*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/23/24 21:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/25/24 19:39	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	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 19:39	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 19:39	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 19:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*103*		*70 - 130*	*11/22/24 13:25*	*11/25/24 19:39*	*1*
o-Terphenyl	*79*		*70 - 130*	*11/22/24 13:25*	*11/25/24 19:39*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-1

Date Collected: 11/20/24 07:50
Date Received: 11/22/24 12:06
Sample Depth: 3

Lab Sample ID: 880-51418-4
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**64.2**		9.98		mg/Kg			11/23/24 08:29	1

Client Sample ID: HA-1

Date Collected: 11/20/24 07:55
Date Received: 11/22/24 12:06
Sample Depth: 4

Lab Sample ID: 880-51418-5
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/23/24 21:49	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/23/24 21:49	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/23/24 21:49	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		11/22/24 16:09	11/23/24 21:49	1
o-Xylene	**0.00627**		0.00200		mg/Kg		11/22/24 16:09	11/23/24 21:49	1
Xylenes, Total	**0.00627**		0.00399		mg/Kg		11/22/24 16:09	11/23/24 21:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*11/22/24 16:09*	*11/23/24 21:49*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*11/22/24 16:09*	*11/23/24 21:49*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.00627**		0.00399		mg/Kg			11/23/24 21:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**55.7**		49.8		mg/Kg			11/25/24 19:56	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	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 19:56	1
Diesel Range Organics (Over C10-C28)	**55.7**		49.8		mg/Kg		11/22/24 13:25	11/25/24 19:56	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*96*		*70 - 130*	*11/22/24 13:25*	*11/25/24 19:56*	*1*
o-Terphenyl	*75*		*70 - 130*	*11/22/24 13:25*	*11/25/24 19:56*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**111**		9.96		mg/Kg			11/23/24 08:37	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-2

Date Collected: 11/20/24 08:00
Date Received: 11/22/24 12:06
Sample Depth: 0.5

Lab Sample ID: 880-51418-6
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0504	U	0.0504		mg/Kg		11/25/24 11:29	11/25/24 14:00	25
Toluene	**1.04**		0.0504		mg/Kg		11/25/24 11:29	11/25/24 14:00	25
Ethylbenzene	**0.441**		0.0504		mg/Kg		11/25/24 11:29	11/25/24 14:00	25
m-Xylene & p-Xylene	**10.2**		0.101		mg/Kg		11/25/24 11:29	11/25/24 14:00	25
o-Xylene	**2.05**		0.0504		mg/Kg		11/25/24 11:29	11/25/24 14:00	25
Xylenes, Total	**12.3**		0.101		mg/Kg		11/25/24 11:29	11/25/24 14:00	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*220*	*S1+*	*70 - 130*	*11/25/24 11:29*	*11/25/24 14:00*	*25*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*11/25/24 11:29*	*11/25/24 14:00*	*25*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**13.7**		0.101		mg/Kg			11/25/24 14:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**4010**		50.0		mg/Kg			11/25/24 20:12	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	**1130**		50.0		mg/Kg		11/22/24 13:25	11/25/24 20:12	1
Diesel Range Organics (Over C10-C28)	**2880**		50.0		mg/Kg		11/22/24 13:25	11/25/24 20:12	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 20:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*148*	*S1+*	*70 - 130*	*11/22/24 13:25*	*11/25/24 20:12*	*1*
o-Terphenyl	*124*		*70 - 130*	*11/22/24 13:25*	*11/25/24 20:12*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6950**		101		mg/Kg			11/23/24 09:01	10

Client Sample ID: HA-2

Date Collected: 11/20/24 08:05
Date Received: 11/22/24 12:06
Sample Depth: 1

Lab Sample ID: 880-51418-7
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:09	11/23/24 22:29	1
Toluene	**0.00259**		0.00202		mg/Kg		11/22/24 16:09	11/23/24 22:29	1
Ethylbenzene	**0.00482**		0.00202		mg/Kg		11/22/24 16:09	11/23/24 22:29	1
m-Xylene & p-Xylene	**0.165**		0.00403		mg/Kg		11/22/24 16:09	11/23/24 22:29	1
o-Xylene	**0.0540**		0.00202		mg/Kg		11/22/24 16:09	11/23/24 22:29	1
Xylenes, Total	**0.219**		0.00403		mg/Kg		11/22/24 16:09	11/23/24 22:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*176*	*S1+*	*70 - 130*	*11/22/24 16:09*	*11/23/24 22:29*	*1*

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-2

Date Collected: 11/20/24 08:05
Date Received: 11/22/24 12:06
Sample Depth: 1

Lab Sample ID: 880-51418-7
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*11/22/24 16:09*	*11/23/24 22:29*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.226**		0.00403		mg/Kg			11/23/24 22:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**231**		49.9		mg/Kg			11/25/24 20:44	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	<49.9	U	49.9		mg/Kg		11/22/24 13:25	11/25/24 20:44	1
Diesel Range Organics (Over C10-C28)	**231**		49.9		mg/Kg		11/22/24 13:25	11/25/24 20:44	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 13:25	11/25/24 20:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*95*		*70 - 130*	*11/22/24 13:25*	*11/25/24 20:44*	*1*
o-Terphenyl	*75*		*70 - 130*	*11/22/24 13:25*	*11/25/24 20:44*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2690**		49.6		mg/Kg			11/23/24 09:09	5

Client Sample ID: HA-2

Date Collected: 11/20/24 08:10
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-8
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:09	11/23/24 22:50	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:09	11/23/24 22:50	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:09	11/23/24 22:50	1
m-Xylene & p-Xylene	**0.00414**		0.00398		mg/Kg		11/22/24 16:09	11/23/24 22:50	1
o-Xylene	**0.00337**		0.00199		mg/Kg		11/22/24 16:09	11/23/24 22:50	1
Xylenes, Total	**0.00751**		0.00398		mg/Kg		11/22/24 16:09	11/23/24 22:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*11/22/24 16:09*	*11/23/24 22:50*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*11/22/24 16:09*	*11/23/24 22:50*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.00751**		0.00398		mg/Kg			11/23/24 22:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/25/24 21:00	1

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-2

Lab Sample ID: 880-51418-8
Matrix: Solid
Date Collected: 11/20/24 08:10
Date Received: 11/22/24 12:06
Sample Depth: 2

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	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 21:00	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 21:00	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 21:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*87*		*70 - 130*	*11/22/24 13:25*	*11/25/24 21:00*	*1*
o-Terphenyl	*65*	*S1-*	*70 - 130*	*11/22/24 13:25*	*11/25/24 21:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**114**		10.1		mg/Kg			11/23/24 09:17	1

Client Sample ID: HA-2

Lab Sample ID: 880-51418-9
Matrix: Solid
Date Collected: 11/20/24 08:15
Date Received: 11/22/24 12:06
Sample Depth: 3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:09	11/23/24 23:11	1
Toluene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:09	11/23/24 23:11	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:09	11/23/24 23:11	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		11/22/24 16:09	11/23/24 23:11	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:09	11/23/24 23:11	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		11/22/24 16:09	11/23/24 23:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*11/22/24 16:09*	*11/23/24 23:11*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*11/22/24 16:09*	*11/23/24 23:11*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			11/23/24 23:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			11/25/24 21:16	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	<49.7	U	49.7		mg/Kg		11/22/24 13:25	11/25/24 21:16	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		11/22/24 13:25	11/25/24 21:16	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		11/22/24 13:25	11/25/24 21:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*11/22/24 13:25*	*11/25/24 21:16*	*1*
o-Terphenyl	*73*		*70 - 130*	*11/22/24 13:25*	*11/25/24 21:16*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-2

Date Collected: 11/20/24 08:15
Date Received: 11/22/24 12:06
Sample Depth: 3

Lab Sample ID: 880-51418-9
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34.4		9.94		mg/Kg			11/23/24 09:26	1

Client Sample ID: HA-2

Date Collected: 11/20/24 08:20
Date Received: 11/22/24 12:06
Sample Depth: 4

Lab Sample ID: 880-51418-10
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:09	11/23/24 23:31	1
Toluene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:09	11/23/24 23:31	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:09	11/23/24 23:31	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		11/22/24 16:09	11/23/24 23:31	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:09	11/23/24 23:31	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		11/22/24 16:09	11/23/24 23:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*	*11/22/24 16:09*	*11/23/24 23:31*	*1*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*	*11/22/24 16:09*	*11/23/24 23:31*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404		mg/Kg			11/23/24 23:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/25/24 21:31	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	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 21:31	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 21:31	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 21:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*98*		*70 - 130*	*11/22/24 13:25*	*11/25/24 21:31*	*1*
o-Terphenyl	*73*		*70 - 130*	*11/22/24 13:25*	*11/25/24 21:31*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	42.3		9.98		mg/Kg			11/23/24 09:34	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-3

Date Collected: 11/20/24 08:25
Date Received: 11/22/24 12:06
Sample Depth: 0.5

Lab Sample ID: 880-51418-11
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0497	U	0.0497		mg/Kg		11/25/24 11:29	11/25/24 14:20	25
Toluene	**2.79**		0.0497		mg/Kg		11/25/24 11:29	11/25/24 14:20	25
Ethylbenzene	**0.829**		0.0497		mg/Kg		11/25/24 11:29	11/25/24 14:20	25
m-Xylene & p-Xylene	**18.9**		0.0994		mg/Kg		11/25/24 11:29	11/25/24 14:20	25
o-Xylene	**4.04**		0.0497		mg/Kg		11/25/24 11:29	11/25/24 14:20	25
Xylenes, Total	**22.9**		0.0994		mg/Kg		11/25/24 11:29	11/25/24 14:20	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*267*	*S1+*	*70 - 130*	*11/25/24 11:29*	*11/25/24 14:20*	*25*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*11/25/24 11:29*	*11/25/24 14:20*	*25*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**26.6**		0.0994		mg/Kg			11/25/24 14:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**4300**		49.8		mg/Kg			11/25/24 21:47	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	**1510**		49.8		mg/Kg		11/22/24 13:25	11/25/24 21:47	1
Diesel Range Organics (Over C10-C28)	**2790**		49.8		mg/Kg		11/22/24 13:25	11/25/24 21:47	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 21:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*148*	*S1+*	*70 - 130*	*11/22/24 13:25*	*11/25/24 21:47*	*1*
o-Terphenyl	*119*		*70 - 130*	*11/22/24 13:25*	*11/25/24 21:47*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**8150**	**F1**	99.6		mg/Kg			11/23/24 09:42	10

Client Sample ID: HA-3

Date Collected: 11/20/24 08:30
Date Received: 11/22/24 12:06
Sample Depth: 1

Lab Sample ID: 880-51418-12
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:09	11/24/24 01:26	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:09	11/24/24 01:26	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:09	11/24/24 01:26	1
m-Xylene & p-Xylene	**0.0250**		0.00398		mg/Kg		11/22/24 16:09	11/24/24 01:26	1
o-Xylene	**0.0523**		0.00199		mg/Kg		11/22/24 16:09	11/24/24 01:26	1
Xylenes, Total	**0.0773**		0.00398		mg/Kg		11/22/24 16:09	11/24/24 01:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*284*	*S1+*	*70 - 130*	*11/22/24 16:09*	*11/24/24 01:26*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-3

Lab Sample ID: 880-51418-12
Matrix: Solid
Date Collected: 11/20/24 08:30
Date Received: 11/22/24 12:06
Sample Depth: 1

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*11/22/24 16:09*	*11/24/24 01:26*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0773**		0.00398		mg/Kg			11/24/24 01:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**62.2**		49.8		mg/Kg			11/25/24 22:03	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	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 22:03	1
Diesel Range Organics (Over C10-C28)	**62.2**		49.8		mg/Kg		11/22/24 13:25	11/25/24 22:03	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 22:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*106*		*70 - 130*	*11/22/24 13:25*	*11/25/24 22:03*	*1*
o-Terphenyl	*83*		*70 - 130*	*11/22/24 13:25*	*11/25/24 22:03*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**510**		10.1		mg/Kg			11/23/24 10:06	1

Client Sample ID: HA-3

Lab Sample ID: 880-51418-13
Matrix: Solid
Date Collected: 11/20/24 08:35
Date Received: 11/22/24 12:06
Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/24/24 01:47	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/24/24 01:47	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/24/24 01:47	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		11/22/24 16:09	11/24/24 01:47	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/24/24 01:47	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		11/22/24 16:09	11/24/24 01:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*11/22/24 16:09*	*11/24/24 01:47*	*1*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*11/22/24 16:09*	*11/24/24 01:47*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			11/24/24 01:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			11/25/24 22:19	1

Eurofins Midland

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-3

Lab Sample ID: 880-51418-13
Matrix: Solid
Date Collected: 11/20/24 08:35
Date Received: 11/22/24 12:06
Sample Depth: 2

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	<49.7	U	49.7		mg/Kg		11/22/24 13:25	11/25/24 22:19	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		11/22/24 13:25	11/25/24 22:19	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		11/22/24 13:25	11/25/24 22:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*89*		*70 - 130*	*11/22/24 13:25*	*11/25/24 22:19*	*1*
o-Terphenyl	*68*	*S1-*	*70 - 130*	*11/22/24 13:25*	*11/25/24 22:19*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**363**		9.98		mg/Kg			11/23/24 10:14	1

Client Sample ID: HA-3

Lab Sample ID: 880-51418-14
Matrix: Solid
Date Collected: 11/20/24 08:40
Date Received: 11/22/24 12:06
Sample Depth: 3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/24/24 02:07	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/24/24 02:07	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/24/24 02:07	1
m-Xylene & p-Xylene	**0.00447**		0.00399		mg/Kg		11/22/24 16:09	11/24/24 02:07	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/24/24 02:07	1
Xylenes, Total	**0.00447**		0.00399		mg/Kg		11/22/24 16:09	11/24/24 02:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*11/22/24 16:09*	*11/24/24 02:07*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*11/22/24 16:09*	*11/24/24 02:07*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.00447**		0.00399		mg/Kg			11/24/24 02:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/25/24 22:35	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	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 22:35	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 22:35	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 22:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*11/22/24 13:25*	*11/25/24 22:35*	*1*
o-Terphenyl	*75*		*70 - 130*	*11/22/24 13:25*	*11/25/24 22:35*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-3
Date Collected: 11/20/24 08:40
Date Received: 11/22/24 12:06
Sample Depth: 3

Lab Sample ID: 880-51418-14
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26.2		10.1		mg/Kg			11/23/24 10:39	1

Client Sample ID: HA-3
Date Collected: 11/20/24 08:45
Date Received: 11/22/24 12:06
Sample Depth: 4

Lab Sample ID: 880-51418-15
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/24/24 02:28	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/24/24 02:28	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/24/24 02:28	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/22/24 16:09	11/24/24 02:28	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/24/24 02:28	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/22/24 16:09	11/24/24 02:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*11/22/24 16:09*	*11/24/24 02:28*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*11/22/24 16:09*	*11/24/24 02:28*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			11/24/24 02:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			11/25/24 22:50	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	<49.7	U	49.7		mg/Kg		11/22/24 13:25	11/25/24 22:50	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		11/22/24 13:25	11/25/24 22:50	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		11/22/24 13:25	11/25/24 22:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*103*		*70 - 130*	*11/22/24 13:25*	*11/25/24 22:50*	*1*
o-Terphenyl	*77*		*70 - 130*	*11/22/24 13:25*	*11/25/24 22:50*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	65.9		9.94		mg/Kg			11/23/24 10:47	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-4

Lab Sample ID: 880-51418-16
Matrix: Solid
Date Collected: 11/20/24 08:50
Date Received: 11/22/24 12:06
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:09	11/24/24 02:48	1
Toluene	**0.00673**		0.00198		mg/Kg		11/22/24 16:09	11/24/24 02:48	1
Ethylbenzene	**0.187**		0.00198		mg/Kg		11/22/24 16:09	11/24/24 02:48	1
m-Xylene & p-Xylene	**0.544**		0.00397		mg/Kg		11/22/24 16:09	11/24/24 02:48	1
o-Xylene	**0.297**		0.00198		mg/Kg		11/22/24 16:09	11/24/24 02:48	1
Xylenes, Total	**0.841**		0.00397		mg/Kg		11/22/24 16:09	11/24/24 02:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*485*	*S1+*	*70 - 130*	*11/22/24 16:09*	*11/24/24 02:48*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*11/22/24 16:09*	*11/24/24 02:48*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**1.03**		0.00397		mg/Kg			11/24/24 02:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**1970**		49.8		mg/Kg			11/25/24 23:07	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	**179**		49.8		mg/Kg		11/22/24 13:25	11/25/24 23:07	1
Diesel Range Organics (Over C10-C28)	**1790**		49.8		mg/Kg		11/22/24 13:25	11/25/24 23:07	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 23:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*115*		*70 - 130*	*11/22/24 13:25*	*11/25/24 23:07*	*1*
o-Terphenyl	*105*		*70 - 130*	*11/22/24 13:25*	*11/25/24 23:07*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1350**		49.6		mg/Kg			11/23/24 10:55	5

Client Sample ID: HA-4

Lab Sample ID: 880-51418-17
Matrix: Solid
Date Collected: 11/20/24 08:55
Date Received: 11/22/24 12:06
Sample Depth: 1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:09	11/24/24 03:09	1
Toluene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:09	11/24/24 03:09	1
Ethylbenzene	**0.00447**		0.00201		mg/Kg		11/22/24 16:09	11/24/24 03:09	1
m-Xylene & p-Xylene	**0.00581**		0.00402		mg/Kg		11/22/24 16:09	11/24/24 03:09	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:09	11/24/24 03:09	1
Xylenes, Total	**0.00581**		0.00402		mg/Kg		11/22/24 16:09	11/24/24 03:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*125*		*70 - 130*	*11/22/24 16:09*	*11/24/24 03:09*	*1*

Eurofins Midland

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-4

Date Collected: 11/20/24 08:55
Date Received: 11/22/24 12:06
Sample Depth: 1

Lab Sample ID: 880-51418-17
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*11/22/24 16:09*	*11/24/24 03:09*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0103**		0.00402		mg/Kg			11/24/24 03:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/25/24 13:49	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	<49.9	U	49.9		mg/Kg		11/22/24 15:51	11/25/24 13:49	1
Diesel Range Organics (Over C10-C28)	<49.9	U F1	49.9		mg/Kg		11/22/24 15:51	11/25/24 13:49	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 15:51	11/25/24 13:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*81*		*70 - 130*	*11/22/24 15:51*	*11/25/24 13:49*	*1*
o-Terphenyl	*73*		*70 - 130*	*11/22/24 15:51*	*11/25/24 13:49*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**617**		10.0		mg/Kg			11/23/24 11:03	1

Client Sample ID: HA-4

Date Collected: 11/20/24 09:00
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-18
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:09	11/24/24 03:29	1
Toluene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:09	11/24/24 03:29	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:09	11/24/24 03:29	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		11/22/24 16:09	11/24/24 03:29	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:09	11/24/24 03:29	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		11/22/24 16:09	11/24/24 03:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*11/22/24 16:09*	*11/24/24 03:29*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*11/22/24 16:09*	*11/24/24 03:29*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			11/24/24 03:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			11/25/24 17:23	1

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-4

Date Collected: 11/20/24 09:00
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-18
Matrix: Solid

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	<49.7	U	49.7		mg/Kg		11/22/24 16:33	11/25/24 17:23	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		11/22/24 16:33	11/25/24 17:23	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		11/22/24 16:33	11/25/24 17:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*81*		*70 - 130*	*11/22/24 16:33*	*11/25/24 17:23*	*1*
o-Terphenyl	*87*		*70 - 130*	*11/22/24 16:33*	*11/25/24 17:23*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**83.7**		10.0		mg/Kg			11/23/24 11:12	1

Client Sample ID: HA-4

Date Collected: 11/20/24 09:05
Date Received: 11/22/24 12:06
Sample Depth: 3

Lab Sample ID: 880-51418-19
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:09	11/24/24 03:50	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:09	11/24/24 03:50	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:09	11/24/24 03:50	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/22/24 16:09	11/24/24 03:50	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:09	11/24/24 03:50	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/22/24 16:09	11/24/24 03:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*11/22/24 16:09*	*11/24/24 03:50*	*1*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*	*11/22/24 16:09*	*11/24/24 03:50*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/24/24 03:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/25/24 17:37	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	<49.8	U	49.8		mg/Kg		11/22/24 16:33	11/25/24 17:37	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/22/24 16:33	11/25/24 17:37	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 16:33	11/25/24 17:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*80*		*70 - 130*	*11/22/24 16:33*	*11/25/24 17:37*	*1*
o-Terphenyl	*85*		*70 - 130*	*11/22/24 16:33*	*11/25/24 17:37*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-4
Date Collected: 11/20/24 09:05
Date Received: 11/22/24 12:06
Sample Depth: 3

Lab Sample ID: 880-51418-19
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	131		9.98		mg/Kg			11/23/24 11:20	1

Client Sample ID: HA-4
Date Collected: 11/20/24 09:10
Date Received: 11/22/24 12:06
Sample Depth: 4

Lab Sample ID: 880-51418-20
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:09	11/24/24 04:10	1
Toluene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:09	11/24/24 04:10	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:09	11/24/24 04:10	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		11/22/24 16:09	11/24/24 04:10	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:09	11/24/24 04:10	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		11/22/24 16:09	11/24/24 04:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*	*11/22/24 16:09*	*11/24/24 04:10*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*11/22/24 16:09*	*11/24/24 04:10*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			11/24/24 04:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/25/24 17:52	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	<49.9	U	49.9		mg/Kg		11/22/24 16:33	11/25/24 17:52	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/22/24 16:33	11/25/24 17:52	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 16:33	11/25/24 17:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*83*		*70 - 130*	*11/22/24 16:33*	*11/25/24 17:52*	*1*
o-Terphenyl	*87*		*70 - 130*	*11/22/24 16:33*	*11/25/24 17:52*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	238		10.1		mg/Kg			11/23/24 11:28	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-5
Date Collected: 11/20/24 09:15
Date Received: 11/22/24 12:06
Sample Depth: 0.5

Lab Sample ID: 880-51418-21
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U F1	0.00198		mg/Kg		11/22/24 16:15	11/23/24 20:47	1
Toluene	**0.102**	**F1**	0.00198		mg/Kg		11/22/24 16:15	11/23/24 20:47	1
Ethylbenzene	**0.0393**	**F1**	0.00198		mg/Kg		11/22/24 16:15	11/23/24 20:47	1
m-Xylene & p-Xylene	**4.37**		0.100		mg/Kg		11/25/24 11:29	11/25/24 20:00	25
o-Xylene	**0.264**	**F2 F1**	0.00198		mg/Kg		11/22/24 16:15	11/23/24 20:47	1
Xylenes, Total	**5.23**		0.100		mg/Kg		11/25/24 11:29	11/25/24 20:00	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*177*	*S1+*	*70 - 130*	*11/22/24 16:15*	*11/23/24 20:47*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*11/22/24 16:15*	*11/23/24 20:47*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**4.78**		0.100		mg/Kg			11/25/24 20:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**1820**		50.0		mg/Kg			11/25/24 18:06	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	**361**		50.0		mg/Kg		11/22/24 16:33	11/25/24 18:06	1
Diesel Range Organics (Over C10-C28)	**1460**		50.0		mg/Kg		11/22/24 16:33	11/25/24 18:06	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 16:33	11/25/24 18:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*110*		*70 - 130*	*11/22/24 16:33*	*11/25/24 18:06*	*1*
o-Terphenyl	*113*		*70 - 130*	*11/22/24 16:33*	*11/25/24 18:06*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5090**	**F1**	101		mg/Kg			11/23/24 01:41	10

Client Sample ID: HA-5
Date Collected: 11/20/24 09:20
Date Received: 11/22/24 12:06
Sample Depth: 1

Lab Sample ID: 880-51418-22
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:15	11/23/24 21:14	1
Toluene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:15	11/23/24 21:14	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:15	11/23/24 21:14	1
m-Xylene & p-Xylene	**0.0940**		0.00397		mg/Kg		11/22/24 16:15	11/23/24 21:14	1
o-Xylene	**0.0197**		0.00198		mg/Kg		11/22/24 16:15	11/23/24 21:14	1
Xylenes, Total	**0.114**		0.00397		mg/Kg		11/22/24 16:15	11/23/24 21:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*126*		*70 - 130*	*11/22/24 16:15*	*11/23/24 21:14*	*1*

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-5
Date Collected: 11/20/24 09:20
Date Received: 11/22/24 12:06
Sample Depth: 1

Lab Sample ID: 880-51418-22
Matrix: Solid

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*81*		*70 - 130*	*11/22/24 16:15*	*11/23/24 21:14*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.114**		0.00397		mg/Kg			11/23/24 21:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**152**		49.8		mg/Kg			11/25/24 18:23	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	<49.8	U	49.8		mg/Kg		11/22/24 16:33	11/25/24 18:23	1
Diesel Range Organics (Over C10-C28)	**152**		49.8		mg/Kg		11/22/24 16:33	11/25/24 18:23	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 16:33	11/25/24 18:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*79*		*70 - 130*	*11/22/24 16:33*	*11/25/24 18:23*	*1*
o-Terphenyl	*85*		*70 - 130*	*11/22/24 16:33*	*11/25/24 18:23*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**819**		10.1		mg/Kg			11/23/24 02:01	1

Client Sample ID: HA-5
Date Collected: 11/20/24 09:25
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-23
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/23/24 21:40	1
Toluene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/23/24 21:40	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/23/24 21:40	1
m-Xylene & p-Xylene	**0.00653**		0.00403		mg/Kg		11/22/24 16:15	11/23/24 21:40	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/23/24 21:40	1
Xylenes, Total	**0.00653**		0.00403		mg/Kg		11/22/24 16:15	11/23/24 21:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*127*		*70 - 130*	*11/22/24 16:15*	*11/23/24 21:40*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*11/22/24 16:15*	*11/23/24 21:40*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.00653**		0.00403		mg/Kg			11/23/24 21:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			11/25/24 18:37	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-5

Date Collected: 11/20/24 09:25
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-23
Matrix: Solid

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	<49.7	U	49.7		mg/Kg		11/22/24 16:33	11/25/24 18:37	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		11/22/24 16:33	11/25/24 18:37	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		11/22/24 16:33	11/25/24 18:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*82*		*70 - 130*	*11/22/24 16:33*	*11/25/24 18:37*	*1*
o-Terphenyl	*85*		*70 - 130*	*11/22/24 16:33*	*11/25/24 18:37*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**93.7**		10.0		mg/Kg			11/23/24 02:08	1

Client Sample ID: HA-5

Date Collected: 11/20/24 09:30
Date Received: 11/22/24 12:06
Sample Depth: 3

Lab Sample ID: 880-51418-24
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/23/24 22:07	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/23/24 22:07	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/23/24 22:07	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/22/24 16:15	11/23/24 22:07	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/23/24 22:07	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/22/24 16:15	11/23/24 22:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*322*	*S1+*	*70 - 130*	*11/22/24 16:15*	*11/23/24 22:07*	*1*
1,4-Difluorobenzene (Surr)	*49*	*S1-*	*70 - 130*	*11/22/24 16:15*	*11/23/24 22:07*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/23/24 22:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/25/24 18:53	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	<50.0	U	50.0		mg/Kg		11/22/24 16:33	11/25/24 18:53	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 16:33	11/25/24 18:53	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 16:33	11/25/24 18:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*76*		*70 - 130*	*11/22/24 16:33*	*11/25/24 18:53*	*1*
o-Terphenyl	*78*		*70 - 130*	*11/22/24 16:33*	*11/25/24 18:53*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-5

Lab Sample ID: 880-51418-24
Matrix: Solid
Date Collected: 11/20/24 09:30
Date Received: 11/22/24 12:06
Sample Depth: 3

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	110		10.0		mg/Kg			11/23/24 02:14	1

Client Sample ID: HA-6

Lab Sample ID: 880-51418-25
Matrix: Solid
Date Collected: 11/20/24 09:35
Date Received: 11/22/24 12:06
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:15	11/23/24 22:33	1
Toluene	0.114		0.00198		mg/Kg		11/22/24 16:15	11/23/24 22:33	1
Ethylbenzene	0.0417		0.00198		mg/Kg		11/22/24 16:15	11/23/24 22:33	1
m-Xylene & p-Xylene	12.6		0.101		mg/Kg		11/25/24 11:29	11/25/24 20:21	25
o-Xylene	0.359		0.00198		mg/Kg		11/22/24 16:15	11/23/24 22:33	1
Xylenes, Total	15.7		0.101		mg/Kg		11/25/24 11:29	11/25/24 20:21	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*11/22/24 16:15*	*11/23/24 22:33*	*1*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*11/22/24 16:15*	*11/23/24 22:33*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	13.1		0.101		mg/Kg			11/25/24 20:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	4420		49.8		mg/Kg			11/25/24 19:07	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	1210		49.8		mg/Kg		11/22/24 16:33	11/25/24 19:07	1
Diesel Range Organics (Over C10-C28)	3210		49.8		mg/Kg		11/22/24 16:33	11/25/24 19:07	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 16:33	11/25/24 19:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*129*		*70 - 130*	*11/22/24 16:33*	*11/25/24 19:07*	*1*
o-Terphenyl	*138*	*S1+*	*70 - 130*	*11/22/24 16:33*	*11/25/24 19:07*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3020		49.5		mg/Kg			11/23/24 02:21	5

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-6

Date Collected: 11/20/24 09:40
Date Received: 11/22/24 12:06
Sample Depth: 1

Lab Sample ID: 880-51418-26
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:15	11/23/24 23:00	1
Toluene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:15	11/23/24 23:00	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:15	11/23/24 23:00	1
m-Xylene & p-Xylene	**0.127**		0.00402		mg/Kg		11/22/24 16:15	11/23/24 23:00	1
o-Xylene	**0.0207**		0.00201		mg/Kg		11/22/24 16:15	11/23/24 23:00	1
Xylenes, Total	**0.148**		0.00402		mg/Kg		11/22/24 16:15	11/23/24 23:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*68*	*S1-*	*70 - 130*	*11/22/24 16:15*	*11/23/24 23:00*	*1*
1,4-Difluorobenzene (Surr)	*63*	*S1-*	*70 - 130*	*11/22/24 16:15*	*11/23/24 23:00*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.148**		0.00402		mg/Kg			11/23/24 23:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**103**		49.8		mg/Kg			11/25/24 19:24	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	<49.8	U	49.8		mg/Kg		11/22/24 16:33	11/25/24 19:24	1
Diesel Range Organics (Over C10-C28)	**103**		49.8		mg/Kg		11/22/24 16:33	11/25/24 19:24	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 16:33	11/25/24 19:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*87*		*70 - 130*	*11/22/24 16:33*	*11/25/24 19:24*	*1*
o-Terphenyl	*93*		*70 - 130*	*11/22/24 16:33*	*11/25/24 19:24*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**658**		9.90		mg/Kg			11/23/24 02:41	1

Client Sample ID: HA-6

Date Collected: 11/20/24 09:45
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-27
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/23/24 23:26	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/23/24 23:26	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/23/24 23:26	1
m-Xylene & p-Xylene	**0.0123**		0.00401		mg/Kg		11/22/24 16:15	11/23/24 23:26	1
o-Xylene	**0.00254**		0.00200		mg/Kg		11/22/24 16:15	11/23/24 23:26	1
Xylenes, Total	**0.0148**		0.00401		mg/Kg		11/22/24 16:15	11/23/24 23:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*	*11/22/24 16:15*	*11/23/24 23:26*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-6

Lab Sample ID: 880-51418-27
Matrix: Solid
Date Collected: 11/20/24 09:45
Date Received: 11/22/24 12:06
Sample Depth: 2

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*77*		*70 - 130*	*11/22/24 16:15*	*11/23/24 23:26*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0148**		0.00401		mg/Kg			11/23/24 23:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/25/24 17:06	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	<50.0	U	50.0		mg/Kg		11/22/24 15:51	11/25/24 17:06	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 15:51	11/25/24 17:06	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 15:51	11/25/24 17:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*76*		*70 - 130*	*11/22/24 15:51*	*11/25/24 17:06*	*1*
o-Terphenyl	*64*	*S1-*	*70 - 130*	*11/22/24 15:51*	*11/25/24 17:06*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**88.3**		10.1		mg/Kg			11/23/24 02:47	1

Client Sample ID: HA-6

Lab Sample ID: 880-51418-28
Matrix: Solid
Date Collected: 11/20/24 09:50
Date Received: 11/22/24 12:06
Sample Depth: 3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/23/24 23:53	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/23/24 23:53	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/23/24 23:53	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		11/22/24 16:15	11/23/24 23:53	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/23/24 23:53	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		11/22/24 16:15	11/23/24 23:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*	*11/22/24 16:15*	*11/23/24 23:53*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*11/22/24 16:15*	*11/23/24 23:53*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			11/23/24 23:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			11/25/24 17:23	1

Eurofins Midland

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-6

Lab Sample ID: 880-51418-28
Matrix: Solid
Date Collected: 11/20/24 09:50
Date Received: 11/22/24 12:06
Sample Depth: 3

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	<49.7	U	49.7		mg/Kg		11/22/24 15:51	11/25/24 17:23	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		11/22/24 15:51	11/25/24 17:23	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		11/22/24 15:51	11/25/24 17:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*82*		*70 - 130*	*11/22/24 15:51*	*11/25/24 17:23*	*1*
o-Terphenyl	*70*		*70 - 130*	*11/22/24 15:51*	*11/25/24 17:23*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**173**		9.98		mg/Kg			11/23/24 02:54	1

Client Sample ID: HA-7

Lab Sample ID: 880-51418-29
Matrix: Solid
Date Collected: 11/20/24 09:55
Date Received: 11/22/24 12:06
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/24/24 00:19	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/24/24 00:19	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/24/24 00:19	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/22/24 16:15	11/24/24 00:19	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/24/24 00:19	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/22/24 16:15	11/24/24 00:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*128*		*70 - 130*	*11/22/24 16:15*	*11/24/24 00:19*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*11/22/24 16:15*	*11/24/24 00:19*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/24/24 00:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**418**		49.9		mg/Kg			11/25/24 17:37	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	<49.9	U	49.9		mg/Kg		11/22/24 15:51	11/25/24 17:37	1
Diesel Range Organics (Over C10-C28)	**418**		49.9		mg/Kg		11/22/24 15:51	11/25/24 17:37	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 15:51	11/25/24 17:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*76*		*70 - 130*	*11/22/24 15:51*	*11/25/24 17:37*	*1*
o-Terphenyl	*73*		*70 - 130*	*11/22/24 15:51*	*11/25/24 17:37*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-7
Date Collected: 11/20/24 09:55
Date Received: 11/22/24 12:06
Sample Depth: 0.5

Lab Sample ID: 880-51418-29
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3280		49.9		mg/Kg			11/23/24 03:01	5

Client Sample ID: HA-7
Date Collected: 11/20/24 10:00
Date Received: 11/22/24 12:06
Sample Depth: 1

Lab Sample ID: 880-51418-30
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/24/24 00:46	1
Toluene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/24/24 00:46	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/24/24 00:46	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		11/22/24 16:15	11/24/24 00:46	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/24/24 00:46	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		11/22/24 16:15	11/24/24 00:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*146*	*S1+*	*70 - 130*	*11/22/24 16:15*	*11/24/24 00:46*	*1*
1,4-Difluorobenzene (Surr)	*76*		*70 - 130*	*11/22/24 16:15*	*11/24/24 00:46*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404		mg/Kg			11/24/24 00:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/25/24 17:52	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	<49.8	U	49.8		mg/Kg		11/22/24 15:51	11/25/24 17:52	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/22/24 15:51	11/25/24 17:52	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 15:51	11/25/24 17:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*76*		*70 - 130*	*11/22/24 15:51*	*11/25/24 17:52*	*1*
o-Terphenyl	*67*	*S1-*	*70 - 130*	*11/22/24 15:51*	*11/25/24 17:52*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	395		10.0		mg/Kg			11/25/24 09:26	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-7

Lab Sample ID: 880-51418-31
Matrix: Solid
Date Collected: 11/20/24 10:05
Date Received: 11/22/24 12:06
Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/24/24 02:32	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/24/24 02:32	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/24/24 02:32	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		11/22/24 16:15	11/24/24 02:32	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/24/24 02:32	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		11/22/24 16:15	11/24/24 02:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*126*		*70 - 130*	*11/22/24 16:15*	*11/24/24 02:32*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*11/22/24 16:15*	*11/24/24 02:32*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			11/24/24 02:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/25/24 18:06	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	<49.9	U	49.9		mg/Kg		11/22/24 15:51	11/25/24 18:06	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/22/24 15:51	11/25/24 18:06	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 15:51	11/25/24 18:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*11/22/24 15:51*	*11/25/24 18:06*	*1*
o-Terphenyl	*78*		*70 - 130*	*11/22/24 15:51*	*11/25/24 18:06*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**43.5**		10.1		mg/Kg			11/23/24 03:09	1

Client Sample ID: HA-8

Lab Sample ID: 880-51418-32
Matrix: Solid
Date Collected: 11/20/24 10:10
Date Received: 11/22/24 12:06
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/24/24 02:59	1
Toluene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/24/24 02:59	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/24/24 02:59	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		11/22/24 16:15	11/24/24 02:59	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/24/24 02:59	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		11/22/24 16:15	11/24/24 02:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*124*		*70 - 130*	*11/22/24 16:15*	*11/24/24 02:59*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-8

Lab Sample ID: 880-51418-32
Matrix: Solid
Date Collected: 11/20/24 10:10
Date Received: 11/22/24 12:06
Sample Depth: 0.5

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*11/22/24 16:15*	*11/24/24 02:59*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404		mg/Kg			11/24/24 02:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**69.0**		50.0		mg/Kg			11/25/24 18:23	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	<50.0	U	50.0		mg/Kg		11/22/24 15:51	11/25/24 18:23	1
Diesel Range Organics (Over C10-C28)	**69.0**		50.0		mg/Kg		11/22/24 15:51	11/25/24 18:23	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 15:51	11/25/24 18:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*77*		*70 - 130*	*11/22/24 15:51*	*11/25/24 18:23*	*1*
o-Terphenyl	*71*		*70 - 130*	*11/22/24 15:51*	*11/25/24 18:23*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**55.3**		10.0		mg/Kg			11/23/24 03:29	1

Client Sample ID: HA-8

Lab Sample ID: 880-51418-33
Matrix: Solid
Date Collected: 11/20/24 10:15
Date Received: 11/22/24 12:06
Sample Depth: 1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/24/24 03:25	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/24/24 03:25	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/24/24 03:25	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/22/24 16:15	11/24/24 03:25	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/24/24 03:25	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/22/24 16:15	11/24/24 03:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*	*11/22/24 16:15*	*11/24/24 03:25*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*11/22/24 16:15*	*11/24/24 03:25*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/24/24 03:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/25/24 18:37	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-8

Lab Sample ID: 880-51418-33
Matrix: Solid
Date Collected: 11/20/24 10:15
Date Received: 11/22/24 12:06
Sample Depth: 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	<49.8	U	49.8		mg/Kg		11/22/24 15:51	11/25/24 18:37	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/22/24 15:51	11/25/24 18:37	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 15:51	11/25/24 18:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*80*		*70 - 130*	*11/22/24 15:51*	*11/25/24 18:37*	*1*
o-Terphenyl	*69*	*S1-*	*70 - 130*	*11/22/24 15:51*	*11/25/24 18:37*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**411**		9.92		mg/Kg			11/23/24 03:36	1

Client Sample ID: HA-8

Lab Sample ID: 880-51418-34
Matrix: Solid
Date Collected: 11/20/24 10:20
Date Received: 11/22/24 12:06
Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/24/24 03:52	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/24/24 03:52	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/24/24 03:52	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		11/22/24 16:15	11/24/24 03:52	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/24/24 03:52	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		11/22/24 16:15	11/24/24 03:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*122*		*70 - 130*	*11/22/24 16:15*	*11/24/24 03:52*	*1*
1,4-Difluorobenzene (Surr)	*74*		*70 - 130*	*11/22/24 16:15*	*11/24/24 03:52*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			11/24/24 03:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/25/24 18:53	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	<49.8	U	49.8		mg/Kg		11/22/24 15:51	11/25/24 18:53	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/22/24 15:51	11/25/24 18:53	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 15:51	11/25/24 18:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*83*		*70 - 130*	*11/22/24 15:51*	*11/25/24 18:53*	*1*
o-Terphenyl	*70*		*70 - 130*	*11/22/24 15:51*	*11/25/24 18:53*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-8
Date Collected: 11/20/24 10:20
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-34
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	42.2		10.1		mg/Kg			11/23/24 03:56	1

Client Sample ID: HA-8
Date Collected: 11/20/24 10:25
Date Received: 11/22/24 12:06
Sample Depth: 3

Lab Sample ID: 880-51418-35
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/24/24 04:18	1
Toluene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/24/24 04:18	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/24/24 04:18	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		11/22/24 16:15	11/24/24 04:18	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/24/24 04:18	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		11/22/24 16:15	11/24/24 04:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*124*		*70 - 130*	*11/22/24 16:15*	*11/24/24 04:18*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*11/22/24 16:15*	*11/24/24 04:18*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404		mg/Kg			11/24/24 04:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/25/24 19:07	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	<50.0	U	50.0		mg/Kg		11/22/24 15:51	11/25/24 19:07	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 15:51	11/25/24 19:07	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 15:51	11/25/24 19:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*79*		*70 - 130*	*11/22/24 15:51*	*11/25/24 19:07*	*1*
o-Terphenyl	*68*	*S1-*	*70 - 130*	*11/22/24 15:51*	*11/25/24 19:07*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	202		9.94		mg/Kg			11/23/24 04:03	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-9

Date Collected: 11/20/24 10:30
Date Received: 11/22/24 12:06
Sample Depth: 0.5

Lab Sample ID: 880-51418-36
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:15	11/24/24 04:44	1
Toluene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:15	11/24/24 04:44	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:15	11/24/24 04:44	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		11/22/24 16:15	11/24/24 04:44	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:15	11/24/24 04:44	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		11/22/24 16:15	11/24/24 04:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*	*11/22/24 16:15*	*11/24/24 04:44*	*1*
1,4-Difluorobenzene (Surr)	*75*		*70 - 130*	*11/22/24 16:15*	*11/24/24 04:44*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			11/24/24 04:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**104**		49.8		mg/Kg			11/25/24 19:24	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	<49.8	U	49.8		mg/Kg		11/22/24 15:51	11/25/24 19:24	1
Diesel Range Organics (Over C10-C28)	**104**		49.8		mg/Kg		11/22/24 15:51	11/25/24 19:24	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 15:51	11/25/24 19:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*82*		*70 - 130*	*11/22/24 15:51*	*11/25/24 19:24*	*1*
o-Terphenyl	*74*		*70 - 130*	*11/22/24 15:51*	*11/25/24 19:24*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2320**		49.6		mg/Kg			11/23/24 04:09	5

Client Sample ID: HA-9

Date Collected: 11/20/24 10:35
Date Received: 11/22/24 12:06
Sample Depth: 1

Lab Sample ID: 880-51418-37
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/24/24 05:11	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/24/24 05:11	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/24/24 05:11	1
m-Xylene & p-Xylene	**0.0119**		0.00398		mg/Kg		11/22/24 16:15	11/24/24 05:11	1
o-Xylene	**0.00356**		0.00199		mg/Kg		11/22/24 16:15	11/24/24 05:11	1
Xylenes, Total	**0.0155**		0.00398		mg/Kg		11/22/24 16:15	11/24/24 05:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*	*11/22/24 16:15*	*11/24/24 05:11*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-9

Date Collected: 11/20/24 10:35
Date Received: 11/22/24 12:06
Sample Depth: 1

Lab Sample ID: 880-51418-37

Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*	*11/22/24 16:15*	*11/24/24 05:11*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0155**		0.00398		mg/Kg			11/24/24 05:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/25/24 17:13	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	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 17:13	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 17:13	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 17:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*98*		*70 - 130*	*11/22/24 15:54*	*11/25/24 17:13*	*1*
o-Terphenyl	*88*		*70 - 130*	*11/22/24 15:54*	*11/25/24 17:13*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**400**		10.0		mg/Kg			11/23/24 04:16	1

Client Sample ID: HA-9

Date Collected: 11/20/24 10:40
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-38

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/24/24 05:37	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/24/24 05:37	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/24/24 05:37	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		11/22/24 16:15	11/24/24 05:37	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/24/24 05:37	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		11/22/24 16:15	11/24/24 05:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*130*		*70 - 130*	*11/22/24 16:15*	*11/24/24 05:37*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*11/22/24 16:15*	*11/24/24 05:37*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			11/24/24 05:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/25/24 18:02	1

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-9

Date Collected: 11/20/24 10:40
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-38
Matrix: Solid

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	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 18:02	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 18:02	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 18:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*104*		*70 - 130*	*11/22/24 15:54*	*11/25/24 18:02*	*1*
o-Terphenyl	*95*		*70 - 130*	*11/22/24 15:54*	*11/25/24 18:02*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**113**		10.1		mg/Kg			11/23/24 04:22	1

Client Sample ID: HA-9

Date Collected: 11/20/24 10:45
Date Received: 11/22/24 12:06
Sample Depth: 3

Lab Sample ID: 880-51418-39
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/24/24 06:04	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/24/24 06:04	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/24/24 06:04	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/22/24 16:15	11/24/24 06:04	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:15	11/24/24 06:04	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/22/24 16:15	11/24/24 06:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*123*		*70 - 130*	*11/22/24 16:15*	*11/24/24 06:04*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*11/22/24 16:15*	*11/24/24 06:04*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/24/24 06:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/25/24 18:19	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	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 18:19	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 18:19	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 18:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*11/22/24 15:54*	*11/25/24 18:19*	*1*
o-Terphenyl	*101*		*70 - 130*	*11/22/24 15:54*	*11/25/24 18:19*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-9

Lab Sample ID: 880-51418-39
Matrix: Solid
Date Collected: 11/20/24 10:45
Date Received: 11/22/24 12:06
Sample Depth: 3

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	121		10.1		mg/Kg			11/23/24 04:29	1

Client Sample ID: HA-10

Lab Sample ID: 880-51418-40
Matrix: Solid
Date Collected: 11/20/24 10:50
Date Received: 11/22/24 12:06
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/24/24 06:30	1
Toluene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/24/24 06:30	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/24/24 06:30	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		11/22/24 16:15	11/24/24 06:30	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:15	11/24/24 06:30	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		11/22/24 16:15	11/24/24 06:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*146*	*S1+*	*70 - 130*	*11/22/24 16:15*	*11/24/24 06:30*	*1*
1,4-Difluorobenzene (Surr)	*77*		*70 - 130*	*11/22/24 16:15*	*11/24/24 06:30*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			11/24/24 06:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/25/24 18:34	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	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 18:34	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 18:34	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 18:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*105*		*70 - 130*	*11/22/24 15:54*	*11/25/24 18:34*	*1*
o-Terphenyl	*99*		*70 - 130*	*11/22/24 15:54*	*11/25/24 18:34*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3390		99.6		mg/Kg			11/23/24 04:36	10

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-10

Date Collected: 11/20/24 10:55
Date Received: 11/22/24 12:06
Sample Depth: 1

Lab Sample ID: 880-51418-41
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U F2 F1	0.00199		mg/Kg		11/22/24 16:19	11/24/24 07:14	1
Toluene	<0.00199	U F2 F1	0.00199		mg/Kg		11/22/24 16:19	11/24/24 07:14	1
Ethylbenzene	<0.00199	U F2 F1	0.00199		mg/Kg		11/22/24 16:19	11/24/24 07:14	1
m-Xylene & p-Xylene	<0.00398	U F2 F1	0.00398		mg/Kg		11/22/24 16:19	11/24/24 07:14	1
o-Xylene	<0.00199	U F2 F1	0.00199		mg/Kg		11/22/24 16:19	11/24/24 07:14	1
Xylenes, Total	<0.00398	U F2 F1	0.00398		mg/Kg		11/22/24 16:19	11/24/24 07:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*132*	*S1+*	*70 - 130*	*11/22/24 16:19*	*11/24/24 07:14*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*11/22/24 16:19*	*11/24/24 07:14*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/24/24 07:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/25/24 18:51	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	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 18:51	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 18:51	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 18:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*104*		*70 - 130*	*11/22/24 15:54*	*11/25/24 18:51*	*1*
o-Terphenyl	*95*		*70 - 130*	*11/22/24 15:54*	*11/25/24 18:51*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**843**	**F1**	9.94		mg/Kg			11/25/24 17:47	1

Client Sample ID: HA-10

Date Collected: 11/20/24 11:00
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-42
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:19	11/24/24 07:35	1
Toluene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:19	11/24/24 07:35	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:19	11/24/24 07:35	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		11/22/24 16:19	11/24/24 07:35	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:19	11/24/24 07:35	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		11/22/24 16:19	11/24/24 07:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*136*	*S1+*	*70 - 130*	*11/22/24 16:19*	*11/24/24 07:35*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-10

Date Collected: 11/20/24 11:00
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-42
Matrix: Solid

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*11/22/24 16:19*	*11/24/24 07:35*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404		mg/Kg			11/24/24 07:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/25/24 19:07	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	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 19:07	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 19:07	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 19:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*103*		*70 - 130*	*11/22/24 15:54*	*11/25/24 19:07*	*1*
o-Terphenyl	*92*		*70 - 130*	*11/22/24 15:54*	*11/25/24 19:07*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**176**		9.98		mg/Kg			11/25/24 18:12	1

Client Sample ID: HA-10

Date Collected: 11/20/24 11:05
Date Received: 11/22/24 12:06
Sample Depth: 3

Lab Sample ID: 880-51418-43
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:19	11/24/24 07:55	1
Toluene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:19	11/24/24 07:55	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:19	11/24/24 07:55	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		11/22/24 16:19	11/24/24 07:55	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:19	11/24/24 07:55	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		11/22/24 16:19	11/24/24 07:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*69*	*S1-*	*70 - 130*	*11/22/24 16:19*	*11/24/24 07:55*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*11/22/24 16:19*	*11/24/24 07:55*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			11/24/24 07:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/25/24 19:24	1

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-10

Date Collected: 11/20/24 11:05
Date Received: 11/22/24 12:06
Sample Depth: 3

Lab Sample ID: 880-51418-43
Matrix: Solid

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	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 19:24	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 19:24	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 19:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*100*		*70 - 130*	*11/22/24 15:54*	*11/25/24 19:24*	*1*
o-Terphenyl	*91*		*70 - 130*	*11/22/24 15:54*	*11/25/24 19:24*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**209**		10.0		mg/Kg			11/25/24 18:20	1

Client Sample ID: HA-10

Date Collected: 11/20/24 11:10
Date Received: 11/22/24 12:06
Sample Depth: 4

Lab Sample ID: 880-51418-44
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:19	11/24/24 08:16	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:19	11/24/24 08:16	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:19	11/24/24 08:16	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/22/24 16:19	11/24/24 08:16	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:19	11/24/24 08:16	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/22/24 16:19	11/24/24 08:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*136*	*S1+*	*70 - 130*	*11/22/24 16:19*	*11/24/24 08:16*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*11/22/24 16:19*	*11/24/24 08:16*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/24/24 08:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/25/24 19:39	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	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 19:39	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 19:39	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 19:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*111*		*70 - 130*	*11/22/24 15:54*	*11/25/24 19:39*	*1*
o-Terphenyl	*102*		*70 - 130*	*11/22/24 15:54*	*11/25/24 19:39*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-10

Lab Sample ID: 880-51418-44
Matrix: Solid
Date Collected: 11/20/24 11:10
Date Received: 11/22/24 12:06
Sample Depth: 4

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**316**		9.96		mg/Kg			11/25/24 18:28	1

Client Sample ID: HA-11

Lab Sample ID: 880-51418-45
Matrix: Solid
Date Collected: 11/20/24 11:15
Date Received: 11/22/24 12:06
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0397	U	0.0397		mg/Kg		11/25/24 11:29	11/25/24 20:41	20
Toluene	**0.346**		0.0397		mg/Kg		11/25/24 11:29	11/25/24 20:41	20
Ethylbenzene	**0.289**		0.0397		mg/Kg		11/25/24 11:29	11/25/24 20:41	20
m-Xylene & p-Xylene	**7.56**		0.0794		mg/Kg		11/25/24 11:29	11/25/24 20:41	20
o-Xylene	**1.50**		0.0397		mg/Kg		11/25/24 11:29	11/25/24 20:41	20
Xylenes, Total	**9.06**		0.0794		mg/Kg		11/25/24 11:29	11/25/24 20:41	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*260*	*S1+*	*70 - 130*	*11/25/24 11:29*	*11/25/24 20:41*	*20*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*11/25/24 11:29*	*11/25/24 20:41*	*20*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**9.70**		0.0794		mg/Kg			11/25/24 20:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**3020**		50.0		mg/Kg			11/25/24 19:56	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	**605**		50.0		mg/Kg		11/22/24 15:54	11/25/24 19:56	1
Diesel Range Organics (Over C10-C28)	**2410**		50.0		mg/Kg		11/22/24 15:54	11/25/24 19:56	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*147*	*S1+*	*70 - 130*	*11/22/24 15:54*	*11/25/24 19:56*	*1*
o-Terphenyl	*134*	*S1+*	*70 - 130*	*11/22/24 15:54*	*11/25/24 19:56*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3490**		49.8		mg/Kg			11/25/24 18:36	5

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-11

Date Collected: 11/20/24 11:20
Date Received: 11/22/24 12:06
Sample Depth: 1

Lab Sample ID: 880-51418-46
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:19	11/24/24 08:56	1
Toluene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:19	11/24/24 08:56	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:19	11/24/24 08:56	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		11/22/24 16:19	11/24/24 08:56	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:19	11/24/24 08:56	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		11/22/24 16:19	11/24/24 08:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*146*	*S1+*	*70 - 130*	*11/22/24 16:19*	*11/24/24 08:56*	*1*
1,4-Difluorobenzene (Surr)	*80*		*70 - 130*	*11/22/24 16:19*	*11/24/24 08:56*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404		mg/Kg			11/24/24 08:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/25/24 20:12	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	<49.8	U	49.8		mg/Kg		11/22/24 15:54	11/25/24 20:12	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/22/24 15:54	11/25/24 20:12	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 15:54	11/25/24 20:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*105*		*70 - 130*	*11/22/24 15:54*	*11/25/24 20:12*	*1*
o-Terphenyl	*99*		*70 - 130*	*11/22/24 15:54*	*11/25/24 20:12*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**4580**		50.2		mg/Kg			11/25/24 19:01	5

Client Sample ID: HA-11

Date Collected: 11/20/24 11:25
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-47
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:19	11/24/24 09:17	1
Toluene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:19	11/24/24 09:17	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:19	11/24/24 09:17	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		11/22/24 16:19	11/24/24 09:17	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:19	11/24/24 09:17	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		11/22/24 16:19	11/24/24 09:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*142*	*S1+*	*70 - 130*	*11/22/24 16:19*	*11/24/24 09:17*	*1*

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-11

Date Collected: 11/20/24 11:25
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-47
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*11/22/24 16:19*	*11/24/24 09:17*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			11/24/24 09:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/25/24 20:44	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	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 20:44	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 20:44	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 20:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*102*		*70 - 130*	*11/22/24 15:54*	*11/25/24 20:44*	*1*
o-Terphenyl	*92*		*70 - 130*	*11/22/24 15:54*	*11/25/24 20:44*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**470**		10.0		mg/Kg			11/25/24 19:09	1

Client Sample ID: HA-11

Date Collected: 11/20/24 11:30
Date Received: 11/22/24 12:06
Sample Depth: 3

Lab Sample ID: 880-51418-48
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:19	11/24/24 09:37	1
Toluene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:19	11/24/24 09:37	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:19	11/24/24 09:37	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		11/22/24 16:19	11/24/24 09:37	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:19	11/24/24 09:37	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		11/22/24 16:19	11/24/24 09:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*135*	*S1+*	*70 - 130*	*11/22/24 16:19*	*11/24/24 09:37*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*11/22/24 16:19*	*11/24/24 09:37*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			11/24/24 09:37	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/25/24 21:00	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-11

Date Collected: 11/20/24 11:30
Date Received: 11/22/24 12:06
Sample Depth: 3

Lab Sample ID: 880-51418-48
Matrix: Solid

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	<49.8	U	49.8		mg/Kg		11/22/24 15:54	11/25/24 21:00	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/22/24 15:54	11/25/24 21:00	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 15:54	11/25/24 21:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*101*		*70 - 130*	*11/22/24 15:54*	*11/25/24 21:00*	*1*
o-Terphenyl	*91*		*70 - 130*	*11/22/24 15:54*	*11/25/24 21:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**381**		9.90		mg/Kg			11/25/24 19:17	1

Client Sample ID: HA-11

Date Collected: 11/20/24 11:35
Date Received: 11/22/24 12:06
Sample Depth: 5

Lab Sample ID: 880-51418-49
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:19	11/24/24 09:58	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:19	11/24/24 09:58	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:19	11/24/24 09:58	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		11/22/24 16:19	11/24/24 09:58	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:19	11/24/24 09:58	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		11/22/24 16:19	11/24/24 09:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*142*	*S1+*	*70 - 130*	*11/22/24 16:19*	*11/24/24 09:58*	*1*
1,4-Difluorobenzene (Surr)	*77*		*70 - 130*	*11/22/24 16:19*	*11/24/24 09:58*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			11/24/24 09:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/25/24 21:16	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	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 21:16	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 21:16	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 21:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*95*		*70 - 130*	*11/22/24 15:54*	*11/25/24 21:16*	*1*
o-Terphenyl	*85*		*70 - 130*	*11/22/24 15:54*	*11/25/24 21:16*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-11

Lab Sample ID: 880-51418-49
Matrix: Solid
Date Collected: 11/20/24 11:35
Date Received: 11/22/24 12:06
Sample Depth: 5

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**360**		9.90		mg/Kg			11/25/24 19:25	1

Client Sample ID: HA-12

Lab Sample ID: 880-51418-50
Matrix: Solid
Date Collected: 11/20/24 11:40
Date Received: 11/22/24 12:06
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.0500	U	0.0500		mg/Kg		11/25/24 11:29	11/25/24 21:02	25
Toluene	**0.246**		0.0500		mg/Kg		11/25/24 11:29	11/25/24 21:02	25
Ethylbenzene	**0.186**		0.0500		mg/Kg		11/25/24 11:29	11/25/24 21:02	25
m-Xylene & p-Xylene	**5.35**		0.100		mg/Kg		11/25/24 11:29	11/25/24 21:02	25
o-Xylene	**1.49**		0.0500		mg/Kg		11/25/24 11:29	11/25/24 21:02	25
Xylenes, Total	**6.84**		0.100		mg/Kg		11/25/24 11:29	11/25/24 21:02	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*220*	*S1+*	*70 - 130*	*11/25/24 11:29*	*11/25/24 21:02*	*25*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*11/25/24 11:29*	*11/25/24 21:02*	*25*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**7.27**		0.100		mg/Kg			11/25/24 21:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**4170**		49.8		mg/Kg			11/25/24 21:31	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	**429**		49.8		mg/Kg		11/22/24 15:54	11/25/24 21:31	1
Diesel Range Organics (Over C10-C28)	**3740**		49.8		mg/Kg		11/22/24 15:54	11/25/24 21:31	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 15:54	11/25/24 21:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*148*	*S1+*	*70 - 130*	*11/22/24 15:54*	*11/25/24 21:31*	*1*
o-Terphenyl	*155*	*S1+*	*70 - 130*	*11/22/24 15:54*	*11/25/24 21:31*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3990**		50.3		mg/Kg			11/25/24 19:33	5

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-12

Date Collected: 11/20/24 11:45
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-51
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:19	11/24/24 11:53	1
Toluene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:19	11/24/24 11:53	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:19	11/24/24 11:53	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		11/22/24 16:19	11/24/24 11:53	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:19	11/24/24 11:53	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		11/22/24 16:19	11/24/24 11:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*11/22/24 16:19*	*11/24/24 11:53*	*1*
1,4-Difluorobenzene (Surr)	*82*		*70 - 130*	*11/22/24 16:19*	*11/24/24 11:53*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			11/24/24 11:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/25/24 21:47	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	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 21:47	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 21:47	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 21:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*100*		*70 - 130*	*11/22/24 15:54*	*11/25/24 21:47*	*1*
o-Terphenyl	*89*		*70 - 130*	*11/22/24 15:54*	*11/25/24 21:47*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1060**		10.0		mg/Kg			11/25/24 19:42	1

Client Sample ID: HA-12

Date Collected: 11/20/24 11:50
Date Received: 11/22/24 12:06
Sample Depth: 4

Lab Sample ID: 880-51418-52
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:19	11/24/24 12:13	1
Toluene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:19	11/24/24 12:13	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:19	11/24/24 12:13	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		11/22/24 16:19	11/24/24 12:13	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		11/22/24 16:19	11/24/24 12:13	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		11/22/24 16:19	11/24/24 12:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*152*	*S1+*	*70 - 130*	*11/22/24 16:19*	*11/24/24 12:13*	*1*

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-12

Lab Sample ID: 880-51418-52
Matrix: Solid

Date Collected: 11/20/24 11:50
Date Received: 11/22/24 12:06
Sample Depth: 4

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*11/22/24 16:19*	*11/24/24 12:13*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			11/24/24 12:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/25/24 22:03	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	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 22:03	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 22:03	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 22:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*11/22/24 15:54*	*11/25/24 22:03*	*1*
o-Terphenyl	*85*		*70 - 130*	*11/22/24 15:54*	*11/25/24 22:03*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**767**		10.1		mg/Kg			11/25/24 20:06	1

Client Sample ID: HA-13

Lab Sample ID: 880-51418-53
Matrix: Solid

Date Collected: 11/20/24 11:55
Date Received: 11/22/24 12:06
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:19	11/24/24 12:34	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:19	11/24/24 12:34	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:19	11/24/24 12:34	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/22/24 16:19	11/24/24 12:34	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:19	11/24/24 12:34	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/22/24 16:19	11/24/24 12:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*141*	*S1+*	*70 - 130*	*11/22/24 16:19*	*11/24/24 12:34*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*11/22/24 16:19*	*11/24/24 12:34*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/24/24 12:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/25/24 22:19	1

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-13

Date Collected: 11/20/24 11:55
Date Received: 11/22/24 12:06
Sample Depth: 0.5

Lab Sample ID: 880-51418-53
Matrix: Solid

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	<49.8	U	49.8		mg/Kg		11/22/24 15:54	11/25/24 22:19	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/22/24 15:54	11/25/24 22:19	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 15:54	11/25/24 22:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*11/22/24 15:54*	*11/25/24 22:19*	*1*
o-Terphenyl	*89*		*70 - 130*	*11/22/24 15:54*	*11/25/24 22:19*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**234**		9.98		mg/Kg			11/25/24 20:14	1

Client Sample ID: HA-13

Date Collected: 11/20/24 12:00
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-54
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:19	11/24/24 12:54	1
Toluene	**0.00382**		0.00202		mg/Kg		11/22/24 16:19	11/24/24 12:54	1
Ethylbenzene	**0.0213**		0.00202		mg/Kg		11/22/24 16:19	11/24/24 12:54	1
m-Xylene & p-Xylene	**0.0117**		0.00403		mg/Kg		11/22/24 16:19	11/24/24 12:54	1
o-Xylene	**0.102**		0.00202		mg/Kg		11/22/24 16:19	11/24/24 12:54	1
Xylenes, Total	**0.114**		0.00403		mg/Kg		11/22/24 16:19	11/24/24 12:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*64*	*S1-*	*70 - 130*	*11/22/24 16:19*	*11/24/24 12:54*	*1*
1,4-Difluorobenzene (Surr)	*115*		*70 - 130*	*11/22/24 16:19*	*11/24/24 12:54*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.139**		0.00403		mg/Kg			11/24/24 12:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/25/24 22:35	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	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 22:35	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 22:35	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 22:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*91*		*70 - 130*	*11/22/24 15:54*	*11/25/24 22:35*	*1*
o-Terphenyl	*82*		*70 - 130*	*11/22/24 15:54*	*11/25/24 22:35*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-13

Date Collected: 11/20/24 12:00
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-54
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	437		9.96		mg/Kg			11/25/24 20:39	1

Client Sample ID: HA-14

Date Collected: 11/20/24 12:05
Date Received: 11/22/24 12:06
Sample Depth: 0.5

Lab Sample ID: 880-51418-55
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:19	11/24/24 13:15	1
Toluene	0.00378		0.00199		mg/Kg		11/22/24 16:19	11/24/24 13:15	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:19	11/24/24 13:15	1
m-Xylene & p-Xylene	0.0104		0.00398		mg/Kg		11/22/24 16:19	11/24/24 13:15	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:19	11/24/24 13:15	1
Xylenes, Total	0.0104		0.00398		mg/Kg		11/22/24 16:19	11/24/24 13:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*12*	*S1-*	*70 - 130*	*11/22/24 16:19*	*11/24/24 13:15*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*11/22/24 16:19*	*11/24/24 13:15*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.0142		0.00398		mg/Kg			11/24/24 13:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	330		50.0		mg/Kg			11/25/24 22:50	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	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 22:50	1
Diesel Range Organics (Over C10-C28)	330		50.0		mg/Kg		11/22/24 15:54	11/25/24 22:50	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 22:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*110*		*70 - 130*	*11/22/24 15:54*	*11/25/24 22:50*	*1*
o-Terphenyl	*100*		*70 - 130*	*11/22/24 15:54*	*11/25/24 22:50*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	411		10.1		mg/Kg			11/25/24 20:47	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-14

Lab Sample ID: 880-51418-56
Matrix: Solid
Date Collected: 11/20/24 12:10
Date Received: 11/22/24 12:06
Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:19	11/24/24 13:35	1
Toluene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:19	11/24/24 13:35	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:19	11/24/24 13:35	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		11/22/24 16:19	11/24/24 13:35	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		11/22/24 16:19	11/24/24 13:35	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		11/22/24 16:19	11/24/24 13:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*159*	*S1+*	*70 - 130*	*11/22/24 16:19*	*11/24/24 13:35*	*1*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*11/22/24 16:19*	*11/24/24 13:35*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			11/24/24 13:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/25/24 23:07	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	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 23:07	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 23:07	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 15:54	11/25/24 23:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*106*		*70 - 130*	*11/22/24 15:54*	*11/25/24 23:07*	*1*
o-Terphenyl	*96*		*70 - 130*	*11/22/24 15:54*	*11/25/24 23:07*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**104**		10.1		mg/Kg			11/25/24 20:55	1

Client Sample ID: HA-15

Lab Sample ID: 880-51418-57
Matrix: Solid
Date Collected: 11/20/24 12:15
Date Received: 11/22/24 12:06
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:19	11/24/24 13:56	1
Toluene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:19	11/24/24 13:56	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:19	11/24/24 13:56	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		11/22/24 16:19	11/24/24 13:56	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		11/22/24 16:19	11/24/24 13:56	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		11/22/24 16:19	11/24/24 13:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*139*	*S1+*	*70 - 130*	*11/22/24 16:19*	*11/24/24 13:56*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-15

Date Collected: 11/20/24 12:15
Date Received: 11/22/24 12:06
Sample Depth: 0.5

Lab Sample ID: 880-51418-57
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*11/22/24 16:19*	*11/24/24 13:56*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			11/24/24 13:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/26/24 01:13	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	<49.9	U	49.9		mg/Kg		11/22/24 15:56	11/26/24 01:13	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/22/24 15:56	11/26/24 01:13	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 15:56	11/26/24 01:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*111*		*70 - 130*	*11/22/24 15:56*	*11/26/24 01:13*	*1*
o-Terphenyl	*103*		*70 - 130*	*11/22/24 15:56*	*11/26/24 01:13*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**144**		9.94		mg/Kg			11/25/24 21:03	1

Client Sample ID: HA-15

Date Collected: 11/20/24 12:12
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-58
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:19	11/24/24 14:16	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:19	11/24/24 14:16	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:19	11/24/24 14:16	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/22/24 16:19	11/24/24 14:16	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/22/24 16:19	11/24/24 14:16	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/22/24 16:19	11/24/24 14:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*137*	*S1+*	*70 - 130*	*11/22/24 16:19*	*11/24/24 14:16*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*11/22/24 16:19*	*11/24/24 14:16*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/24/24 14:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/26/24 02:00	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-15

Date Collected: 11/20/24 12:12
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51418-58

Matrix: Solid

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	<50.0	U	50.0		mg/Kg		11/22/24 15:56	11/26/24 02:00	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 15:56	11/26/24 02:00	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 15:56	11/26/24 02:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*100*		*70 - 130*	*11/22/24 15:56*	*11/26/24 02:00*	*1*
o-Terphenyl	*90*		*70 - 130*	*11/22/24 15:56*	*11/26/24 02:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**144**		9.98		mg/Kg			11/25/24 21:11	1

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-51418-1	HA-1	132 S1+	104
880-51418-1 MS	HA-1	118	104
880-51418-1 MSD	HA-1	112	101
880-51418-2	HA-1	113	101
880-51418-3	HA-1	112	107
880-51418-4	HA-1	110	107
880-51418-5	HA-1	108	100
880-51418-6	HA-2	220 S1+	103
880-51418-7	HA-2	176 S1+	104
880-51418-8	HA-2	103	93
880-51418-9	HA-2	110	105
880-51418-10	HA-2	111	108
880-51418-11	HA-3	267 S1+	104
880-51418-12	HA-3	284 S1+	104
880-51418-13	HA-3	118	106
880-51418-14	HA-3	102	103
880-51418-15	HA-3	100	101
880-51418-16	HA-4	485 S1+	105
880-51418-17	HA-4	125	106
880-51418-18	HA-4	113	104
880-51418-19	HA-4	113	108
880-51418-20	HA-4	111	107
880-51418-21	HA-5	177 S1+	89
880-51418-21 MS	HA-5	148 S1+	95
880-51418-21 MSD	HA-5	121	70
880-51418-22	HA-5	126	81
880-51418-23	HA-5	127	95
880-51418-24	HA-5	322 S1+	49 S1-
880-51418-25	HA-6	118	86
880-51418-26	HA-6	68 S1-	63 S1-
880-51418-27	HA-6	116	77
880-51418-28	HA-6	117	89
880-51418-29	HA-7	128	92
880-51418-30	HA-7	146 S1+	76
880-51418-31	HA-7	126	91
880-51418-32	HA-8	124	87
880-51418-33	HA-8	117	89
880-51418-34	HA-8	122	74
880-51418-35	HA-8	124	91
880-51418-36	HA-9	117	75
880-51418-37	HA-9	111	85
880-51418-38	HA-9	130	94
880-51418-39	HA-9	123	92
880-51418-40	HA-10	146 S1+	77
880-51418-41	HA-10	132 S1+	92
880-51418-41 MS	HA-10	144 S1+	91
880-51418-41 MSD	HA-10	84	99
880-51418-42	HA-10	136 S1+	95
880-51418-43	HA-10	69 S1-	107

Surrogate Summary

Client: Earth Systems Response and Restoration
Job ID: 880-51418-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County

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

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits) BFB1 (70-130)	DFBZ1 (70-130)
880-51418-44	HA-10	136 S1+	90
880-51418-45	HA-11	260 S1+	105
880-51418-46	HA-11	146 S1+	80
880-51418-47	HA-11	142 S1+	92
880-51418-48	HA-11	135 S1+	95
880-51418-49	HA-11	142 S1+	77
880-51418-50	HA-12	220 S1+	99
880-51418-51	HA-12	103	82
880-51418-52	HA-12	152 S1+	98
880-51418-53	HA-13	141 S1+	96
880-51418-54	HA-13	64 S1-	115
880-51418-55	HA-14	12 S1-	103
880-51418-56	HA-14	159 S1+	86
880-51418-57	HA-15	139 S1+	96
880-51418-58	HA-15	137 S1+	94
880-51473-A-1-F MS	Matrix Spike	103	103
880-51473-A-1-G MSD	Matrix Spike Duplicate	107	103
LCS 880-96416/1-A	Lab Control Sample	108	103
LCS 880-96417/1-A	Lab Control Sample	105	98
LCS 880-96418/1-A	Lab Control Sample	126	95
LCS 880-96519/1-A	Lab Control Sample	105	103
LCSD 880-96416/2-A	Lab Control Sample Dup	108	103
LCSD 880-96417/2-A	Lab Control Sample Dup	108	98
LCSD 880-96418/2-A	Lab Control Sample Dup	125	94
LCSD 880-96519/2-A	Lab Control Sample Dup	107	104
MB 880-96416/5-A	Method Blank	107	102
MB 880-96417/5-A	Method Blank	84	86
MB 880-96418/5-A	Method Blank	132 S1+	92
MB 880-96443/25-A	Method Blank	128	92
MB 880-96519/5-A	Method Blank	108	103

Surrogate Legend

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

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

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits) 1CO1 (70-130)	OTPH1 (70-130)
880-51418-1	HA-1	91	70
880-51418-2	HA-1	100	75
880-51418-3	HA-1	93	71
880-51418-4	HA-1	103	79
880-51418-5	HA-1	96	75
880-51418-6	HA-2	148 S1+	124
880-51418-7	HA-2	95	75
880-51418-8	HA-2	87	65 S1-
880-51418-9	HA-2	97	73
880-51418-10	HA-2	98	73

Surrogate Summary

Client: Earth Systems Response and Restoration
Job ID: 880-51418-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-51418-11	HA-3	148 S1+	119
880-51418-12	HA-3	106	83
880-51418-13	HA-3	89	68 S1-
880-51418-14	HA-3	97	75
880-51418-15	HA-3	103	77
880-51418-16	HA-4	115	105
880-51418-17	HA-4	81	73
880-51418-17 MS	HA-4	98	77
880-51418-17 MSD	HA-4	97	77
880-51418-18	HA-4	81	87
880-51418-19	HA-4	80	85
880-51418-20	HA-4	83	87
880-51418-21	HA-5	110	113
880-51418-22	HA-5	79	85
880-51418-23	HA-5	82	85
880-51418-24	HA-5	76	78
880-51418-25	HA-6	129	138 S1+
880-51418-26	HA-6	87	93
880-51418-27	HA-6	76	64 S1-
880-51418-28	HA-6	82	70
880-51418-29	HA-7	76	73
880-51418-30	HA-7	76	67 S1-
880-51418-31	HA-7	90	78
880-51418-32	HA-8	77	71
880-51418-33	HA-8	80	69 S1-
880-51418-34	HA-8	83	70
880-51418-35	HA-8	79	68 S1-
880-51418-36	HA-9	82	74
880-51418-37	HA-9	98	88
880-51418-37 MS	HA-9	91	87
880-51418-37 MSD	HA-9	91	89
880-51418-38	HA-9	104	95
880-51418-39	HA-9	112	101
880-51418-40	HA-10	105	99
880-51418-41	HA-10	104	95
880-51418-42	HA-10	103	92
880-51418-43	HA-10	100	91
880-51418-44	HA-10	111	102
880-51418-45	HA-11	147 S1+	134 S1+
880-51418-46	HA-11	105	99
880-51418-47	HA-11	102	92
880-51418-48	HA-11	101	91
880-51418-49	HA-11	95	85
880-51418-50	HA-12	148 S1+	155 S1+
880-51418-51	HA-12	100	89
880-51418-52	HA-12	92	85
880-51418-53	HA-13	97	89
880-51418-54	HA-13	91	82
880-51418-55	HA-14	110	100
880-51418-56	HA-14	106	96

Surrogate Summary

Client: Earth Systems Response and Restoration
Job ID: 880-51418-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-51418-57	HA-15	111	103
880-51418-57 MS	HA-15	95	92
880-51418-57 MSD	HA-15	95	92
880-51418-58	HA-15	100	90
880-51419-A-67-B MS	Matrix Spike	94	87
880-51419-A-67-C MSD	Matrix Spike Duplicate	97	88
880-51423-A-1-B MS	Matrix Spike	82	70
880-51423-A-1-C MSD	Matrix Spike Duplicate	82	70
LCS 880-96383/2-A	Lab Control Sample	90	81
LCS 880-96407/2-A	Lab Control Sample	114	93
LCS 880-96409/2-A	Lab Control Sample	104	103
LCS 880-96410/2-A	Lab Control Sample	124	120
LCS 880-96419/2-A	Lab Control Sample	136 S1+	131 S1+
LCSD 880-96383/3-A	Lab Control Sample Dup	92	81
LCSD 880-96407/3-A	Lab Control Sample Dup	109	88
LCSD 880-96409/3-A	Lab Control Sample Dup	103	100
LCSD 880-96410/3-A	Lab Control Sample Dup	114	113
LCSD 880-96419/3-A	Lab Control Sample Dup	143 S1+	134 S1+
MB 880-96383/1-A	Method Blank	92	73
MB 880-96407/1-A	Method Blank	78	69 S1-
MB 880-96409/1-A	Method Blank	113	106
MB 880-96410/1-A	Method Blank	118	109
MB 880-96419/1-A	Method Blank	76	82

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-96416/5-A
Matrix: Solid
Analysis Batch: 96441

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96416

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/23/24 20:05	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/23/24 20:05	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/23/24 20:05	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/22/24 16:09	11/23/24 20:05	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:09	11/23/24 20:05	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/22/24 16:09	11/23/24 20:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*	*11/22/24 16:09*	*11/23/24 20:05*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*11/22/24 16:09*	*11/23/24 20:05*	*1*

Lab Sample ID: LCS 880-96416/1-A
Matrix: Solid
Analysis Batch: 96441

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96416

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1018		mg/Kg		102	70 - 130
Toluene	0.100	0.1004		mg/Kg		100	70 - 130
Ethylbenzene	0.100	0.09942		mg/Kg		99	70 - 130
m-Xylene & p-Xylene	0.200	0.2022		mg/Kg		101	70 - 130
o-Xylene	0.100	0.1042		mg/Kg		104	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: LCSD 880-96416/2-A
Matrix: Solid
Analysis Batch: 96441

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96416

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1132		mg/Kg		113	70 - 130	11	35
Toluene	0.100	0.1120		mg/Kg		112	70 - 130	11	35
Ethylbenzene	0.100	0.1107		mg/Kg		111	70 - 130	11	35
m-Xylene & p-Xylene	0.200	0.2245		mg/Kg		112	70 - 130	10	35
o-Xylene	0.100	0.1147		mg/Kg		115	70 - 130	10	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: 880-51418-1 MS
Matrix: Solid
Analysis Batch: 96441

Client Sample ID: HA-1
Prep Type: Total/NA
Prep Batch: 96416

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.101	0.1069		mg/Kg		106	70 - 130
Toluene	0.0256		0.101	0.1164		mg/Kg		90	70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

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

Lab Sample ID: 880-51418-1 MS
Matrix: Solid
Analysis Batch: 96441

Client Sample ID: HA-1
Prep Type: Total/NA
Prep Batch: 96416

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	0.00785		0.101	0.1031		mg/Kg		94	70 - 130
m-Xylene & p-Xylene	0.171	F1	0.202	0.2987	F1	mg/Kg		63	70 - 130
o-Xylene	0.0497	F1	0.101	0.1274		mg/Kg		77	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*

Lab Sample ID: 880-51418-1 MSD
Matrix: Solid
Analysis Batch: 96441

Client Sample ID: HA-1
Prep Type: Total/NA
Prep Batch: 96416

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.0996	0.09941		mg/Kg		100	70 - 130	7	35
Toluene	0.0256		0.0996	0.09847		mg/Kg		73	70 - 130	17	35
Ethylbenzene	0.00785		0.0996	0.09294		mg/Kg		85	70 - 130	10	35
m-Xylene & p-Xylene	0.171	F1	0.199	0.2092	F1	mg/Kg		19	70 - 130	35	35
o-Xylene	0.0497	F1	0.0996	0.1034	F1	mg/Kg		54	70 - 130	21	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: MB 880-96417/5-A
Matrix: Solid
Analysis Batch: 96442

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96417

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/23/24 20:21	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/23/24 20:21	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/23/24 20:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/22/24 16:15	11/23/24 20:21	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:15	11/23/24 20:21	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/22/24 16:15	11/23/24 20:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*	*11/22/24 16:15*	*11/23/24 20:21*	*1*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*11/22/24 16:15*	*11/23/24 20:21*	*1*

Lab Sample ID: LCS 880-96417/1-A
Matrix: Solid
Analysis Batch: 96442

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96417

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1056		mg/Kg		106	70 - 130
Toluene	0.100	0.09892		mg/Kg		99	70 - 130
Ethylbenzene	0.100	0.1022		mg/Kg		102	70 - 130
m-Xylene & p-Xylene	0.200	0.2038		mg/Kg		102	70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

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

Lab Sample ID: LCS 880-96417/1-A
Matrix: Solid
Analysis Batch: 96442

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96417

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
o-Xylene			0.100	0.1023		mg/Kg		102	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 880-96417/2-A
Matrix: Solid
Analysis Batch: 96442

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96417

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1093		mg/Kg		109	70 - 130	3	35
Toluene			0.100	0.1016		mg/Kg		102	70 - 130	3	35
Ethylbenzene			0.100	0.1068		mg/Kg		107	70 - 130	4	35
m-Xylene & p-Xylene			0.200	0.2152		mg/Kg		108	70 - 130	5	35
o-Xylene			0.100	0.1086		mg/Kg		109	70 - 130	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: 880-51418-21 MS
Matrix: Solid
Analysis Batch: 96442

Client Sample ID: HA-5
Prep Type: Total/NA
Prep Batch: 96417

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00198	U F1	0.0996	0.07226		mg/Kg		73	70 - 130		
Toluene	0.102	F1	0.0996	0.1335	F1	mg/Kg		32	70 - 130		
Ethylbenzene	0.0393	F1	0.0996	0.07004	F1	mg/Kg		31	70 - 130		
m-Xylene & p-Xylene	1.18	F2 E	0.199	1.269	E 4	mg/Kg		47	70 - 130		
o-Xylene	0.264	F2 F1	0.0996	0.2966	F1	mg/Kg		33	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*148*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: 880-51418-21 MSD
Matrix: Solid
Analysis Batch: 96442

Client Sample ID: HA-5
Prep Type: Total/NA
Prep Batch: 96417

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00198	U F1	0.101	0.06781	F1	mg/Kg		67	70 - 130	6	35
Toluene	0.102	F1	0.101	0.09450	F1	mg/Kg		-7	70 - 130	34	35
Ethylbenzene	0.0393	F1	0.101	0.04968	F1	mg/Kg		10	70 - 130	34	35
m-Xylene & p-Xylene	1.18	F2 E	0.202	0.7831	4 F2	mg/Kg		-194	70 - 130	47	35
o-Xylene	0.264	F2 F1	0.101	0.1939	F2 F1	mg/Kg		-70	70 - 130	42	35

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

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

Lab Sample ID: 880-51418-21 MSD
Matrix: Solid
Analysis Batch: 96442

Client Sample ID: HA-5
Prep Type: Total/NA
Prep Batch: 96417

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	121		70 - 130
1,4-Difluorobenzene (Surr)	70		70 - 130

Lab Sample ID: MB 880-96418/5-A
Matrix: Solid
Analysis Batch: 96439

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96418

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:19	11/24/24 06:53	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:19	11/24/24 06:53	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:19	11/24/24 06:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/22/24 16:19	11/24/24 06:53	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 16:19	11/24/24 06:53	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/22/24 16:19	11/24/24 06:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	132	S1+	70 - 130	11/22/24 16:19	11/24/24 06:53	1
1,4-Difluorobenzene (Surr)	92		70 - 130	11/22/24 16:19	11/24/24 06:53	1

Lab Sample ID: LCS 880-96418/1-A
Matrix: Solid
Analysis Batch: 96439

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96418

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1211		mg/Kg		121	70 - 130
Toluene	0.100	0.1118		mg/Kg		112	70 - 130
Ethylbenzene	0.100	0.1121		mg/Kg		112	70 - 130
m-Xylene & p-Xylene	0.200	0.2307		mg/Kg		115	70 - 130
o-Xylene	0.100	0.1153		mg/Kg		115	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	126		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: LCSD 880-96418/2-A
Matrix: Solid
Analysis Batch: 96439

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96418

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1207		mg/Kg		121	70 - 130	0	35
Toluene	0.100	0.1114		mg/Kg		111	70 - 130	0	35
Ethylbenzene	0.100	0.1116		mg/Kg		112	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.2295		mg/Kg		115	70 - 130	1	35
o-Xylene	0.100	0.1146		mg/Kg		115	70 - 130	1	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	125		70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

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

Lab Sample ID: LCSD 880-96418/2-A
Matrix: Solid
Analysis Batch: 96439

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96418

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

Lab Sample ID: 880-51418-41 MS
Matrix: Solid
Analysis Batch: 96439

Client Sample ID: HA-10
Prep Type: Total/NA
Prep Batch: 96418

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U F2 F1	0.0996	0.08104		mg/Kg		81	70 - 130
Toluene	<0.00199	U F2 F1	0.0996	0.08140		mg/Kg		82	70 - 130
Ethylbenzene	<0.00199	U F2 F1	0.0996	0.08578		mg/Kg		86	70 - 130
m-Xylene & p-Xylene	<0.00398	U F2 F1	0.199	0.1840		mg/Kg		92	70 - 130
o-Xylene	<0.00199	U F2 F1	0.0996	0.09331		mg/Kg		94	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	144	S1+	70 - 130
1,4-Difluorobenzene (Surr)	91		70 - 130

Lab Sample ID: 880-51418-41 MSD
Matrix: Solid
Analysis Batch: 96439

Client Sample ID: HA-10
Prep Type: Total/NA
Prep Batch: 96418

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U F2 F1	0.101	0.03618	F2 F1	mg/Kg		36	70 - 130	77	35
Toluene	<0.00199	U F2 F1	0.101	0.04235	F2 F1	mg/Kg		42	70 - 130	63	35
Ethylbenzene	<0.00199	U F2 F1	0.101	0.03680	F2 F1	mg/Kg		37	70 - 130	80	35
m-Xylene & p-Xylene	<0.00398	U F2 F1	0.201	0.08125	F2 F1	mg/Kg		40	70 - 130	77	35
o-Xylene	<0.00199	U F2 F1	0.101	0.04105	F2 F1	mg/Kg		41	70 - 130	78	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	84		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

Lab Sample ID: MB 880-96443/25-A
Matrix: Solid
Analysis Batch: 96439

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96443

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/23/24 16:48	11/23/24 19:56	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/23/24 16:48	11/23/24 19:56	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/23/24 16:48	11/23/24 19:56	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/23/24 16:48	11/23/24 19:56	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/23/24 16:48	11/23/24 19:56	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/23/24 16:48	11/23/24 19:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	128		70 - 130	11/23/24 16:48	11/23/24 19:56	1
1,4-Difluorobenzene (Surr)	92		70 - 130	11/23/24 16:48	11/23/24 19:56	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

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

Lab Sample ID: MB 880-96519/5-A
Matrix: Solid
Analysis Batch: 96472

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96519

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/25/24 11:29	11/25/24 12:57	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/25/24 11:29	11/25/24 12:57	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/25/24 11:29	11/25/24 12:57	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/25/24 11:29	11/25/24 12:57	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/25/24 11:29	11/25/24 12:57	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/25/24 11:29	11/25/24 12:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*11/25/24 11:29*	*11/25/24 12:57*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*11/25/24 11:29*	*11/25/24 12:57*	*1*

Lab Sample ID: LCS 880-96519/1-A
Matrix: Solid
Analysis Batch: 96472

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96519

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1142		mg/Kg		114	70 - 130
Toluene	0.100	0.1129		mg/Kg		113	70 - 130
Ethylbenzene	0.100	0.1116		mg/Kg		112	70 - 130
m-Xylene & p-Xylene	0.200	0.2272		mg/Kg		114	70 - 130
o-Xylene	0.100	0.1157		mg/Kg		116	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: LCSD 880-96519/2-A
Matrix: Solid
Analysis Batch: 96472

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96519

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1132		mg/Kg		113	70 - 130	1	35
Toluene	0.100	0.1124		mg/Kg		112	70 - 130	1	35
Ethylbenzene	0.100	0.1111		mg/Kg		111	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.2256		mg/Kg		113	70 - 130	1	35
o-Xylene	0.100	0.1154		mg/Kg		115	70 - 130	0	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*

Lab Sample ID: 880-51473-A-1-F MS
Matrix: Solid
Analysis Batch: 96472

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96519

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00201	U	0.0996	0.1044		mg/Kg		105	70 - 130
Toluene	<0.00201	U	0.0996	0.1017		mg/Kg		102	70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

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

Lab Sample ID: 880-51473-A-1-F MS
Matrix: Solid
Analysis Batch: 96472

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96519

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00201	U	0.0996	0.09704		mg/Kg		97	70 - 130
m-Xylene & p-Xylene	<0.00402	U	0.199	0.1972		mg/Kg		99	70 - 130
o-Xylene	<0.00201	U	0.0996	0.1008		mg/Kg		101	70 - 130

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

Lab Sample ID: 880-51473-A-1-G MSD
Matrix: Solid
Analysis Batch: 96472

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 96519

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.101	0.1012		mg/Kg		100	70 - 130	3	35
Toluene	<0.00201	U	0.101	0.09875		mg/Kg		98	70 - 130	3	35
Ethylbenzene	<0.00201	U	0.101	0.09518		mg/Kg		94	70 - 130	2	35
m-Xylene & p-Xylene	<0.00402	U	0.202	0.1937		mg/Kg		96	70 - 130	2	35
o-Xylene	<0.00201	U	0.101	0.09987		mg/Kg		99	70 - 130	1	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

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

Lab Sample ID: MB 880-96383/1-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96383

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 16:25	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 16:25	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 16:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*11/22/24 13:25*	*11/25/24 16:25*	*1*
o-Terphenyl	*73*		*70 - 130*	*11/22/24 13:25*	*11/25/24 16:25*	*1*

Lab Sample ID: LCS 880-96383/2-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96383

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1009		mg/Kg		101	70 - 130
Diesel Range Organics (Over C10-C28)	1000	801.6		mg/Kg		80	70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

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

Lab Sample ID: LCS 880-96383/2-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96383

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	90		70 - 130
o-Terphenyl	81		70 - 130

Lab Sample ID: LCSD 880-96383/3-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96383

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1031		mg/Kg		103	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	826.2		mg/Kg		83	70 - 130	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	92		70 - 130
o-Terphenyl	81		70 - 130

Lab Sample ID: 880-51423-A-1-B MS
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96383

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	995	826.1		mg/Kg		83	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U F1	995	689.2	F1	mg/Kg		69	70 - 130

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

Lab Sample ID: 880-51423-A-1-C MSD
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 96383

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	995	841.7		mg/Kg		85	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<50.0	U F1	995	710.2		mg/Kg		71	70 - 130	3	20

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

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

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

Lab Sample ID: MB 880-96407/1-A
Matrix: Solid
Analysis Batch: 96491

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96407

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/22/24 15:51	11/25/24 10:56	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 15:51	11/25/24 10:56	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 15:51	11/25/24 10:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*78*		*70 - 130*	*11/22/24 15:51*	*11/25/24 10:56*	*1*
o-Terphenyl	*69*	*S1-*	*70 - 130*	*11/22/24 15:51*	*11/25/24 10:56*	*1*

Lab Sample ID: LCS 880-96407/2-A
Matrix: Solid
Analysis Batch: 96491

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96407

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1198		mg/Kg		120	70 - 130
Diesel Range Organics (Over C10-C28)	1000	882.5		mg/Kg		88	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*114*		*70 - 130*
o-Terphenyl	*93*		*70 - 130*

Lab Sample ID: LCSD 880-96407/3-A
Matrix: Solid
Analysis Batch: 96491

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96407

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1099		mg/Kg		110	70 - 130	9	20
Diesel Range Organics (Over C10-C28)	1000	820.1		mg/Kg		82	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*109*		*70 - 130*
o-Terphenyl	*88*		*70 - 130*

Lab Sample ID: 880-51418-17 MS
Matrix: Solid
Analysis Batch: 96491

Client Sample ID: HA-4
Prep Type: Total/NA
Prep Batch: 96407

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	996	944.7		mg/Kg		95	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U F1	996	680.2	F1	mg/Kg		64	70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

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

Lab Sample ID: 880-51418-17 MS
Matrix: Solid
Analysis Batch: 96491

Client Sample ID: HA-4
Prep Type: Total/NA
Prep Batch: 96407

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	77		70 - 130

Lab Sample ID: 880-51418-17 MSD
Matrix: Solid
Analysis Batch: 96491

Client Sample ID: HA-4
Prep Type: Total/NA
Prep Batch: 96407

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	996	942.6		mg/Kg		95	70 - 130	0	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	996	676.0	F1	mg/Kg		63	70 - 130	1	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	97		70 - 130
o-Terphenyl	77		70 - 130

Lab Sample ID: MB 880-96409/1-A
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96409

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 16:25	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 16:25	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 15:54	11/25/24 16:25	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130	11/22/24 15:54	11/25/24 16:25	1
o-Terphenyl	106		70 - 130	11/22/24 15:54	11/25/24 16:25	1

Lab Sample ID: LCS 880-96409/2-A
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96409

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1089		mg/Kg		109	70 - 130
Diesel Range Organics (Over C10-C28)	1000	975.3		mg/Kg		98	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	104		70 - 130
o-Terphenyl	103		70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

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

Lab Sample ID: LCSD 880-96409/3-A
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96409

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1064		mg/Kg		106	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	955.1		mg/Kg		96	70 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*103*		*70 - 130*
o-Terphenyl	*100*		*70 - 130*

Lab Sample ID: 880-51418-37 MS
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: HA-9
Prep Type: Total/NA
Prep Batch: 96409

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	997	784.5		mg/Kg		79	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	997	772.4		mg/Kg		77	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*91*		*70 - 130*
o-Terphenyl	*87*		*70 - 130*

Lab Sample ID: 880-51418-37 MSD
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: HA-9
Prep Type: Total/NA
Prep Batch: 96409

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	997	799.4		mg/Kg		80	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<49.9	U	997	794.9		mg/Kg		80	70 - 130	3	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*91*		*70 - 130*
o-Terphenyl	*89*		*70 - 130*

Lab Sample ID: MB 880-96410/1-A
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96410

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/22/24 15:56	11/26/24 00:26	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 15:56	11/26/24 00:26	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 15:56	11/26/24 00:26	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

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

Lab Sample ID: MB 880-96410/1-A
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96410

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	118		70 - 130	11/22/24 15:56	11/26/24 00:26	1
o-Terphenyl	109		70 - 130	11/22/24 15:56	11/26/24 00:26	1

Lab Sample ID: LCS 880-96410/2-A
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96410

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1218		mg/Kg		122	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1127		mg/Kg		113	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	124		70 - 130
o-Terphenyl	120		70 - 130

Lab Sample ID: LCSD 880-96410/3-A
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96410

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1123		mg/Kg		112	70 - 130	8	20
Diesel Range Organics (Over C10-C28)			1000	969.8		mg/Kg		97	70 - 130	15	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	114		70 - 130
o-Terphenyl	113		70 - 130

Lab Sample ID: 880-51418-57 MS
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: HA-15
Prep Type: Total/NA
Prep Batch: 96410

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	884.8		mg/Kg		89	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	999	819.0		mg/Kg		82	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	95		70 - 130
o-Terphenyl	92		70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

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

Lab Sample ID: 880-51418-57 MSD — **Client Sample ID: HA-15**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96451 — **Prep Batch: 96410**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	997	888.6		mg/Kg		89	70 - 130	0	20
Diesel Range Organics (Over C10-C28)	<49.9	U	997	810.1		mg/Kg		81	70 - 130	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*95*		*70 - 130*
o-Terphenyl	*92*		*70 - 130*

Lab Sample ID: MB 880-96419/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96493 — **Prep Batch: 96419**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/22/24 16:33	11/25/24 10:01	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 16:33	11/25/24 10:01	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 16:33	11/25/24 10:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*76*		*70 - 130*	*11/22/24 16:33*	*11/25/24 10:01*	*1*
o-Terphenyl	*82*		*70 - 130*	*11/22/24 16:33*	*11/25/24 10:01*	*1*

Lab Sample ID: LCS 880-96419/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96493 — **Prep Batch: 96419**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1157		mg/Kg		116	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1030		mg/Kg		103	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*136*	*S1+*	*70 - 130*
o-Terphenyl	*131*	*S1+*	*70 - 130*

Lab Sample ID: LCSD 880-96419/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96493 — **Prep Batch: 96419**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1203		mg/Kg		120	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	1000	1109		mg/Kg		111	70 - 130	7	20

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

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

Lab Sample ID: LCSD 880-96419/3-A
Matrix: Solid
Analysis Batch: 96493

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96419

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	143	S1+	70 - 130
o-Terphenyl	134	S1+	70 - 130

Lab Sample ID: 880-51419-A-67-B MS
Matrix: Solid
Analysis Batch: 96493

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96419

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	851.2		mg/Kg		85	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	744.9		mg/Kg		74	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	94		70 - 130
o-Terphenyl	87		70 - 130

Lab Sample ID: 880-51419-A-67-C MSD
Matrix: Solid
Analysis Batch: 96493

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 96419

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	881.9		mg/Kg		88	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	746.8		mg/Kg		75	70 - 130	0	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	97		70 - 130
o-Terphenyl	88		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-96391/1-A
Matrix: Solid
Analysis Batch: 96408

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			11/23/24 07:24	1

Lab Sample ID: LCS 880-96391/2-A
Matrix: Solid
Analysis Batch: 96408

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	247.9		mg/Kg		99	90 - 110

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-96391/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 96408

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	248.4		mg/Kg		99	90 - 110	0	20

Lab Sample ID: 880-51418-1 MS — **Client Sample ID: HA-1**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 96408

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	3870	F1	1260	5296	F1	mg/Kg		113	90 - 110

Lab Sample ID: 880-51418-1 MSD — **Client Sample ID: HA-1**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 96408

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	3870	F1	1260	5303	F1	mg/Kg		114	90 - 110	0	20

Lab Sample ID: 880-51418-11 MS — **Client Sample ID: HA-3**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 96408

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	8150	F1	2490	11250	F1	mg/Kg		125	90 - 110

Lab Sample ID: 880-51418-11 MSD — **Client Sample ID: HA-3**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 96408

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	8150	F1	2490	11250	F1	mg/Kg		125	90 - 110	0	20

Lab Sample ID: MB 880-96392/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 96428

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			11/23/24 01:21	1

Lab Sample ID: LCS 880-96392/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 96428

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride			250	244.6		mg/Kg		98	90 - 110

Lab Sample ID: LCSD 880-96392/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 96428

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	248.4		mg/Kg		99	90 - 110	2	20

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 880-51418-21 MS
Matrix: Solid
Analysis Batch: 96428

Client Sample ID: HA-5
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5090	F1	2520	8133	F1	mg/Kg		121	90 - 110

Lab Sample ID: 880-51418-21 MSD
Matrix: Solid
Analysis Batch: 96428

Client Sample ID: HA-5
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	5090	F1	2520	8242	F1	mg/Kg		125	90 - 110	1	20

Lab Sample ID: 880-51418-31 MS
Matrix: Solid
Analysis Batch: 96428

Client Sample ID: HA-7
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	43.5		253	303.3		mg/Kg		103	90 - 110

Lab Sample ID: 880-51418-31 MSD
Matrix: Solid
Analysis Batch: 96428

Client Sample ID: HA-7
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	43.5		253	303.5		mg/Kg		103	90 - 110	0	20

Lab Sample ID: MB 880-96396/1-A
Matrix: Solid
Analysis Batch: 96496

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			11/25/24 17:23	1

Lab Sample ID: LCS 880-96396/2-A
Matrix: Solid
Analysis Batch: 96496

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	248.2		mg/Kg		99	90 - 110

Lab Sample ID: LCSD 880-96396/3-A
Matrix: Solid
Analysis Batch: 96496

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	248.8		mg/Kg		100	90 - 110	0	20

Lab Sample ID: 880-51418-41 MS
Matrix: Solid
Analysis Batch: 96496

Client Sample ID: HA-10
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	843	F1	249	1065	F1	mg/Kg		89	90 - 110

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 880-51418-41 MSD
Matrix: Solid
Analysis Batch: 96496

Client Sample ID: HA-10
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	843	F1	249	1066		mg/Kg		90	90 - 110	0	20

Lab Sample ID: 880-51418-51 MS
Matrix: Solid
Analysis Batch: 96496

Client Sample ID: HA-12
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	1060		251	1256	4	mg/Kg		77	90 - 110

Lab Sample ID: 880-51418-51 MSD
Matrix: Solid
Analysis Batch: 96496

Client Sample ID: HA-12
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1060		251	1257	4	mg/Kg		78	90 - 110	0	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

GC VOA

Prep Batch: 96416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-1	HA-1	Total/NA	Solid	5035	
880-51418-2	HA-1	Total/NA	Solid	5035	
880-51418-3	HA-1	Total/NA	Solid	5035	
880-51418-4	HA-1	Total/NA	Solid	5035	
880-51418-5	HA-1	Total/NA	Solid	5035	
880-51418-7	HA-2	Total/NA	Solid	5035	
880-51418-8	HA-2	Total/NA	Solid	5035	
880-51418-9	HA-2	Total/NA	Solid	5035	
880-51418-10	HA-2	Total/NA	Solid	5035	
880-51418-12	HA-3	Total/NA	Solid	5035	
880-51418-13	HA-3	Total/NA	Solid	5035	
880-51418-14	HA-3	Total/NA	Solid	5035	
880-51418-15	HA-3	Total/NA	Solid	5035	
880-51418-16	HA-4	Total/NA	Solid	5035	
880-51418-17	HA-4	Total/NA	Solid	5035	
880-51418-18	HA-4	Total/NA	Solid	5035	
880-51418-19	HA-4	Total/NA	Solid	5035	
880-51418-20	HA-4	Total/NA	Solid	5035	
MB 880-96416/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-96416/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-96416/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-51418-1 MS	HA-1	Total/NA	Solid	5035	
880-51418-1 MSD	HA-1	Total/NA	Solid	5035	

Prep Batch: 96417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-21	HA-5	Total/NA	Solid	5035	
880-51418-22	HA-5	Total/NA	Solid	5035	
880-51418-23	HA-5	Total/NA	Solid	5035	
880-51418-24	HA-5	Total/NA	Solid	5035	
880-51418-25	HA-6	Total/NA	Solid	5035	
880-51418-26	HA-6	Total/NA	Solid	5035	
880-51418-27	HA-6	Total/NA	Solid	5035	
880-51418-28	HA-6	Total/NA	Solid	5035	
880-51418-29	HA-7	Total/NA	Solid	5035	
880-51418-30	HA-7	Total/NA	Solid	5035	
880-51418-31	HA-7	Total/NA	Solid	5035	
880-51418-32	HA-8	Total/NA	Solid	5035	
880-51418-33	HA-8	Total/NA	Solid	5035	
880-51418-34	HA-8	Total/NA	Solid	5035	
880-51418-35	HA-8	Total/NA	Solid	5035	
880-51418-36	HA-9	Total/NA	Solid	5035	
880-51418-37	HA-9	Total/NA	Solid	5035	
880-51418-38	HA-9	Total/NA	Solid	5035	
880-51418-39	HA-9	Total/NA	Solid	5035	
880-51418-40	HA-10	Total/NA	Solid	5035	
MB 880-96417/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-96417/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-96417/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-51418-21 MS	HA-5	Total/NA	Solid	5035	
880-51418-21 MSD	HA-5	Total/NA	Solid	5035	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

GC VOA

Prep Batch: 96418

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-41	HA-10	Total/NA	Solid	5035	
880-51418-42	HA-10	Total/NA	Solid	5035	
880-51418-43	HA-10	Total/NA	Solid	5035	
880-51418-44	HA-10	Total/NA	Solid	5035	
880-51418-46	HA-11	Total/NA	Solid	5035	
880-51418-47	HA-11	Total/NA	Solid	5035	
880-51418-48	HA-11	Total/NA	Solid	5035	
880-51418-49	HA-11	Total/NA	Solid	5035	
880-51418-51	HA-12	Total/NA	Solid	5035	
880-51418-52	HA-12	Total/NA	Solid	5035	
880-51418-53	HA-13	Total/NA	Solid	5035	
880-51418-54	HA-13	Total/NA	Solid	5035	
880-51418-55	HA-14	Total/NA	Solid	5035	
880-51418-56	HA-14	Total/NA	Solid	5035	
880-51418-57	HA-15	Total/NA	Solid	5035	
880-51418-58	HA-15	Total/NA	Solid	5035	
MB 880-96418/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-96418/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-96418/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-51418-41 MS	HA-10	Total/NA	Solid	5035	
880-51418-41 MSD	HA-10	Total/NA	Solid	5035	

Analysis Batch: 96439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-41	HA-10	Total/NA	Solid	8021B	96418
880-51418-42	HA-10	Total/NA	Solid	8021B	96418
880-51418-43	HA-10	Total/NA	Solid	8021B	96418
880-51418-44	HA-10	Total/NA	Solid	8021B	96418
880-51418-46	HA-11	Total/NA	Solid	8021B	96418
880-51418-47	HA-11	Total/NA	Solid	8021B	96418
880-51418-48	HA-11	Total/NA	Solid	8021B	96418
880-51418-49	HA-11	Total/NA	Solid	8021B	96418
880-51418-51	HA-12	Total/NA	Solid	8021B	96418
880-51418-52	HA-12	Total/NA	Solid	8021B	96418
880-51418-53	HA-13	Total/NA	Solid	8021B	96418
880-51418-54	HA-13	Total/NA	Solid	8021B	96418
880-51418-55	HA-14	Total/NA	Solid	8021B	96418
880-51418-56	HA-14	Total/NA	Solid	8021B	96418
880-51418-57	HA-15	Total/NA	Solid	8021B	96418
880-51418-58	HA-15	Total/NA	Solid	8021B	96418
MB 880-96418/5-A	Method Blank	Total/NA	Solid	8021B	96418
MB 880-96443/25-A	Method Blank	Total/NA	Solid	8021B	96443
LCS 880-96418/1-A	Lab Control Sample	Total/NA	Solid	8021B	96418
LCSD 880-96418/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	96418
880-51418-41 MS	HA-10	Total/NA	Solid	8021B	96418
880-51418-41 MSD	HA-10	Total/NA	Solid	8021B	96418

Analysis Batch: 96441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-1	HA-1	Total/NA	Solid	8021B	96416
880-51418-2	HA-1	Total/NA	Solid	8021B	96416

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

GC VOA (Continued)

Analysis Batch: 96441 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-3	HA-1	Total/NA	Solid	8021B	96416
880-51418-4	HA-1	Total/NA	Solid	8021B	96416
880-51418-5	HA-1	Total/NA	Solid	8021B	96416
880-51418-7	HA-2	Total/NA	Solid	8021B	96416
880-51418-8	HA-2	Total/NA	Solid	8021B	96416
880-51418-9	HA-2	Total/NA	Solid	8021B	96416
880-51418-10	HA-2	Total/NA	Solid	8021B	96416
880-51418-12	HA-3	Total/NA	Solid	8021B	96416
880-51418-13	HA-3	Total/NA	Solid	8021B	96416
880-51418-14	HA-3	Total/NA	Solid	8021B	96416
880-51418-15	HA-3	Total/NA	Solid	8021B	96416
880-51418-16	HA-4	Total/NA	Solid	8021B	96416
880-51418-17	HA-4	Total/NA	Solid	8021B	96416
880-51418-18	HA-4	Total/NA	Solid	8021B	96416
880-51418-19	HA-4	Total/NA	Solid	8021B	96416
880-51418-20	HA-4	Total/NA	Solid	8021B	96416
MB 880-96416/5-A	Method Blank	Total/NA	Solid	8021B	96416
LCS 880-96416/1-A	Lab Control Sample	Total/NA	Solid	8021B	96416
LCSD 880-96416/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	96416
880-51418-1 MS	HA-1	Total/NA	Solid	8021B	96416
880-51418-1 MSD	HA-1	Total/NA	Solid	8021B	96416

Analysis Batch: 96442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-21	HA-5	Total/NA	Solid	8021B	96417
880-51418-22	HA-5	Total/NA	Solid	8021B	96417
880-51418-23	HA-5	Total/NA	Solid	8021B	96417
880-51418-24	HA-5	Total/NA	Solid	8021B	96417
880-51418-25	HA-6	Total/NA	Solid	8021B	96417
880-51418-26	HA-6	Total/NA	Solid	8021B	96417
880-51418-27	HA-6	Total/NA	Solid	8021B	96417
880-51418-28	HA-6	Total/NA	Solid	8021B	96417
880-51418-29	HA-7	Total/NA	Solid	8021B	96417
880-51418-30	HA-7	Total/NA	Solid	8021B	96417
880-51418-31	HA-7	Total/NA	Solid	8021B	96417
880-51418-32	HA-8	Total/NA	Solid	8021B	96417
880-51418-33	HA-8	Total/NA	Solid	8021B	96417
880-51418-34	HA-8	Total/NA	Solid	8021B	96417
880-51418-35	HA-8	Total/NA	Solid	8021B	96417
880-51418-36	HA-9	Total/NA	Solid	8021B	96417
880-51418-37	HA-9	Total/NA	Solid	8021B	96417
880-51418-38	HA-9	Total/NA	Solid	8021B	96417
880-51418-39	HA-9	Total/NA	Solid	8021B	96417
880-51418-40	HA-10	Total/NA	Solid	8021B	96417
MB 880-96417/5-A	Method Blank	Total/NA	Solid	8021B	96417
LCS 880-96417/1-A	Lab Control Sample	Total/NA	Solid	8021B	96417
LCSD 880-96417/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	96417
880-51418-21 MS	HA-5	Total/NA	Solid	8021B	96417
880-51418-21 MSD	HA-5	Total/NA	Solid	8021B	96417

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

GC VOA

Prep Batch: 96443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-96443/25-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 96472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-6	HA-2	Total/NA	Solid	8021B	96519
880-51418-11	HA-3	Total/NA	Solid	8021B	96519
880-51418-21	HA-5	Total/NA	Solid	8021B	96519
880-51418-25	HA-6	Total/NA	Solid	8021B	96519
880-51418-45	HA-11	Total/NA	Solid	8021B	96519
880-51418-50	HA-12	Total/NA	Solid	8021B	96519
MB 880-96519/5-A	Method Blank	Total/NA	Solid	8021B	96519
LCS 880-96519/1-A	Lab Control Sample	Total/NA	Solid	8021B	96519
LCSD 880-96519/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	96519
880-51473-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	96519
880-51473-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	96519

Prep Batch: 96519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-6	HA-2	Total/NA	Solid	5035	
880-51418-11	HA-3	Total/NA	Solid	5035	
880-51418-21	HA-5	Total/NA	Solid	5035	
880-51418-25	HA-6	Total/NA	Solid	5035	
880-51418-45	HA-11	Total/NA	Solid	5035	
880-51418-50	HA-12	Total/NA	Solid	5035	
MB 880-96519/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-96519/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-96519/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-51473-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
880-51473-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 96538

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-1	HA-1	Total/NA	Solid	Total BTEX	
880-51418-2	HA-1	Total/NA	Solid	Total BTEX	
880-51418-3	HA-1	Total/NA	Solid	Total BTEX	
880-51418-4	HA-1	Total/NA	Solid	Total BTEX	
880-51418-5	HA-1	Total/NA	Solid	Total BTEX	
880-51418-6	HA-2	Total/NA	Solid	Total BTEX	
880-51418-7	HA-2	Total/NA	Solid	Total BTEX	
880-51418-8	HA-2	Total/NA	Solid	Total BTEX	
880-51418-9	HA-2	Total/NA	Solid	Total BTEX	
880-51418-10	HA-2	Total/NA	Solid	Total BTEX	
880-51418-11	HA-3	Total/NA	Solid	Total BTEX	
880-51418-12	HA-3	Total/NA	Solid	Total BTEX	
880-51418-13	HA-3	Total/NA	Solid	Total BTEX	
880-51418-14	HA-3	Total/NA	Solid	Total BTEX	
880-51418-15	HA-3	Total/NA	Solid	Total BTEX	
880-51418-16	HA-4	Total/NA	Solid	Total BTEX	
880-51418-17	HA-4	Total/NA	Solid	Total BTEX	
880-51418-18	HA-4	Total/NA	Solid	Total BTEX	
880-51418-19	HA-4	Total/NA	Solid	Total BTEX	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

GC VOA (Continued)

Analysis Batch: 96538 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-20	HA-4	Total/NA	Solid	Total BTEX	
880-51418-21	HA-5	Total/NA	Solid	Total BTEX	
880-51418-22	HA-5	Total/NA	Solid	Total BTEX	
880-51418-23	HA-5	Total/NA	Solid	Total BTEX	
880-51418-24	HA-5	Total/NA	Solid	Total BTEX	
880-51418-25	HA-6	Total/NA	Solid	Total BTEX	
880-51418-26	HA-6	Total/NA	Solid	Total BTEX	
880-51418-27	HA-6	Total/NA	Solid	Total BTEX	
880-51418-28	HA-6	Total/NA	Solid	Total BTEX	
880-51418-29	HA-7	Total/NA	Solid	Total BTEX	
880-51418-30	HA-7	Total/NA	Solid	Total BTEX	
880-51418-31	HA-7	Total/NA	Solid	Total BTEX	
880-51418-32	HA-8	Total/NA	Solid	Total BTEX	
880-51418-33	HA-8	Total/NA	Solid	Total BTEX	
880-51418-34	HA-8	Total/NA	Solid	Total BTEX	
880-51418-35	HA-8	Total/NA	Solid	Total BTEX	
880-51418-36	HA-9	Total/NA	Solid	Total BTEX	
880-51418-37	HA-9	Total/NA	Solid	Total BTEX	
880-51418-38	HA-9	Total/NA	Solid	Total BTEX	
880-51418-39	HA-9	Total/NA	Solid	Total BTEX	
880-51418-40	HA-10	Total/NA	Solid	Total BTEX	
880-51418-41	HA-10	Total/NA	Solid	Total BTEX	
880-51418-42	HA-10	Total/NA	Solid	Total BTEX	
880-51418-43	HA-10	Total/NA	Solid	Total BTEX	
880-51418-44	HA-10	Total/NA	Solid	Total BTEX	
880-51418-45	HA-11	Total/NA	Solid	Total BTEX	
880-51418-46	HA-11	Total/NA	Solid	Total BTEX	
880-51418-47	HA-11	Total/NA	Solid	Total BTEX	
880-51418-48	HA-11	Total/NA	Solid	Total BTEX	
880-51418-49	HA-11	Total/NA	Solid	Total BTEX	
880-51418-50	HA-12	Total/NA	Solid	Total BTEX	
880-51418-51	HA-12	Total/NA	Solid	Total BTEX	
880-51418-52	HA-12	Total/NA	Solid	Total BTEX	
880-51418-53	HA-13	Total/NA	Solid	Total BTEX	
880-51418-54	HA-13	Total/NA	Solid	Total BTEX	
880-51418-55	HA-14	Total/NA	Solid	Total BTEX	
880-51418-56	HA-14	Total/NA	Solid	Total BTEX	
880-51418-57	HA-15	Total/NA	Solid	Total BTEX	
880-51418-58	HA-15	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 96383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-1	HA-1	Total/NA	Solid	8015NM Prep	
880-51418-2	HA-1	Total/NA	Solid	8015NM Prep	
880-51418-3	HA-1	Total/NA	Solid	8015NM Prep	
880-51418-4	HA-1	Total/NA	Solid	8015NM Prep	
880-51418-5	HA-1	Total/NA	Solid	8015NM Prep	
880-51418-6	HA-2	Total/NA	Solid	8015NM Prep	
880-51418-7	HA-2	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

GC Semi VOA (Continued)

Prep Batch: 96383 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-8	HA-2	Total/NA	Solid	8015NM Prep	
880-51418-9	HA-2	Total/NA	Solid	8015NM Prep	
880-51418-10	HA-2	Total/NA	Solid	8015NM Prep	
880-51418-11	HA-3	Total/NA	Solid	8015NM Prep	
880-51418-12	HA-3	Total/NA	Solid	8015NM Prep	
880-51418-13	HA-3	Total/NA	Solid	8015NM Prep	
880-51418-14	HA-3	Total/NA	Solid	8015NM Prep	
880-51418-15	HA-3	Total/NA	Solid	8015NM Prep	
880-51418-16	HA-4	Total/NA	Solid	8015NM Prep	
MB 880-96383/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-96383/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-96383/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-51423-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-51423-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Prep Batch: 96407

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-17	HA-4	Total/NA	Solid	8015NM Prep	
880-51418-27	HA-6	Total/NA	Solid	8015NM Prep	
880-51418-28	HA-6	Total/NA	Solid	8015NM Prep	
880-51418-29	HA-7	Total/NA	Solid	8015NM Prep	
880-51418-30	HA-7	Total/NA	Solid	8015NM Prep	
880-51418-31	HA-7	Total/NA	Solid	8015NM Prep	
880-51418-32	HA-8	Total/NA	Solid	8015NM Prep	
880-51418-33	HA-8	Total/NA	Solid	8015NM Prep	
880-51418-34	HA-8	Total/NA	Solid	8015NM Prep	
880-51418-35	HA-8	Total/NA	Solid	8015NM Prep	
880-51418-36	HA-9	Total/NA	Solid	8015NM Prep	
MB 880-96407/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-96407/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-96407/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-51418-17 MS	HA-4	Total/NA	Solid	8015NM Prep	
880-51418-17 MSD	HA-4	Total/NA	Solid	8015NM Prep	

Prep Batch: 96409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-37	HA-9	Total/NA	Solid	8015NM Prep	
880-51418-38	HA-9	Total/NA	Solid	8015NM Prep	
880-51418-39	HA-9	Total/NA	Solid	8015NM Prep	
880-51418-40	HA-10	Total/NA	Solid	8015NM Prep	
880-51418-41	HA-10	Total/NA	Solid	8015NM Prep	
880-51418-42	HA-10	Total/NA	Solid	8015NM Prep	
880-51418-43	HA-10	Total/NA	Solid	8015NM Prep	
880-51418-44	HA-10	Total/NA	Solid	8015NM Prep	
880-51418-45	HA-11	Total/NA	Solid	8015NM Prep	
880-51418-46	HA-11	Total/NA	Solid	8015NM Prep	
880-51418-47	HA-11	Total/NA	Solid	8015NM Prep	
880-51418-48	HA-11	Total/NA	Solid	8015NM Prep	
880-51418-49	HA-11	Total/NA	Solid	8015NM Prep	
880-51418-50	HA-12	Total/NA	Solid	8015NM Prep	
880-51418-51	HA-12	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

GC Semi VOA (Continued)

Prep Batch: 96409 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-52	HA-12	Total/NA	Solid	8015NM Prep	
880-51418-53	HA-13	Total/NA	Solid	8015NM Prep	
880-51418-54	HA-13	Total/NA	Solid	8015NM Prep	
880-51418-55	HA-14	Total/NA	Solid	8015NM Prep	
880-51418-56	HA-14	Total/NA	Solid	8015NM Prep	
MB 880-96409/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-96409/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-96409/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-51418-37 MS	HA-9	Total/NA	Solid	8015NM Prep	
880-51418-37 MSD	HA-9	Total/NA	Solid	8015NM Prep	

Prep Batch: 96410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-57	HA-15	Total/NA	Solid	8015NM Prep	
880-51418-58	HA-15	Total/NA	Solid	8015NM Prep	
MB 880-96410/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-96410/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-96410/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-51418-57 MS	HA-15	Total/NA	Solid	8015NM Prep	
880-51418-57 MSD	HA-15	Total/NA	Solid	8015NM Prep	

Prep Batch: 96419

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-18	HA-4	Total/NA	Solid	8015NM Prep	
880-51418-19	HA-4	Total/NA	Solid	8015NM Prep	
880-51418-20	HA-4	Total/NA	Solid	8015NM Prep	
880-51418-21	HA-5	Total/NA	Solid	8015NM Prep	
880-51418-22	HA-5	Total/NA	Solid	8015NM Prep	
880-51418-23	HA-5	Total/NA	Solid	8015NM Prep	
880-51418-24	HA-5	Total/NA	Solid	8015NM Prep	
880-51418-25	HA-6	Total/NA	Solid	8015NM Prep	
880-51418-26	HA-6	Total/NA	Solid	8015NM Prep	
MB 880-96419/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-96419/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-96419/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-51419-A-67-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-51419-A-67-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 96449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-1	HA-1	Total/NA	Solid	8015B NM	96383
880-51418-2	HA-1	Total/NA	Solid	8015B NM	96383
880-51418-3	HA-1	Total/NA	Solid	8015B NM	96383
880-51418-4	HA-1	Total/NA	Solid	8015B NM	96383
880-51418-5	HA-1	Total/NA	Solid	8015B NM	96383
880-51418-6	HA-2	Total/NA	Solid	8015B NM	96383
880-51418-7	HA-2	Total/NA	Solid	8015B NM	96383
880-51418-8	HA-2	Total/NA	Solid	8015B NM	96383
880-51418-9	HA-2	Total/NA	Solid	8015B NM	96383
880-51418-10	HA-2	Total/NA	Solid	8015B NM	96383
880-51418-11	HA-3	Total/NA	Solid	8015B NM	96383

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

GC Semi VOA (Continued)

Analysis Batch: 96449 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-12	HA-3	Total/NA	Solid	8015B NM	96383
880-51418-13	HA-3	Total/NA	Solid	8015B NM	96383
880-51418-14	HA-3	Total/NA	Solid	8015B NM	96383
880-51418-15	HA-3	Total/NA	Solid	8015B NM	96383
880-51418-16	HA-4	Total/NA	Solid	8015B NM	96383
MB 880-96383/1-A	Method Blank	Total/NA	Solid	8015B NM	96383
LCS 880-96383/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	96383
LCSD 880-96383/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	96383
880-51423-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	96383
880-51423-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	96383

Analysis Batch: 96451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-37	HA-9	Total/NA	Solid	8015B NM	96409
880-51418-38	HA-9	Total/NA	Solid	8015B NM	96409
880-51418-39	HA-9	Total/NA	Solid	8015B NM	96409
880-51418-40	HA-10	Total/NA	Solid	8015B NM	96409
880-51418-41	HA-10	Total/NA	Solid	8015B NM	96409
880-51418-42	HA-10	Total/NA	Solid	8015B NM	96409
880-51418-43	HA-10	Total/NA	Solid	8015B NM	96409
880-51418-44	HA-10	Total/NA	Solid	8015B NM	96409
880-51418-45	HA-11	Total/NA	Solid	8015B NM	96409
880-51418-46	HA-11	Total/NA	Solid	8015B NM	96409
880-51418-47	HA-11	Total/NA	Solid	8015B NM	96409
880-51418-48	HA-11	Total/NA	Solid	8015B NM	96409
880-51418-49	HA-11	Total/NA	Solid	8015B NM	96409
880-51418-50	HA-12	Total/NA	Solid	8015B NM	96409
880-51418-51	HA-12	Total/NA	Solid	8015B NM	96409
880-51418-52	HA-12	Total/NA	Solid	8015B NM	96409
880-51418-53	HA-13	Total/NA	Solid	8015B NM	96409
880-51418-54	HA-13	Total/NA	Solid	8015B NM	96409
880-51418-55	HA-14	Total/NA	Solid	8015B NM	96409
880-51418-56	HA-14	Total/NA	Solid	8015B NM	96409
880-51418-57	HA-15	Total/NA	Solid	8015B NM	96410
880-51418-58	HA-15	Total/NA	Solid	8015B NM	96410
MB 880-96409/1-A	Method Blank	Total/NA	Solid	8015B NM	96409
MB 880-96410/1-A	Method Blank	Total/NA	Solid	8015B NM	96410
LCS 880-96409/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	96409
LCS 880-96410/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	96410
LCSD 880-96409/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	96409
LCSD 880-96410/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	96410
880-51418-37 MS	HA-9	Total/NA	Solid	8015B NM	96409
880-51418-37 MSD	HA-9	Total/NA	Solid	8015B NM	96409
880-51418-57 MS	HA-15	Total/NA	Solid	8015B NM	96410
880-51418-57 MSD	HA-15	Total/NA	Solid	8015B NM	96410

Analysis Batch: 96491

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-17	HA-4	Total/NA	Solid	8015B NM	96407
880-51418-27	HA-6	Total/NA	Solid	8015B NM	96407
880-51418-28	HA-6	Total/NA	Solid	8015B NM	96407

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

GC Semi VOA (Continued)

Analysis Batch: 96491 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-29	HA-7	Total/NA	Solid	8015B NM	96407
880-51418-30	HA-7	Total/NA	Solid	8015B NM	96407
880-51418-31	HA-7	Total/NA	Solid	8015B NM	96407
880-51418-32	HA-8	Total/NA	Solid	8015B NM	96407
880-51418-33	HA-8	Total/NA	Solid	8015B NM	96407
880-51418-34	HA-8	Total/NA	Solid	8015B NM	96407
880-51418-35	HA-8	Total/NA	Solid	8015B NM	96407
880-51418-36	HA-9	Total/NA	Solid	8015B NM	96407
MB 880-96407/1-A	Method Blank	Total/NA	Solid	8015B NM	96407
LCS 880-96407/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	96407
LCSD 880-96407/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	96407
880-51418-17 MS	HA-4	Total/NA	Solid	8015B NM	96407
880-51418-17 MSD	HA-4	Total/NA	Solid	8015B NM	96407

Analysis Batch: 96493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-18	HA-4	Total/NA	Solid	8015B NM	96419
880-51418-19	HA-4	Total/NA	Solid	8015B NM	96419
880-51418-20	HA-4	Total/NA	Solid	8015B NM	96419
880-51418-21	HA-5	Total/NA	Solid	8015B NM	96419
880-51418-22	HA-5	Total/NA	Solid	8015B NM	96419
880-51418-23	HA-5	Total/NA	Solid	8015B NM	96419
880-51418-24	HA-5	Total/NA	Solid	8015B NM	96419
880-51418-25	HA-6	Total/NA	Solid	8015B NM	96419
880-51418-26	HA-6	Total/NA	Solid	8015B NM	96419
MB 880-96419/1-A	Method Blank	Total/NA	Solid	8015B NM	96419
LCS 880-96419/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	96419
LCSD 880-96419/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	96419
880-51419-A-67-B MS	Matrix Spike	Total/NA	Solid	8015B NM	96419
880-51419-A-67-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	96419

Analysis Batch: 96569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-1	HA-1	Total/NA	Solid	8015 NM	
880-51418-2	HA-1	Total/NA	Solid	8015 NM	
880-51418-3	HA-1	Total/NA	Solid	8015 NM	
880-51418-4	HA-1	Total/NA	Solid	8015 NM	
880-51418-5	HA-1	Total/NA	Solid	8015 NM	
880-51418-6	HA-2	Total/NA	Solid	8015 NM	
880-51418-7	HA-2	Total/NA	Solid	8015 NM	
880-51418-8	HA-2	Total/NA	Solid	8015 NM	
880-51418-9	HA-2	Total/NA	Solid	8015 NM	
880-51418-10	HA-2	Total/NA	Solid	8015 NM	
880-51418-11	HA-3	Total/NA	Solid	8015 NM	
880-51418-12	HA-3	Total/NA	Solid	8015 NM	
880-51418-13	HA-3	Total/NA	Solid	8015 NM	
880-51418-14	HA-3	Total/NA	Solid	8015 NM	
880-51418-15	HA-3	Total/NA	Solid	8015 NM	
880-51418-16	HA-4	Total/NA	Solid	8015 NM	
880-51418-17	HA-4	Total/NA	Solid	8015 NM	
880-51418-18	HA-4	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

GC Semi VOA (Continued)

Analysis Batch: 96569 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-19	HA-4	Total/NA	Solid	8015 NM	
880-51418-20	HA-4	Total/NA	Solid	8015 NM	
880-51418-21	HA-5	Total/NA	Solid	8015 NM	
880-51418-22	HA-5	Total/NA	Solid	8015 NM	
880-51418-23	HA-5	Total/NA	Solid	8015 NM	
880-51418-24	HA-5	Total/NA	Solid	8015 NM	
880-51418-25	HA-6	Total/NA	Solid	8015 NM	
880-51418-26	HA-6	Total/NA	Solid	8015 NM	
880-51418-27	HA-6	Total/NA	Solid	8015 NM	
880-51418-28	HA-6	Total/NA	Solid	8015 NM	
880-51418-29	HA-7	Total/NA	Solid	8015 NM	
880-51418-30	HA-7	Total/NA	Solid	8015 NM	
880-51418-31	HA-7	Total/NA	Solid	8015 NM	
880-51418-32	HA-8	Total/NA	Solid	8015 NM	
880-51418-33	HA-8	Total/NA	Solid	8015 NM	
880-51418-34	HA-8	Total/NA	Solid	8015 NM	
880-51418-35	HA-8	Total/NA	Solid	8015 NM	
880-51418-36	HA-9	Total/NA	Solid	8015 NM	
880-51418-37	HA-9	Total/NA	Solid	8015 NM	
880-51418-38	HA-9	Total/NA	Solid	8015 NM	
880-51418-39	HA-9	Total/NA	Solid	8015 NM	
880-51418-40	HA-10	Total/NA	Solid	8015 NM	
880-51418-41	HA-10	Total/NA	Solid	8015 NM	
880-51418-42	HA-10	Total/NA	Solid	8015 NM	
880-51418-43	HA-10	Total/NA	Solid	8015 NM	
880-51418-44	HA-10	Total/NA	Solid	8015 NM	
880-51418-45	HA-11	Total/NA	Solid	8015 NM	
880-51418-46	HA-11	Total/NA	Solid	8015 NM	
880-51418-47	HA-11	Total/NA	Solid	8015 NM	
880-51418-48	HA-11	Total/NA	Solid	8015 NM	
880-51418-49	HA-11	Total/NA	Solid	8015 NM	
880-51418-50	HA-12	Total/NA	Solid	8015 NM	
880-51418-51	HA-12	Total/NA	Solid	8015 NM	
880-51418-52	HA-12	Total/NA	Solid	8015 NM	
880-51418-53	HA-13	Total/NA	Solid	8015 NM	
880-51418-54	HA-13	Total/NA	Solid	8015 NM	
880-51418-55	HA-14	Total/NA	Solid	8015 NM	
880-51418-56	HA-14	Total/NA	Solid	8015 NM	
880-51418-57	HA-15	Total/NA	Solid	8015 NM	
880-51418-58	HA-15	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 96391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-1	HA-1	Soluble	Solid	DI Leach	
880-51418-2	HA-1	Soluble	Solid	DI Leach	
880-51418-3	HA-1	Soluble	Solid	DI Leach	
880-51418-4	HA-1	Soluble	Solid	DI Leach	
880-51418-5	HA-1	Soluble	Solid	DI Leach	
880-51418-6	HA-2	Soluble	Solid	DI Leach	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

HPLC/IC (Continued)

Leach Batch: 96391 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-7	HA-2	Soluble	Solid	DI Leach	
880-51418-8	HA-2	Soluble	Solid	DI Leach	
880-51418-9	HA-2	Soluble	Solid	DI Leach	
880-51418-10	HA-2	Soluble	Solid	DI Leach	
880-51418-11	HA-3	Soluble	Solid	DI Leach	
880-51418-12	HA-3	Soluble	Solid	DI Leach	
880-51418-13	HA-3	Soluble	Solid	DI Leach	
880-51418-14	HA-3	Soluble	Solid	DI Leach	
880-51418-15	HA-3	Soluble	Solid	DI Leach	
880-51418-16	HA-4	Soluble	Solid	DI Leach	
880-51418-17	HA-4	Soluble	Solid	DI Leach	
880-51418-18	HA-4	Soluble	Solid	DI Leach	
880-51418-19	HA-4	Soluble	Solid	DI Leach	
880-51418-20	HA-4	Soluble	Solid	DI Leach	
MB 880-96391/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-96391/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-96391/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-51418-1 MS	HA-1	Soluble	Solid	DI Leach	
880-51418-1 MSD	HA-1	Soluble	Solid	DI Leach	
880-51418-11 MS	HA-3	Soluble	Solid	DI Leach	
880-51418-11 MSD	HA-3	Soluble	Solid	DI Leach	

Leach Batch: 96392

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-21	HA-5	Soluble	Solid	DI Leach	
880-51418-22	HA-5	Soluble	Solid	DI Leach	
880-51418-23	HA-5	Soluble	Solid	DI Leach	
880-51418-24	HA-5	Soluble	Solid	DI Leach	
880-51418-25	HA-6	Soluble	Solid	DI Leach	
880-51418-26	HA-6	Soluble	Solid	DI Leach	
880-51418-27	HA-6	Soluble	Solid	DI Leach	
880-51418-28	HA-6	Soluble	Solid	DI Leach	
880-51418-29	HA-7	Soluble	Solid	DI Leach	
880-51418-30	HA-7	Soluble	Solid	DI Leach	
880-51418-31	HA-7	Soluble	Solid	DI Leach	
880-51418-32	HA-8	Soluble	Solid	DI Leach	
880-51418-33	HA-8	Soluble	Solid	DI Leach	
880-51418-34	HA-8	Soluble	Solid	DI Leach	
880-51418-35	HA-8	Soluble	Solid	DI Leach	
880-51418-36	HA-9	Soluble	Solid	DI Leach	
880-51418-37	HA-9	Soluble	Solid	DI Leach	
880-51418-38	HA-9	Soluble	Solid	DI Leach	
880-51418-39	HA-9	Soluble	Solid	DI Leach	
880-51418-40	HA-10	Soluble	Solid	DI Leach	
MB 880-96392/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-96392/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-96392/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-51418-21 MS	HA-5	Soluble	Solid	DI Leach	
880-51418-21 MSD	HA-5	Soluble	Solid	DI Leach	
880-51418-31 MS	HA-7	Soluble	Solid	DI Leach	
880-51418-31 MSD	HA-7	Soluble	Solid	DI Leach	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

HPLC/IC

Leach Batch: 96396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-41	HA-10	Soluble	Solid	DI Leach	
880-51418-42	HA-10	Soluble	Solid	DI Leach	
880-51418-43	HA-10	Soluble	Solid	DI Leach	
880-51418-44	HA-10	Soluble	Solid	DI Leach	
880-51418-45	HA-11	Soluble	Solid	DI Leach	
880-51418-46	HA-11	Soluble	Solid	DI Leach	
880-51418-47	HA-11	Soluble	Solid	DI Leach	
880-51418-48	HA-11	Soluble	Solid	DI Leach	
880-51418-49	HA-11	Soluble	Solid	DI Leach	
880-51418-50	HA-12	Soluble	Solid	DI Leach	
880-51418-51	HA-12	Soluble	Solid	DI Leach	
880-51418-52	HA-12	Soluble	Solid	DI Leach	
880-51418-53	HA-13	Soluble	Solid	DI Leach	
880-51418-54	HA-13	Soluble	Solid	DI Leach	
880-51418-55	HA-14	Soluble	Solid	DI Leach	
880-51418-56	HA-14	Soluble	Solid	DI Leach	
880-51418-57	HA-15	Soluble	Solid	DI Leach	
880-51418-58	HA-15	Soluble	Solid	DI Leach	
MB 880-96396/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-96396/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-96396/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-51418-41 MS	HA-10	Soluble	Solid	DI Leach	
880-51418-41 MSD	HA-10	Soluble	Solid	DI Leach	
880-51418-51 MS	HA-12	Soluble	Solid	DI Leach	
880-51418-51 MSD	HA-12	Soluble	Solid	DI Leach	

Analysis Batch: 96408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-1	HA-1	Soluble	Solid	300.0	96391
880-51418-2	HA-1	Soluble	Solid	300.0	96391
880-51418-3	HA-1	Soluble	Solid	300.0	96391
880-51418-4	HA-1	Soluble	Solid	300.0	96391
880-51418-5	HA-1	Soluble	Solid	300.0	96391
880-51418-6	HA-2	Soluble	Solid	300.0	96391
880-51418-7	HA-2	Soluble	Solid	300.0	96391
880-51418-8	HA-2	Soluble	Solid	300.0	96391
880-51418-9	HA-2	Soluble	Solid	300.0	96391
880-51418-10	HA-2	Soluble	Solid	300.0	96391
880-51418-11	HA-3	Soluble	Solid	300.0	96391
880-51418-12	HA-3	Soluble	Solid	300.0	96391
880-51418-13	HA-3	Soluble	Solid	300.0	96391
880-51418-14	HA-3	Soluble	Solid	300.0	96391
880-51418-15	HA-3	Soluble	Solid	300.0	96391
880-51418-16	HA-4	Soluble	Solid	300.0	96391
880-51418-17	HA-4	Soluble	Solid	300.0	96391
880-51418-18	HA-4	Soluble	Solid	300.0	96391
880-51418-19	HA-4	Soluble	Solid	300.0	96391
880-51418-20	HA-4	Soluble	Solid	300.0	96391
MB 880-96391/1-A	Method Blank	Soluble	Solid	300.0	96391
LCS 880-96391/2-A	Lab Control Sample	Soluble	Solid	300.0	96391
LCSD 880-96391/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	96391

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

HPLC/IC (Continued)

Analysis Batch: 96408 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-1 MS	HA-1	Soluble	Solid	300.0	96391
880-51418-1 MSD	HA-1	Soluble	Solid	300.0	96391
880-51418-11 MS	HA-3	Soluble	Solid	300.0	96391
880-51418-11 MSD	HA-3	Soluble	Solid	300.0	96391

Analysis Batch: 96428

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-21	HA-5	Soluble	Solid	300.0	96392
880-51418-22	HA-5	Soluble	Solid	300.0	96392
880-51418-23	HA-5	Soluble	Solid	300.0	96392
880-51418-24	HA-5	Soluble	Solid	300.0	96392
880-51418-25	HA-6	Soluble	Solid	300.0	96392
880-51418-26	HA-6	Soluble	Solid	300.0	96392
880-51418-27	HA-6	Soluble	Solid	300.0	96392
880-51418-28	HA-6	Soluble	Solid	300.0	96392
880-51418-29	HA-7	Soluble	Solid	300.0	96392
880-51418-30	HA-7	Soluble	Solid	300.0	96392
880-51418-31	HA-7	Soluble	Solid	300.0	96392
880-51418-32	HA-8	Soluble	Solid	300.0	96392
880-51418-33	HA-8	Soluble	Solid	300.0	96392
880-51418-34	HA-8	Soluble	Solid	300.0	96392
880-51418-35	HA-8	Soluble	Solid	300.0	96392
880-51418-36	HA-9	Soluble	Solid	300.0	96392
880-51418-37	HA-9	Soluble	Solid	300.0	96392
880-51418-38	HA-9	Soluble	Solid	300.0	96392
880-51418-39	HA-9	Soluble	Solid	300.0	96392
880-51418-40	HA-10	Soluble	Solid	300.0	96392
MB 880-96392/1-A	Method Blank	Soluble	Solid	300.0	96392
LCS 880-96392/2-A	Lab Control Sample	Soluble	Solid	300.0	96392
LCSD 880-96392/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	96392
880-51418-21 MS	HA-5	Soluble	Solid	300.0	96392
880-51418-21 MSD	HA-5	Soluble	Solid	300.0	96392
880-51418-31 MS	HA-7	Soluble	Solid	300.0	96392
880-51418-31 MSD	HA-7	Soluble	Solid	300.0	96392

Analysis Batch: 96496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-41	HA-10	Soluble	Solid	300.0	96396
880-51418-42	HA-10	Soluble	Solid	300.0	96396
880-51418-43	HA-10	Soluble	Solid	300.0	96396
880-51418-44	HA-10	Soluble	Solid	300.0	96396
880-51418-45	HA-11	Soluble	Solid	300.0	96396
880-51418-46	HA-11	Soluble	Solid	300.0	96396
880-51418-47	HA-11	Soluble	Solid	300.0	96396
880-51418-48	HA-11	Soluble	Solid	300.0	96396
880-51418-49	HA-11	Soluble	Solid	300.0	96396
880-51418-50	HA-12	Soluble	Solid	300.0	96396
880-51418-51	HA-12	Soluble	Solid	300.0	96396
880-51418-52	HA-12	Soluble	Solid	300.0	96396
880-51418-53	HA-13	Soluble	Solid	300.0	96396
880-51418-54	HA-13	Soluble	Solid	300.0	96396

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

HPLC/IC (Continued)

Analysis Batch: 96496 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51418-55	HA-14	Soluble	Solid	300.0	96396
880-51418-56	HA-14	Soluble	Solid	300.0	96396
880-51418-57	HA-15	Soluble	Solid	300.0	96396
880-51418-58	HA-15	Soluble	Solid	300.0	96396
MB 880-96396/1-A	Method Blank	Soluble	Solid	300.0	96396
LCS 880-96396/2-A	Lab Control Sample	Soluble	Solid	300.0	96396
LCSD 880-96396/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	96396
880-51418-41 MS	HA-10	Soluble	Solid	300.0	96396
880-51418-41 MSD	HA-10	Soluble	Solid	300.0	96396
880-51418-51 MS	HA-12	Soluble	Solid	300.0	96396
880-51418-51 MSD	HA-12	Soluble	Solid	300.0	96396

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-1
Date Collected: 11/20/24 07:35
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/23/24 20:27	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/23/24 20:27	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 18:51	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 18:51	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96408	11/23/24 07:48	SMC	EET MID

Client Sample ID: HA-1
Date Collected: 11/20/24 07:40
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/23/24 20:47	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/23/24 20:47	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 19:07	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 19:07	TKC	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96408	11/23/24 08:12	SMC	EET MID

Client Sample ID: HA-1
Date Collected: 11/20/24 07:45
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/23/24 21:07	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/23/24 21:07	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 19:24	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 19:24	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96408	11/23/24 08:20	SMC	EET MID

Client Sample ID: HA-1
Date Collected: 11/20/24 07:50
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/23/24 21:28	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/23/24 21:28	SM	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-1
Date Collected: 11/20/24 07:50
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			96569	11/25/24 19:39	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 19:39	TKC	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96408	11/23/24 08:29	SMC	EET MID

Client Sample ID: HA-1
Date Collected: 11/20/24 07:55
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/23/24 21:49	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/23/24 21:49	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 19:56	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 19:56	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96408	11/23/24 08:37	SMC	EET MID

Client Sample ID: HA-2
Date Collected: 11/20/24 08:00
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	96519	11/25/24 11:29	EL	EET MID
Total/NA	Analysis	8021B		25	5 mL	5 mL	96472	11/25/24 14:00	SM	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/25/24 14:00	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 20:12	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 20:12	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		10	50 mL	50 mL	96408	11/23/24 09:01	SMC	EET MID

Client Sample ID: HA-2
Date Collected: 11/20/24 08:05
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/23/24 22:29	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/23/24 22:29	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 20:44	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 20:44	TKC	EET MID

Eurofins Midland

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-2
Date Collected: 11/20/24 08:05
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.04 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96408	11/23/24 09:09	SMC	EET MID

Client Sample ID: HA-2
Date Collected: 11/20/24 08:10
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/23/24 22:50	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/23/24 22:50	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 21:00	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 21:00	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96408	11/23/24 09:17	SMC	EET MID

Client Sample ID: HA-2
Date Collected: 11/20/24 08:15
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/23/24 23:11	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/23/24 23:11	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 21:16	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 21:16	TKC	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96408	11/23/24 09:26	SMC	EET MID

Client Sample ID: HA-2
Date Collected: 11/20/24 08:20
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/23/24 23:31	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/23/24 23:31	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 21:31	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 21:31	TKC	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96408	11/23/24 09:34	SMC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-3
Date Collected: 11/20/24 08:25
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	96519	11/25/24 11:29	EL	EET MID
Total/NA	Analysis	8021B		25	5 mL	5 mL	96472	11/25/24 14:20	SM	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/25/24 14:20	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 21:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 21:47	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		10	50 mL	50 mL	96408	11/23/24 09:42	SMC	EET MID

Client Sample ID: HA-3
Date Collected: 11/20/24 08:30
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/24/24 01:26	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 01:26	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 22:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 22:03	TKC	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96408	11/23/24 10:06	SMC	EET MID

Client Sample ID: HA-3
Date Collected: 11/20/24 08:35
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-13
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/24/24 01:47	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 01:47	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 22:19	SM	EET MID
Total/NA	Prep	8015NM Prep			10.07 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 22:19	TKC	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96408	11/23/24 10:14	SMC	EET MID

Client Sample ID: HA-3
Date Collected: 11/20/24 08:40
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-14
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/24/24 02:07	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 02:07	SM	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-3
Date Collected: 11/20/24 08:40
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-14
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			96569	11/25/24 22:35	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 22:35	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96408	11/23/24 10:39	SMC	EET MID

Client Sample ID: HA-3
Date Collected: 11/20/24 08:45
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-15
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/24/24 02:28	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 02:28	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 22:50	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 22:50	TKC	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96408	11/23/24 10:47	SMC	EET MID

Client Sample ID: HA-4
Date Collected: 11/20/24 08:50
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-16
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/24/24 02:48	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 02:48	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 23:07	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 23:07	TKC	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96408	11/23/24 10:55	SMC	EET MID

Client Sample ID: HA-4
Date Collected: 11/20/24 08:55
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-17
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/24/24 03:09	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 03:09	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 13:49	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	96407	11/22/24 15:51	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96491	11/25/24 13:49	TKC	EET MID

Eurofins Midland

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-4
Date Collected: 11/20/24 08:55
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-17
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.98 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96408	11/23/24 11:03	SMC	EET MID

Client Sample ID: HA-4
Date Collected: 11/20/24 09:00
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-18
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/24/24 03:29	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 03:29	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 17:23	SM	EET MID
Total/NA	Prep	8015NM Prep			10.07 g	10 mL	96419	11/22/24 16:33	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96493	11/25/24 17:23	TKC	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96408	11/23/24 11:12	SMC	EET MID

Client Sample ID: HA-4
Date Collected: 11/20/24 09:05
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-19
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/24/24 03:50	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 03:50	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 17:37	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	96419	11/22/24 16:33	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96493	11/25/24 17:37	TKC	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96408	11/23/24 11:20	SMC	EET MID

Client Sample ID: HA-4
Date Collected: 11/20/24 09:10
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-20
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	96416	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96441	11/24/24 04:10	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 04:10	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 17:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	96419	11/22/24 16:33	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96493	11/25/24 17:52	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	96391	11/22/24 14:19	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96408	11/23/24 11:28	SMC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-5
Date Collected: 11/20/24 09:15
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-21
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	96519	11/25/24 11:29	EL	EET MID
Total/NA	Analysis	8021B		25	5 mL	5 mL	96472	11/25/24 20:00	SM	EET MID
Total/NA	Prep	5035			5.05 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/23/24 20:47	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/25/24 20:00	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 18:06	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	96419	11/22/24 16:33	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96493	11/25/24 18:06	TKC	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		10	50 mL	50 mL	96428	11/23/24 01:41	SMC	EET MID

Client Sample ID: HA-5
Date Collected: 11/20/24 09:20
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-22
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/23/24 21:14	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/23/24 21:14	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 18:23	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	96419	11/22/24 16:33	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96493	11/25/24 18:23	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96428	11/23/24 02:01	SMC	EET MID

Client Sample ID: HA-5
Date Collected: 11/20/24 09:25
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-23
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/23/24 21:40	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/23/24 21:40	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 18:37	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	96419	11/22/24 16:33	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96493	11/25/24 18:37	TKC	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96428	11/23/24 02:08	SMC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-5
Date Collected: 11/20/24 09:30
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-24
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/23/24 22:07	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/23/24 22:07	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 18:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	96419	11/22/24 16:33	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96493	11/25/24 18:53	TKC	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96428	11/23/24 02:14	SMC	EET MID

Client Sample ID: HA-6
Date Collected: 11/20/24 09:35
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-25
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	96519	11/25/24 11:29	EL	EET MID
Total/NA	Analysis	8021B		25	5 mL	5 mL	96472	11/25/24 20:21	SM	EET MID
Total/NA	Prep	5035			5.04 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/23/24 22:33	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/25/24 20:21	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 19:07	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	96419	11/22/24 16:33	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96493	11/25/24 19:07	TKC	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96428	11/23/24 02:21	SMC	EET MID

Client Sample ID: HA-6
Date Collected: 11/20/24 09:40
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-26
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/23/24 23:00	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/23/24 23:00	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 19:24	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	96419	11/22/24 16:33	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96493	11/25/24 19:24	TKC	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96428	11/23/24 02:41	SMC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-6
Date Collected: 11/20/24 09:45
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-27
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/23/24 23:26	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/23/24 23:26	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 17:06	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	96407	11/22/24 15:51	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96491	11/25/24 17:06	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96428	11/23/24 02:47	SMC	EET MID

Client Sample ID: HA-6
Date Collected: 11/20/24 09:50
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-28
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/23/24 23:53	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/23/24 23:53	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 17:23	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	96407	11/22/24 15:51	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96491	11/25/24 17:23	TKC	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96428	11/23/24 02:54	SMC	EET MID

Client Sample ID: HA-7
Date Collected: 11/20/24 09:55
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-29
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/24/24 00:19	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 00:19	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 17:37	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	96407	11/22/24 15:51	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96491	11/25/24 17:37	TKC	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96428	11/23/24 03:01	SMC	EET MID

Client Sample ID: HA-7
Date Collected: 11/20/24 10:00
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-30
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/24/24 00:46	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 00:46	SM	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-7
Date Collected: 11/20/24 10:00
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-30
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			96569	11/25/24 17:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	96407	11/22/24 15:51	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96491	11/25/24 17:52	TKC	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96428	11/25/24 09:26	SMC	EET MID

Client Sample ID: HA-7
Date Collected: 11/20/24 10:05
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-31
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/24/24 02:32	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 02:32	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 18:06	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	96407	11/22/24 15:51	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96491	11/25/24 18:06	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96428	11/23/24 03:09	SMC	EET MID

Client Sample ID: HA-8
Date Collected: 11/20/24 10:10
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-32
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/24/24 02:59	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 02:59	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 18:23	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	96407	11/22/24 15:51	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96491	11/25/24 18:23	TKC	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96428	11/23/24 03:29	SMC	EET MID

Client Sample ID: HA-8
Date Collected: 11/20/24 10:15
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-33
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/24/24 03:25	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 03:25	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 18:37	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	96407	11/22/24 15:51	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96491	11/25/24 18:37	TKC	EET MID

Eurofins Midland

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-8
Date Collected: 11/20/24 10:15
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-33
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.04 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96428	11/23/24 03:36	SMC	EET MID

Client Sample ID: HA-8
Date Collected: 11/20/24 10:20
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-34
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/24/24 03:52	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 03:52	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 18:53	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	96407	11/22/24 15:51	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96491	11/25/24 18:53	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96428	11/23/24 03:56	SMC	EET MID

Client Sample ID: HA-8
Date Collected: 11/20/24 10:25
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-35
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/24/24 04:18	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 04:18	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 19:07	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	96407	11/22/24 15:51	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96491	11/25/24 19:07	TKC	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96428	11/23/24 04:03	SMC	EET MID

Client Sample ID: HA-9
Date Collected: 11/20/24 10:30
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-36
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/24/24 04:44	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 04:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 19:24	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	96407	11/22/24 15:51	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96491	11/25/24 19:24	TKC	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96428	11/23/24 04:09	SMC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-9
Date Collected: 11/20/24 10:35
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-37
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/24/24 05:11	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 05:11	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 17:13	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 17:13	TKC	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96428	11/23/24 04:16	SMC	EET MID

Client Sample ID: HA-9
Date Collected: 11/20/24 10:40
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-38
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/24/24 05:37	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 05:37	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 18:02	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 18:02	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96428	11/23/24 04:22	SMC	EET MID

Client Sample ID: HA-9
Date Collected: 11/20/24 10:45
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-39
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/24/24 06:04	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 06:04	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 18:19	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 18:19	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96428	11/23/24 04:29	SMC	EET MID

Client Sample ID: HA-10
Date Collected: 11/20/24 10:50
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-40
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	96417	11/22/24 16:15	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96442	11/24/24 06:30	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 06:30	SM	EET MID

Eurofins Midland

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-10
Date Collected: 11/20/24 10:50
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-40
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			96569	11/25/24 18:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 18:34	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	96392	11/22/24 14:22	SA	EET MID
Soluble	Analysis	300.0		10	50 mL	50 mL	96428	11/23/24 04:36	SMC	EET MID

Client Sample ID: HA-10
Date Collected: 11/20/24 10:55
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-41
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	96418	11/22/24 16:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96439	11/24/24 07:14	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 07:14	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 18:51	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 18:51	TKC	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96496	11/25/24 17:47	SMC	EET MID

Client Sample ID: HA-10
Date Collected: 11/20/24 11:00
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-42
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	96418	11/22/24 16:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96439	11/24/24 07:35	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 07:35	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 19:07	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 19:07	TKC	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96496	11/25/24 18:12	SMC	EET MID

Client Sample ID: HA-10
Date Collected: 11/20/24 11:05
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-43
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	96418	11/22/24 16:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96439	11/24/24 07:55	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 07:55	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 19:24	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 19:24	TKC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-10
Date Collected: 11/20/24 11:05
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-43
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.99 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96496	11/25/24 18:20	SMC	EET MID

Client Sample ID: HA-10
Date Collected: 11/20/24 11:10
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-44
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	96418	11/22/24 16:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96439	11/24/24 08:16	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 08:16	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 19:39	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 19:39	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96496	11/25/24 18:28	SMC	EET MID

Client Sample ID: HA-11
Date Collected: 11/20/24 11:15
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-45
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	96519	11/25/24 11:29	EL	EET MID
Total/NA	Analysis	8021B		20	5 mL	5 mL	96472	11/25/24 20:41	SM	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/25/24 20:41	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 19:56	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 19:56	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96496	11/25/24 18:36	SMC	EET MID

Client Sample ID: HA-11
Date Collected: 11/20/24 11:20
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-46
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	96418	11/22/24 16:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96439	11/24/24 08:56	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 08:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 20:12	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 20:12	TKC	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96496	11/25/24 19:01	SMC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-11
Date Collected: 11/20/24 11:25
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-47
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	96418	11/22/24 16:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96439	11/24/24 09:17	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 09:17	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 20:44	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 20:44	TKC	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96496	11/25/24 19:09	SMC	EET MID

Client Sample ID: HA-11
Date Collected: 11/20/24 11:30
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-48
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	96418	11/22/24 16:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96439	11/24/24 09:37	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 09:37	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 21:00	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 21:00	TKC	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96496	11/25/24 19:17	SMC	EET MID

Client Sample ID: HA-11
Date Collected: 11/20/24 11:35
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-49
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	96418	11/22/24 16:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96439	11/24/24 09:58	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 09:58	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 21:16	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 21:16	TKC	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96496	11/25/24 19:25	SMC	EET MID

Client Sample ID: HA-12
Date Collected: 11/20/24 11:40
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-50
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	96519	11/25/24 11:29	EL	EET MID
Total/NA	Analysis	8021B		25	5 mL	5 mL	96472	11/25/24 21:02	SM	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/25/24 21:02	SM	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-12
Date Collected: 11/20/24 11:40
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-50
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			96569	11/25/24 21:31	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 21:31	TKC	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96496	11/25/24 19:33	SMC	EET MID

Client Sample ID: HA-12
Date Collected: 11/20/24 11:45
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-51
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	96418	11/22/24 16:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96439	11/24/24 11:53	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 11:53	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 21:47	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 21:47	TKC	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96496	11/25/24 19:42	SMC	EET MID

Client Sample ID: HA-12
Date Collected: 11/20/24 11:50
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-52
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	96418	11/22/24 16:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96439	11/24/24 12:13	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 12:13	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 22:03	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 22:03	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96496	11/25/24 20:06	SMC	EET MID

Client Sample ID: HA-13
Date Collected: 11/20/24 11:55
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-53
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	96418	11/22/24 16:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96439	11/24/24 12:34	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 12:34	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 22:19	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 22:19	TKC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-13
Date Collected: 11/20/24 11:55
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-53
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.01 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96496	11/25/24 20:14	SMC	EET MID

Client Sample ID: HA-13
Date Collected: 11/20/24 12:00
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-54
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	96418	11/22/24 16:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96439	11/24/24 12:54	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 12:54	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 22:35	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 22:35	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96496	11/25/24 20:39	SMC	EET MID

Client Sample ID: HA-14
Date Collected: 11/20/24 12:05
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-55
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	96418	11/22/24 16:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96439	11/24/24 13:15	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 13:15	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 22:50	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 22:50	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96496	11/25/24 20:47	SMC	EET MID

Client Sample ID: HA-14
Date Collected: 11/20/24 12:10
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-56
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	96418	11/22/24 16:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96439	11/24/24 13:35	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 13:35	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/25/24 23:07	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	96409	11/22/24 15:54	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 23:07	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96496	11/25/24 20:55	SMC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Client Sample ID: HA-15
Date Collected: 11/20/24 12:15
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-57
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	96418	11/22/24 16:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96439	11/24/24 13:56	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 13:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/26/24 01:13	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	96410	11/22/24 15:56	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/26/24 01:13	TKC	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96496	11/25/24 21:03	SMC	EET MID

Client Sample ID: HA-15
Date Collected: 11/20/24 12:12
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51418-58
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	96418	11/22/24 16:19	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96439	11/24/24 14:16	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96538	11/24/24 14:16	SM	EET MID
Total/NA	Analysis	8015 NM		1			96569	11/26/24 02:00	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	96410	11/22/24 15:56	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/26/24 02:00	TKC	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	96396	11/22/24 14:25	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96496	11/25/24 21:11	SMC	EET MID

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

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

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

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-51418-1	HA-1	Solid	11/20/24 07:35	11/22/24 12:06	0.5
880-51418-2	HA-1	Solid	11/20/24 07:40	11/22/24 12:06	1
880-51418-3	HA-1	Solid	11/20/24 07:45	11/22/24 12:06	2
880-51418-4	HA-1	Solid	11/20/24 07:50	11/22/24 12:06	3
880-51418-5	HA-1	Solid	11/20/24 07:55	11/22/24 12:06	4
880-51418-6	HA-2	Solid	11/20/24 08:00	11/22/24 12:06	0.5
880-51418-7	HA-2	Solid	11/20/24 08:05	11/22/24 12:06	1
880-51418-8	HA-2	Solid	11/20/24 08:10	11/22/24 12:06	2
880-51418-9	HA-2	Solid	11/20/24 08:15	11/22/24 12:06	3
880-51418-10	HA-2	Solid	11/20/24 08:20	11/22/24 12:06	4
880-51418-11	HA-3	Solid	11/20/24 08:25	11/22/24 12:06	0.5
880-51418-12	HA-3	Solid	11/20/24 08:30	11/22/24 12:06	1
880-51418-13	HA-3	Solid	11/20/24 08:35	11/22/24 12:06	2
880-51418-14	HA-3	Solid	11/20/24 08:40	11/22/24 12:06	3
880-51418-15	HA-3	Solid	11/20/24 08:45	11/22/24 12:06	4
880-51418-16	HA-4	Solid	11/20/24 08:50	11/22/24 12:06	0.5
880-51418-17	HA-4	Solid	11/20/24 08:55	11/22/24 12:06	1
880-51418-18	HA-4	Solid	11/20/24 09:00	11/22/24 12:06	2
880-51418-19	HA-4	Solid	11/20/24 09:05	11/22/24 12:06	3
880-51418-20	HA-4	Solid	11/20/24 09:10	11/22/24 12:06	4
880-51418-21	HA-5	Solid	11/20/24 09:15	11/22/24 12:06	0.5
880-51418-22	HA-5	Solid	11/20/24 09:20	11/22/24 12:06	1
880-51418-23	HA-5	Solid	11/20/24 09:25	11/22/24 12:06	2
880-51418-24	HA-5	Solid	11/20/24 09:30	11/22/24 12:06	3
880-51418-25	HA-6	Solid	11/20/24 09:35	11/22/24 12:06	0.5
880-51418-26	HA-6	Solid	11/20/24 09:40	11/22/24 12:06	1
880-51418-27	HA-6	Solid	11/20/24 09:45	11/22/24 12:06	2
880-51418-28	HA-6	Solid	11/20/24 09:50	11/22/24 12:06	3
880-51418-29	HA-7	Solid	11/20/24 09:55	11/22/24 12:06	0.5
880-51418-30	HA-7	Solid	11/20/24 10:00	11/22/24 12:06	1
880-51418-31	HA-7	Solid	11/20/24 10:05	11/22/24 12:06	2
880-51418-32	HA-8	Solid	11/20/24 10:10	11/22/24 12:06	0.5
880-51418-33	HA-8	Solid	11/20/24 10:15	11/22/24 12:06	1
880-51418-34	HA-8	Solid	11/20/24 10:20	11/22/24 12:06	2
880-51418-35	HA-8	Solid	11/20/24 10:25	11/22/24 12:06	3
880-51418-36	HA-9	Solid	11/20/24 10:30	11/22/24 12:06	0.5
880-51418-37	HA-9	Solid	11/20/24 10:35	11/22/24 12:06	1
880-51418-38	HA-9	Solid	11/20/24 10:40	11/22/24 12:06	2
880-51418-39	HA-9	Solid	11/20/24 10:45	11/22/24 12:06	3
880-51418-40	HA-10	Solid	11/20/24 10:50	11/22/24 12:06	0.5
880-51418-41	HA-10	Solid	11/20/24 10:55	11/22/24 12:06	1
880-51418-42	HA-10	Solid	11/20/24 11:00	11/22/24 12:06	2
880-51418-43	HA-10	Solid	11/20/24 11:05	11/22/24 12:06	3
880-51418-44	HA-10	Solid	11/20/24 11:10	11/22/24 12:06	4
880-51418-45	HA-11	Solid	11/20/24 11:15	11/22/24 12:06	0.5
880-51418-46	HA-11	Solid	11/20/24 11:20	11/22/24 12:06	1
880-51418-47	HA-11	Solid	11/20/24 11:25	11/22/24 12:06	2
880-51418-48	HA-11	Solid	11/20/24 11:30	11/22/24 12:06	3
880-51418-49	HA-11	Solid	11/20/24 11:35	11/22/24 12:06	5
880-51418-50	HA-12	Solid	11/20/24 11:40	11/22/24 12:06	0.5
880-51418-51	HA-12	Solid	11/20/24 11:45	11/22/24 12:06	2
880-51418-52	HA-12	Solid	11/20/24 11:50	11/22/24 12:06	4
880-51418-53	HA-13	Solid	11/20/24 11:55	11/22/24 12:06	0.5
880-51418-54	HA-13	Solid	11/20/24 12:00	11/22/24 12:06	2

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-51418-55	HA-14	Solid	11/20/24 12:05	11/22/24 12:06	0.5
880-51418-56	HA-14	Solid	11/20/24 12:10	11/22/24 12:06	2
880-51418-57	HA-15	Solid	11/20/24 12:15	11/22/24 12:06	0.5
880-51418-58	HA-15	Solid	11/20/24 12:12	11/22/24 12:06	2

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880-51418 Chain of Custody

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Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	5114 West County Road 128	Address:	
City, State ZIP:	Midland TX 79705	City, State ZIP:	
Phone:	432-894-6385	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	2657	☑ Routine ☐ Rush	
Project Location:	Eddy County	Due Date:	
Sampler's Name:	Joey Pinson	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No	
Samples Received Intact:	(Yes) No	Thermometer ID:	IR-8	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.1	
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	3.8	
Total Containers:		Corrected Temperature:	3.7	

Preservative Codes

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Chloride NM	TPH NM	BTEX NM	Sample Comments
HA-1	S	11/20/2024	7:35	0.5	Grab	1	X	X	X	Incident Number
HA-1	S	11/20/2024	7:40	1	Grab	1	X	X	X	nAPP2431628896
HA-1	S	11/20/2024	7:45	2	Grab	1	X	X	X	nAPP2431628896
HA-1	S	11/20/2024	7:50	3	Grab	1	X	X	X	nAPP2431628896
HA-1	S	11/20/2024	7:55	4	Grab	1	X	X	X	nAPP2431628896
HA-2	S	11/20/2024	8:00	0.5	Grab	1	X	X	X	nAPP2431628896
HA-2	S	11/20/2024	8:05	1	Grab	1	X	X	X	nAPP2431628896
HA-2	S	11/20/2024	8:10	2	Grab	1	X	X	X	nAPP2431628896
HA-2	S	11/20/2024	8:15	3	Grab	1	X	X	X	nAPP2431628896

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

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	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		Teddy Tomlett Lee	11/22/24 12:06			
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

Received by OCD: 11/4/2025 7:21:25 AM
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Work Order No: _____

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	5114 West County Road 128	Address:	
City, State ZIP:	Midland TX 79705	City, State ZIP:	
Phone:	432-894-6385	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	☑ Routine ☐ Rush
Project Number:	2657	Due Date:	
Project Location:	Eddy County	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Joey Pinson		
PO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	Yes (No)	
Samples Received Intact:	(Yes) No	Thermometer ID:	IR-8	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.1	
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	5.8	
Total Containers:		Corrected Temperature:	5.7	

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2S0_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Chloride NM	TPH NM	BTEX NM	Sample Comments
HA-2	S	11/20/2024	8:20	4	Grab	1	X	X	X	Incident Number
HA-3	S	11/20/2024	8:25	0.5	Grab	1	X	X	X	nAPP2431628896
HA-3	S	11/20/2024	8:30	1	Grab	1	X	X	X	nAPP2431628896
HA-3	S	11/20/2024	8:35	2	Grab	1	X	X	X	nAPP2431628896
HA-3	S	11/20/2024	8:40	3	Grab	1	X	X	X	nAPP2431628896
HA-3	S	11/20/2024	8:45	4	Grab	1	X	X	X	nAPP2431628896
HA-4	S	11/20/2024	8:50	0.5	Grab	1	X	X	X	nAPP2431628896
HA-4	S	11/20/2024	8:55	1	Grab	1	X	X	X	nAPP2431628896
HA-4	S	11/20/2024	9:00	2	Grab	1	X	X	X	nAPP2431628896

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed

Hg: 1631 / 245.1 / 7470 / 7471

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0	Teddy Rashell Lee	11/22/24 1206			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

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Work Order No: _____

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Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	5114 West County Road 128	Address:	
City, State ZIP:	Midland TX 79705	City, State ZIP:	
Phone:	432-894-6385	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	2657	☑ Routine ☐ Rush	
Project Location:	Eddy County	Due Date:	
Sampler's Name:	Joey Pinson	TAT starts the day received by the lab, if received by 4:30pm	
WO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	IR-8	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.1	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	5.8	
Total Containers:		Corrected Temperature:	5.7	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Chloride NM	TPH NM	BTEX NM	Sample Comments
HA-4	S	11/20/2024	9:05	3	Grab	1	X	X	X	Incident Number
HA-4	S	11/20/2024	9:10	4	Grab	1	X	X	X	nAPP2431628896
HA-5	S	11/20/2024	9:15	0.5	Grab	1	X	X	X	nAPP2431628896
HA-5	S	11/20/2024	9:20	1	Grab	1	X	X	X	nAPP2431628896
HA-5	S	11/20/2024	9:25	2	Grab	1	X	X	X	nAPP2431628896
HA-5	S	11/20/2024	9:30	3	Grab	1	X	X	X	nAPP2431628896
HA-6	S	11/20/2024	9:35	0.5	Grab	1	X	X	X	nAPP2431628896
HA-6	S	11/20/2024	9:40	1	Grab	1	X	X	X	nAPP2431628896
HA-6	S	11/20/2024	9:45	2	Grab	1	X	X	X	nAPP2431628896

Preservative Codes

None: NO | DI Water: H_2O
Cool: Cool | MeOH: Me
HCL: HC | HNO_3: HN
H_2S0_4: H_2 | NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed

Hg: 1631 / 245.1 / 7470 / 7471

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0	Teddy Randell Le	11/21/24 12:05			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

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Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

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Work Order No: _____

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	5114 West County Road 128	Address:	
City, State ZIP:	Midland TX 79705	City, State ZIP:	
Phone:	432-894-6385	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	☑ Routine ☐ Rush
Project Number:	2657	Due Date:	
Project Location:	Eddy County	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Joey Pinson		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	IR-4
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.1
Sample Custody Seals:	Yes No N/A	Temperature Reading:	5.8
Total Containers:		Corrected Temperature:	5.7

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2S0_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: Chloride NM	TPH NM	BTEX NM	Sample Comments
HA-6	S	11/20/2024	9:50	3	Grab	1		X	X	X	Incident Number
HA-7	S	11/20/2024	9:55	0.5	Grab	1		X	X	X	nAPP2431628896
HA-7	S	11/20/2024	10:00	1	Grab	1		X	X	X	nAPP2431628896
HA-7	S	11/20/2024	10:05	2	Grab	1		X	X	X	nAPP2431628896
HA-8	S	11/20/2024	10:10	0.5	Grab	1		X	X	X	nAPP2431628896
HA-8	S	11/20/2024	10:15	1	Grab	1		X	X	X	nAPP2431628896
HA-8	S	11/20/2024	10:20	2	Grab	1		X	X	X	nAPP2431628896
HA-8	S	11/20/2024	10:25	3	Grab	1		X	X	X	nAPP2431628896
HA-9	S	11/20/2024	10:30	0.5	Grab	1		X	X	X	nAPP2431628896

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

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	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		Teddy Randell Lee	11/22/24 12:06			
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

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Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: _____

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Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	5114 West County Road 128	Address:	
City, State ZIP:	Midland TX 79705	City, State ZIP:	
Phone:	432-894-6385	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	☑ Routine ☐ Rush
Project Number:	2657	Due Date:	
Project Location:	Eddy County	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Joey Pinson		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	IR-8
Cooler Custody Seals:	Yes No N/A	Correction Factor:	+0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	5.8
Total Containers:		Corrected Temperature:	6.0

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2S0_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Chloride NM	TPH NM	BTEX NM	Sample Comments
HA-9	S	10/10/2024	10:35	1	Grab	1	X	X	X	Incident Number
HA-9	S	10/10/2024	10:40	2	Grab	1	X	X	X	nAPP2431628896
HA-9	S	10/10/2024	10:45	3	Grab	1	X	X	X	nAPP2431628896
HA-10	S	10/10/2024	10:50	0.5	Grab	1	X	X	X	nAPP2431628896
HA-10	S	10/10/2024	10:55	1	Grab	1	X	X	X	nAPP2431628896
HA-10	S	10/10/2024	11:00	2	Grab	1	X	X	X	nAPP2431628896
HA-10	S	10/10/2024	11:05	3	Grab	1	X	X	X	nAPP2431628896
HA-10	S	10/10/2024	11:10	4	Grab	1	X	X	X	nAPP2431628896
HA-11	S	10/10/2024	11:15	0.5	Grab	1	X	X	X	nAPP2431628896

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

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0	[signature]	Teddy Randell Lee	11/22/24 12:06			
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

Received by OCD: 11/4/2025 7:21:25 AM
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Work Order No: _____

Page 6 of 7

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	5114 West County Road 128	Address:	
City, State ZIP:	Midland TX 79705	City, State ZIP:	
Phone:	432-894-6385	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	☑ Routine ☐ Rush
Project Number:	2657	Due Date:	
Project Location:	Eddy County	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Joey Pinson		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	IR-8
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.1
Sample Custody Seals:	Yes No N/A	Temperature Reading:	5.8
Total Containers:		Corrected Temperature:	5.7

Preservative Codes

None: NO | DI Water: H_2O
Cool: Cool | MeOH: Me
HCL: HC | HNO_3: HN
H_2S0_4: H_2 | NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Chloride NM	TPH NM	BTEX NM	Sample Comments
HA-11	S	11/20/2024	11:20	1	Grab	1	X	X	X	Incident Number
HA-11	S	11/20/2024	11:25	2	Grab	1	X	X	X	nAPP2431628896
HA-11	S	11/20/2024	11:30	3	Grab	1	X	X	X	nAPP2431628896
HA-11	S	11/20/2024	11:35	5	Grab	1	X	X	X	nAPP2431628896
HA-12	S	11/20/2024	11:40	0.5	Grab	1	X	X	X	nAPP2431628896
HA-12	S	11/20/2024	11:45	2	Grab	1	X	X	X	nAPP2431628896
HA-12	S	11/20/2024	11:50	4	Grab	1	X	X	X	nAPP2431628896
HA-13	S	11/20/2024	11:55	0.5	Grab	1	X	X	X	nAPP2431628896
HA-13	S	11/20/2024	12:00	2	Grab	1	X	X	X	nAPP2431628896

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

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0		Teddy Rundell Lo	11/22/24 12:06			
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

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Work Order No: _____

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Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	5114 West County Road 128	Address:	
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Phone:	432-894-6385	Email:	gmoreno@earthsys.net

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Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Spud Muffin 31 30 #738H	Turn Around	☑ Routine ☐ Rush
Project Number:	2657	Due Date:	
Project Location:	Eddy County	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Joey Pinson		
PO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	IR-8
Cooler Custody Seals:	Yes No N/A	Correction Factor:	+0.1
Sample Custody Seals:	Yes No N/A	Temperature Reading:	5.0
Total Containers:		Corrected Temperature:	5.1

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2S0_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Chloride NM	TPH NM	BTEX NM	Sample Comments
HA-14	S	11/20/2024	12:05	0.5	Grab	1	X	X	X	Incident Number
HA-14	S	11/20/2024	12:10	2	Grab	1	X	X	X	nAPP2431628896
HA-15	S	11/20/2024	12:15	0.5	Grab	1	X	X	X	nAPP2431628896
HA-15	S	11/20/2024	12:20	2	Grab	1	X	X	X	nAPP2431628896

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed — Hg: 1631 / 245.1 / 7470 / 7471

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0		Teddy Hamlet Lee	11/21/24 12:06			
3				4		
5				6		

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12/30/2024 (Rev. 1)

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Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 880-51418-1
SDG Number: Eddy County

Login Number: 51418
List Number: 1
Creator: Vasquez, Julisa

List Source: Eurofins Midland

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Kris Williams
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 11/27/2024 8:56:50 AM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy County

JOB NUMBER

880-51432-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

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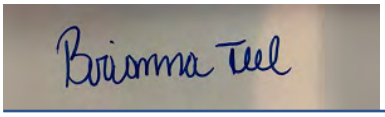
Eurofins Midland

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
11/27/2024 8:56:50 AM

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

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Laboratory Job ID: 880-51432-1
SDG: Eddy County

Table of Contents

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51432-1
SDG: Eddy County

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 880-51432-1
Project: Spud Muffin 31 30 #738H

Job ID: 880-51432-1 Eurofins Midland

Job Narrative
880-51432-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 11/22/2024 12:06 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 3.7°C.

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: HA-12 (880-51432-1), HA-12 (880-51432-2) and HA-12 (880-51432-3).

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

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

HPLC/IC
Method 300_ORGFM_28D - Soluble: The Chloride matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-96382 and analytical batch 880-96389 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: HA-12 (880-51432-1), HA-12 (880-51432-2), HA-12 (880-51432-3), (880-51431-A-1-A), (880-51431-A-1-B MS) and (880-51431-A-1-C MSD).

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

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51432-1
SDG: Eddy County

Client Sample ID: HA-12

Lab Sample ID: 880-51432-1
Matrix: Solid
Date Collected: 11/21/24 08:00
Date Received: 11/22/24 12:06
Sample Depth: 6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 21:49	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 21:49	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 21:49	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		11/22/24 14:47	11/22/24 21:49	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 21:49	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		11/22/24 14:47	11/22/24 21:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*11/22/24 14:47*	*11/22/24 21:49*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*11/22/24 14:47*	*11/22/24 21:49*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			11/22/24 21:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5		mg/Kg			11/25/24 13:50	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	<50.5	U	50.5		mg/Kg		11/23/24 19:22	11/25/24 13:50	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5		mg/Kg		11/23/24 19:22	11/25/24 13:50	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5		mg/Kg		11/23/24 19:22	11/25/24 13:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*95*		*70 - 130*	*11/23/24 19:22*	*11/25/24 13:50*	*1*
o-Terphenyl	*86*		*70 - 130*	*11/23/24 19:22*	*11/25/24 13:50*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**822**		50.3		mg/Kg			11/23/24 19:12	5

Client Sample ID: HA-12

Lab Sample ID: 880-51432-2
Matrix: Solid
Date Collected: 11/21/24 08:05
Date Received: 11/22/24 12:06
Sample Depth: 8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 22:09	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 22:09	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 22:09	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/22/24 14:47	11/22/24 22:09	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 22:09	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/22/24 14:47	11/22/24 22:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*	*11/22/24 14:47*	*11/22/24 22:09*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51432-1
SDG: Eddy County

Client Sample ID: HA-12

Date Collected: 11/21/24 08:05
Date Received: 11/22/24 12:06
Sample Depth: 8

Lab Sample ID: 880-51432-2

Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*11/22/24 14:47*	*11/22/24 22:09*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/22/24 22:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/25/24 14:07	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	<49.8	U	49.8		mg/Kg		11/23/24 19:22	11/25/24 14:07	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/23/24 19:22	11/25/24 14:07	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/23/24 19:22	11/25/24 14:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*93*		*70 - 130*	*11/23/24 19:22*	*11/25/24 14:07*	*1*
o-Terphenyl	*85*		*70 - 130*	*11/23/24 19:22*	*11/25/24 14:07*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1080**		50.3		mg/Kg			11/23/24 19:20	5

Client Sample ID: HA-12

Date Collected: 11/21/24 08:10
Date Received: 11/22/24 12:06
Sample Depth: 10

Lab Sample ID: 880-51432-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		11/22/24 14:47	11/22/24 22:30	1
Toluene	**0.00227**		0.00198		mg/Kg		11/22/24 14:47	11/22/24 22:30	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		11/22/24 14:47	11/22/24 22:30	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		11/22/24 14:47	11/22/24 22:30	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		11/22/24 14:47	11/22/24 22:30	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		11/22/24 14:47	11/22/24 22:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*11/22/24 14:47*	*11/22/24 22:30*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*11/22/24 14:47*	*11/22/24 22:30*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			11/22/24 22:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			11/25/24 14:22	1

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51432-1
SDG: Eddy County

Client Sample ID: HA-12

Lab Sample ID: 880-51432-3
Matrix: Solid
Date Collected: 11/21/24 08:10
Date Received: 11/22/24 12:06
Sample Depth: 10

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	<49.7	U	49.7		mg/Kg		11/23/24 19:22	11/25/24 14:22	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		11/23/24 19:22	11/25/24 14:22	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		11/23/24 19:22	11/25/24 14:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*98*		*70 - 130*	*11/23/24 19:22*	*11/25/24 14:22*	*1*
o-Terphenyl	*88*		*70 - 130*	*11/23/24 19:22*	*11/25/24 14:22*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1340**		49.8		mg/Kg			11/23/24 19:28	5

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51432-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-51387-A-1-F MS	Matrix Spike	103	102										
880-51387-A-1-G MSD	Matrix Spike Duplicate	109	105										
880-51432-1	HA-12	99	104										
880-51432-2	HA-12	112	106										
880-51432-3	HA-12	106	107										
LCS 880-96371/1-A	Lab Control Sample	107	103										
LCSD 880-96371/2-A	Lab Control Sample Dup	103	101										
MB 880-96371/5-A	Method Blank	108	102										

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-51431-A-2-E MS	Matrix Spike	106	101										
880-51431-A-2-F MSD	Matrix Spike Duplicate	94	90										
880-51432-1	HA-12	95	86										
880-51432-2	HA-12	93	85										
880-51432-3	HA-12	98	88										
LCS 880-96447/2-A	Lab Control Sample	105	102										
LCSD 880-96447/3-A	Lab Control Sample Dup	105	102										
MB 880-96447/1-A	Method Blank	97	93										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51432-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-96371/5-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96371

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/22/24 10:47	11/22/24 12:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*11/22/24 10:47*	*11/22/24 12:21*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*11/22/24 10:47*	*11/22/24 12:21*	*1*

Lab Sample ID: LCS 880-96371/1-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1152		mg/Kg		115	70 - 130
Toluene	0.100	0.1137		mg/Kg		114	70 - 130
Ethylbenzene	0.100	0.1116		mg/Kg		112	70 - 130
m-Xylene & p-Xylene	0.200	0.2277		mg/Kg		114	70 - 130
o-Xylene	0.100	0.1156		mg/Kg		116	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: LCSD 880-96371/2-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1151		mg/Kg		115	70 - 130	0	35
Toluene	0.100	0.1137		mg/Kg		114	70 - 130	0	35
Ethylbenzene	0.100	0.1119		mg/Kg		112	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.2281		mg/Kg		114	70 - 130	0	35
o-Xylene	0.100	0.1160		mg/Kg		116	70 - 130	0	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 880-51387-A-1-F MS
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0996	0.1109		mg/Kg		111	70 - 130
Toluene	<0.00199	U	0.0996	0.1080		mg/Kg		108	70 - 130

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QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51432-1
SDG: Eddy County

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

Lab Sample ID: 880-51387-A-1-F MS
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0996	0.1039		mg/Kg		104	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.199	0.2118		mg/Kg		106	70 - 130
o-Xylene	<0.00199	U	0.0996	0.1072		mg/Kg		108	70 - 130

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

Lab Sample ID: 880-51387-A-1-G MSD
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.100	0.09830		mg/Kg		98	70 - 130	12	35
Toluene	<0.00199	U	0.100	0.09286		mg/Kg		93	70 - 130	15	35
Ethylbenzene	<0.00199	U	0.100	0.08506		mg/Kg		85	70 - 130	20	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1724		mg/Kg		86	70 - 130	21	35
o-Xylene	<0.00199	U	0.100	0.08836		mg/Kg		88	70 - 130	19	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

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

Lab Sample ID: MB 880-96447/1-A
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96447

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/23/24 19:22	11/25/24 09:50	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/23/24 19:22	11/25/24 09:50	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/23/24 19:22	11/25/24 09:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*11/23/24 19:22*	*11/25/24 09:50*	*1*
o-Terphenyl	*93*		*70 - 130*	*11/23/24 19:22*	*11/25/24 09:50*	*1*

Lab Sample ID: LCS 880-96447/2-A
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96447

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1086		mg/Kg		109	70 - 130
Diesel Range Organics (Over C10-C28)	1000	967.2		mg/Kg		97	70 - 130

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QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51432-1
SDG: Eddy County

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

Lab Sample ID: LCS 880-96447/2-A
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96447

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	105		70 - 130
o-Terphenyl	102		70 - 130

Lab Sample ID: LCSD 880-96447/3-A
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96447

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1084		mg/Kg		108	70 - 130	0	20
Diesel Range Organics (Over C10-C28)			1000	951.3		mg/Kg		95	70 - 130	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	105		70 - 130
o-Terphenyl	102		70 - 130

Lab Sample ID: 880-51431-A-2-E MS
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96447

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	997	1133		mg/Kg		114	70 - 130
Diesel Range Organics (Over C10-C28)	<50.3	U	997	1088		mg/Kg		109	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	106		70 - 130
o-Terphenyl	101		70 - 130

Lab Sample ID: 880-51431-A-2-F MSD
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 96447

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	997	991.3		mg/Kg		99	70 - 130	13	20
Diesel Range Organics (Over C10-C28)	<50.3	U	997	975.0		mg/Kg		98	70 - 130	11	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	94		70 - 130
o-Terphenyl	90		70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51432-1
SDG: Eddy County

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-96382/1-A
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			11/23/24 12:34	1

Lab Sample ID: LCS 880-96382/2-A
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	251.9		mg/Kg		101	90 - 110		

Lab Sample ID: LCSD 880-96382/3-A
Matrix: Solid
Analysis Batch: 96389

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	252.5		mg/Kg		101	90 - 110	0	20

Lab Sample ID: 880-51431-A-1-B MS
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	941	F1	1260	2490	F1	mg/Kg		123	90 - 110		

Lab Sample ID: 880-51431-A-1-C MSD
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	941	F1	1260	2495	F1	mg/Kg		124	90 - 110	0	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51432-1
SDG: Eddy County

GC VOA

Analysis Batch: 96347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51432-1	HA-12	Total/NA	Solid	8021B	96371
880-51432-2	HA-12	Total/NA	Solid	8021B	96371
880-51432-3	HA-12	Total/NA	Solid	8021B	96371
MB 880-96371/5-A	Method Blank	Total/NA	Solid	8021B	96371
LCS 880-96371/1-A	Lab Control Sample	Total/NA	Solid	8021B	96371
LCSD 880-96371/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	96371
880-51387-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	96371
880-51387-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	96371

Prep Batch: 96371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51432-1	HA-12	Total/NA	Solid	5035	
880-51432-2	HA-12	Total/NA	Solid	5035	
880-51432-3	HA-12	Total/NA	Solid	5035	
MB 880-96371/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-96371/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-96371/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-51387-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
880-51387-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 96549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51432-1	HA-12	Total/NA	Solid	Total BTEX	
880-51432-2	HA-12	Total/NA	Solid	Total BTEX	
880-51432-3	HA-12	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 96447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51432-1	HA-12	Total/NA	Solid	8015NM Prep	
880-51432-2	HA-12	Total/NA	Solid	8015NM Prep	
880-51432-3	HA-12	Total/NA	Solid	8015NM Prep	
MB 880-96447/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-96447/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-96447/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-51431-A-2-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-51431-A-2-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 96451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51432-1	HA-12	Total/NA	Solid	8015B NM	96447
880-51432-2	HA-12	Total/NA	Solid	8015B NM	96447
880-51432-3	HA-12	Total/NA	Solid	8015B NM	96447
MB 880-96447/1-A	Method Blank	Total/NA	Solid	8015B NM	96447
LCS 880-96447/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	96447
LCSD 880-96447/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	96447
880-51431-A-2-E MS	Matrix Spike	Total/NA	Solid	8015B NM	96447
880-51431-A-2-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	96447

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51432-1
SDG: Eddy County

GC Semi VOA

Analysis Batch: 96647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51432-1	HA-12	Total/NA	Solid	8015 NM	
880-51432-2	HA-12	Total/NA	Solid	8015 NM	
880-51432-3	HA-12	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 96382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51432-1	HA-12	Soluble	Solid	DI Leach	
880-51432-2	HA-12	Soluble	Solid	DI Leach	
880-51432-3	HA-12	Soluble	Solid	DI Leach	
MB 880-96382/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-96382/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-96382/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-51431-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-51431-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 96389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51432-1	HA-12	Soluble	Solid	300.0	96382
880-51432-2	HA-12	Soluble	Solid	300.0	96382
880-51432-3	HA-12	Soluble	Solid	300.0	96382
MB 880-96382/1-A	Method Blank	Soluble	Solid	300.0	96382
LCS 880-96382/2-A	Lab Control Sample	Soluble	Solid	300.0	96382
LCSD 880-96382/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	96382
880-51431-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	96382
880-51431-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	96382

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51432-1
SDG: Eddy County

Client Sample ID: HA-12

Date Collected: 11/21/24 08:00
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51432-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 21:49	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96549	11/22/24 21:49	SM	EET MID
Total/NA	Analysis	8015 NM		1			96647	11/25/24 13:50	SM	EET MID
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	96447	11/23/24 19:22	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 13:50	TKC	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96389	11/23/24 19:12	SMC	EET MID

Client Sample ID: HA-12

Date Collected: 11/21/24 08:05
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51432-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 22:09	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96549	11/22/24 22:09	SM	EET MID
Total/NA	Analysis	8015 NM		1			96647	11/25/24 14:07	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	96447	11/23/24 19:22	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 14:07	TKC	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96389	11/23/24 19:20	SMC	EET MID

Client Sample ID: HA-12

Date Collected: 11/21/24 08:10
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51432-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 22:30	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96549	11/22/24 22:30	SM	EET MID
Total/NA	Analysis	8015 NM		1			96647	11/25/24 14:22	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	96447	11/23/24 19:22	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 14:22	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96389	11/23/24 19:28	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 880-51432-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51432-1
SDG: Eddy County

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51432-1
SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-51432-1	HA-12	Solid	11/21/24 08:00	11/22/24 12:06	6
880-51432-2	HA-12	Solid	11/21/24 08:05	11/22/24 12:06	8
880-51432-3	HA-12	Solid	11/21/24 08:10	11/22/24 12:06	10

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880-51432 Chain of Custody

ain of Custody

31) 240-4200, Dallas, TX (214) 902-0300
704-5440, San Antonio, TX (210) 509-3334
5) 585-3443, Lubbock, TX (806) 794-1296
) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: 432

www.xenco.com Page 1 of 1

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	5114 West County Road 128	Address:	
City, State ZIP:	Midland TX 79705	City, State ZIP:	
Phone:	432-894-6385	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	2657	☑ Routine ☐ Rush	
Project Location:	Eddy County	Due Date:	
Sampler's Name:	Joey Pinson	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: Chloride NM	TPH NM	BTEX NM	Sample Comments
HA-12	S	11/21/2024	8:00	6	Grab	1		X	X	X	Incident Number
HA-12	S	11/21/2024	8:05	8	Grab	1		X	X	X	nAPP2431628896
HA-12	S	11/21/2024	8:10	10	Grab	1		X	X	X	nAPP2431628896

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2S0_4: H_2 NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		Teddy Randell Lee	11/22/24 12:06			
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

Received by OCD: 11/4/2025 7:21:25 AM
Released to Imaging: 11/6/2025 3:18:49 PM
11/27/2024
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Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 880-51432-1
SDG Number: Eddy County

Login Number: 51432
List Number: 1
Creator: Vasquez, Julisa

List Source: Eurofins Midland

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Kris Williams
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 11/27/2024 12:32:21 PM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy County

JOB NUMBER

880-51433-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

Released to Imaging: 11/6/2025 3:18:49 PM

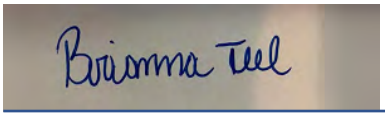
Eurofins Midland

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
11/27/2024 12:32:21 PM

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

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

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

Glossary

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

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 880-51433-1
Project: Spud Muffin 31 30 #738H

Job ID: 880-51433-1 Eurofins Midland

Job Narrative
880-51433-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 11/22/2024 12:06 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 3.7°C.

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: HA-16 (880-51433-1), HA-16 (880-51433-2), HA-16 (880-51433-3) and HA-16 (880-51433-4).

GC VOA
Method 8021B: Surrogate recovery for the following samples were outside control limits: HA-16 (880-51433-2) and (880-51424-A-1-D MSD). 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.

Diesel Range Organics
Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: HA-16 (880-51433-3). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The matrix spike duplicate (MSD) recoveries for preparation batch 880-96467 and analytical batch 880-96624 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

HPLC/IC
Method 300_ORGFM_28D - Soluble: The Chloride matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-96382 and analytical batch 880-96389 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: HA-16 (880-51433-1), HA-16 (880-51433-2) and HA-16 (880-51433-3).

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

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

Client Sample ID: HA-16

Lab Sample ID: 880-51433-1
Matrix: Solid
Date Collected: 11/21/24 09:15
Date Received: 11/22/24 12:06
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:38	11/22/24 17:45	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:38	11/22/24 17:45	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:38	11/22/24 17:45	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		11/22/24 14:38	11/22/24 17:45	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:38	11/22/24 17:45	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		11/22/24 14:38	11/22/24 17:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*128*		*70 - 130*	*11/22/24 14:38*	*11/22/24 17:45*	*1*
1,4-Difluorobenzene (Surr)	*76*		*70 - 130*	*11/22/24 14:38*	*11/22/24 17:45*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			11/22/24 17:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.2	U	50.2		mg/Kg			11/25/24 14:39	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	<50.2	U	50.2		mg/Kg		11/23/24 19:22	11/25/24 14:39	1
Diesel Range Organics (Over C10-C28)	<50.2	U	50.2		mg/Kg		11/23/24 19:22	11/25/24 14:39	1
Oil Range Organics (Over C28-C36)	<50.2	U	50.2		mg/Kg		11/23/24 19:22	11/25/24 14:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*94*		*70 - 130*	*11/23/24 19:22*	*11/25/24 14:39*	*1*
o-Terphenyl	*83*		*70 - 130*	*11/23/24 19:22*	*11/25/24 14:39*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**233**		9.98		mg/Kg			11/23/24 19:36	1

Client Sample ID: HA-16

Lab Sample ID: 880-51433-2
Matrix: Solid
Date Collected: 11/21/24 09:20
Date Received: 11/22/24 12:06
Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:38	11/22/24 18:12	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:38	11/22/24 18:12	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:38	11/22/24 18:12	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/22/24 14:38	11/22/24 18:12	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:38	11/22/24 18:12	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/22/24 14:38	11/22/24 18:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*137*	*S1+*	*70 - 130*	*11/22/24 14:38*	*11/22/24 18:12*	*1*

Eurofins Midland

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

Client Sample ID: HA-16

Date Collected: 11/21/24 09:20
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51433-2
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*11/22/24 14:38*	*11/22/24 18:12*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/22/24 18:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.1	U	50.1		mg/Kg			11/25/24 14:54	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	<50.1	U	50.1		mg/Kg		11/23/24 19:22	11/25/24 14:54	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1		mg/Kg		11/23/24 19:22	11/25/24 14:54	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1		mg/Kg		11/23/24 19:22	11/25/24 14:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*96*		*70 - 130*	*11/23/24 19:22*	*11/25/24 14:54*	*1*
o-Terphenyl	*87*		*70 - 130*	*11/23/24 19:22*	*11/25/24 14:54*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**17.1**		10.0		mg/Kg			11/23/24 19:44	1

Client Sample ID: HA-16

Date Collected: 11/21/24 09:25
Date Received: 11/22/24 12:06
Sample Depth: 4

Lab Sample ID: 880-51433-3
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		11/22/24 14:38	11/22/24 18:38	1
Toluene	<0.00201	U	0.00201		mg/Kg		11/22/24 14:38	11/22/24 18:38	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		11/22/24 14:38	11/22/24 18:38	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		11/22/24 14:38	11/22/24 18:38	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		11/22/24 14:38	11/22/24 18:38	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		11/22/24 14:38	11/22/24 18:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*11/22/24 14:38*	*11/22/24 18:38*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*11/22/24 14:38*	*11/22/24 18:38*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			11/22/24 18:38	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/25/24 14:07	1

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

Client Sample ID: HA-16

Lab Sample ID: 880-51433-3
Matrix: Solid
Date Collected: 11/21/24 09:25
Date Received: 11/22/24 12:06
Sample Depth: 4

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	<49.9	U	49.9		mg/Kg		11/23/24 19:25	11/25/24 14:07	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/23/24 19:25	11/25/24 14:07	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/23/24 19:25	11/25/24 14:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*86*		*70 - 130*	*11/23/24 19:25*	*11/25/24 14:07*	*1*
o-Terphenyl	*66*	*S1-*	*70 - 130*	*11/23/24 19:25*	*11/25/24 14:07*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**21.5**		9.96		mg/Kg			11/23/24 19:53	1

Client Sample ID: HA-16

Lab Sample ID: 880-51433-4
Matrix: Solid
Date Collected: 11/21/24 08:30
Date Received: 11/22/24 12:06
Sample Depth: 6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/23/24 16:57	11/24/24 02:00	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/23/24 16:57	11/24/24 02:00	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/23/24 16:57	11/24/24 02:00	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/23/24 16:57	11/24/24 02:00	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/23/24 16:57	11/24/24 02:00	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/23/24 16:57	11/24/24 02:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*11/23/24 16:57*	*11/24/24 02:00*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*11/23/24 16:57*	*11/24/24 02:00*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			11/24/24 02:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/26/24 10:54	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	<49.9	U F2	49.9		mg/Kg		11/25/24 08:25	11/26/24 10:54	1
Diesel Range Organics (Over C10-C28)	<49.9	U F1	49.9		mg/Kg		11/25/24 08:25	11/26/24 10:54	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/25/24 08:25	11/26/24 10:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*11/25/24 08:25*	*11/26/24 10:54*	*1*
o-Terphenyl	*70*		*70 - 130*	*11/25/24 08:25*	*11/26/24 10:54*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

Client Sample ID: HA-16

Lab Sample ID: 880-51433-4

Date Collected: 11/21/24 08:30
Matrix: Solid
Date Received: 11/22/24 12:06
Sample Depth: 6

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	208		9.92		mg/Kg			11/26/24 08:03	1

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-51433-1	HA-16	128	76
880-51433-2	HA-16	137 S1+	86
880-51433-3	HA-16	118	93
880-51433-4	HA-16	109	98
LCS 880-96403/1-A	Lab Control Sample	104	102
LCS 880-96444/1-A	Lab Control Sample	109	101
LCS 880-96444/2-A	Lab Control Sample	101	101
LCSD 880-96403/2-A	Lab Control Sample Dup	107	102
MB 880-96403/5-A	Method Blank	84	88
MB 880-96444/5-A	Method Blank	97	94

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-51433-1	HA-16	94	83
880-51433-2	HA-16	96	87
880-51433-3	HA-16	86	66 S1-
880-51433-4	HA-16	90	70
880-51433-4 MS	HA-16	102	84
880-51433-4 MSD	HA-16	84	71
LCS 880-96447/2-A	Lab Control Sample	105	102
LCS 880-96448/2-A	Lab Control Sample	90	82
LCS 880-96467/2-A	Lab Control Sample	90	82
LCSD 880-96447/3-A	Lab Control Sample Dup	105	102
LCSD 880-96448/3-A	Lab Control Sample Dup	90	80
LCSD 880-96467/3-A	Lab Control Sample Dup	92	82
MB 880-96447/1-A	Method Blank	97	93
MB 880-96448/1-A	Method Blank	87	72
MB 880-96467/1-A	Method Blank	113	91

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-96403/5-A
Matrix: Solid
Analysis Batch: 96351

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96403

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:38	11/22/24 16:26	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:38	11/22/24 16:26	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:38	11/22/24 16:26	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/22/24 14:38	11/22/24 16:26	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:38	11/22/24 16:26	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/22/24 14:38	11/22/24 16:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*	*11/22/24 14:38*	*11/22/24 16:26*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*11/22/24 14:38*	*11/22/24 16:26*	*1*

Lab Sample ID: LCS 880-96403/1-A
Matrix: Solid
Analysis Batch: 96351

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96403

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1155		mg/Kg		116	70 - 130		
Toluene			0.100	0.1084		mg/Kg		108	70 - 130		
Ethylbenzene			0.100	0.1100		mg/Kg		110	70 - 130		
m-Xylene & p-Xylene			0.200	0.2196		mg/Kg		110	70 - 130		
o-Xylene			0.100	0.1090		mg/Kg		109	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: LCSD 880-96403/2-A
Matrix: Solid
Analysis Batch: 96351

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96403

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1157		mg/Kg		116	70 - 130	0	35
Toluene			0.100	0.1079		mg/Kg		108	70 - 130	0	35
Ethylbenzene			0.100	0.1097		mg/Kg		110	70 - 130	0	35
m-Xylene & p-Xylene			0.200	0.2208		mg/Kg		110	70 - 130	1	35
o-Xylene			0.100	0.1101		mg/Kg		110	70 - 130	1	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: MB 880-96444/5-A
Matrix: Solid
Analysis Batch: 96440

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96444

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/23/24 16:57	11/23/24 19:57	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/23/24 16:57	11/23/24 19:57	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

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

Lab Sample ID: MB 880-96444/5-A
Matrix: Solid
Analysis Batch: 96440

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96444

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/23/24 16:57	11/23/24 19:57	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/23/24 16:57	11/23/24 19:57	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/23/24 16:57	11/23/24 19:57	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/23/24 16:57	11/23/24 19:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*11/23/24 16:57*	*11/23/24 19:57*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*11/23/24 16:57*	*11/23/24 19:57*	*1*

Lab Sample ID: LCS 880-96444/1-A
Matrix: Solid
Analysis Batch: 96440

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96444

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1098		mg/Kg		110	70 - 130
Toluene	0.100	0.1086		mg/Kg		109	70 - 130
Ethylbenzene	0.100	0.1156		mg/Kg		116	70 - 130
m-Xylene & p-Xylene	0.200	0.2234		mg/Kg		112	70 - 130
o-Xylene	0.100	0.1252		mg/Kg		125	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: LCS 880-96444/2-A
Matrix: Solid
Analysis Batch: 96440

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96444

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1077		mg/Kg		108	70 - 130
Toluene	0.100	0.1062		mg/Kg		106	70 - 130
Ethylbenzene	0.100	0.1127		mg/Kg		113	70 - 130
m-Xylene & p-Xylene	0.200	0.2161		mg/Kg		108	70 - 130
o-Xylene	0.100	0.1209		mg/Kg		121	70 - 130

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

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

Lab Sample ID: MB 880-96447/1-A
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96447

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/23/24 19:22	11/25/24 09:50	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

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

Lab Sample ID: MB 880-96447/1-A
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96447

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/23/24 19:22	11/25/24 09:50	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/23/24 19:22	11/25/24 09:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*11/23/24 19:22*	*11/25/24 09:50*	*1*
o-Terphenyl	*93*		*70 - 130*	*11/23/24 19:22*	*11/25/24 09:50*	*1*

Lab Sample ID: LCS 880-96447/2-A
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96447

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1086		mg/Kg		109	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	967.2		mg/Kg		97	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*105*		*70 - 130*
o-Terphenyl	*102*		*70 - 130*

Lab Sample ID: LCSD 880-96447/3-A
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96447

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1084		mg/Kg		108	70 - 130	0	20
Diesel Range Organics (Over C10-C28)			1000	951.3		mg/Kg		95	70 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*105*		*70 - 130*
o-Terphenyl	*102*		*70 - 130*

Lab Sample ID: MB 880-96448/1-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96448

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/23/24 19:25	11/25/24 09:50	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/23/24 19:25	11/25/24 09:50	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/23/24 19:25	11/25/24 09:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*87*		*70 - 130*	*11/23/24 19:25*	*11/25/24 09:50*	*1*

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

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

Lab Sample ID: MB 880-96448/1-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96448

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	72		70 - 130	11/23/24 19:25	11/25/24 09:50	1

Lab Sample ID: LCS 880-96448/2-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96448

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	992.8		mg/Kg		99	70 - 130
Diesel Range Organics (Over C10-C28)	1000	819.3		mg/Kg		82	70 - 130

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

Lab Sample ID: LCSD 880-96448/3-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96448

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1011		mg/Kg		101	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	1000	788.9		mg/Kg		79	70 - 130	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	90		70 - 130
o-Terphenyl	80		70 - 130

Lab Sample ID: MB 880-96467/1-A
Matrix: Solid
Analysis Batch: 96624

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96467

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/25/24 08:25	11/26/24 08:02	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/25/24 08:25	11/26/24 08:02	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/25/24 08:25	11/26/24 08:02	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130	11/25/24 08:25	11/26/24 08:02	1
o-Terphenyl	91		70 - 130	11/25/24 08:25	11/26/24 08:02	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

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

Lab Sample ID: LCS 880-96467/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96624 — **Prep Batch: 96467**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	993.9		mg/Kg		99	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	835.4		mg/Kg		84	70 - 130		

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

Lab Sample ID: LCSD 880-96467/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96624 — **Prep Batch: 96467**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1036		mg/Kg		104	70 - 130	4	20
Diesel Range Organics (Over C10-C28)			1000	827.1		mg/Kg		83	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*92*		*70 - 130*
o-Terphenyl	*82*		*70 - 130*

Lab Sample ID: 880-51433-4 MS — **Client Sample ID: HA-16**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96624 — **Prep Batch: 96467**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F2	999	972.0		mg/Kg		97	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U F1	999	783.4		mg/Kg		78	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*102*		*70 - 130*
o-Terphenyl	*84*		*70 - 130*

Lab Sample ID: 880-51433-4 MSD — **Client Sample ID: HA-16**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96624 — **Prep Batch: 96467**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F2	999	785.4	F2	mg/Kg		79	70 - 130	21	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	999	649.7	F1	mg/Kg		65	70 - 130	19	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*84*		*70 - 130*

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

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

Lab Sample ID: 880-51433-4 MSD
Matrix: Solid
Analysis Batch: 96624

Client Sample ID: HA-16
Prep Type: Total/NA
Prep Batch: 96467

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl	71		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-96382/1-A
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			11/23/24 12:34	1

Lab Sample ID: LCS 880-96382/2-A
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	251.9		mg/Kg		101	90 - 110		

Lab Sample ID: LCSD 880-96382/3-A
Matrix: Solid
Analysis Batch: 96389

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	252.5		mg/Kg		101	90 - 110	0	20

Lab Sample ID: MB 880-96517/1-A
Matrix: Solid
Analysis Batch: 96559

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			11/26/24 07:14	1

Lab Sample ID: LCS 880-96517/2-A
Matrix: Solid
Analysis Batch: 96559

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	254.0		mg/Kg		102	90 - 110		

Lab Sample ID: LCSD 880-96517/3-A
Matrix: Solid
Analysis Batch: 96559

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	254.7		mg/Kg		102	90 - 110	0	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

GC VOA

Analysis Batch: 96351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51433-1	HA-16	Total/NA	Solid	8021B	96403
880-51433-2	HA-16	Total/NA	Solid	8021B	96403
880-51433-3	HA-16	Total/NA	Solid	8021B	96403
MB 880-96403/5-A	Method Blank	Total/NA	Solid	8021B	96403
LCS 880-96403/1-A	Lab Control Sample	Total/NA	Solid	8021B	96403
LCSD 880-96403/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	96403

Prep Batch: 96403

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51433-1	HA-16	Total/NA	Solid	5035	
880-51433-2	HA-16	Total/NA	Solid	5035	
880-51433-3	HA-16	Total/NA	Solid	5035	
MB 880-96403/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-96403/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-96403/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 96440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51433-4	HA-16	Total/NA	Solid	8021B	96444
MB 880-96444/5-A	Method Blank	Total/NA	Solid	8021B	96444
LCS 880-96444/1-A	Lab Control Sample	Total/NA	Solid	8021B	96444
LCS 880-96444/2-A	Lab Control Sample	Total/NA	Solid	8021B	96444

Prep Batch: 96444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51433-4	HA-16	Total/NA	Solid	5035	
MB 880-96444/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-96444/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCS 880-96444/2-A	Lab Control Sample	Total/NA	Solid	5035	

Analysis Batch: 96527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51433-1	HA-16	Total/NA	Solid	Total BTEX	
880-51433-2	HA-16	Total/NA	Solid	Total BTEX	
880-51433-3	HA-16	Total/NA	Solid	Total BTEX	
880-51433-4	HA-16	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 96447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51433-1	HA-16	Total/NA	Solid	8015NM Prep	
880-51433-2	HA-16	Total/NA	Solid	8015NM Prep	
MB 880-96447/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-96447/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-96447/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Prep Batch: 96448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51433-3	HA-16	Total/NA	Solid	8015NM Prep	
MB 880-96448/1-A	Method Blank	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

GC Semi VOA (Continued)

Prep Batch: 96448 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-96448/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-96448/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 96449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51433-3	HA-16	Total/NA	Solid	8015B NM	96448
MB 880-96448/1-A	Method Blank	Total/NA	Solid	8015B NM	96448
LCS 880-96448/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	96448
LCSD 880-96448/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	96448

Analysis Batch: 96451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51433-1	HA-16	Total/NA	Solid	8015B NM	96447
880-51433-2	HA-16	Total/NA	Solid	8015B NM	96447
MB 880-96447/1-A	Method Blank	Total/NA	Solid	8015B NM	96447
LCS 880-96447/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	96447
LCSD 880-96447/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	96447

Prep Batch: 96467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51433-4	HA-16	Total/NA	Solid	8015NM Prep	
MB 880-96467/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-96467/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-96467/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-51433-4 MS	HA-16	Total/NA	Solid	8015NM Prep	
880-51433-4 MSD	HA-16	Total/NA	Solid	8015NM Prep	

Analysis Batch: 96552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51433-1	HA-16	Total/NA	Solid	8015 NM	
880-51433-2	HA-16	Total/NA	Solid	8015 NM	
880-51433-3	HA-16	Total/NA	Solid	8015 NM	
880-51433-4	HA-16	Total/NA	Solid	8015 NM	

Analysis Batch: 96624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51433-4	HA-16	Total/NA	Solid	8015B NM	96467
MB 880-96467/1-A	Method Blank	Total/NA	Solid	8015B NM	96467
LCS 880-96467/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	96467
LCSD 880-96467/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	96467
880-51433-4 MS	HA-16	Total/NA	Solid	8015B NM	96467
880-51433-4 MSD	HA-16	Total/NA	Solid	8015B NM	96467

HPLC/IC

Leach Batch: 96382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51433-1	HA-16	Soluble	Solid	DI Leach	
880-51433-2	HA-16	Soluble	Solid	DI Leach	
880-51433-3	HA-16	Soluble	Solid	DI Leach	
MB 880-96382/1-A	Method Blank	Soluble	Solid	DI Leach	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

HPLC/IC (Continued)

Leach Batch: 96382 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-96382/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-96382/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 96389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51433-1	HA-16	Soluble	Solid	300.0	96382
880-51433-2	HA-16	Soluble	Solid	300.0	96382
880-51433-3	HA-16	Soluble	Solid	300.0	96382
MB 880-96382/1-A	Method Blank	Soluble	Solid	300.0	96382
LCS 880-96382/2-A	Lab Control Sample	Soluble	Solid	300.0	96382
LCSD 880-96382/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	96382

Leach Batch: 96517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51433-4	HA-16	Soluble	Solid	DI Leach	
MB 880-96517/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-96517/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-96517/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 96559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51433-4	HA-16	Soluble	Solid	300.0	96517
MB 880-96517/1-A	Method Blank	Soluble	Solid	300.0	96517
LCS 880-96517/2-A	Lab Control Sample	Soluble	Solid	300.0	96517
LCSD 880-96517/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	96517

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

Client Sample ID: HA-16
Date Collected: 11/21/24 09:15
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51433-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	96403	11/22/24 14:38	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96351	11/22/24 17:45	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96527	11/22/24 17:45	SM	EET MID
Total/NA	Analysis	8015 NM		1			96552	11/25/24 14:39	SM	EET MID
Total/NA	Prep	8015NM Prep			9.97 g	10 mL	96447	11/23/24 19:22	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 14:39	TKC	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96389	11/23/24 19:36	SMC	EET MID

Client Sample ID: HA-16
Date Collected: 11/21/24 09:20
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51433-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	96403	11/22/24 14:38	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96351	11/22/24 18:12	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96527	11/22/24 18:12	SM	EET MID
Total/NA	Analysis	8015 NM		1			96552	11/25/24 14:54	SM	EET MID
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	96447	11/23/24 19:22	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 14:54	TKC	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96389	11/23/24 19:44	SMC	EET MID

Client Sample ID: HA-16
Date Collected: 11/21/24 09:25
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51433-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	96403	11/22/24 14:38	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96351	11/22/24 18:38	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96527	11/22/24 18:38	SM	EET MID
Total/NA	Analysis	8015 NM		1			96552	11/25/24 14:07	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	96448	11/23/24 19:25	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 14:07	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96389	11/23/24 19:53	SMC	EET MID

Client Sample ID: HA-16
Date Collected: 11/21/24 08:30
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51433-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	96444	11/23/24 16:57	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96440	11/24/24 02:00	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96527	11/24/24 02:00	SM	EET MID

Eurofins Midland

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

Client Sample ID: HA-16

Date Collected: 11/21/24 08:30
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51433-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			96552	11/26/24 10:54	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	96467	11/25/24 08:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96624	11/26/24 10:54	TKC	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	96517	11/25/24 11:24	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96559	11/26/24 08:03	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 880-51433-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-51433-1	HA-16	Solid	11/21/24 09:15	11/22/24 12:06	0.5
880-51433-2	HA-16	Solid	11/21/24 09:20	11/22/24 12:06	2
880-51433-3	HA-16	Solid	11/21/24 09:25	11/22/24 12:06	4
880-51433-4	HA-16	Solid	11/21/24 08:30	11/22/24 12:06	6

Released to Imaging: 11/6/2025 3:18:49 PM
Received by OCD: 11/4/2025 7:21:25 AM

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880-51433 Chain of Custody

of Custody

3-4200, Dallas, TX (214) 902-0300
440, San Antonio, TX (210) 509-3334
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: 433

www.xenco.com Page 1 of 1

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	5114 West County Road 128	Address:	
City, State ZIP:	Midland TX 79705	City, State ZIP:	
Phone:	432-894-6385	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	2657	☑ Routine ☐ Rush	
Project Location:	Eddy County	Due Date:	
Sampler's Name:	Joey Pinson	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

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

Preservative Codes

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: Chloride NM	TPH NM	BTEX NM	Sample Comments
HA-16	S	11/21/2024	8:15	0.5	Grab	1		X	X	X	Incident Number
HA-16	S	11/21/2024	8:20	2	Grab	1		X	X	X	nAPP2431628896
HA-16	S	11/21/2024	8:25	4	Grab	1		X	X	X	nAPP2431628896
HA-16	S	11/21/2024	8:30	6	Grab	1		X	X	X	nAPP2431628896

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		Teddy Rachell Lee	11/22/24 12:26			
3				4		
5				6		

Revised Date: 08/25/2020 Rev 2020.2

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 880-51433-1
SDG Number: Eddy County

Login Number: 51433
List Number: 1
Creator: Vasquez, Julisa

List Source: Eurofins Midland

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Kris Williams
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 11/26/2024 11:23:57 AM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy County

JOB NUMBER

880-51423-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

Released to Imaging: 11/6/2025 3:18:49 PM

my EOL

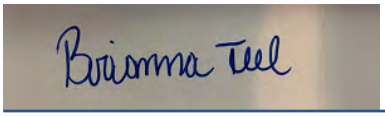
Eurofins Midland

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
11/26/2024 11:23:57 AM

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

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51423-1
SDG: Eddy County

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
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

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

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 880-51423-1
Project: Spud Muffin 31 30 #738H

Job ID: 880-51423-1 Eurofins Midland

Job Narrative
880-51423-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 11/22/2024 12:06 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.7°C.

Receipt Exceptions
The following sample was received and analyzed from an unpreserved bulk soil jar: HA-16 (880-51423-1).

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 matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-96383 and analytical batch 880-96449 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.

HPLC/IC
Method 300_ORGFM_28D - Soluble: Due to the high concentration of Chloride, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 880-96390 and analytical batch 880-96405 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

The associated samples are: (880-51422-A-2-B MS) and (880-51422-A-2-C MSD).

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

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51423-1
SDG: Eddy County

Client Sample ID: HA-16

Date Collected: 11/21/24 08:35
Date Received: 11/22/24 12:06
Sample Depth: 8

Lab Sample ID: 880-51423-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		11/22/24 14:47	11/22/24 15:07	1
Toluene	<0.00201	U	0.00201		mg/Kg		11/22/24 14:47	11/22/24 15:07	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		11/22/24 14:47	11/22/24 15:07	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		11/22/24 14:47	11/22/24 15:07	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		11/22/24 14:47	11/22/24 15:07	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		11/22/24 14:47	11/22/24 15:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*11/22/24 14:47*	*11/22/24 15:07*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*11/22/24 14:47*	*11/22/24 15:07*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			11/22/24 15:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/25/24 17:13	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	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 17:13	1
Diesel Range Organics (Over C10-C28)	<50.0	U F1	50.0		mg/Kg		11/22/24 13:25	11/25/24 17:13	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 17:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*88*		*70 - 130*	*11/22/24 13:25*	*11/25/24 17:13*	*1*
o-Terphenyl	*70*		*70 - 130*	*11/22/24 13:25*	*11/25/24 17:13*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**709**		50.4		mg/Kg			11/22/24 23:48	5

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51423-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-51387-A-1-F MS	Matrix Spike	103	102										
880-51387-A-1-G MSD	Matrix Spike Duplicate	109	105										
880-51423-1	HA-16	104	105										
LCS 880-96371/1-A	Lab Control Sample	107	103										
LCSD 880-96371/2-A	Lab Control Sample Dup	103	101										
MB 880-96371/5-A	Method Blank	108	102										

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-51423-1	HA-16	88	70										
880-51423-1 MS	HA-16	82	70										
880-51423-1 MSD	HA-16	82	70										
LCS 880-96383/2-A	Lab Control Sample	90	81										
LCSD 880-96383/3-A	Lab Control Sample Dup	92	81										
MB 880-96383/1-A	Method Blank	92	73										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51423-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-96371/5-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96371

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/22/24 10:47	11/22/24 12:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*11/22/24 10:47*	*11/22/24 12:21*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*11/22/24 10:47*	*11/22/24 12:21*	*1*

Lab Sample ID: LCS 880-96371/1-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1152		mg/Kg		115	70 - 130
Toluene	0.100	0.1137		mg/Kg		114	70 - 130
Ethylbenzene	0.100	0.1116		mg/Kg		112	70 - 130
m-Xylene & p-Xylene	0.200	0.2277		mg/Kg		114	70 - 130
o-Xylene	0.100	0.1156		mg/Kg		116	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: LCSD 880-96371/2-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1151		mg/Kg		115	70 - 130	0	35
Toluene	0.100	0.1137		mg/Kg		114	70 - 130	0	35
Ethylbenzene	0.100	0.1119		mg/Kg		112	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.2281		mg/Kg		114	70 - 130	0	35
o-Xylene	0.100	0.1160		mg/Kg		116	70 - 130	0	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 880-51387-A-1-F MS
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0996	0.1109		mg/Kg		111	70 - 130
Toluene	<0.00199	U	0.0996	0.1080		mg/Kg		108	70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51423-1
SDG: Eddy County

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

Lab Sample ID: 880-51387-A-1-F MS
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0996	0.1039		mg/Kg		104	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.199	0.2118		mg/Kg		106	70 - 130
o-Xylene	<0.00199	U	0.0996	0.1072		mg/Kg		108	70 - 130

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

Lab Sample ID: 880-51387-A-1-G MSD
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.100	0.09830		mg/Kg		98	70 - 130	12	35
Toluene	<0.00199	U	0.100	0.09286		mg/Kg		93	70 - 130	15	35
Ethylbenzene	<0.00199	U	0.100	0.08506		mg/Kg		85	70 - 130	20	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1724		mg/Kg		86	70 - 130	21	35
o-Xylene	<0.00199	U	0.100	0.08836		mg/Kg		88	70 - 130	19	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

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

Lab Sample ID: MB 880-96383/1-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96383

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 16:25	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 16:25	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 16:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*11/22/24 13:25*	*11/25/24 16:25*	*1*
o-Terphenyl	*73*		*70 - 130*	*11/22/24 13:25*	*11/25/24 16:25*	*1*

Lab Sample ID: LCS 880-96383/2-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96383

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1009		mg/Kg		101	70 - 130
Diesel Range Organics (Over C10-C28)	1000	801.6		mg/Kg		80	70 - 130

Eurofins Midland

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51423-1
SDG: Eddy County

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

Lab Sample ID: LCS 880-96383/2-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96383

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	90		70 - 130
o-Terphenyl	81		70 - 130

Lab Sample ID: LCSD 880-96383/3-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96383

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1031		mg/Kg		103	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	826.2		mg/Kg		83	70 - 130	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	92		70 - 130
o-Terphenyl	81		70 - 130

Lab Sample ID: 880-51423-1 MS
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: HA-16
Prep Type: Total/NA
Prep Batch: 96383

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	995	826.1		mg/Kg		83	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U F1	995	689.2	F1	mg/Kg		69	70 - 130

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

Lab Sample ID: 880-51423-1 MSD
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: HA-16
Prep Type: Total/NA
Prep Batch: 96383

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	995	841.7		mg/Kg		85	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<50.0	U F1	995	710.2		mg/Kg		71	70 - 130	3	20

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

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51423-1
SDG: Eddy County

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-96390/1-A
Matrix: Solid
Analysis Batch: 96405

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			11/22/24 21:28	1

Lab Sample ID: LCS 880-96390/2-A
Matrix: Solid
Analysis Batch: 96405

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	242.6		mg/Kg		97	90 - 110		

Lab Sample ID: LCSD 880-96390/3-A
Matrix: Solid
Analysis Batch: 96405

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	245.5		mg/Kg		98	90 - 110	1	20

Lab Sample ID: 880-51422-A-2-B MS
Matrix: Solid
Analysis Batch: 96405

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	1060		251	1280	4	mg/Kg		88	90 - 110		

Lab Sample ID: 880-51422-A-2-C MSD
Matrix: Solid
Analysis Batch: 96405

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1060		251	1270	4	mg/Kg		84	90 - 110	1	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51423-1
SDG: Eddy County

GC VOA

Analysis Batch: 96347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51423-1	HA-16	Total/NA	Solid	8021B	96371
MB 880-96371/5-A	Method Blank	Total/NA	Solid	8021B	96371
LCS 880-96371/1-A	Lab Control Sample	Total/NA	Solid	8021B	96371
LCSD 880-96371/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	96371
880-51387-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	96371
880-51387-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	96371

Prep Batch: 96371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51423-1	HA-16	Total/NA	Solid	5035	
MB 880-96371/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-96371/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-96371/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-51387-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
880-51387-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 96543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51423-1	HA-16	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 96383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51423-1	HA-16	Total/NA	Solid	8015NM Prep	
MB 880-96383/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-96383/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-96383/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-51423-1 MS	HA-16	Total/NA	Solid	8015NM Prep	
880-51423-1 MSD	HA-16	Total/NA	Solid	8015NM Prep	

Analysis Batch: 96449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51423-1	HA-16	Total/NA	Solid	8015B NM	96383
MB 880-96383/1-A	Method Blank	Total/NA	Solid	8015B NM	96383
LCS 880-96383/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	96383
LCSD 880-96383/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	96383
880-51423-1 MS	HA-16	Total/NA	Solid	8015B NM	96383
880-51423-1 MSD	HA-16	Total/NA	Solid	8015B NM	96383

Analysis Batch: 96643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51423-1	HA-16	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 96390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51423-1	HA-16	Soluble	Solid	DI Leach	
MB 880-96390/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-96390/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-96390/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51423-1
SDG: Eddy County

HPLC/IC (Continued)

Leach Batch: 96390 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51422-A-2-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-51422-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 96405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51423-1	HA-16	Soluble	Solid	300.0	96390
MB 880-96390/1-A	Method Blank	Soluble	Solid	300.0	96390
LCS 880-96390/2-A	Lab Control Sample	Soluble	Solid	300.0	96390
LCSD 880-96390/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	96390
880-51422-A-2-B MS	Matrix Spike	Soluble	Solid	300.0	96390
880-51422-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	96390

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51423-1
SDG: Eddy County

Client Sample ID: HA-16

Date Collected: 11/21/24 08:35
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51423-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 15:07	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96543	11/22/24 15:07	SM	EET MID
Total/NA	Analysis	8015 NM		1			96643	11/25/24 17:13	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 17:13	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	96390	11/22/24 14:16	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96405	11/22/24 23:48	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 880-51423-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51423-1
SDG: Eddy County

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51423-1
SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-51423-1	HA-16	Solid	11/21/24 08:35	11/22/24 12:06	8

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11/26/2024

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Chain of Custody

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

880-51423 Chain of Custody

Work Order No.: _____

www.xenco.com Page 1 of 1

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	5114 West County Road 128	Address:	
City, State ZIP:	Midland TX 79705	City, State ZIP:	
Phone:	432-894-6385	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	2657	☑ Routine ☐ Rush	
Project Location:	Eddy County	Due Date:	
Sampler's Name:	Joey Pinson	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:		
Cooler Custody Seals:	Yes No N/A	Correction Factor:		
Sample Custody Seals:	Yes No N/A	Temperature Reading:	3.6	
Total Containers:		Corrected Temperature:	3.7	

Preservative Codes

None: NO — DI Water: H_2O
Cool: Cool — MeOH: Me
HCL: HC — HNO_3: HN
H_2S0_4: H_2 — NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Chloride NM	TPH NM	BTEX NM	Sample Comments
HA-16	S	11/21/2024	8:35	8	Grab	1	X	X	X	Incident Number

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0	Teddy Rendell Lo	11/21/24 12:46	4		
3			6		
5					

Revised Date: 08/25/2020 Rev. 2020.2

Received by OCD: 11/4/2025 7:21:25 AM

Released to Imaging: 11/6/2025 3:18:49 PM

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 880-51423-1
SDG Number: Eddy County

Login Number: 51423
List Number: 1
Creator: Vasquez, Julisa

List Source: Eurofins Midland

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Kris Williams
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 11/26/2024 11:23:57 AM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy County

JOB NUMBER

880-51426-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

Released to Imaging: 11/6/2025 3:18:49 PM

my EOL

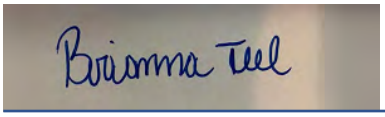
Eurofins Midland

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
11/26/2024 11:23:57 AM

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

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Laboratory Job ID: 880-51426-1
SDG: Eddy County

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51426-1
SDG: Eddy County

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
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

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

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 880-51426-1
Project: Spud Muffin 31 30 #738H

Job ID: 880-51426-1 Eurofins Midland

Job Narrative
880-51426-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 11/22/2024 12:06 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 3.7°C.

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: HA-17 (880-51426-1), HA-17 (880-51426-2) and HA-17 (880-51426-3).

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 matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-96383 and analytical batch 880-96449 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.

HPLC/IC
Method 300_ORGFM_28D - Soluble: Due to the high concentration of Chloride, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 880-96390 and analytical batch 880-96405 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

The associated samples are: (880-51422-A-2-B MS) and (880-51422-A-2-C MSD).

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

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51426-1
SDG: Eddy County

Client Sample ID: HA-17

Lab Sample ID: 880-51426-1
Matrix: Solid
Date Collected: 11/21/24 08:35
Date Received: 11/22/24 12:06
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		11/22/24 14:47	11/22/24 15:28	1
Toluene	<0.00202	U	0.00202		mg/Kg		11/22/24 14:47	11/22/24 15:28	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		11/22/24 14:47	11/22/24 15:28	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		11/22/24 14:47	11/22/24 15:28	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		11/22/24 14:47	11/22/24 15:28	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		11/22/24 14:47	11/22/24 15:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*11/22/24 14:47*	*11/22/24 15:28*	*1*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*	*11/22/24 14:47*	*11/22/24 15:28*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			11/22/24 15:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/25/24 18:02	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	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 18:02	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 18:02	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 13:25	11/25/24 18:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*96*		*70 - 130*	*11/22/24 13:25*	*11/25/24 18:02*	*1*
o-Terphenyl	*75*		*70 - 130*	*11/22/24 13:25*	*11/25/24 18:02*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1790**		50.3		mg/Kg			11/23/24 00:28	5

Client Sample ID: HA-17

Lab Sample ID: 880-51426-2
Matrix: Solid
Date Collected: 11/21/24 08:40
Date Received: 11/22/24 12:06
Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 15:48	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 15:48	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 15:48	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		11/22/24 14:47	11/22/24 15:48	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 15:48	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		11/22/24 14:47	11/22/24 15:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*	*11/22/24 14:47*	*11/22/24 15:48*	*1*

Eurofins Midland

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51426-1
SDG: Eddy County

Client Sample ID: HA-17

Date Collected: 11/21/24 08:40
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51426-2

Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*11/22/24 14:47*	*11/22/24 15:48*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			11/22/24 15:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			11/25/24 18:19	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	<49.7	U	49.7		mg/Kg		11/22/24 13:25	11/25/24 18:19	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		11/22/24 13:25	11/25/24 18:19	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		11/22/24 13:25	11/25/24 18:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*94*		*70 - 130*	*11/22/24 13:25*	*11/25/24 18:19*	*1*
o-Terphenyl	*71*		*70 - 130*	*11/22/24 13:25*	*11/25/24 18:19*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**52.1**		9.92		mg/Kg			11/23/24 00:34	1

Client Sample ID: HA-17

Date Collected: 11/21/24 08:45
Date Received: 11/22/24 12:06
Sample Depth: 4

Lab Sample ID: 880-51426-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 16:09	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 16:09	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 16:09	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		11/22/24 14:47	11/22/24 16:09	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 16:09	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		11/22/24 14:47	11/22/24 16:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*11/22/24 14:47*	*11/22/24 16:09*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*11/22/24 14:47*	*11/22/24 16:09*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			11/22/24 16:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/25/24 18:34	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51426-1
SDG: Eddy County

Client Sample ID: HA-17

Lab Sample ID: 880-51426-3
Matrix: Solid
Date Collected: 11/21/24 08:45
Date Received: 11/22/24 12:06
Sample Depth: 4

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	<49.9	U	49.9		mg/Kg		11/22/24 13:25	11/25/24 18:34	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/22/24 13:25	11/25/24 18:34	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 13:25	11/25/24 18:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*11/22/24 13:25*	*11/25/24 18:34*	*1*
o-Terphenyl	*70*		*70 - 130*	*11/22/24 13:25*	*11/25/24 18:34*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**539**		10.1		mg/Kg			11/23/24 00:41	1

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51426-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-51387-A-1-F MS	Matrix Spike	103	102
880-51387-A-1-G MSD	Matrix Spike Duplicate	109	105
880-51426-1	HA-17	113	108
880-51426-2	HA-17	92	101
880-51426-3	HA-17	110	107
LCS 880-96371/1-A	Lab Control Sample	107	103
LCSD 880-96371/2-A	Lab Control Sample Dup	103	101
MB 880-96371/5-A	Method Blank	108	102

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-51423-A-1-B MS	Matrix Spike	82	70
880-51423-A-1-C MSD	Matrix Spike Duplicate	82	70
880-51426-1	HA-17	96	75
880-51426-2	HA-17	94	71
880-51426-3	HA-17	92	70
LCS 880-96383/2-A	Lab Control Sample	90	81
LCSD 880-96383/3-A	Lab Control Sample Dup	92	81
MB 880-96383/1-A	Method Blank	92	73

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51426-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-96371/5-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96371

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/22/24 10:47	11/22/24 12:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*11/22/24 10:47*	*11/22/24 12:21*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*11/22/24 10:47*	*11/22/24 12:21*	*1*

Lab Sample ID: LCS 880-96371/1-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1152		mg/Kg		115	70 - 130
Toluene	0.100	0.1137		mg/Kg		114	70 - 130
Ethylbenzene	0.100	0.1116		mg/Kg		112	70 - 130
m-Xylene & p-Xylene	0.200	0.2277		mg/Kg		114	70 - 130
o-Xylene	0.100	0.1156		mg/Kg		116	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: LCSD 880-96371/2-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1151		mg/Kg		115	70 - 130	0	35
Toluene	0.100	0.1137		mg/Kg		114	70 - 130	0	35
Ethylbenzene	0.100	0.1119		mg/Kg		112	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.2281		mg/Kg		114	70 - 130	0	35
o-Xylene	0.100	0.1160		mg/Kg		116	70 - 130	0	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 880-51387-A-1-F MS
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0996	0.1109		mg/Kg		111	70 - 130
Toluene	<0.00199	U	0.0996	0.1080		mg/Kg		108	70 - 130

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QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51426-1
SDG: Eddy County

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

Lab Sample ID: 880-51387-A-1-F MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96347 — **Prep Batch: 96371**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0996	0.1039		mg/Kg		104	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.199	0.2118		mg/Kg		106	70 - 130
o-Xylene	<0.00199	U	0.0996	0.1072		mg/Kg		108	70 - 130

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

Lab Sample ID: 880-51387-A-1-G MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96347 — **Prep Batch: 96371**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.100	0.09830		mg/Kg		98	70 - 130	12	35
Toluene	<0.00199	U	0.100	0.09286		mg/Kg		93	70 - 130	15	35
Ethylbenzene	<0.00199	U	0.100	0.08506		mg/Kg		85	70 - 130	20	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1724		mg/Kg		86	70 - 130	21	35
o-Xylene	<0.00199	U	0.100	0.08836		mg/Kg		88	70 - 130	19	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

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

Lab Sample ID: MB 880-96383/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96449 — **Prep Batch: 96383**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 16:25	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 16:25	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 13:25	11/25/24 16:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*11/22/24 13:25*	*11/25/24 16:25*	*1*
o-Terphenyl	*73*		*70 - 130*	*11/22/24 13:25*	*11/25/24 16:25*	*1*

Lab Sample ID: LCS 880-96383/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96449 — **Prep Batch: 96383**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1009		mg/Kg		101	70 - 130
Diesel Range Organics (Over C10-C28)	1000	801.6		mg/Kg		80	70 - 130

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QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51426-1
SDG: Eddy County

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

Lab Sample ID: LCS 880-96383/2-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96383

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	90		70 - 130
o-Terphenyl	81		70 - 130

Lab Sample ID: LCSD 880-96383/3-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96383

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1031		mg/Kg		103	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	826.2		mg/Kg		83	70 - 130	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	92		70 - 130
o-Terphenyl	81		70 - 130

Lab Sample ID: 880-51423-A-1-B MS
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96383

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	995	826.1		mg/Kg		83	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U F1	995	689.2	F1	mg/Kg		69	70 - 130

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

Lab Sample ID: 880-51423-A-1-C MSD
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 96383

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	995	841.7		mg/Kg		85	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<50.0	U F1	995	710.2		mg/Kg		71	70 - 130	3	20

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

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51426-1
SDG: Eddy County

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-96390/1-A
Matrix: Solid
Analysis Batch: 96405

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			11/22/24 21:28	1

Lab Sample ID: LCS 880-96390/2-A
Matrix: Solid
Analysis Batch: 96405

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	242.6		mg/Kg		97	90 - 110		

Lab Sample ID: LCSD 880-96390/3-A
Matrix: Solid
Analysis Batch: 96405

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	245.5		mg/Kg		98	90 - 110	1	20

Lab Sample ID: 880-51422-A-2-B MS
Matrix: Solid
Analysis Batch: 96405

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	1060		251	1280	4	mg/Kg		88	90 - 110		

Lab Sample ID: 880-51422-A-2-C MSD
Matrix: Solid
Analysis Batch: 96405

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1060		251	1270	4	mg/Kg		84	90 - 110	1	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51426-1
SDG: Eddy County

GC VOA

Analysis Batch: 96347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51426-1	HA-17	Total/NA	Solid	8021B	96371
880-51426-2	HA-17	Total/NA	Solid	8021B	96371
880-51426-3	HA-17	Total/NA	Solid	8021B	96371
MB 880-96371/5-A	Method Blank	Total/NA	Solid	8021B	96371
LCS 880-96371/1-A	Lab Control Sample	Total/NA	Solid	8021B	96371
LCSD 880-96371/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	96371
880-51387-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	96371
880-51387-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	96371

Prep Batch: 96371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51426-1	HA-17	Total/NA	Solid	5035	
880-51426-2	HA-17	Total/NA	Solid	5035	
880-51426-3	HA-17	Total/NA	Solid	5035	
MB 880-96371/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-96371/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-96371/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-51387-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
880-51387-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 96544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51426-1	HA-17	Total/NA	Solid	Total BTEX	
880-51426-2	HA-17	Total/NA	Solid	Total BTEX	
880-51426-3	HA-17	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 96383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51426-1	HA-17	Total/NA	Solid	8015NM Prep	
880-51426-2	HA-17	Total/NA	Solid	8015NM Prep	
880-51426-3	HA-17	Total/NA	Solid	8015NM Prep	
MB 880-96383/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-96383/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-96383/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-51423-A-1-B MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-51423-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 96449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51426-1	HA-17	Total/NA	Solid	8015B NM	96383
880-51426-2	HA-17	Total/NA	Solid	8015B NM	96383
880-51426-3	HA-17	Total/NA	Solid	8015B NM	96383
MB 880-96383/1-A	Method Blank	Total/NA	Solid	8015B NM	96383
LCS 880-96383/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	96383
LCSD 880-96383/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	96383
880-51423-A-1-B MS	Matrix Spike	Total/NA	Solid	8015B NM	96383
880-51423-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	96383

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51426-1
SDG: Eddy County

GC Semi VOA

Analysis Batch: 96644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51426-1	HA-17	Total/NA	Solid	8015 NM	
880-51426-2	HA-17	Total/NA	Solid	8015 NM	
880-51426-3	HA-17	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 96390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51426-1	HA-17	Soluble	Solid	DI Leach	
880-51426-2	HA-17	Soluble	Solid	DI Leach	
880-51426-3	HA-17	Soluble	Solid	DI Leach	
MB 880-96390/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-96390/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-96390/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-51422-A-2-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-51422-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 96405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51426-1	HA-17	Soluble	Solid	300.0	96390
880-51426-2	HA-17	Soluble	Solid	300.0	96390
880-51426-3	HA-17	Soluble	Solid	300.0	96390
MB 880-96390/1-A	Method Blank	Soluble	Solid	300.0	96390
LCS 880-96390/2-A	Lab Control Sample	Soluble	Solid	300.0	96390
LCSD 880-96390/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	96390
880-51422-A-2-B MS	Matrix Spike	Soluble	Solid	300.0	96390
880-51422-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	96390

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51426-1
SDG: Eddy County

Client Sample ID: HA-17

Date Collected: 11/21/24 08:35
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51426-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 15:28	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96544	11/22/24 15:28	SM	EET MID
Total/NA	Analysis	8015 NM		1			96644	11/25/24 18:02	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 18:02	TKC	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	96390	11/22/24 14:16	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96405	11/23/24 00:28	SMC	EET MID

Client Sample ID: HA-17

Date Collected: 11/21/24 08:40
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51426-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 15:48	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96544	11/22/24 15:48	SM	EET MID
Total/NA	Analysis	8015 NM		1			96644	11/25/24 18:19	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 18:19	TKC	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	96390	11/22/24 14:16	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96405	11/23/24 00:34	SMC	EET MID

Client Sample ID: HA-17

Date Collected: 11/21/24 08:45
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51426-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 16:09	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96544	11/22/24 16:09	SM	EET MID
Total/NA	Analysis	8015 NM		1			96644	11/25/24 18:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	96383	11/22/24 13:25	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 18:34	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	96390	11/22/24 14:16	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96405	11/23/24 00:41	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 880-51426-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51426-1
SDG: Eddy County

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51426-1
SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-51426-1	HA-17	Solid	11/21/24 08:35	11/22/24 12:06	0.5
880-51426-2	HA-17	Solid	11/21/24 08:40	11/22/24 12:06	2
880-51426-3	HA-17	Solid	11/21/24 08:45	11/22/24 12:06	4

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11/26/2024

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Chain of Custody

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

880-51426 Chain of Custody

www.xenco.com Page 1 of 1

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	5114 West County Road 128	Address:	
City, State ZIP:	Midland TX 79705	City, State ZIP:	
Phone:	432-894-6385	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	2657	☑ Routine ☐ Rush	
Project Location:	Eddy County	Due Date:	
Sampler's Name:	Joey Pinson	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

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

ANALYSIS REQUEST

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2S0_4: H_2 NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Parameters: Chloride NM	TPH NM	BTEX NM	Sample Comments
HA-17	S	11/21/2024	8:35	0.5	Grab	1	X	X	X	Incident Number
HA-17	S	11/21/2024	8:40	2	Grab	1	X	X	X	nAPP2431628896
HA-17	S	11/21/2024	8:45	4	Grab	1	X	X	X	nAPP2431628896

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		Teddy Randall Lo	11/22/24 12:16			
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

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Received by OCD: 11/4/2025 7:21:25 AM

Released to Imaging: 11/6/2025 3:18:49 PM

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 880-51426-1
SDG Number: Eddy County

Login Number: 51426
List Number: 1
Creator: Vasquez, Julisa

List Source: Eurofins Midland

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Kris Williams
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 11/25/2024 4:48:35 PM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy County

JOB NUMBER

880-51424-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

Released to Imaging: 11/6/2025 3:18:49 PM

my EOL

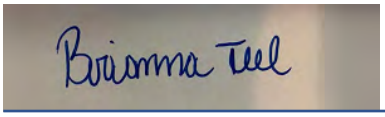
Eurofins Midland

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
11/25/2024 4:48:35 PM

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

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51424-1
SDG: Eddy County

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low 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

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

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 880-51424-1
Project: Spud Muffin 31 30 #738H

Job ID: 880-51424-1 Eurofins Midland

Job Narrative
880-51424-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 11/22/2024 12:06 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 3.7°C.

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: HA-17 (880-51424-1) and HA-17 (880-51424-2).

GC VOA
Method 8021B: Surrogate recovery for the following sample was outside control limits: (880-51424-A-1-D MSD). 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.

Diesel Range Organics
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: HA-17 (880-51424-1) and HA-17 (880-51424-2). Evidence of matrix interferences is not obvious.

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

HPLC/IC
Method 300_ORGFM_28D - Soluble: Due to the high concentration of Chloride, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 880-96390 and analytical batch 880-96405 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

The associated samples are: (880-51422-A-2-B MS) and (880-51422-A-2-C MSD).

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

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51424-1
SDG: Eddy County

Client Sample ID: HA-17

Lab Sample ID: 880-51424-1
Matrix: Solid
Date Collected: 11/21/24 08:45
Date Received: 11/22/24 12:06
Sample Depth: 5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:38	11/22/24 16:53	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:38	11/22/24 16:53	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:38	11/22/24 16:53	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		11/22/24 14:38	11/22/24 16:53	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:38	11/22/24 16:53	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		11/22/24 14:38	11/22/24 16:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*	*11/22/24 14:38*	*11/22/24 16:53*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*11/22/24 14:38*	*11/22/24 16:53*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			11/22/24 16:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			11/25/24 14:22	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	<49.7	U	49.7		mg/Kg		11/23/24 19:25	11/25/24 14:22	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		11/23/24 19:25	11/25/24 14:22	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		11/23/24 19:25	11/25/24 14:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*88*		*70 - 130*	*11/23/24 19:25*	*11/25/24 14:22*	*1*
o-Terphenyl	*66*	*S1-*	*70 - 130*	*11/23/24 19:25*	*11/25/24 14:22*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**742**		49.9		mg/Kg			11/23/24 00:08	5

Client Sample ID: HA-17

Lab Sample ID: 880-51424-2
Matrix: Solid
Date Collected: 11/21/24 08:50
Date Received: 11/22/24 12:06
Sample Depth: 8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		11/22/24 14:38	11/22/24 17:19	1
Toluene	<0.00202	U	0.00202		mg/Kg		11/22/24 14:38	11/22/24 17:19	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		11/22/24 14:38	11/22/24 17:19	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		11/22/24 14:38	11/22/24 17:19	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		11/22/24 14:38	11/22/24 17:19	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		11/22/24 14:38	11/22/24 17:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*11/22/24 14:38*	*11/22/24 17:19*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51424-1
SDG: Eddy County

Client Sample ID: HA-17

Date Collected: 11/21/24 08:50
Date Received: 11/22/24 12:06
Sample Depth: 8

Lab Sample ID: 880-51424-2

Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*84*		*70 - 130*	*11/22/24 14:38*	*11/22/24 17:19*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			11/22/24 17:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/25/24 14:39	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	<50.0	U	50.0		mg/Kg		11/23/24 19:25	11/25/24 14:39	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/23/24 19:25	11/25/24 14:39	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/23/24 19:25	11/25/24 14:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*82*		*70 - 130*	*11/23/24 19:25*	*11/25/24 14:39*	*1*
o-Terphenyl	*63*	*S1-*	*70 - 130*	*11/23/24 19:25*	*11/25/24 14:39*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1030**		49.7		mg/Kg			11/23/24 00:14	5

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51424-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)											
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)										
880-51424-1	HA-17	112	89										
880-51424-1 MS	HA-17	89	80										
880-51424-1 MSD	HA-17	72	69 S1-										
880-51424-2	HA-17	104	84										
LCS 880-96403/1-A	Lab Control Sample	104	102										
LCSD 880-96403/2-A	Lab Control Sample Dup	107	102										
MB 880-96403/5-A	Method Blank	84	88										

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)											
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)										
880-51424-1	HA-17	88	66 S1-										
880-51424-2	HA-17	82	63 S1-										
890-7406-A-28-E MS	Matrix Spike	87	74										
890-7406-A-28-F MSD	Matrix Spike Duplicate	87	74										
LCS 880-96448/2-A	Lab Control Sample	90	82										
LCSD 880-96448/3-A	Lab Control Sample Dup	90	80										
MB 880-96448/1-A	Method Blank	87	72										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51424-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-96403/5-A
Matrix: Solid
Analysis Batch: 96351

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96403

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:38	11/22/24 16:26	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:38	11/22/24 16:26	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:38	11/22/24 16:26	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/22/24 14:38	11/22/24 16:26	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:38	11/22/24 16:26	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/22/24 14:38	11/22/24 16:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*	*11/22/24 14:38*	*11/22/24 16:26*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*11/22/24 14:38*	*11/22/24 16:26*	*1*

Lab Sample ID: LCS 880-96403/1-A
Matrix: Solid
Analysis Batch: 96351

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96403

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1155		mg/Kg		116	70 - 130
Toluene	0.100	0.1084		mg/Kg		108	70 - 130
Ethylbenzene	0.100	0.1100		mg/Kg		110	70 - 130
m-Xylene & p-Xylene	0.200	0.2196		mg/Kg		110	70 - 130
o-Xylene	0.100	0.1090		mg/Kg		109	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: LCSD 880-96403/2-A
Matrix: Solid
Analysis Batch: 96351

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96403

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1157		mg/Kg		116	70 - 130	0	35
Toluene	0.100	0.1079		mg/Kg		108	70 - 130	0	35
Ethylbenzene	0.100	0.1097		mg/Kg		110	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.2208		mg/Kg		110	70 - 130	1	35
o-Xylene	0.100	0.1101		mg/Kg		110	70 - 130	1	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*

Lab Sample ID: 880-51424-1 MS
Matrix: Solid
Analysis Batch: 96351

Client Sample ID: HA-17
Prep Type: Total/NA
Prep Batch: 96403

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.0962	0.08587		mg/Kg		89	70 - 130
Toluene	<0.00200	U	0.0962	0.08171		mg/Kg		85	70 - 130

Eurofins Midland

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51424-1
SDG: Eddy County

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

Lab Sample ID: 880-51424-1 MS
Matrix: Solid
Analysis Batch: 96351

Client Sample ID: HA-17
Prep Type: Total/NA
Prep Batch: 96403

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.0962	0.08404		mg/Kg		87	70 - 130
m-Xylene & p-Xylene	<0.00399	U	0.192	0.1665		mg/Kg		87	70 - 130
o-Xylene	<0.00200	U	0.0962	0.08128		mg/Kg		85	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*
1,4-Difluorobenzene (Surr)	*80*		*70 - 130*

Lab Sample ID: 880-51424-1 MSD
Matrix: Solid
Analysis Batch: 96351

Client Sample ID: HA-17
Prep Type: Total/NA
Prep Batch: 96403

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.101	0.1081		mg/Kg		107	70 - 130	23	35
Toluene	<0.00200	U	0.101	0.09538		mg/Kg		95	70 - 130	15	35
Ethylbenzene	<0.00200	U	0.101	0.09636		mg/Kg		96	70 - 130	14	35
m-Xylene & p-Xylene	<0.00399	U	0.202	0.1953		mg/Kg		97	70 - 130	16	35
o-Xylene	<0.00200	U	0.101	0.08374		mg/Kg		83	70 - 130	3	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*72*		*70 - 130*
1,4-Difluorobenzene (Surr)	*69*	*S1-*	*70 - 130*

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

Lab Sample ID: MB 880-96448/1-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96448

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/23/24 19:25	11/25/24 09:50	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/23/24 19:25	11/25/24 09:50	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/23/24 19:25	11/25/24 09:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*87*		*70 - 130*	*11/23/24 19:25*	*11/25/24 09:50*	*1*
o-Terphenyl	*72*		*70 - 130*	*11/23/24 19:25*	*11/25/24 09:50*	*1*

Lab Sample ID: LCS 880-96448/2-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96448

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	992.8		mg/Kg		99	70 - 130
Diesel Range Organics (Over C10-C28)	1000	819.3		mg/Kg		82	70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51424-1
SDG: Eddy County

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

Lab Sample ID: LCS 880-96448/2-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96448

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

Lab Sample ID: LCSD 880-96448/3-A
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96448

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1011		mg/Kg		101	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	788.9		mg/Kg		79	70 - 130	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	90		70 - 130
o-Terphenyl	80		70 - 130

Lab Sample ID: 890-7406-A-28-E MS
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96448

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	1010	923.8		mg/Kg		92	70 - 130
Diesel Range Organics (Over C10-C28)	<49.8	U	1010	790.5		mg/Kg		77	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	87		70 - 130
o-Terphenyl	74		70 - 130

Lab Sample ID: 890-7406-A-28-F MSD
Matrix: Solid
Analysis Batch: 96449

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 96448

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	1010	944.1		mg/Kg		94	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<49.8	U	1010	784.5		mg/Kg		77	70 - 130	1	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	87		70 - 130
o-Terphenyl	74		70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51424-1
SDG: Eddy County

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-96390/1-A
Matrix: Solid
Analysis Batch: 96405

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			11/22/24 21:28	1

Lab Sample ID: LCS 880-96390/2-A
Matrix: Solid
Analysis Batch: 96405

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	242.6		mg/Kg		97	90 - 110		

Lab Sample ID: LCSD 880-96390/3-A
Matrix: Solid
Analysis Batch: 96405

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	245.5		mg/Kg		98	90 - 110	1	20

Lab Sample ID: 880-51422-A-2-B MS
Matrix: Solid
Analysis Batch: 96405

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	1060		251	1280	4	mg/Kg		88	90 - 110		

Lab Sample ID: 880-51422-A-2-C MSD
Matrix: Solid
Analysis Batch: 96405

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1060		251	1270	4	mg/Kg		84	90 - 110	1	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51424-1
SDG: Eddy County

GC VOA

Analysis Batch: 96351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51424-1	HA-17	Total/NA	Solid	8021B	96403
880-51424-2	HA-17	Total/NA	Solid	8021B	96403
MB 880-96403/5-A	Method Blank	Total/NA	Solid	8021B	96403
LCS 880-96403/1-A	Lab Control Sample	Total/NA	Solid	8021B	96403
LCSD 880-96403/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	96403
880-51424-1 MS	HA-17	Total/NA	Solid	8021B	96403
880-51424-1 MSD	HA-17	Total/NA	Solid	8021B	96403

Prep Batch: 96403

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51424-1	HA-17	Total/NA	Solid	5035	
880-51424-2	HA-17	Total/NA	Solid	5035	
MB 880-96403/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-96403/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-96403/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-51424-1 MS	HA-17	Total/NA	Solid	5035	
880-51424-1 MSD	HA-17	Total/NA	Solid	5035	

Analysis Batch: 96558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51424-1	HA-17	Total/NA	Solid	Total BTEX	
880-51424-2	HA-17	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 96448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51424-1	HA-17	Total/NA	Solid	8015NM Prep	
880-51424-2	HA-17	Total/NA	Solid	8015NM Prep	
MB 880-96448/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-96448/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-96448/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-7406-A-28-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-7406-A-28-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 96449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51424-1	HA-17	Total/NA	Solid	8015B NM	96448
880-51424-2	HA-17	Total/NA	Solid	8015B NM	96448
MB 880-96448/1-A	Method Blank	Total/NA	Solid	8015B NM	96448
LCS 880-96448/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	96448
LCSD 880-96448/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	96448
890-7406-A-28-E MS	Matrix Spike	Total/NA	Solid	8015B NM	96448
890-7406-A-28-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	96448

Analysis Batch: 96553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51424-1	HA-17	Total/NA	Solid	8015 NM	
880-51424-2	HA-17	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51424-1
SDG: Eddy County

HPLC/IC

Leach Batch: 96390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51424-1	HA-17	Soluble	Solid	DI Leach	
880-51424-2	HA-17	Soluble	Solid	DI Leach	
MB 880-96390/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-96390/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-96390/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-51422-A-2-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-51422-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 96405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51424-1	HA-17	Soluble	Solid	300.0	96390
880-51424-2	HA-17	Soluble	Solid	300.0	96390
MB 880-96390/1-A	Method Blank	Soluble	Solid	300.0	96390
LCS 880-96390/2-A	Lab Control Sample	Soluble	Solid	300.0	96390
LCSD 880-96390/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	96390
880-51422-A-2-B MS	Matrix Spike	Soluble	Solid	300.0	96390
880-51422-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	96390

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51424-1
SDG: Eddy County

Client Sample ID: HA-17

Date Collected: 11/21/24 08:45
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51424-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	96403	11/22/24 14:38	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96351	11/22/24 16:53	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96558	11/22/24 16:53	SM	EET MID
Total/NA	Analysis	8015 NM		1			96553	11/25/24 14:22	SM	EET MID
Total/NA	Prep	8015NM Prep			10.07 g	10 mL	96448	11/23/24 19:25	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 14:22	TKC	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	96390	11/22/24 14:16	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96405	11/23/24 00:08	SMC	EET MID

Client Sample ID: HA-17

Date Collected: 11/21/24 08:50
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51424-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	96403	11/22/24 14:38	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96351	11/22/24 17:19	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96558	11/22/24 17:19	SM	EET MID
Total/NA	Analysis	8015 NM		1			96553	11/25/24 14:39	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	96448	11/23/24 19:25	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96449	11/25/24 14:39	TKC	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	96390	11/22/24 14:16	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96405	11/23/24 00:14	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 880-51424-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51424-1
SDG: Eddy County

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51424-1
SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-51424-1	HA-17	Solid	11/21/24 08:45	11/22/24 12:06	5
880-51424-2	HA-17	Solid	11/21/24 08:50	11/22/24 12:06	8

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11/25/2024

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880-51424 Chain of Custody

Chain of Custody

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

Work Order No: 424

www.xenco.com Page 1 of 1

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	5114 West County Road 128	Address:	
City, State ZIP:	Midland TX 79705	City, State ZIP:	
Phone:	432-894-6385	Email:	gmoreno@earthsys.net

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

State of Project:

Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐

Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	2657	☑ Routine ☐ Rush	
Project Location:	Eddy County	Due Date:	
Sampler's Name:	Joey Pinson	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

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

Preservative Codes

None: NO | DI Water: H_2O
Cool: Cool | MeOH: Me
HCL: HC | HNO_3: HN
H_2S0_4: H_2 | NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: Chloride NM	TPH NM	BTEX NM	Sample Comments
HA-17	S	11/21/2024	8:45	5	Grab	1		X	X	X	Incident Number
HA-17	S	11/21/2024	8:50	8	Grab	1		X	X	X	nAPP2431628896

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed

Hg: 1631 / 245.1 / 7470 / 7471

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		Teddy Randall Lee	11/22/24 12:06			
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

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Received by OCD: 11/4/2025 7:21:25 AM

Released to Imaging: 11/6/2025 3:18:49 PM

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 880-51424-1
SDG Number: Eddy County

Login Number: 51424
List Number: 1
Creator: Vasquez, Julisa

List Source: Eurofins Midland

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Kris Williams
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 11/27/2024 8:56:33 AM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy County

JOB NUMBER

880-51431-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

Released to Imaging: 11/6/2025 3:18:49 PM

my EOL

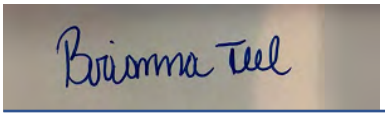
Eurofins Midland

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
11/27/2024 8:56:33 AM

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

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51431-1
SDG: Eddy County

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 880-51431-1
Project: Spud Muffin 31 30 #738H

Job ID: 880-51431-1 Eurofins Midland

Job Narrative
880-51431-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 11/22/2024 12:06 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 3.7°C.

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: HA-18 (880-51431-1), HA-18 (880-51431-2) and HA-18 (880-51431-3).

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

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

HPLC/IC
Method 300_ORGFM_28D - Soluble: The Chloride matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-96382 and analytical batch 880-96389 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: HA-18 (880-51431-1), HA-18 (880-51431-2), HA-18 (880-51431-3), (880-51431-A-1-B MS) and (880-51431-A-1-C MSD).

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

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51431-1
SDG: Eddy County

Client Sample ID: HA-18

Lab Sample ID: 880-51431-1
Matrix: Solid
Date Collected: 11/21/24 08:55
Date Received: 11/22/24 12:06
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		11/22/24 14:47	11/22/24 20:47	1
Toluene	<0.00198	U	0.00198		mg/Kg		11/22/24 14:47	11/22/24 20:47	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		11/22/24 14:47	11/22/24 20:47	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		11/22/24 14:47	11/22/24 20:47	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		11/22/24 14:47	11/22/24 20:47	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		11/22/24 14:47	11/22/24 20:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*11/22/24 14:47*	*11/22/24 20:47*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*11/22/24 14:47*	*11/22/24 20:47*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			11/22/24 20:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/22/24 21:11	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	<49.8	U	49.8		mg/Kg		11/22/24 13:22	11/22/24 21:11	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/22/24 13:22	11/22/24 21:11	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 13:22	11/22/24 21:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*93*		*70 - 130*	*11/22/24 13:22*	*11/22/24 21:11*	*1*
o-Terphenyl	*85*		*70 - 130*	*11/22/24 13:22*	*11/22/24 21:11*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**941**	**F1**	50.2		mg/Kg			11/23/24 16:48	5

Client Sample ID: HA-18

Lab Sample ID: 880-51431-2
Matrix: Solid
Date Collected: 11/21/24 09:00
Date Received: 11/22/24 12:06
Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 21:08	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 21:08	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 21:08	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/22/24 14:47	11/22/24 21:08	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 21:08	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/22/24 14:47	11/22/24 21:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*	*11/22/24 14:47*	*11/22/24 21:08*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51431-1
SDG: Eddy County

Client Sample ID: HA-18

Date Collected: 11/21/24 09:00
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51431-2
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*11/22/24 14:47*	*11/22/24 21:08*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/22/24 21:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3		mg/Kg			11/25/24 12:45	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	<50.3	U	50.3		mg/Kg		11/23/24 19:22	11/25/24 12:45	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3		mg/Kg		11/23/24 19:22	11/25/24 12:45	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3		mg/Kg		11/23/24 19:22	11/25/24 12:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*96*		*70 - 130*	*11/23/24 19:22*	*11/25/24 12:45*	*1*
o-Terphenyl	*86*		*70 - 130*	*11/23/24 19:22*	*11/25/24 12:45*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**31.9**		10.1		mg/Kg			11/23/24 17:49	1

Client Sample ID: HA-18

Date Collected: 11/21/24 09:05
Date Received: 11/22/24 12:06
Sample Depth: 4

Lab Sample ID: 880-51431-3
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 21:28	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 21:28	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 21:28	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		11/22/24 14:47	11/22/24 21:28	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 21:28	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		11/22/24 14:47	11/22/24 21:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*	*11/22/24 14:47*	*11/22/24 21:28*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*11/22/24 14:47*	*11/22/24 21:28*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			11/22/24 21:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.4	U	50.4		mg/Kg			11/25/24 13:34	1

Eurofins Midland

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51431-1
SDG: Eddy County

Client Sample ID: HA-18

Date Collected: 11/21/24 09:05
Date Received: 11/22/24 12:06
Sample Depth: 4

Lab Sample ID: 880-51431-3

Matrix: Solid

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	<50.4	U	50.4		mg/Kg		11/23/24 19:22	11/25/24 13:34	1
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4		mg/Kg		11/23/24 19:22	11/25/24 13:34	1
Oil Range Organics (Over C28-C36)	<50.4	U	50.4		mg/Kg		11/23/24 19:22	11/25/24 13:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*104*		*70 - 130*	*11/23/24 19:22*	*11/25/24 13:34*	*1*
o-Terphenyl	*95*		*70 - 130*	*11/23/24 19:22*	*11/25/24 13:34*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**77.5**		10.1		mg/Kg			11/23/24 18:10	1

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51431-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-51387-A-1-F MS	Matrix Spike	103	102										
880-51387-A-1-G MSD	Matrix Spike Duplicate	109	105										
880-51431-1	HA-18	113	107										
880-51431-2	HA-18	105	103										
880-51431-3	HA-18	112	105										
LCS 880-96371/1-A	Lab Control Sample	107	103										
LCSD 880-96371/2-A	Lab Control Sample Dup	103	101										
MB 880-96371/5-A	Method Blank	108	102										

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-51428-A-1-C MS	Matrix Spike	94	92										
880-51428-A-1-D MSD	Matrix Spike Duplicate	96	92										
880-51431-1	HA-18	93	85										
880-51431-2	HA-18	96	86										
880-51431-2 MS	HA-18	106	101										
880-51431-2 MSD	HA-18	94	90										
880-51431-3	HA-18	104	95										
LCS 880-96381/2-A	Lab Control Sample	115	117										
LCS 880-96447/2-A	Lab Control Sample	105	102										
LCSD 880-96381/3-A	Lab Control Sample Dup	115	115										
LCSD 880-96447/3-A	Lab Control Sample Dup	105	102										
MB 880-96381/1-A	Method Blank	109	104										
MB 880-96447/1-A	Method Blank	97	93										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51431-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-96371/5-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96371

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/22/24 10:47	11/22/24 12:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*11/22/24 10:47*	*11/22/24 12:21*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*11/22/24 10:47*	*11/22/24 12:21*	*1*

Lab Sample ID: LCS 880-96371/1-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1152		mg/Kg		115	70 - 130
Toluene	0.100	0.1137		mg/Kg		114	70 - 130
Ethylbenzene	0.100	0.1116		mg/Kg		112	70 - 130
m-Xylene & p-Xylene	0.200	0.2277		mg/Kg		114	70 - 130
o-Xylene	0.100	0.1156		mg/Kg		116	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: LCSD 880-96371/2-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1151		mg/Kg		115	70 - 130	0	35
Toluene	0.100	0.1137		mg/Kg		114	70 - 130	0	35
Ethylbenzene	0.100	0.1119		mg/Kg		112	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.2281		mg/Kg		114	70 - 130	0	35
o-Xylene	0.100	0.1160		mg/Kg		116	70 - 130	0	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 880-51387-A-1-F MS
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0996	0.1109		mg/Kg		111	70 - 130
Toluene	<0.00199	U	0.0996	0.1080		mg/Kg		108	70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51431-1
SDG: Eddy County

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

Lab Sample ID: 880-51387-A-1-F MS
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0996	0.1039		mg/Kg		104	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.199	0.2118		mg/Kg		106	70 - 130
o-Xylene	<0.00199	U	0.0996	0.1072		mg/Kg		108	70 - 130

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

Lab Sample ID: 880-51387-A-1-G MSD
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.100	0.09830		mg/Kg		98	70 - 130	12	35
Toluene	<0.00199	U	0.100	0.09286		mg/Kg		93	70 - 130	15	35
Ethylbenzene	<0.00199	U	0.100	0.08506		mg/Kg		85	70 - 130	20	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1724		mg/Kg		86	70 - 130	21	35
o-Xylene	<0.00199	U	0.100	0.08836		mg/Kg		88	70 - 130	19	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

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

Lab Sample ID: MB 880-96381/1-A
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96381

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/22/24 10:21	11/22/24 10:45	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 10:21	11/22/24 10:45	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 10:21	11/22/24 10:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*109*		*70 - 130*	*11/22/24 10:21*	*11/22/24 10:45*	*1*
o-Terphenyl	*104*		*70 - 130*	*11/22/24 10:21*	*11/22/24 10:45*	*1*

Lab Sample ID: LCS 880-96381/2-A
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96381

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1124		mg/Kg		112	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1051		mg/Kg		105	70 - 130

Eurofins Midland

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51431-1
SDG: Eddy County

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

Lab Sample ID: LCS 880-96381/2-A
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96381

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	115		70 - 130
o-Terphenyl	117		70 - 130

Lab Sample ID: LCSD 880-96381/3-A
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96381

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1103		mg/Kg		110	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	999.0		mg/Kg		100	70 - 130	5	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	115		70 - 130
o-Terphenyl	115		70 - 130

Lab Sample ID: 880-51428-A-1-C MS
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96381

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	999	867.7		mg/Kg		87	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.7	U	999	816.9		mg/Kg		82	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	94		70 - 130
o-Terphenyl	92		70 - 130

Lab Sample ID: 880-51428-A-1-D MSD
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 96381

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	999	893.2		mg/Kg		89	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<49.7	U	999	814.5		mg/Kg		82	70 - 130	0	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	92		70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51431-1
SDG: Eddy County

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

Lab Sample ID: MB 880-96447/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96451 — **Prep Batch: 96447**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/23/24 19:22	11/25/24 09:50	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/23/24 19:22	11/25/24 09:50	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/23/24 19:22	11/25/24 09:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*11/23/24 19:22*	*11/25/24 09:50*	*1*
o-Terphenyl	*93*		*70 - 130*	*11/23/24 19:22*	*11/25/24 09:50*	*1*

Lab Sample ID: LCS 880-96447/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96451 — **Prep Batch: 96447**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1086		mg/Kg		109	70 - 130
Diesel Range Organics (Over C10-C28)	1000	967.2		mg/Kg		97	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*105*		*70 - 130*
o-Terphenyl	*102*		*70 - 130*

Lab Sample ID: LCSD 880-96447/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96451 — **Prep Batch: 96447**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1084		mg/Kg		108	70 - 130	0	20
Diesel Range Organics (Over C10-C28)	1000	951.3		mg/Kg		95	70 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*105*		*70 - 130*
o-Terphenyl	*102*		*70 - 130*

Lab Sample ID: 880-51431-2 MS — **Client Sample ID: HA-18**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96451 — **Prep Batch: 96447**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	997	1133		mg/Kg		114	70 - 130
Diesel Range Organics (Over C10-C28)	<50.3	U	997	1088		mg/Kg		109	70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51431-1
SDG: Eddy County

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

Lab Sample ID: 880-51431-2 MS
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: HA-18
Prep Type: Total/NA
Prep Batch: 96447

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	106		70 - 130
o-Terphenyl	101		70 - 130

Lab Sample ID: 880-51431-2 MSD
Matrix: Solid
Analysis Batch: 96451

Client Sample ID: HA-18
Prep Type: Total/NA
Prep Batch: 96447

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	997	991.3		mg/Kg		99	70 - 130	13	20
Diesel Range Organics (Over C10-C28)	<50.3	U	997	975.0		mg/Kg		98	70 - 130	11	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	94		70 - 130
o-Terphenyl	90		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-96382/1-A
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			11/23/24 12:34	1

Lab Sample ID: LCS 880-96382/2-A
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	251.9		mg/Kg		101	90 - 110

Lab Sample ID: LCSD 880-96382/3-A
Matrix: Solid
Analysis Batch: 96389

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	252.5		mg/Kg		101	90 - 110	0	20

Lab Sample ID: 880-51431-1 MS
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: HA-18
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	941	F1	1260	2490	F1	mg/Kg		123	90 - 110

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51431-1
SDG: Eddy County

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-51431-1 MSD
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: HA-18
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	941	F1	1260	2495	F1	mg/Kg		124	90 - 110	0	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51431-1
SDG: Eddy County

GC VOA

Analysis Batch: 96347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51431-1	HA-18	Total/NA	Solid	8021B	96371
880-51431-2	HA-18	Total/NA	Solid	8021B	96371
880-51431-3	HA-18	Total/NA	Solid	8021B	96371
MB 880-96371/5-A	Method Blank	Total/NA	Solid	8021B	96371
LCS 880-96371/1-A	Lab Control Sample	Total/NA	Solid	8021B	96371
LCSD 880-96371/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	96371
880-51387-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	96371
880-51387-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	96371

Prep Batch: 96371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51431-1	HA-18	Total/NA	Solid	5035	
880-51431-2	HA-18	Total/NA	Solid	5035	
880-51431-3	HA-18	Total/NA	Solid	5035	
MB 880-96371/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-96371/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-96371/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-51387-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
880-51387-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 96548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51431-1	HA-18	Total/NA	Solid	Total BTEX	
880-51431-2	HA-18	Total/NA	Solid	Total BTEX	
880-51431-3	HA-18	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 96381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51431-1	HA-18	Total/NA	Solid	8015NM Prep	
MB 880-96381/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-96381/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-96381/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-51428-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-51428-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 96435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51431-1	HA-18	Total/NA	Solid	8015B NM	96381
MB 880-96381/1-A	Method Blank	Total/NA	Solid	8015B NM	96381
LCS 880-96381/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	96381
LCSD 880-96381/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	96381
880-51428-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	96381
880-51428-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	96381

Prep Batch: 96447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51431-2	HA-18	Total/NA	Solid	8015NM Prep	
880-51431-3	HA-18	Total/NA	Solid	8015NM Prep	
MB 880-96447/1-A	Method Blank	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51431-1
SDG: Eddy County

GC Semi VOA (Continued)

Prep Batch: 96447 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-96447/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-96447/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-51431-2 MS	HA-18	Total/NA	Solid	8015NM Prep	
880-51431-2 MSD	HA-18	Total/NA	Solid	8015NM Prep	

Analysis Batch: 96451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51431-2	HA-18	Total/NA	Solid	8015B NM	96447
880-51431-3	HA-18	Total/NA	Solid	8015B NM	96447
MB 880-96447/1-A	Method Blank	Total/NA	Solid	8015B NM	96447
LCS 880-96447/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	96447
LCSD 880-96447/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	96447
880-51431-2 MS	HA-18	Total/NA	Solid	8015B NM	96447
880-51431-2 MSD	HA-18	Total/NA	Solid	8015B NM	96447

Analysis Batch: 96481

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51431-1	HA-18	Total/NA	Solid	8015 NM	
880-51431-2	HA-18	Total/NA	Solid	8015 NM	
880-51431-3	HA-18	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 96382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51431-1	HA-18	Soluble	Solid	DI Leach	
880-51431-2	HA-18	Soluble	Solid	DI Leach	
880-51431-3	HA-18	Soluble	Solid	DI Leach	
MB 880-96382/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-96382/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-96382/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-51431-1 MS	HA-18	Soluble	Solid	DI Leach	
880-51431-1 MSD	HA-18	Soluble	Solid	DI Leach	

Analysis Batch: 96389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51431-1	HA-18	Soluble	Solid	300.0	96382
880-51431-2	HA-18	Soluble	Solid	300.0	96382
880-51431-3	HA-18	Soluble	Solid	300.0	96382
MB 880-96382/1-A	Method Blank	Soluble	Solid	300.0	96382
LCS 880-96382/2-A	Lab Control Sample	Soluble	Solid	300.0	96382
LCSD 880-96382/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	96382
880-51431-1 MS	HA-18	Soluble	Solid	300.0	96382
880-51431-1 MSD	HA-18	Soluble	Solid	300.0	96382

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51431-1
SDG: Eddy County

Client Sample ID: HA-18

Lab Sample ID: 880-51431-1
Matrix: Solid
Date Collected: 11/21/24 08:55
Date Received: 11/22/24 12:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 20:47	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96548	11/22/24 20:47	SM	EET MID
Total/NA	Analysis	8015 NM		1			96481	11/22/24 21:11	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	96381	11/22/24 13:22	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96435	11/22/24 21:11	TKC	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96389	11/23/24 16:48	SMC	EET MID

Client Sample ID: HA-18

Lab Sample ID: 880-51431-2
Matrix: Solid
Date Collected: 11/21/24 09:00
Date Received: 11/22/24 12:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 21:08	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96548	11/22/24 21:08	SM	EET MID
Total/NA	Analysis	8015 NM		1			96481	11/25/24 12:45	SM	EET MID
Total/NA	Prep	8015NM Prep			9.95 g	10 mL	96447	11/23/24 19:22	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 12:45	TKC	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96389	11/23/24 17:49	SMC	EET MID

Client Sample ID: HA-18

Lab Sample ID: 880-51431-3
Matrix: Solid
Date Collected: 11/21/24 09:05
Date Received: 11/22/24 12:06

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 21:28	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96548	11/22/24 21:28	SM	EET MID
Total/NA	Analysis	8015 NM		1			96481	11/25/24 13:34	SM	EET MID
Total/NA	Prep	8015NM Prep			9.92 g	10 mL	96447	11/23/24 19:22	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96451	11/25/24 13:34	TKC	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96389	11/23/24 18:10	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 880-51431-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51431-1
SDG: Eddy County

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51431-1
SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-51431-1	HA-18	Solid	11/21/24 08:55	11/22/24 12:06	0.5
880-51431-2	HA-18	Solid	11/21/24 09:00	11/22/24 12:06	2
880-51431-3	HA-18	Solid	11/21/24 09:05	11/22/24 12:06	4

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11/27/2024

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880-51431 Chain of Custody

n of Custody

240-4200, Dallas, TX (214) 902-0300
-5440, San Antonio, TX (210) 509-3334
35-3443, Lubbock, TX (806) 794-1296
2-7550, Carlsbad, NM (575) 988-3199

Work Order No: 431

www.xenco.com Page 1 of 1

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	5114 West County Road 128	Address:	
City, State ZIP:	Midland TX 79705	City, State ZIP:	
Phone:	432-894-6385	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	2657	☑ Routine ☐ Rush	
Project Location:	Eddy County	Due Date:	
Sampler's Name:	Joey Pinson	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

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

Preservative Codes

None: NO | DI Water: H_2O
Cool: Cool | MeOH: Me
HCL: HC | HNO_3: HN
H_2S0_4: H_2 | NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Chloride NM	TPH NM	BTEX NM	Sample Comments
HA-18	S	11/21/2024	8:55	0.5	Grab	1		X	X	X	Incident Number
HA-18	S	11/21/2024	9:00	2	Grab	1		X	X	X	nAPP2431628896
HA-18	S	11/21/2024	9:05	4	Grab	1		X	X	X	nAPP2431628896

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		Teddy Rachell Lee	11/22/24 12:06			
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

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Received by OCD: 11/4/2025 7:21:25 AM

Released to Imaging: 11/6/2025 3:18:49 PM

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 880-51431-1
SDG Number: Eddy County

Login Number: 51431
List Number: 1
Creator: Vasquez, Julisa

List Source: Eurofins Midland

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Kris Williams
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 11/27/2024 8:55:38 AM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy County

JOB NUMBER

880-51430-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

Released to Imaging: 11/6/2025 3:18:49 PM

my EOL

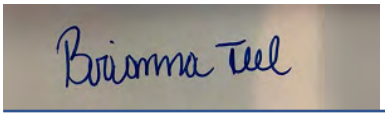
Eurofins Midland

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
11/27/2024 8:55:38 AM

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

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Laboratory Job ID: 880-51430-1
SDG: Eddy County

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51430-1
SDG: Eddy County

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 880-51430-1
Project: Spud Muffin 31 30 #738H

Job ID: 880-51430-1 Eurofins Midland

Job Narrative
880-51430-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 11/22/2024 12:06 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 3.7°C.

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: HA-18 (880-51430-1), HA-18 (880-51430-2) and HA-18 (880-51430-3).

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

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

HPLC/IC
Method 300_ORGFM_28D - Soluble: The Chloride matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-96382 and analytical batch 880-96389 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: (880-51431-A-1-A), (880-51431-A-1-B MS) and (880-51431-A-1-C MSD).

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

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51430-1
SDG: Eddy County

Client Sample ID: HA-18

Lab Sample ID: 880-51430-1
Matrix: Solid
Date Collected: 11/21/24 09:05
Date Received: 11/22/24 12:06
Sample Depth: 6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 19:46	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 19:46	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 19:46	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/22/24 14:47	11/22/24 19:46	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 19:46	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/22/24 14:47	11/22/24 19:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*11/22/24 14:47*	*11/22/24 19:46*	*1*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*11/22/24 14:47*	*11/22/24 19:46*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			11/22/24 19:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/22/24 20:23	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	<49.9	U	49.9		mg/Kg		11/22/24 13:22	11/22/24 20:23	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/22/24 13:22	11/22/24 20:23	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 13:22	11/22/24 20:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*94*		*70 - 130*	*11/22/24 13:22*	*11/22/24 20:23*	*1*
o-Terphenyl	*85*		*70 - 130*	*11/22/24 13:22*	*11/22/24 20:23*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**462**		9.96		mg/Kg			11/23/24 15:46	1

Client Sample ID: HA-18

Lab Sample ID: 880-51430-2
Matrix: Solid
Date Collected: 11/21/24 09:10
Date Received: 11/22/24 12:06
Sample Depth: 8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		11/22/24 14:47	11/22/24 20:06	1
Toluene	<0.00201	U	0.00201		mg/Kg		11/22/24 14:47	11/22/24 20:06	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		11/22/24 14:47	11/22/24 20:06	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		11/22/24 14:47	11/22/24 20:06	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		11/22/24 14:47	11/22/24 20:06	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		11/22/24 14:47	11/22/24 20:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*11/22/24 14:47*	*11/22/24 20:06*	*1*

Eurofins Midland

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51430-1
SDG: Eddy County

Client Sample ID: HA-18

Date Collected: 11/21/24 09:10
Date Received: 11/22/24 12:06
Sample Depth: 8

Lab Sample ID: 880-51430-2
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*11/22/24 14:47*	*11/22/24 20:06*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			11/22/24 20:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/22/24 20:40	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	<49.8	U	49.8		mg/Kg		11/22/24 13:22	11/22/24 20:40	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/22/24 13:22	11/22/24 20:40	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 13:22	11/22/24 20:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*91*		*70 - 130*	*11/22/24 13:22*	*11/22/24 20:40*	*1*
o-Terphenyl	*83*		*70 - 130*	*11/22/24 13:22*	*11/22/24 20:40*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**859**		49.5		mg/Kg			11/23/24 16:06	5

Client Sample ID: HA-18

Date Collected: 11/21/24 09:15
Date Received: 11/22/24 12:06
Sample Depth: 10

Lab Sample ID: 880-51430-3
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.00206**		0.00199		mg/Kg		11/22/24 14:47	11/22/24 20:27	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 20:27	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 20:27	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/22/24 14:47	11/22/24 20:27	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 20:27	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/22/24 14:47	11/22/24 20:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*11/22/24 14:47*	*11/22/24 20:27*	*1*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*11/22/24 14:47*	*11/22/24 20:27*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/22/24 20:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			11/22/24 20:56	1

Eurofins Midland

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51430-1
SDG: Eddy County

Client Sample ID: HA-18

Date Collected: 11/21/24 09:15
Date Received: 11/22/24 12:06
Sample Depth: 10

Lab Sample ID: 880-51430-3

Matrix: Solid

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	<50.0	U	50.0		mg/Kg		11/22/24 13:22	11/22/24 20:56	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 13:22	11/22/24 20:56	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 13:22	11/22/24 20:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*94*		*70 - 130*	*11/22/24 13:22*	*11/22/24 20:56*	*1*
o-Terphenyl	*86*		*70 - 130*	*11/22/24 13:22*	*11/22/24 20:56*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**851**		50.0		mg/Kg			11/23/24 16:27	5

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51430-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-51387-A-1-F MS	Matrix Spike	103	102										
880-51387-A-1-G MSD	Matrix Spike Duplicate	109	105										
880-51430-1	HA-18	100	106										
880-51430-2	HA-18	100	103										
880-51430-3	HA-18	102	106										
LCS 880-96371/1-A	Lab Control Sample	107	103										
LCSD 880-96371/2-A	Lab Control Sample Dup	103	101										
MB 880-96371/5-A	Method Blank	108	102										

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-51428-A-1-C MS	Matrix Spike	94	92										
880-51428-A-1-D MSD	Matrix Spike Duplicate	96	92										
880-51430-1	HA-18	94	85										
880-51430-2	HA-18	91	83										
880-51430-3	HA-18	94	86										
LCS 880-96381/2-A	Lab Control Sample	115	117										
LCSD 880-96381/3-A	Lab Control Sample Dup	115	115										
MB 880-96381/1-A	Method Blank	109	104										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51430-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-96371/5-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96371

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/22/24 10:47	11/22/24 12:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*11/22/24 10:47*	*11/22/24 12:21*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*11/22/24 10:47*	*11/22/24 12:21*	*1*

Lab Sample ID: LCS 880-96371/1-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1152		mg/Kg		115	70 - 130
Toluene	0.100	0.1137		mg/Kg		114	70 - 130
Ethylbenzene	0.100	0.1116		mg/Kg		112	70 - 130
m-Xylene & p-Xylene	0.200	0.2277		mg/Kg		114	70 - 130
o-Xylene	0.100	0.1156		mg/Kg		116	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: LCSD 880-96371/2-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1151		mg/Kg		115	70 - 130	0	35
Toluene	0.100	0.1137		mg/Kg		114	70 - 130	0	35
Ethylbenzene	0.100	0.1119		mg/Kg		112	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.2281		mg/Kg		114	70 - 130	0	35
o-Xylene	0.100	0.1160		mg/Kg		116	70 - 130	0	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 880-51387-A-1-F MS
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0996	0.1109		mg/Kg		111	70 - 130
Toluene	<0.00199	U	0.0996	0.1080		mg/Kg		108	70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51430-1
SDG: Eddy County

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

Lab Sample ID: 880-51387-A-1-F MS
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0996	0.1039		mg/Kg		104	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.199	0.2118		mg/Kg		106	70 - 130
o-Xylene	<0.00199	U	0.0996	0.1072		mg/Kg		108	70 - 130

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

Lab Sample ID: 880-51387-A-1-G MSD
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.100	0.09830		mg/Kg		98	70 - 130	12	35
Toluene	<0.00199	U	0.100	0.09286		mg/Kg		93	70 - 130	15	35
Ethylbenzene	<0.00199	U	0.100	0.08506		mg/Kg		85	70 - 130	20	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1724		mg/Kg		86	70 - 130	21	35
o-Xylene	<0.00199	U	0.100	0.08836		mg/Kg		88	70 - 130	19	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

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

Lab Sample ID: MB 880-96381/1-A
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96381

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/22/24 10:21	11/22/24 10:45	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 10:21	11/22/24 10:45	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 10:21	11/22/24 10:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*109*		*70 - 130*	*11/22/24 10:21*	*11/22/24 10:45*	*1*
o-Terphenyl	*104*		*70 - 130*	*11/22/24 10:21*	*11/22/24 10:45*	*1*

Lab Sample ID: LCS 880-96381/2-A
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96381

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1124		mg/Kg		112	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1051		mg/Kg		105	70 - 130

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QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51430-1
SDG: Eddy County

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

Lab Sample ID: LCS 880-96381/2-A
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96381

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	115		70 - 130
o-Terphenyl	117		70 - 130

Lab Sample ID: LCSD 880-96381/3-A
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96381

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1103		mg/Kg		110	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	999.0		mg/Kg		100	70 - 130	5	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	115		70 - 130
o-Terphenyl	115		70 - 130

Lab Sample ID: 880-51428-A-1-C MS
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96381

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	999	867.7		mg/Kg		87	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.7	U	999	816.9		mg/Kg		82	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	94		70 - 130
o-Terphenyl	92		70 - 130

Lab Sample ID: 880-51428-A-1-D MSD
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 96381

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	999	893.2		mg/Kg		89	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<49.7	U	999	814.5		mg/Kg		82	70 - 130	0	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	92		70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51430-1
SDG: Eddy County

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-96382/1-A
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			11/23/24 12:34	1

Lab Sample ID: LCS 880-96382/2-A
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	251.9		mg/Kg		101	90 - 110		

Lab Sample ID: LCSD 880-96382/3-A
Matrix: Solid
Analysis Batch: 96389

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	252.5		mg/Kg		101	90 - 110	0	20

Lab Sample ID: 820-16292-A-1-B MS
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	42.2		251	307.6		mg/Kg		106	90 - 110		

Lab Sample ID: 820-16292-A-1-C MSD
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	42.2		251	308.3		mg/Kg		106	90 - 110	0	20

Lab Sample ID: 880-51431-A-1-B MS
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	941	F1	1260	2490	F1	mg/Kg		123	90 - 110		

Lab Sample ID: 880-51431-A-1-C MSD
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	941	F1	1260	2495	F1	mg/Kg		124	90 - 110	0	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51430-1
SDG: Eddy County

GC VOA

Analysis Batch: 96347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51430-1	HA-18	Total/NA	Solid	8021B	96371
880-51430-2	HA-18	Total/NA	Solid	8021B	96371
880-51430-3	HA-18	Total/NA	Solid	8021B	96371
MB 880-96371/5-A	Method Blank	Total/NA	Solid	8021B	96371
LCS 880-96371/1-A	Lab Control Sample	Total/NA	Solid	8021B	96371
LCSD 880-96371/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	96371
880-51387-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	96371
880-51387-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	96371

Prep Batch: 96371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51430-1	HA-18	Total/NA	Solid	5035	
880-51430-2	HA-18	Total/NA	Solid	5035	
880-51430-3	HA-18	Total/NA	Solid	5035	
MB 880-96371/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-96371/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-96371/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-51387-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
880-51387-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 96547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51430-1	HA-18	Total/NA	Solid	Total BTEX	
880-51430-2	HA-18	Total/NA	Solid	Total BTEX	
880-51430-3	HA-18	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 96381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51430-1	HA-18	Total/NA	Solid	8015NM Prep	
880-51430-2	HA-18	Total/NA	Solid	8015NM Prep	
880-51430-3	HA-18	Total/NA	Solid	8015NM Prep	
MB 880-96381/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-96381/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-96381/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-51428-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-51428-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 96435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51430-1	HA-18	Total/NA	Solid	8015B NM	96381
880-51430-2	HA-18	Total/NA	Solid	8015B NM	96381
880-51430-3	HA-18	Total/NA	Solid	8015B NM	96381
MB 880-96381/1-A	Method Blank	Total/NA	Solid	8015B NM	96381
LCS 880-96381/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	96381
LCSD 880-96381/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	96381
880-51428-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	96381
880-51428-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	96381

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51430-1
SDG: Eddy County

GC Semi VOA

Analysis Batch: 96480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51430-1	HA-18	Total/NA	Solid	8015 NM	
880-51430-2	HA-18	Total/NA	Solid	8015 NM	
880-51430-3	HA-18	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 96382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51430-1	HA-18	Soluble	Solid	DI Leach	
880-51430-2	HA-18	Soluble	Solid	DI Leach	
880-51430-3	HA-18	Soluble	Solid	DI Leach	
MB 880-96382/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-96382/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-96382/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
820-16292-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
820-16292-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
880-51431-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-51431-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 96389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51430-1	HA-18	Soluble	Solid	300.0	96382
880-51430-2	HA-18	Soluble	Solid	300.0	96382
880-51430-3	HA-18	Soluble	Solid	300.0	96382
MB 880-96382/1-A	Method Blank	Soluble	Solid	300.0	96382
LCS 880-96382/2-A	Lab Control Sample	Soluble	Solid	300.0	96382
LCSD 880-96382/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	96382
820-16292-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	96382
820-16292-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	96382
880-51431-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	96382
880-51431-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	96382

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51430-1
SDG: Eddy County

Client Sample ID: HA-18
Date Collected: 11/21/24 09:05
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51430-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 19:46	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96547	11/22/24 19:46	SM	EET MID
Total/NA	Analysis	8015 NM		1			96480	11/22/24 20:23	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	96381	11/22/24 13:22	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96435	11/22/24 20:23	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96389	11/23/24 15:46	SMC	EET MID

Client Sample ID: HA-18
Date Collected: 11/21/24 09:10
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51430-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 20:06	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96547	11/22/24 20:06	SM	EET MID
Total/NA	Analysis	8015 NM		1			96480	11/22/24 20:40	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	96381	11/22/24 13:22	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96435	11/22/24 20:40	TKC	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96389	11/23/24 16:06	SMC	EET MID

Client Sample ID: HA-18
Date Collected: 11/21/24 09:15
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51430-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 20:27	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96547	11/22/24 20:27	SM	EET MID
Total/NA	Analysis	8015 NM		1			96480	11/22/24 20:56	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	96381	11/22/24 13:22	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96435	11/22/24 20:56	TKC	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96389	11/23/24 16:27	SMC	EET MID

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

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 880-51430-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51430-1
SDG: Eddy County

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51430-1
SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-51430-1	HA-18	Solid	11/21/24 09:05	11/22/24 12:06	6
880-51430-2	HA-18	Solid	11/21/24 09:10	11/22/24 12:06	8
880-51430-3	HA-18	Solid	11/21/24 09:15	11/22/24 12:06	10

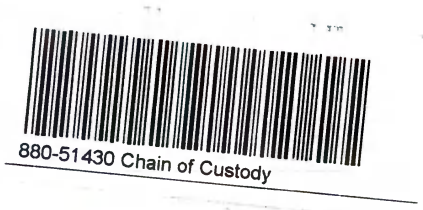
Released to Imaging: 11/6/2025 3:18:49 PM
Received by OCD: 11/4/2025 7:21:25 AM

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Chain of Custody

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

Wo



www.xenco.com Page _____ of _____

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	5114 West County Road 128	Address:	
City, State ZIP:	Midland TX 79705	City, State ZIP:	
Phone:	432-894-6385	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	2657	☑ Routine ☐ Rush	
Project Location:	Eddy County	Due Date:	
Sampler's Name:	Joey Pinson	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

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

Preservative Codes

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

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Chloride NM	TPH NM	BTEX NM	Sample Comments
HA-18	S	11/21/2024	9:05	6	Grab	1	X	X	X	Incident Number
HA-18	S	11/21/2024	9:10	8	Grab	1	X	X	X	nAPP2431628896
HA-18	S	11/21/2024	9:15	10	Grab	1	X	X	X	nAPP2431628896

Pres. Code / Parameters

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0	Teddy Randall Lee	11/22/24 1206			
3			4		
5			6		

Revised Date. 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 880-51430-1
SDG Number: Eddy County

Login Number: 51430
List Number: 1
Creator: Vasquez, Julisa

List Source: Eurofins Midland

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Kris Williams
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 11/27/2024 8:55:04 AM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy County

JOB NUMBER

880-51429-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

Released to Imaging: 11/6/2025 3:18:49 PM

my EOL

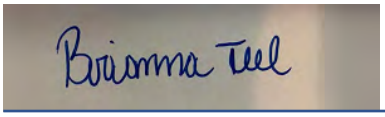
Eurofins Midland

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
11/27/2024 8:55:04 AM

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

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Laboratory Job ID: 880-51429-1
SDG: Eddy County

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51429-1
SDG: Eddy County

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Earth Systems Response and Restoration
Project: Spud Muffin 31 30 #738H

Job ID: 880-51429-1

Job ID: 880-51429-1 Eurofins Midland

Job Narrative
880-51429-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 11/22/2024 12:06 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 3.7°C.

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: HA-19 (880-51429-1), HA-19 (880-51429-2) and HA-19 (880-51429-3).

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

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

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

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51429-1
SDG: Eddy County

Client Sample ID: HA-19

Lab Sample ID: 880-51429-1
Matrix: Solid
Date Collected: 11/21/24 09:20
Date Received: 11/22/24 12:06
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 17:31	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 17:31	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 17:31	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/22/24 14:47	11/22/24 17:31	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 17:31	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/22/24 14:47	11/22/24 17:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*11/22/24 14:47*	*11/22/24 17:31*	*1*
1,4-Difluorobenzene (Surr)	*109*		*70 - 130*	*11/22/24 14:47*	*11/22/24 17:31*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/22/24 17:31	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/22/24 19:35	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	<49.9	U	49.9		mg/Kg		11/22/24 13:22	11/22/24 19:35	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/22/24 13:22	11/22/24 19:35	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 13:22	11/22/24 19:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*94*		*70 - 130*	*11/22/24 13:22*	*11/22/24 19:35*	*1*
o-Terphenyl	*85*		*70 - 130*	*11/22/24 13:22*	*11/22/24 19:35*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**913**		10.1		mg/Kg			11/25/24 16:17	1

Client Sample ID: HA-19

Lab Sample ID: 880-51429-2
Matrix: Solid
Date Collected: 11/21/24 09:25
Date Received: 11/22/24 12:06
Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 17:51	1
Toluene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 17:51	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 17:51	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		11/22/24 14:47	11/22/24 17:51	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		11/22/24 14:47	11/22/24 17:51	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		11/22/24 14:47	11/22/24 17:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*11/22/24 14:47*	*11/22/24 17:51*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51429-1
SDG: Eddy County

Client Sample ID: HA-19

Date Collected: 11/21/24 09:25
Date Received: 11/22/24 12:06
Sample Depth: 2

Lab Sample ID: 880-51429-2
Matrix: Solid

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*11/22/24 14:47*	*11/22/24 17:51*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			11/22/24 17:51	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			11/22/24 19:50	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	<49.9	U	49.9		mg/Kg		11/22/24 13:22	11/22/24 19:50	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		11/22/24 13:22	11/22/24 19:50	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		11/22/24 13:22	11/22/24 19:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*99*		*70 - 130*	*11/22/24 13:22*	*11/22/24 19:50*	*1*
o-Terphenyl	*90*		*70 - 130*	*11/22/24 13:22*	*11/22/24 19:50*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**165**		10.0		mg/Kg			11/23/24 15:04	1

Client Sample ID: HA-19

Date Collected: 11/21/24 09:30
Date Received: 11/22/24 12:06
Sample Depth: 4

Lab Sample ID: 880-51429-3
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 19:25	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 19:25	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 19:25	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/22/24 14:47	11/22/24 19:25	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 19:25	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/22/24 14:47	11/22/24 19:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*11/22/24 14:47*	*11/22/24 19:25*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*11/22/24 14:47*	*11/22/24 19:25*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			11/22/24 19:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/22/24 20:07	1

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51429-1
SDG: Eddy County

Client Sample ID: HA-19

Date Collected: 11/21/24 09:30
Date Received: 11/22/24 12:06
Sample Depth: 4

Lab Sample ID: 880-51429-3

Matrix: Solid

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	<49.8	U	49.8		mg/Kg		11/22/24 13:22	11/22/24 20:07	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/22/24 13:22	11/22/24 20:07	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 13:22	11/22/24 20:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*11/22/24 13:22*	*11/22/24 20:07*	*1*
o-Terphenyl	*88*		*70 - 130*	*11/22/24 13:22*	*11/22/24 20:07*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**518**		10.1		mg/Kg			11/23/24 15:25	1

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51429-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-51387-A-1-F MS	Matrix Spike	103	102
880-51387-A-1-G MSD	Matrix Spike Duplicate	109	105
880-51429-1	HA-19	110	109
880-51429-2	HA-19	97	99
880-51429-3	HA-19	110	107
LCS 880-96371/1-A	Lab Control Sample	107	103
LCSD 880-96371/2-A	Lab Control Sample Dup	103	101
MB 880-96371/5-A	Method Blank	108	102

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-51428-A-1-C MS	Matrix Spike	94	92
880-51428-A-1-D MSD	Matrix Spike Duplicate	96	92
880-51429-1	HA-19	94	85
880-51429-2	HA-19	99	90
880-51429-3	HA-19	97	88
LCS 880-96381/2-A	Lab Control Sample	115	117
LCSD 880-96381/3-A	Lab Control Sample Dup	115	115
MB 880-96381/1-A	Method Blank	109	104

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51429-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-96371/5-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96371

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/22/24 10:47	11/22/24 12:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*11/22/24 10:47*	*11/22/24 12:21*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*11/22/24 10:47*	*11/22/24 12:21*	*1*

Lab Sample ID: LCS 880-96371/1-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1152		mg/Kg		115	70 - 130
Toluene	0.100	0.1137		mg/Kg		114	70 - 130
Ethylbenzene	0.100	0.1116		mg/Kg		112	70 - 130
m-Xylene & p-Xylene	0.200	0.2277		mg/Kg		114	70 - 130
o-Xylene	0.100	0.1156		mg/Kg		116	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: LCSD 880-96371/2-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1151		mg/Kg		115	70 - 130	0	35
Toluene	0.100	0.1137		mg/Kg		114	70 - 130	0	35
Ethylbenzene	0.100	0.1119		mg/Kg		112	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.2281		mg/Kg		114	70 - 130	0	35
o-Xylene	0.100	0.1160		mg/Kg		116	70 - 130	0	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 880-51387-A-1-F MS
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0996	0.1109		mg/Kg		111	70 - 130
Toluene	<0.00199	U	0.0996	0.1080		mg/Kg		108	70 - 130

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QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51429-1
SDG: Eddy County

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

Lab Sample ID: 880-51387-A-1-F MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96347 — **Prep Batch: 96371**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0996	0.1039		mg/Kg		104	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.199	0.2118		mg/Kg		106	70 - 130
o-Xylene	<0.00199	U	0.0996	0.1072		mg/Kg		108	70 - 130

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

Lab Sample ID: 880-51387-A-1-G MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96347 — **Prep Batch: 96371**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.100	0.09830		mg/Kg		98	70 - 130	12	35
Toluene	<0.00199	U	0.100	0.09286		mg/Kg		93	70 - 130	15	35
Ethylbenzene	<0.00199	U	0.100	0.08506		mg/Kg		85	70 - 130	20	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1724		mg/Kg		86	70 - 130	21	35
o-Xylene	<0.00199	U	0.100	0.08836		mg/Kg		88	70 - 130	19	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

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

Lab Sample ID: MB 880-96381/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96435 — **Prep Batch: 96381**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/22/24 10:21	11/22/24 10:45	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 10:21	11/22/24 10:45	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 10:21	11/22/24 10:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*109*		*70 - 130*	*11/22/24 10:21*	*11/22/24 10:45*	*1*
o-Terphenyl	*104*		*70 - 130*	*11/22/24 10:21*	*11/22/24 10:45*	*1*

Lab Sample ID: LCS 880-96381/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96435 — **Prep Batch: 96381**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1124		mg/Kg		112	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1051		mg/Kg		105	70 - 130

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QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51429-1
SDG: Eddy County

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

Lab Sample ID: LCS 880-96381/2-A
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96381

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	115		70 - 130
o-Terphenyl	117		70 - 130

Lab Sample ID: LCSD 880-96381/3-A
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96381

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1103		mg/Kg		110	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	999.0		mg/Kg		100	70 - 130	5	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	115		70 - 130
o-Terphenyl	115		70 - 130

Lab Sample ID: 880-51428-A-1-C MS
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96381

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	999	867.7		mg/Kg		87	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.7	U	999	816.9		mg/Kg		82	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	94		70 - 130
o-Terphenyl	92		70 - 130

Lab Sample ID: 880-51428-A-1-D MSD
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 96381

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	999	893.2		mg/Kg		89	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<49.7	U	999	814.5		mg/Kg		82	70 - 130	0	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	92		70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51429-1
SDG: Eddy County

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-96382/1-A
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			11/23/24 12:34	1

Lab Sample ID: LCS 880-96382/2-A
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	251.9		mg/Kg		101	90 - 110		

Lab Sample ID: LCSD 880-96382/3-A
Matrix: Solid
Analysis Batch: 96389

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	252.5		mg/Kg		101	90 - 110	0	20

Lab Sample ID: 820-16292-A-1-B MS
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	42.2		251	307.6		mg/Kg		106	90 - 110		

Lab Sample ID: 820-16292-A-1-C MSD
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	42.2		251	308.3		mg/Kg		106	90 - 110	0	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51429-1
SDG: Eddy County

GC VOA

Analysis Batch: 96347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51429-1	HA-19	Total/NA	Solid	8021B	96371
880-51429-2	HA-19	Total/NA	Solid	8021B	96371
880-51429-3	HA-19	Total/NA	Solid	8021B	96371
MB 880-96371/5-A	Method Blank	Total/NA	Solid	8021B	96371
LCS 880-96371/1-A	Lab Control Sample	Total/NA	Solid	8021B	96371
LCSD 880-96371/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	96371
880-51387-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	96371
880-51387-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	96371

Prep Batch: 96371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51429-1	HA-19	Total/NA	Solid	5035	
880-51429-2	HA-19	Total/NA	Solid	5035	
880-51429-3	HA-19	Total/NA	Solid	5035	
MB 880-96371/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-96371/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-96371/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-51387-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
880-51387-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 96546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51429-1	HA-19	Total/NA	Solid	Total BTEX	
880-51429-2	HA-19	Total/NA	Solid	Total BTEX	
880-51429-3	HA-19	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 96381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51429-1	HA-19	Total/NA	Solid	8015NM Prep	
880-51429-2	HA-19	Total/NA	Solid	8015NM Prep	
880-51429-3	HA-19	Total/NA	Solid	8015NM Prep	
MB 880-96381/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-96381/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-96381/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-51428-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-51428-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Analysis Batch: 96435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51429-1	HA-19	Total/NA	Solid	8015B NM	96381
880-51429-2	HA-19	Total/NA	Solid	8015B NM	96381
880-51429-3	HA-19	Total/NA	Solid	8015B NM	96381
MB 880-96381/1-A	Method Blank	Total/NA	Solid	8015B NM	96381
LCS 880-96381/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	96381
LCSD 880-96381/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	96381
880-51428-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	96381
880-51428-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	96381

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51429-1
SDG: Eddy County

GC Semi VOA

Analysis Batch: 96479

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51429-1	HA-19	Total/NA	Solid	8015 NM	
880-51429-2	HA-19	Total/NA	Solid	8015 NM	
880-51429-3	HA-19	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 96382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51429-1	HA-19	Soluble	Solid	DI Leach	
880-51429-2	HA-19	Soluble	Solid	DI Leach	
880-51429-3	HA-19	Soluble	Solid	DI Leach	
MB 880-96382/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-96382/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-96382/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
820-16292-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
820-16292-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 96389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51429-1	HA-19	Soluble	Solid	300.0	96382
880-51429-2	HA-19	Soluble	Solid	300.0	96382
880-51429-3	HA-19	Soluble	Solid	300.0	96382
MB 880-96382/1-A	Method Blank	Soluble	Solid	300.0	96382
LCS 880-96382/2-A	Lab Control Sample	Soluble	Solid	300.0	96382
LCSD 880-96382/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	96382
820-16292-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	96382
820-16292-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	96382

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51429-1
SDG: Eddy County

Client Sample ID: HA-19

Date Collected: 11/21/24 09:20
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51429-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 17:31	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96546	11/22/24 17:31	SM	EET MID
Total/NA	Analysis	8015 NM		1			96479	11/22/24 19:35	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	96381	11/22/24 13:22	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96435	11/22/24 19:35	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96389	11/25/24 16:17	SMC	EET MID

Client Sample ID: HA-19

Date Collected: 11/21/24 09:25
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51429-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 17:51	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96546	11/22/24 17:51	SM	EET MID
Total/NA	Analysis	8015 NM		1			96479	11/22/24 19:50	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	96381	11/22/24 13:22	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96435	11/22/24 19:50	TKC	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96389	11/23/24 15:04	SMC	EET MID

Client Sample ID: HA-19

Date Collected: 11/21/24 09:30
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51429-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 19:25	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96546	11/22/24 19:25	SM	EET MID
Total/NA	Analysis	8015 NM		1			96479	11/22/24 20:07	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	96381	11/22/24 13:22	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96435	11/22/24 20:07	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96389	11/23/24 15:25	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 880-51429-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51429-1
SDG: Eddy County

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51429-1
SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-51429-1	HA-19	Solid	11/21/24 09:20	11/22/24 12:06	0.5
880-51429-2	HA-19	Solid	11/21/24 09:25	11/22/24 12:06	2
880-51429-3	HA-19	Solid	11/21/24 09:30	11/22/24 12:06	4

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11/27/2024

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880-51429 Chain of Custody

ain of Custody

:81) 240-4200, Dallas, TX (214) 902-0300
) 704-5440, San Antonio, TX (210) 509-3334
15) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: 429

www.xenco.com Page 1 of 1

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	5114 West County Road 128	Address:	
City, State ZIP:	Midland TX 79705	City, State ZIP:	
Phone:	432-894-6385	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	2657	☑ Routine ☐ Rush	
Project Location:	Eddy County	Due Date:	
Sampler's Name:	Joey Pinson	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

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

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2S0_4: H_2 NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: Chloride NM	TPH NM	BTEX NM	Sample Comments
HA-19	S	11/21/2024	9:20	0.5	Grab	1		X	X	X	Incident Number
HA-19	S	11/21/2024	9:25	2	Grab	1		X	X	X	nAPP2431628896
HA-19	S	11/21/2024	9:30	4	Grab	1		X	X	X	nAPP2431628896

ANALYSIS REQUEST

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		Teddy Randell Lee	11/22/24 12:06			
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

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Received by OCD: 11/4/2025 7:21:25 AM

Released to Imaging: 11/6/2025 3:18:49 PM

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 880-51429-1
SDG Number: Eddy County

Login Number: 51429
List Number: 1
Creator: Vasquez, Julisa

List Source: Eurofins Midland

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Kris Williams
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 11/27/2024 8:54:58 AM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy County

JOB NUMBER

880-51428-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

Released to Imaging: 11/6/2025 3:18:49 PM

my EOL

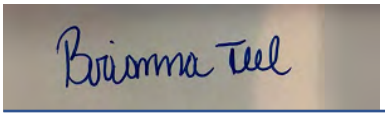
Eurofins Midland

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
11/27/2024 8:54:58 AM

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

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51428-1
SDG: Eddy County

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 880-51428-1
Project: Spud Muffin 31 30 #738H

Job ID: 880-51428-1 Eurofins Midland

Job Narrative
880-51428-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 11/22/2024 12:06 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 3.7°C.

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: HA-19 (880-51428-1), HA-19 (880-51428-2) and HA-19 (880-51428-3).

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

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

HPLC/IC
Method 300_ORGFM_28D - Soluble: The Chloride matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-96382 and analytical batch 880-96389 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: (880-51431-A-1-A), (880-51431-A-1-B MS) and (880-51431-A-1-C MSD).

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

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51428-1
SDG: Eddy County

Client Sample ID: HA-19

Lab Sample ID: 880-51428-1
Matrix: Solid
Date Collected: 11/21/24 09:35
Date Received: 11/22/24 12:06
Sample Depth: 6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 16:29	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 16:29	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 16:29	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/22/24 14:47	11/22/24 16:29	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 16:29	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/22/24 14:47	11/22/24 16:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*11/22/24 14:47*	*11/22/24 16:29*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*11/22/24 14:47*	*11/22/24 16:29*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			11/22/24 16:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			11/22/24 18:10	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	<49.7	U	49.7		mg/Kg		11/22/24 13:22	11/22/24 18:10	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		11/22/24 13:22	11/22/24 18:10	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		11/22/24 13:22	11/22/24 18:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*98*		*70 - 130*	*11/22/24 13:22*	*11/22/24 18:10*	*1*
o-Terphenyl	*90*		*70 - 130*	*11/22/24 13:22*	*11/22/24 18:10*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**855**		10.1		mg/Kg			11/25/24 15:53	1

Client Sample ID: HA-19

Lab Sample ID: 880-51428-2
Matrix: Solid
Date Collected: 11/21/24 09:40
Date Received: 11/22/24 12:06
Sample Depth: 8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 16:50	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 16:50	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 16:50	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/22/24 14:47	11/22/24 16:50	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 16:50	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/22/24 14:47	11/22/24 16:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*	*11/22/24 14:47*	*11/22/24 16:50*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51428-1
SDG: Eddy County

Client Sample ID: HA-19

Lab Sample ID: 880-51428-2
Matrix: Solid
Date Collected: 11/21/24 09:40
Date Received: 11/22/24 12:06
Sample Depth: 8

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*11/22/24 14:47*	*11/22/24 16:50*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			11/22/24 16:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/22/24 19:00	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	<49.8	U	49.8		mg/Kg		11/22/24 13:22	11/22/24 19:00	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/22/24 13:22	11/22/24 19:00	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 13:22	11/22/24 19:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*96*		*70 - 130*	*11/22/24 13:22*	*11/22/24 19:00*	*1*
o-Terphenyl	*88*		*70 - 130*	*11/22/24 13:22*	*11/22/24 19:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1070**		50.4		mg/Kg			11/25/24 16:01	5

Client Sample ID: HA-19

Lab Sample ID: 880-51428-3
Matrix: Solid
Date Collected: 11/21/24 09:45
Date Received: 11/22/24 12:06
Sample Depth: 10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 17:10	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 17:10	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 17:10	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		11/22/24 14:47	11/22/24 17:10	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 14:47	11/22/24 17:10	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		11/22/24 14:47	11/22/24 17:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*11/22/24 14:47*	*11/22/24 17:10*	*1*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*	*11/22/24 14:47*	*11/22/24 17:10*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			11/22/24 17:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			11/22/24 19:17	1

Eurofins Midland

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51428-1
SDG: Eddy County

Client Sample ID: HA-19

Lab Sample ID: 880-51428-3
Matrix: Solid
Date Collected: 11/21/24 09:45
Date Received: 11/22/24 12:06
Sample Depth: 10

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	<49.8	U	49.8		mg/Kg		11/22/24 13:22	11/22/24 19:17	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		11/22/24 13:22	11/22/24 19:17	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		11/22/24 13:22	11/22/24 19:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*99*		*70 - 130*	*11/22/24 13:22*	*11/22/24 19:17*	*1*
o-Terphenyl	*91*		*70 - 130*	*11/22/24 13:22*	*11/22/24 19:17*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1060**		49.6		mg/Kg			11/25/24 16:09	5

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51428-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-51387-A-1-F MS	Matrix Spike	103	102										
880-51387-A-1-G MSD	Matrix Spike Duplicate	109	105										
880-51428-1	HA-19	109	107										
880-51428-2	HA-19	107	101										
880-51428-3	HA-19	113	108										
LCS 880-96371/1-A	Lab Control Sample	107	103										
LCSD 880-96371/2-A	Lab Control Sample Dup	103	101										
MB 880-96371/5-A	Method Blank	108	102										

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-51428-1	HA-19	98	90										
880-51428-1 MS	HA-19	94	92										
880-51428-1 MSD	HA-19	96	92										
880-51428-2	HA-19	96	88										
880-51428-3	HA-19	99	91										
LCS 880-96381/2-A	Lab Control Sample	115	117										
LCSD 880-96381/3-A	Lab Control Sample Dup	115	115										
MB 880-96381/1-A	Method Blank	109	104										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51428-1
SDG: Eddy County

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-96371/5-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 96371

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Toluene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		11/22/24 10:47	11/22/24 12:21	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		11/22/24 10:47	11/22/24 12:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*11/22/24 10:47*	*11/22/24 12:21*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*11/22/24 10:47*	*11/22/24 12:21*	*1*

Lab Sample ID: LCS 880-96371/1-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1152		mg/Kg		115	70 - 130
Toluene	0.100	0.1137		mg/Kg		114	70 - 130
Ethylbenzene	0.100	0.1116		mg/Kg		112	70 - 130
m-Xylene & p-Xylene	0.200	0.2277		mg/Kg		114	70 - 130
o-Xylene	0.100	0.1156		mg/Kg		116	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*

Lab Sample ID: LCSD 880-96371/2-A
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1151		mg/Kg		115	70 - 130	0	35
Toluene	0.100	0.1137		mg/Kg		114	70 - 130	0	35
Ethylbenzene	0.100	0.1119		mg/Kg		112	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.2281		mg/Kg		114	70 - 130	0	35
o-Xylene	0.100	0.1160		mg/Kg		116	70 - 130	0	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 880-51387-A-1-F MS
Matrix: Solid
Analysis Batch: 96347

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 96371

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00199	U	0.0996	0.1109		mg/Kg		111	70 - 130
Toluene	<0.00199	U	0.0996	0.1080		mg/Kg		108	70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51428-1
SDG: Eddy County

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

Lab Sample ID: 880-51387-A-1-F MS — **Client Sample ID: Matrix Spike**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96347 — **Prep Batch: 96371**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00199	U	0.0996	0.1039		mg/Kg		104	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.199	0.2118		mg/Kg		106	70 - 130
o-Xylene	<0.00199	U	0.0996	0.1072		mg/Kg		108	70 - 130

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

Lab Sample ID: 880-51387-A-1-G MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96347 — **Prep Batch: 96371**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.100	0.09830		mg/Kg		98	70 - 130	12	35
Toluene	<0.00199	U	0.100	0.09286		mg/Kg		93	70 - 130	15	35
Ethylbenzene	<0.00199	U	0.100	0.08506		mg/Kg		85	70 - 130	20	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1724		mg/Kg		86	70 - 130	21	35
o-Xylene	<0.00199	U	0.100	0.08836		mg/Kg		88	70 - 130	19	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

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

Lab Sample ID: MB 880-96381/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96435 — **Prep Batch: 96381**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		11/22/24 10:21	11/22/24 10:45	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		11/22/24 10:21	11/22/24 10:45	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		11/22/24 10:21	11/22/24 10:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*109*		*70 - 130*	*11/22/24 10:21*	*11/22/24 10:45*	*1*
o-Terphenyl	*104*		*70 - 130*	*11/22/24 10:21*	*11/22/24 10:45*	*1*

Lab Sample ID: LCS 880-96381/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 96435 — **Prep Batch: 96381**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1124		mg/Kg		112	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1051		mg/Kg		105	70 - 130

Eurofins Midland

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51428-1
SDG: Eddy County

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

Lab Sample ID: LCS 880-96381/2-A
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 96381

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	115		70 - 130
o-Terphenyl	117		70 - 130

Lab Sample ID: LCSD 880-96381/3-A
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 96381

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1103		mg/Kg		110	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	999.0		mg/Kg		100	70 - 130	5	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	115		70 - 130
o-Terphenyl	115		70 - 130

Lab Sample ID: 880-51428-1 MS
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: HA-19
Prep Type: Total/NA
Prep Batch: 96381

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	999	867.7		mg/Kg		87	70 - 130
Diesel Range Organics (Over C10-C28)	<49.7	U	999	816.9		mg/Kg		82	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	94		70 - 130
o-Terphenyl	92		70 - 130

Lab Sample ID: 880-51428-1 MSD
Matrix: Solid
Analysis Batch: 96435

Client Sample ID: HA-19
Prep Type: Total/NA
Prep Batch: 96381

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	999	893.2		mg/Kg		89	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<49.7	U	999	814.5		mg/Kg		82	70 - 130	0	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	92		70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51428-1
SDG: Eddy County

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-96382/1-A
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			11/23/24 12:34	1

Lab Sample ID: LCS 880-96382/2-A
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	251.9		mg/Kg		101	90 - 110		

Lab Sample ID: LCSD 880-96382/3-A
Matrix: Solid
Analysis Batch: 96389

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	252.5		mg/Kg		101	90 - 110	0	20

Lab Sample ID: 820-16292-A-1-B MS
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	42.2		251	307.6		mg/Kg		106	90 - 110		

Lab Sample ID: 820-16292-A-1-C MSD
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	42.2		251	308.3		mg/Kg		106	90 - 110	0	20

Lab Sample ID: 880-51431-A-1-B MS
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	941	F1	1260	2490	F1	mg/Kg		123	90 - 110		

Lab Sample ID: 880-51431-A-1-C MSD
Matrix: Solid
Analysis Batch: 96389

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	941	F1	1260	2495	F1	mg/Kg		124	90 - 110	0	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51428-1
SDG: Eddy County

GC VOA

Analysis Batch: 96347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51428-1	HA-19	Total/NA	Solid	8021B	96371
880-51428-2	HA-19	Total/NA	Solid	8021B	96371
880-51428-3	HA-19	Total/NA	Solid	8021B	96371
MB 880-96371/5-A	Method Blank	Total/NA	Solid	8021B	96371
LCS 880-96371/1-A	Lab Control Sample	Total/NA	Solid	8021B	96371
LCSD 880-96371/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	96371
880-51387-A-1-F MS	Matrix Spike	Total/NA	Solid	8021B	96371
880-51387-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	96371

Prep Batch: 96371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51428-1	HA-19	Total/NA	Solid	5035	
880-51428-2	HA-19	Total/NA	Solid	5035	
880-51428-3	HA-19	Total/NA	Solid	5035	
MB 880-96371/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-96371/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-96371/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-51387-A-1-F MS	Matrix Spike	Total/NA	Solid	5035	
880-51387-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 96545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51428-1	HA-19	Total/NA	Solid	Total BTEX	
880-51428-2	HA-19	Total/NA	Solid	Total BTEX	
880-51428-3	HA-19	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 96381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51428-1	HA-19	Total/NA	Solid	8015NM Prep	
880-51428-2	HA-19	Total/NA	Solid	8015NM Prep	
880-51428-3	HA-19	Total/NA	Solid	8015NM Prep	
MB 880-96381/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-96381/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-96381/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-51428-1 MS	HA-19	Total/NA	Solid	8015NM Prep	
880-51428-1 MSD	HA-19	Total/NA	Solid	8015NM Prep	

Analysis Batch: 96435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51428-1	HA-19	Total/NA	Solid	8015B NM	96381
880-51428-2	HA-19	Total/NA	Solid	8015B NM	96381
880-51428-3	HA-19	Total/NA	Solid	8015B NM	96381
MB 880-96381/1-A	Method Blank	Total/NA	Solid	8015B NM	96381
LCS 880-96381/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	96381
LCSD 880-96381/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	96381
880-51428-1 MS	HA-19	Total/NA	Solid	8015B NM	96381
880-51428-1 MSD	HA-19	Total/NA	Solid	8015B NM	96381

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51428-1
SDG: Eddy County

GC Semi VOA

Analysis Batch: 96478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51428-1	HA-19	Total/NA	Solid	8015 NM	
880-51428-2	HA-19	Total/NA	Solid	8015 NM	
880-51428-3	HA-19	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 96382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51428-1	HA-19	Soluble	Solid	DI Leach	
880-51428-2	HA-19	Soluble	Solid	DI Leach	
880-51428-3	HA-19	Soluble	Solid	DI Leach	
MB 880-96382/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-96382/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-96382/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
820-16292-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
820-16292-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
880-51431-A-1-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-51431-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 96389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-51428-1	HA-19	Soluble	Solid	300.0	96382
880-51428-2	HA-19	Soluble	Solid	300.0	96382
880-51428-3	HA-19	Soluble	Solid	300.0	96382
MB 880-96382/1-A	Method Blank	Soluble	Solid	300.0	96382
LCS 880-96382/2-A	Lab Control Sample	Soluble	Solid	300.0	96382
LCSD 880-96382/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	96382
820-16292-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	96382
820-16292-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	96382
880-51431-A-1-B MS	Matrix Spike	Soluble	Solid	300.0	96382
880-51431-A-1-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	96382

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51428-1
SDG: Eddy County

Client Sample ID: HA-19

Date Collected: 11/21/24 09:35
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51428-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 16:29	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96545	11/22/24 16:29	SM	EET MID
Total/NA	Analysis	8015 NM		1			96478	11/22/24 18:10	SM	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	96381	11/22/24 13:22	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96435	11/22/24 18:10	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	96389	11/25/24 15:53	SMC	EET MID

Client Sample ID: HA-19

Date Collected: 11/21/24 09:40
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51428-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 16:50	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96545	11/22/24 16:50	SM	EET MID
Total/NA	Analysis	8015 NM		1			96478	11/22/24 19:00	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	96381	11/22/24 13:22	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96435	11/22/24 19:00	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96389	11/25/24 16:01	SMC	EET MID

Client Sample ID: HA-19

Date Collected: 11/21/24 09:45
Date Received: 11/22/24 12:06

Lab Sample ID: 880-51428-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	96371	11/22/24 14:47	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	96347	11/22/24 17:10	EL	EET MID
Total/NA	Analysis	Total BTEX		1			96545	11/22/24 17:10	SM	EET MID
Total/NA	Analysis	8015 NM		1			96478	11/22/24 19:17	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	96381	11/22/24 13:22	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	96435	11/22/24 19:17	TKC	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	96382	11/22/24 13:23	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	96389	11/25/24 16:09	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 880-51428-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County

Laboratory: Eurofins Midland

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

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

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

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

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51428-1
SDG: Eddy County

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51428-1
SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-51428-1	HA-19	Solid	11/21/24 09:35	11/22/24 12:06	6
880-51428-2	HA-19	Solid	11/21/24 09:40	11/22/24 12:06	8
880-51428-3	HA-19	Solid	11/21/24 09:45	11/22/24 12:06	10

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11/27/2024

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Chain of Custody

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

W 880-51428 Chain of Custody

www.xenco.com Page 1 of 1

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	5114 West County Road 128	Address:	
City, State ZIP:	Midland TX 79705	City, State ZIP:	
Phone:	432-894-6385	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	☑ Routine ☐ Rush
Project Number:	2657	Due Date:	
Project Location:	Eddy County	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Joey Pinson		
PO #:			

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

Preservative Codes

None: NO | DI Water: H_2O
Cool: Cool | MeOH: Me
HCL: HC | HNO_3: HN
H_2S0_4: H_2 | NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: Chloride NM	TPH NM	BTEX NM	Sample Comments
HA-19	S	11/21/2024	9:35	6	Grab	1		X	X	X	Incident Number
HA-19	S	11/21/2024	9:40	8	Grab	1		X	X	X	nAPP2431628896
HA-19	S	11/21/2024	9:45	10	Grab	1		X	X	X	nAPP2431628896

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

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

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		Teddy Randell Lee	11/22/24 12:06			
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

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Received by OCD: 11/4/2025 7:21:25 AM

Released to Imaging: 11/6/2025 3:18:49 PM

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 880-51428-1
SDG Number: Eddy County

Login Number: 51428
List Number: 1
Creator: Vasquez, Julisa

List Source: Eurofins Midland

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Gilbert Moreno
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 3/31/2025 1:20:39 PM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy, NM

JOB NUMBER

890-7850-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

Released to Imaging: 11/6/2025 3:18:49 PM

my EOL

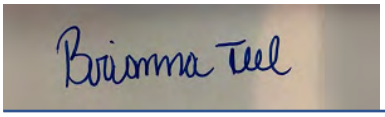
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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3/31/2025 1:20:39 PM

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

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7850-1
SDG: Eddy, NM

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 890-7850-1
Project: Spud Muffin 31 30 #738H

Job ID: 890-7850-1 Eurofins Carlsbad

Job Narrative
890-7850-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 3/25/2025 3:26 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.0°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: Surrogate recovery for the following samples were outside control limits: (LCS 880-106198/2-A) and (LCSD 880-106198/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: HA-2 (890-7850-1), HA-2 (890-7850-2), HA-2 (890-7850-3), HA-2 (890-7850-4), HA-2 (890-7850-5), HA-2 (890-7850-6), (890-7861-A-5-B), (890-7861-A-5-C MS) and (890-7861-A-5-D MSD). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-106198 and analytical batch 880-106362 was outside the upper control limits.

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

HPLC/IC
Method 300_ORGFM_28D - Soluble: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-106191 and analytical batch 880-106228 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.

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7850-1
SDG: Eddy, NM

Client Sample ID: HA-2
Date Collected: 03/24/25 14:00
Date Received: 03/25/25 15:26
Sample Depth: 6

Lab Sample ID: 890-7850-1
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		03/27/25 10:00	03/27/25 14:05	1
Toluene	<0.00202	U	0.00202		mg/Kg		03/27/25 10:00	03/27/25 14:05	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		03/27/25 10:00	03/27/25 14:05	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		03/27/25 10:00	03/27/25 14:05	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		03/27/25 10:00	03/27/25 14:05	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		03/27/25 10:00	03/27/25 14:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*03/27/25 10:00*	*03/27/25 14:05*	*1*
1,4-Difluorobenzene (Surr)	*73*		*70 - 130*	*03/27/25 10:00*	*03/27/25 14:05*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			03/29/25 06:02	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	<49.7	U	49.7		mg/Kg		03/27/25 12:15	03/29/25 06:02	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		03/27/25 12:15	03/29/25 06:02	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		03/27/25 12:15	03/29/25 06:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*143*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 06:02*	*1*
o-Terphenyl	*151*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 06:02*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**829**		9.96		mg/Kg			03/28/25 16:51	1

Client Sample ID: HA-2
Date Collected: 03/24/25 14:05
Date Received: 03/25/25 15:26
Sample Depth: 8

Lab Sample ID: 890-7850-2
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		03/27/25 10:00	03/27/25 17:12	1
Toluene	<0.00201	U	0.00201		mg/Kg		03/27/25 10:00	03/27/25 17:12	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		03/27/25 10:00	03/27/25 17:12	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		03/27/25 10:00	03/27/25 17:12	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		03/27/25 10:00	03/27/25 17:12	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		03/27/25 10:00	03/27/25 17:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*03/27/25 10:00*	*03/27/25 17:12*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*03/27/25 10:00*	*03/27/25 17:12*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7850-1
SDG: Eddy, NM

Client Sample ID: HA-2

Lab Sample ID: 890-7850-2
Matrix: Solid
Date Collected: 03/24/25 14:05
Date Received: 03/25/25 15:26
Sample Depth: 8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			03/29/25 06:18	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	<49.9	U	49.9		mg/Kg		03/27/25 12:15	03/29/25 06:18	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		03/27/25 12:15	03/29/25 06:18	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		03/27/25 12:15	03/29/25 06:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*145*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 06:18*	*1*
o-Terphenyl	*151*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 06:18*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1700**	**F1**	49.9		mg/Kg			03/28/25 16:56	5

Client Sample ID: HA-2

Lab Sample ID: 890-7850-3
Matrix: Solid
Date Collected: 03/24/25 14:10
Date Received: 03/25/25 15:26
Sample Depth: 11

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 17:32	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 17:32	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 17:32	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		03/27/25 10:00	03/27/25 17:32	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 17:32	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		03/27/25 10:00	03/27/25 17:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*	*03/27/25 10:00*	*03/27/25 17:32*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*03/27/25 10:00*	*03/27/25 17:32*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6		mg/Kg			03/29/25 06:34	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	<49.6	U	49.6		mg/Kg		03/27/25 12:15	03/29/25 06:34	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6		mg/Kg		03/27/25 12:15	03/29/25 06:34	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6		mg/Kg		03/27/25 12:15	03/29/25 06:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*142*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 06:34*	*1*
o-Terphenyl	*147*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 06:34*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7850-1
SDG: Eddy, NM

Client Sample ID: HA-2
Lab Sample ID: 890-7850-3
Matrix: Solid
Date Collected: 03/24/25 14:10
Date Received: 03/25/25 15:26
Sample Depth: 11

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2010		50.1		mg/Kg			03/28/25 17:14	5

Client Sample ID: HA-2
Lab Sample ID: 890-7850-4
Matrix: Solid
Date Collected: 03/24/25 14:15
Date Received: 03/25/25 15:26
Sample Depth: 16

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 17:53	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 17:53	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 17:53	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		03/27/25 10:00	03/27/25 17:53	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 17:53	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		03/27/25 10:00	03/27/25 17:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*03/27/25 10:00*	*03/27/25 17:53*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*03/27/25 10:00*	*03/27/25 17:53*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			03/29/25 06:51	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	<49.7	U	49.7		mg/Kg		03/27/25 12:15	03/29/25 06:51	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		03/27/25 12:15	03/29/25 06:51	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		03/27/25 12:15	03/29/25 06:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*147*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 06:51*	*1*
o-Terphenyl	*154*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 06:51*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2300		49.8		mg/Kg			03/28/25 17:19	5

Client Sample ID: HA-2
Lab Sample ID: 890-7850-5
Matrix: Solid
Date Collected: 03/24/25 14:20
Date Received: 03/25/25 15:26
Sample Depth: 21

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		03/27/25 10:00	03/27/25 18:14	1
Toluene	<0.00198	U	0.00198		mg/Kg		03/27/25 10:00	03/27/25 18:14	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		03/27/25 10:00	03/27/25 18:14	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		03/27/25 10:00	03/27/25 18:14	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7850-1
SDG: Eddy, NM

Client Sample ID: HA-2

Lab Sample ID: 890-7850-5
Matrix: Solid
Date Collected: 03/24/25 14:20
Date Received: 03/25/25 15:26
Sample Depth: 21

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00198	U	0.00198		mg/Kg		03/27/25 10:00	03/27/25 18:14	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		03/27/25 10:00	03/27/25 18:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*03/27/25 10:00*	*03/27/25 18:14*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*03/27/25 10:00*	*03/27/25 18:14*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			03/29/25 07:06	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	<49.8	U	49.8		mg/Kg		03/27/25 12:15	03/29/25 07:06	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		03/27/25 12:15	03/29/25 07:06	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		03/27/25 12:15	03/29/25 07:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*147*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 07:06*	*1*
o-Terphenyl	*156*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 07:06*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2460		50.0		mg/Kg			03/28/25 17:37	5

Client Sample ID: HA-2

Lab Sample ID: 890-7850-6
Matrix: Solid
Date Collected: 03/24/25 14:25
Date Received: 03/25/25 15:26
Sample Depth: 26

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		03/27/25 10:00	03/27/25 18:34	1
Toluene	<0.00199	U	0.00199		mg/Kg		03/27/25 10:00	03/27/25 18:34	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		03/27/25 10:00	03/27/25 18:34	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		03/27/25 10:00	03/27/25 18:34	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		03/27/25 10:00	03/27/25 18:34	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		03/27/25 10:00	03/27/25 18:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*03/27/25 10:00*	*03/27/25 18:34*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*03/27/25 10:00*	*03/27/25 18:34*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			03/29/25 07:22	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7850-1
SDG: Eddy, NM

Client Sample ID: HA-2

Lab Sample ID: 890-7850-6
Date Collected: 03/24/25 14:25
Matrix: Solid
Date Received: 03/25/25 15:26
Sample Depth: 26

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	<49.9	U	49.9		mg/Kg		03/27/25 12:15	03/29/25 07:22	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		03/27/25 12:15	03/29/25 07:22	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		03/27/25 12:15	03/29/25 07:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*145*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 07:22*	*1*
o-Terphenyl	*152*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 07:22*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1910**		50.1		mg/Kg			03/28/25 17:42	5

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7850-1
SDG: Eddy, NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-7850-1	HA-2	104	73										
890-7850-2	HA-2	98	93										
890-7850-3	HA-2	95	89										
890-7850-4	HA-2	98	95										
890-7850-5	HA-2	98	95										
890-7850-6	HA-2	98	94										
LCS 880-106182/1-A	Lab Control Sample	127	90										
LCSD 880-106182/2-A	Lab Control Sample Dup	117	99										
MB 880-106182/5-A	Method Blank	93	89										

Surrogate Legend

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

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-7850-1	HA-2	143 S1+	151 S1+										
890-7850-2	HA-2	145 S1+	151 S1+										
890-7850-3	HA-2	142 S1+	147 S1+										
890-7850-4	HA-2	147 S1+	154 S1+										
890-7850-5	HA-2	147 S1+	156 S1+										
890-7850-6	HA-2	145 S1+	152 S1+										
LCS 880-106198/2-A	Lab Control Sample	121	140 S1+										
LCSD 880-106198/3-A	Lab Control Sample Dup	124	143 S1+										
MB 880-106198/1-A	Method Blank	129	132 S1+										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7850-1
SDG: Eddy, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-106182/5-A
Matrix: Solid
Analysis Batch: 106175

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106182

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 12:22	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 12:22	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 12:22	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		03/27/25 10:00	03/27/25 12:22	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 12:22	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		03/27/25 10:00	03/27/25 12:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*03/27/25 10:00*	*03/27/25 12:22*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*03/27/25 10:00*	*03/27/25 12:22*	*1*

Lab Sample ID: LCS 880-106182/1-A
Matrix: Solid
Analysis Batch: 106175

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106182

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09931		mg/Kg		99	70 - 130		
Toluene			0.100	0.09773		mg/Kg		98	70 - 130		
Ethylbenzene			0.100	0.1233		mg/Kg		123	70 - 130		
m-Xylene & p-Xylene			0.200	0.2374		mg/Kg		119	70 - 130		
o-Xylene			0.100	0.1137		mg/Kg		114	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*127*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: LCSD 880-106182/2-A
Matrix: Solid
Analysis Batch: 106175

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106182

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09850		mg/Kg		98	70 - 130	1	35
Toluene			0.100	0.09297		mg/Kg		93	70 - 130	5	35
Ethylbenzene			0.100	0.08745		mg/Kg		87	70 - 130	34	35
m-Xylene & p-Xylene			0.200	0.1691		mg/Kg		85	70 - 130	34	35
o-Xylene			0.100	0.1051		mg/Kg		105	70 - 130	8	35

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

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7850-1
SDG: Eddy, NM

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

Lab Sample ID: MB 880-106198/1-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106198

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 01:24	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 01:24	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 01:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*129*		*70 - 130*	*03/27/25 12:15*	*03/29/25 01:24*	*1*
o-Terphenyl	*132*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 01:24*	*1*

Lab Sample ID: LCS 880-106198/2-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106198

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1061		mg/Kg		106	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1262		mg/Kg		126	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*121*		*70 - 130*
o-Terphenyl	*140*	*S1+*	*70 - 130*

Lab Sample ID: LCSD 880-106198/3-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106198

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1113		mg/Kg		111	70 - 130	5	20
Diesel Range Organics (Over C10-C28)			1000	1300		mg/Kg		130	70 - 130	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*124*		*70 - 130*
o-Terphenyl	*143*	*S1+*	*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-106191/1-A
Matrix: Solid
Analysis Batch: 106228

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			03/28/25 15:19	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7850-1
SDG: Eddy, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-106191/2-A
Matrix: Solid
Analysis Batch: 106228

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	264.9		mg/Kg		106	90 - 110		

Lab Sample ID: LCSD 880-106191/3-A
Matrix: Solid
Analysis Batch: 106228

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	259.8		mg/Kg		104	90 - 110	2	20

Lab Sample ID: 890-7850-2 MS
Matrix: Solid
Analysis Batch: 106228

Client Sample ID: HA-2
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	1700	F1	1250	3142	F1	mg/Kg		116	90 - 110		

Lab Sample ID: 890-7850-2 MSD
Matrix: Solid
Analysis Batch: 106228

Client Sample ID: HA-2
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1700	F1	1250	3149	F1	mg/Kg		116	90 - 110	0	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7850-1
SDG: Eddy, NM

GC VOA

Analysis Batch: 106175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7850-1	HA-2	Total/NA	Solid	8021B	106182
890-7850-2	HA-2	Total/NA	Solid	8021B	106182
890-7850-3	HA-2	Total/NA	Solid	8021B	106182
890-7850-4	HA-2	Total/NA	Solid	8021B	106182
890-7850-5	HA-2	Total/NA	Solid	8021B	106182
890-7850-6	HA-2	Total/NA	Solid	8021B	106182
MB 880-106182/5-A	Method Blank	Total/NA	Solid	8021B	106182
LCS 880-106182/1-A	Lab Control Sample	Total/NA	Solid	8021B	106182
LCSD 880-106182/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	106182

Prep Batch: 106182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7850-1	HA-2	Total/NA	Solid	5035	
890-7850-2	HA-2	Total/NA	Solid	5035	
890-7850-3	HA-2	Total/NA	Solid	5035	
890-7850-4	HA-2	Total/NA	Solid	5035	
890-7850-5	HA-2	Total/NA	Solid	5035	
890-7850-6	HA-2	Total/NA	Solid	5035	
MB 880-106182/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-106182/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-106182/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 106198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7850-1	HA-2	Total/NA	Solid	8015NM Prep	
890-7850-2	HA-2	Total/NA	Solid	8015NM Prep	
890-7850-3	HA-2	Total/NA	Solid	8015NM Prep	
890-7850-4	HA-2	Total/NA	Solid	8015NM Prep	
890-7850-5	HA-2	Total/NA	Solid	8015NM Prep	
890-7850-6	HA-2	Total/NA	Solid	8015NM Prep	
MB 880-106198/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-106198/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-106198/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 106362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7850-1	HA-2	Total/NA	Solid	8015B NM	106198
890-7850-2	HA-2	Total/NA	Solid	8015B NM	106198
890-7850-3	HA-2	Total/NA	Solid	8015B NM	106198
890-7850-4	HA-2	Total/NA	Solid	8015B NM	106198
890-7850-5	HA-2	Total/NA	Solid	8015B NM	106198
890-7850-6	HA-2	Total/NA	Solid	8015B NM	106198
MB 880-106198/1-A	Method Blank	Total/NA	Solid	8015B NM	106198
LCS 880-106198/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	106198
LCSD 880-106198/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	106198

Analysis Batch: 106526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7850-1	HA-2	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7850-1
SDG: Eddy, NM

GC Semi VOA (Continued)

Analysis Batch: 106526 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7850-2	HA-2	Total/NA	Solid	8015 NM	
890-7850-3	HA-2	Total/NA	Solid	8015 NM	
890-7850-4	HA-2	Total/NA	Solid	8015 NM	
890-7850-5	HA-2	Total/NA	Solid	8015 NM	
890-7850-6	HA-2	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 106191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7850-1	HA-2	Soluble	Solid	DI Leach	
890-7850-2	HA-2	Soluble	Solid	DI Leach	
890-7850-3	HA-2	Soluble	Solid	DI Leach	
890-7850-4	HA-2	Soluble	Solid	DI Leach	
890-7850-5	HA-2	Soluble	Solid	DI Leach	
890-7850-6	HA-2	Soluble	Solid	DI Leach	
MB 880-106191/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-106191/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-106191/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-7850-2 MS	HA-2	Soluble	Solid	DI Leach	
890-7850-2 MSD	HA-2	Soluble	Solid	DI Leach	

Analysis Batch: 106228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7850-1	HA-2	Soluble	Solid	300.0	106191
890-7850-2	HA-2	Soluble	Solid	300.0	106191
890-7850-3	HA-2	Soluble	Solid	300.0	106191
890-7850-4	HA-2	Soluble	Solid	300.0	106191
890-7850-5	HA-2	Soluble	Solid	300.0	106191
890-7850-6	HA-2	Soluble	Solid	300.0	106191
MB 880-106191/1-A	Method Blank	Soluble	Solid	300.0	106191
LCS 880-106191/2-A	Lab Control Sample	Soluble	Solid	300.0	106191
LCSD 880-106191/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	106191
890-7850-2 MS	HA-2	Soluble	Solid	300.0	106191
890-7850-2 MSD	HA-2	Soluble	Solid	300.0	106191

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7850-1
SDG: Eddy, NM

Client Sample ID: HA-2
Date Collected: 03/24/25 14:00
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7850-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	106182	03/27/25 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106175	03/27/25 14:05	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106526	03/29/25 06:02	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.07 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 06:02	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		1			106228	03/28/25 16:51	CH	EET MID

Client Sample ID: HA-2
Date Collected: 03/24/25 14:05
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7850-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	106182	03/27/25 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106175	03/27/25 17:12	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106526	03/29/25 06:18	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 06:18	TKC	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		5			106228	03/28/25 16:56	CH	EET MID

Client Sample ID: HA-2
Date Collected: 03/24/25 14:10
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7850-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	106182	03/27/25 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106175	03/27/25 17:32	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106526	03/29/25 06:34	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 06:34	TKC	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		5			106228	03/28/25 17:14	CH	EET MID

Client Sample ID: HA-2
Date Collected: 03/24/25 14:15
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7850-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	106182	03/27/25 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106175	03/27/25 17:53	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106526	03/29/25 06:51	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 06:51	TKC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Job ID: 890-7850-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy, NM

Client Sample ID: HA-2
Lab Sample ID: 890-7850-4
Date Collected: 03/24/25 14:15
Matrix: Solid
Date Received: 03/25/25 15:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.02 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		5			106228	03/28/25 17:19	CH	EET MID

Client Sample ID: HA-2
Lab Sample ID: 890-7850-5
Date Collected: 03/24/25 14:20
Matrix: Solid
Date Received: 03/25/25 15:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	106182	03/27/25 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106175	03/27/25 18:14	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106526	03/29/25 07:06	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 07:06	TKC	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		5			106228	03/28/25 17:37	CH	EET MID

Client Sample ID: HA-2
Lab Sample ID: 890-7850-6
Date Collected: 03/24/25 14:25
Matrix: Solid
Date Received: 03/25/25 15:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	106182	03/27/25 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106175	03/27/25 18:34	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106526	03/29/25 07:22	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 07:22	TKC	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		5			106228	03/28/25 17:42	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 890-7850-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy, NM

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7850-1
SDG: Eddy, NM

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7850-1
SDG: Eddy, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-7850-1	HA-2	Solid	03/24/25 14:00	03/25/25 15:26	6
890-7850-2	HA-2	Solid	03/24/25 14:05	03/25/25 15:26	8
890-7850-3	HA-2	Solid	03/24/25 14:10	03/25/25 15:26	11
890-7850-4	HA-2	Solid	03/24/25 14:15	03/25/25 15:26	16
890-7850-5	HA-2	Solid	03/24/25 14:20	03/25/25 15:26	21
890-7850-6	HA-2	Solid	03/24/25 14:25	03/25/25 15:26	26

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Chain of Custody

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

Work Order No: 890-7850 Chain of Custody

3/31/2025

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	☑ Routine ☐ Rush
Project Number:	15995	Due Date:	5 Day TAT
Project Location:	Eddy, NM	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Gilbert Moreno		
PO/WO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	TRM0067	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	0.2	
Total Containers:		Corrected Temperature:	0.0	

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2S0_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	Sample Comments
HA-2	S	3.24.25	14:00	6	Grab/	1	X	X	X			Incident Number
HA-2	S	3.24.25	14:05	8	Grab/	1	X	X	X			nAPP2431628896
HA-2	S	3.24.25	14:10	11	Grab/	1	X	X	X			
HA-2	S	3.24.25	14:15	16	Grab/	1	X	X	X			
HA-2	S	3.24.25	14:20	21	Grab/	1	X	X	X			
HA-2	S	3.24.25	14:25	26	Grab/	1	X	X	X			

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		15:26 3/25	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

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Received by OCD: 11/4/2025 7:21:25 AM

Released to Imaging: 11/6/2025 3:18:49 PM

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Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Teel, Brianna	Carrier Tracking No(s): N/A	COC No: 890-4778.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Brianna.Teel@et.eurofinsus.com	State of Origin: Texas	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-7850-1
Address: 1211 W. Florida Ave, ,	Due Date Requested: 3/31/2025			Preservation Codes: -
City: Midland	TAT Requested (days): N/A			
State, Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: spud muffin 31 30 #738H	Project #: 88001228			
Site: N/A	SSOW#: N/A			Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8021B/5035FP_Calc BTEX	300_ORGFM_28D/DI_LEACH Chloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep 8015 NM	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
HA-2 (890-7850-1)	3/24/25	14:00 Central	G	Solid			X	X	X	X	1	
HA-2 (890-7850-2)	3/24/25	14:05 Central	G	Solid			X	X	X	X	1	
HA-2 (890-7850-3)	3/24/25	14:10 Central	G	Solid			X	X	X	X	1	
HA-2 (890-7850-4)	3/24/25	14:15 Central	G	Solid			X	X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:			TRL	3/27/25 0800	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

Received by OCD: 11/4/2025 7:21:25 AM
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3/31/2025
Released to Imaging: 11/6/2025 3:18:49 PM

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7850-1
SDG Number: Eddy, NM

Login Number: 7850
List Number: 1
Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7850-1
SDG Number: Eddy, NM

Login Number: 7850
List Number: 2
Creator: Lee, Randell

List Source: Eurofins Midland
List Creation: 03/27/25 08:12 AM

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Gilbert Moreno
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

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JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy, NM

JOB NUMBER

890-7845-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

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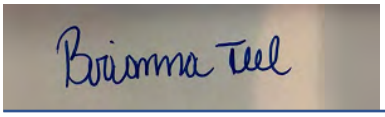
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7845-1
SDG: Eddy, NM

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 890-7845-1
Project: Spud Muffin 31 30 #738H

Job ID: 890-7845-1 Eurofins Carlsbad

Job Narrative
890-7845-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 3/25/2025 3:59 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.0°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 880-106065 and analytical batch 880-106122 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-106065/2-A), (LCSD 880-106065/3-A) and (890-7844-A-56-B MS). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: HA-12 (890-7845-1) and (890-7844-A-56-C MSD). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The method blank for preparation batch 880-106150 and analytical batch 880-106362 contained Gasoline Range Organics (GRO)-C6-C10 above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-106150/2-A), (LCSD 880-106150/3-A) and (890-7845-A-4-F MSD). Evidence of matrix interferences is not obvious.

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

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

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7845-1
SDG: Eddy, NM

Client Sample ID: HA-12

Lab Sample ID: 890-7845-1
Matrix: Solid
Date Collected: 03/24/25 10:30
Date Received: 03/25/25 15:59
Sample Depth: 11

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		03/26/25 08:49	03/26/25 19:03	1
Toluene	<0.00202	U	0.00202		mg/Kg		03/26/25 08:49	03/26/25 19:03	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		03/26/25 08:49	03/26/25 19:03	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		03/26/25 08:49	03/26/25 19:03	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		03/26/25 08:49	03/26/25 19:03	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		03/26/25 08:49	03/26/25 19:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*03/26/25 08:49*	*03/26/25 19:03*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*03/26/25 08:49*	*03/26/25 19:03*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**58.3**		49.8		mg/Kg			03/26/25 23:43	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	<49.8	U	49.8		mg/Kg		03/26/25 07:04	03/26/25 23:43	1
Diesel Range Organics (Over C10-C28)	**58.3**		49.8		mg/Kg		03/26/25 07:04	03/26/25 23:43	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		03/26/25 07:04	03/26/25 23:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*130*		*70 - 130*	*03/26/25 07:04*	*03/26/25 23:43*	*1*
o-Terphenyl	*132*	*S1+*	*70 - 130*	*03/26/25 07:04*	*03/26/25 23:43*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1510**		50.2		mg/Kg			03/27/25 02:09	5

Client Sample ID: HA-12

Lab Sample ID: 890-7845-2
Matrix: Solid
Date Collected: 03/24/25 10:35
Date Received: 03/25/25 15:59
Sample Depth: 16

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/26/25 08:49	03/26/25 19:23	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/26/25 08:49	03/26/25 19:23	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/26/25 08:49	03/26/25 19:23	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		03/26/25 08:49	03/26/25 19:23	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/26/25 08:49	03/26/25 19:23	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		03/26/25 08:49	03/26/25 19:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*03/26/25 08:49*	*03/26/25 19:23*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*03/26/25 08:49*	*03/26/25 19:23*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7845-1
SDG: Eddy, NM

Client Sample ID: HA-12

Lab Sample ID: 890-7845-2
Matrix: Solid
Date Collected: 03/24/25 10:35
Date Received: 03/25/25 15:59
Sample Depth: 16

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6		mg/Kg			03/27/25 00:01	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	<49.6	U	49.6		mg/Kg		03/26/25 07:04	03/27/25 00:01	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6		mg/Kg		03/26/25 07:04	03/27/25 00:01	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6		mg/Kg		03/26/25 07:04	03/27/25 00:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*123*		*70 - 130*	*03/26/25 07:04*	*03/27/25 00:01*	*1*
o-Terphenyl	*126*		*70 - 130*	*03/26/25 07:04*	*03/27/25 00:01*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2480**		49.6		mg/Kg			03/27/25 22:05	5

Client Sample ID: HA-12

Lab Sample ID: 890-7845-3
Matrix: Solid
Date Collected: 03/24/25 10:40
Date Received: 03/25/25 15:59
Sample Depth: 21

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		03/26/25 08:49	03/26/25 19:44	1
Toluene	<0.00199	U	0.00199		mg/Kg		03/26/25 08:49	03/26/25 19:44	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		03/26/25 08:49	03/26/25 19:44	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		03/26/25 08:49	03/26/25 19:44	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		03/26/25 08:49	03/26/25 19:44	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		03/26/25 08:49	03/26/25 19:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*03/26/25 08:49*	*03/26/25 19:44*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*03/26/25 08:49*	*03/26/25 19:44*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			03/27/25 00:17	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	<49.8	U	49.8		mg/Kg		03/26/25 07:04	03/27/25 00:17	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		03/26/25 07:04	03/27/25 00:17	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		03/26/25 07:04	03/27/25 00:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*125*		*70 - 130*	*03/26/25 07:04*	*03/27/25 00:17*	*1*
o-Terphenyl	*128*		*70 - 130*	*03/26/25 07:04*	*03/27/25 00:17*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7845-1
SDG: Eddy, NM

Client Sample ID: HA-12
Date Collected: 03/24/25 10:40
Date Received: 03/25/25 15:59
Sample Depth: 21

Lab Sample ID: 890-7845-3
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2980		50.4		mg/Kg			03/27/25 22:14	5

Client Sample ID: HA-12
Date Collected: 03/24/25 10:45
Date Received: 03/25/25 15:59
Sample Depth: 26

Lab Sample ID: 890-7845-4
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		03/26/25 08:49	03/26/25 20:04	1
Toluene	<0.00201	U	0.00201		mg/Kg		03/26/25 08:49	03/26/25 20:04	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		03/26/25 08:49	03/26/25 20:04	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		03/26/25 08:49	03/26/25 20:04	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		03/26/25 08:49	03/26/25 20:04	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		03/26/25 08:49	03/26/25 20:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*03/26/25 08:49*	*03/26/25 20:04*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*03/26/25 08:49*	*03/26/25 20:04*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			03/28/25 18:00	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	<49.7	U	49.7		mg/Kg		03/26/25 20:48	03/28/25 18:00	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		03/26/25 20:48	03/28/25 18:00	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		03/26/25 20:48	03/28/25 18:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*100*		*70 - 130*	*03/26/25 20:48*	*03/28/25 18:00*	*1*
o-Terphenyl	*108*		*70 - 130*	*03/26/25 20:48*	*03/28/25 18:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1830		50.0		mg/Kg			03/27/25 22:23	5

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7845-1
SDG: Eddy, NM

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-7845-1	HA-12	113	87
890-7845-2	HA-12	106	90
890-7845-3	HA-12	106	91
890-7845-4	HA-12	108	88
LCS 880-106086/1-A	Lab Control Sample	99	94
LCSD 880-106086/2-A	Lab Control Sample Dup	101	94
MB 880-106086/5-A	Method Blank	105	86

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-7845-1	HA-12	130	132 S1+
890-7845-2	HA-12	123	126
890-7845-3	HA-12	125	128
890-7845-4	HA-12	100	108
890-7845-4 MS	HA-12	112	125
890-7845-4 MSD	HA-12	119	133 S1+
LCS 880-106065/2-A	Lab Control Sample	162 S1+	150 S1+
LCS 880-106150/2-A	Lab Control Sample	115	136 S1+
LCSD 880-106065/3-A	Lab Control Sample Dup	134 S1+	145 S1+
LCSD 880-106150/3-A	Lab Control Sample Dup	118	135 S1+
MB 880-106065/1-A	Method Blank	163 S1+	163 S1+
MB 880-106150/1-A	Method Blank	119	125

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7845-1
SDG: Eddy, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-106086/5-A
Matrix: Solid
Analysis Batch: 106083

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106086

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/26/25 08:49	03/26/25 12:20	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/26/25 08:49	03/26/25 12:20	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/26/25 08:49	03/26/25 12:20	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		03/26/25 08:49	03/26/25 12:20	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/26/25 08:49	03/26/25 12:20	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		03/26/25 08:49	03/26/25 12:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*	*03/26/25 08:49*	*03/26/25 12:20*	*1*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*03/26/25 08:49*	*03/26/25 12:20*	*1*

Lab Sample ID: LCS 880-106086/1-A
Matrix: Solid
Analysis Batch: 106083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106086

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.08566		mg/Kg		86	70 - 130		
Toluene			0.100	0.07762		mg/Kg		78	70 - 130		
Ethylbenzene			0.100	0.08091		mg/Kg		81	70 - 130		
m-Xylene & p-Xylene			0.200	0.1718		mg/Kg		86	70 - 130		
o-Xylene			0.100	0.08736		mg/Kg		87	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

Lab Sample ID: LCSD 880-106086/2-A
Matrix: Solid
Analysis Batch: 106083

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106086

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1009		mg/Kg		101	70 - 130	16	35
Toluene			0.100	0.09158		mg/Kg		92	70 - 130	17	35
Ethylbenzene			0.100	0.09595		mg/Kg		96	70 - 130	17	35
m-Xylene & p-Xylene			0.200	0.2042		mg/Kg		102	70 - 130	17	35
o-Xylene			0.100	0.1021		mg/Kg		102	70 - 130	16	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7845-1
SDG: Eddy, NM

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

Lab Sample ID: MB 880-106065/1-A
Matrix: Solid
Analysis Batch: 106122

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106065

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		03/26/25 07:03	03/26/25 11:43	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/26/25 07:03	03/26/25 11:43	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/26/25 07:03	03/26/25 11:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*163*	*S1+*	*70 - 130*	*03/26/25 07:03*	*03/26/25 11:43*	*1*
o-Terphenyl	*163*	*S1+*	*70 - 130*	*03/26/25 07:03*	*03/26/25 11:43*	*1*

Lab Sample ID: LCS 880-106065/2-A
Matrix: Solid
Analysis Batch: 106122

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106065

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1171		mg/Kg		117	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1209		mg/Kg		121	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*162*	*S1+*	*70 - 130*
o-Terphenyl	*150*	*S1+*	*70 - 130*

Lab Sample ID: LCSD 880-106065/3-A
Matrix: Solid
Analysis Batch: 106122

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106065

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1160		mg/Kg		116	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	1233		mg/Kg		123	70 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*134*	*S1+*	*70 - 130*
o-Terphenyl	*145*	*S1+*	*70 - 130*

Lab Sample ID: MB 880-106150/1-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106150

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		03/26/25 20:48	03/28/25 12:49	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/26/25 20:48	03/28/25 12:49	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/26/25 20:48	03/28/25 12:49	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7845-1
SDG: Eddy, NM

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

Lab Sample ID: MB 880-106150/1-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106150

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	119		70 - 130	03/26/25 20:48	03/28/25 12:49	1
o-Terphenyl	125		70 - 130	03/26/25 20:48	03/28/25 12:49	1

Lab Sample ID: LCS 880-106150/2-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106150

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1024		mg/Kg		102	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1210		mg/Kg		121	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	115		70 - 130
o-Terphenyl	136	S1+	70 - 130

Lab Sample ID: LCSD 880-106150/3-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106150

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1025		mg/Kg		103	70 - 130	0	20
Diesel Range Organics (Over C10-C28)			1000	1191		mg/Kg		119	70 - 130	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	118		70 - 130
o-Terphenyl	135	S1+	70 - 130

Lab Sample ID: 890-7845-4 MS
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: HA-12
Prep Type: Total/NA
Prep Batch: 106150

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	995	727.9		mg/Kg		73	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.7	U	995	911.2		mg/Kg		92	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	112		70 - 130
o-Terphenyl	125		70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7845-1
SDG: Eddy, NM

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

Lab Sample ID: 890-7845-4 MSD
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: HA-12
Prep Type: Total/NA
Prep Batch: 106150

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	995	769.7		mg/Kg		77	70 - 130	6	20
Diesel Range Organics (Over C10-C28)	<49.7	U	995	962.4		mg/Kg		97	70 - 130	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*119*		*70 - 130*
o-Terphenyl	*133*	*S1+*	*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-106110/1-A
Matrix: Solid
Analysis Batch: 106126

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			03/26/25 23:17	1

Lab Sample ID: LCS 880-106110/2-A
Matrix: Solid
Analysis Batch: 106126

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	239.8		mg/Kg		96	90 - 110

Lab Sample ID: LCSD 880-106110/3-A
Matrix: Solid
Analysis Batch: 106126

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	241.6		mg/Kg		97	90 - 110	1	20

Lab Sample ID: MB 880-106111/1-A
Matrix: Solid
Analysis Batch: 106199

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			03/27/25 20:31	1

Lab Sample ID: LCS 880-106111/2-A
Matrix: Solid
Analysis Batch: 106199

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	245.0		mg/Kg		98	90 - 110

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7845-1
SDG: Eddy, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-106111/3-A
Matrix: Solid
Analysis Batch: 106199

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	245.2		mg/Kg		98	90 - 110	0	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7845-1
SDG: Eddy, NM

GC VOA

Analysis Batch: 106083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7845-1	HA-12	Total/NA	Solid	8021B	106086
890-7845-2	HA-12	Total/NA	Solid	8021B	106086
890-7845-3	HA-12	Total/NA	Solid	8021B	106086
890-7845-4	HA-12	Total/NA	Solid	8021B	106086
MB 880-106086/5-A	Method Blank	Total/NA	Solid	8021B	106086
LCS 880-106086/1-A	Lab Control Sample	Total/NA	Solid	8021B	106086
LCSD 880-106086/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	106086

Prep Batch: 106086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7845-1	HA-12	Total/NA	Solid	5035	
890-7845-2	HA-12	Total/NA	Solid	5035	
890-7845-3	HA-12	Total/NA	Solid	5035	
890-7845-4	HA-12	Total/NA	Solid	5035	
MB 880-106086/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-106086/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-106086/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 106065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7845-1	HA-12	Total/NA	Solid	8015NM Prep	
890-7845-2	HA-12	Total/NA	Solid	8015NM Prep	
890-7845-3	HA-12	Total/NA	Solid	8015NM Prep	
MB 880-106065/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-106065/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-106065/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 106122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7845-1	HA-12	Total/NA	Solid	8015B NM	106065
890-7845-2	HA-12	Total/NA	Solid	8015B NM	106065
890-7845-3	HA-12	Total/NA	Solid	8015B NM	106065
MB 880-106065/1-A	Method Blank	Total/NA	Solid	8015B NM	106065
LCS 880-106065/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	106065
LCSD 880-106065/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	106065

Prep Batch: 106150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7845-4	HA-12	Total/NA	Solid	8015NM Prep	
MB 880-106150/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-106150/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-106150/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-7845-4 MS	HA-12	Total/NA	Solid	8015NM Prep	
890-7845-4 MSD	HA-12	Total/NA	Solid	8015NM Prep	

Analysis Batch: 106234

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7845-1	HA-12	Total/NA	Solid	8015 NM	
890-7845-2	HA-12	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7845-1
SDG: Eddy, NM

GC Semi VOA (Continued)

Analysis Batch: 106234 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7845-3	HA-12	Total/NA	Solid	8015 NM	
890-7845-4	HA-12	Total/NA	Solid	8015 NM	

Analysis Batch: 106362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7845-4	HA-12	Total/NA	Solid	8015B NM	106150
MB 880-106150/1-A	Method Blank	Total/NA	Solid	8015B NM	106150
LCS 880-106150/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	106150
LCSD 880-106150/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	106150
890-7845-4 MS	HA-12	Total/NA	Solid	8015B NM	106150
890-7845-4 MSD	HA-12	Total/NA	Solid	8015B NM	106150

HPLC/IC

Leach Batch: 106110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7845-1	HA-12	Soluble	Solid	DI Leach	
MB 880-106110/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-106110/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-106110/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Leach Batch: 106111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7845-2	HA-12	Soluble	Solid	DI Leach	
890-7845-3	HA-12	Soluble	Solid	DI Leach	
890-7845-4	HA-12	Soluble	Solid	DI Leach	
MB 880-106111/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-106111/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-106111/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 106126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7845-1	HA-12	Soluble	Solid	300.0	106110
MB 880-106110/1-A	Method Blank	Soluble	Solid	300.0	106110
LCS 880-106110/2-A	Lab Control Sample	Soluble	Solid	300.0	106110
LCSD 880-106110/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	106110

Analysis Batch: 106199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7845-2	HA-12	Soluble	Solid	300.0	106111
890-7845-3	HA-12	Soluble	Solid	300.0	106111
890-7845-4	HA-12	Soluble	Solid	300.0	106111
MB 880-106111/1-A	Method Blank	Soluble	Solid	300.0	106111
LCS 880-106111/2-A	Lab Control Sample	Soluble	Solid	300.0	106111
LCSD 880-106111/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	106111

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7845-1
SDG: Eddy, NM

Client Sample ID: HA-12
Date Collected: 03/24/25 10:30
Date Received: 03/25/25 15:59

Lab Sample ID: 890-7845-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	106086	03/26/25 08:49	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106083	03/26/25 19:03	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106234	03/26/25 23:43	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	106065	03/26/25 07:04	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106122	03/26/25 23:43	TKC	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	106110	03/26/25 13:00	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	106126	03/27/25 02:09	CH	EET MID

Client Sample ID: HA-12
Date Collected: 03/24/25 10:35
Date Received: 03/25/25 15:59

Lab Sample ID: 890-7845-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	106086	03/26/25 08:49	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106083	03/26/25 19:23	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106234	03/27/25 00:01	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	106065	03/26/25 07:04	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106122	03/27/25 00:01	TKC	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	106111	03/26/25 13:02	SA	EET MID
Soluble	Analysis	300.0		5			106199	03/27/25 22:05	CH	EET MID

Client Sample ID: HA-12
Date Collected: 03/24/25 10:40
Date Received: 03/25/25 15:59

Lab Sample ID: 890-7845-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	106086	03/26/25 08:49	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106083	03/26/25 19:44	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106234	03/27/25 00:17	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	106065	03/26/25 07:04	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106122	03/27/25 00:17	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	106111	03/26/25 13:02	SA	EET MID
Soluble	Analysis	300.0		5			106199	03/27/25 22:14	CH	EET MID

Client Sample ID: HA-12
Date Collected: 03/24/25 10:45
Date Received: 03/25/25 15:59

Lab Sample ID: 890-7845-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	106086	03/26/25 08:49	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106083	03/26/25 20:04	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106234	03/28/25 18:00	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	106150	03/26/25 20:48	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/28/25 18:00	TKC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Job ID: 890-7845-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy, NM

Client Sample ID: HA-12
Lab Sample ID: 890-7845-4

Date Collected: 03/24/25 10:45
Matrix: Solid

Date Received: 03/25/25 15:59

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.00 g	50 mL	106111	03/26/25 13:02	SA	EET MID
Soluble	Analysis	300.0		5			106199	03/27/25 22:23	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 890-7845-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy, NM

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7845-1
SDG: Eddy, NM

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7845-1
SDG: Eddy, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-7845-1	HA-12	Solid	03/24/25 10:30	03/25/25 15:59	11
890-7845-2	HA-12	Solid	03/24/25 10:35	03/25/25 15:59	16
890-7845-3	HA-12	Solid	03/24/25 10:40	03/25/25 15:59	21
890-7845-4	HA-12	Solid	03/24/25 10:45	03/25/25 15:59	26

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Chain of Custody

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

890-7845 Chain of Custody

3/31/2025

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Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	**Turn Around**	
Project Number:	15995	☑ Routine ☐ Rush	
Project Location:	Eddy, NM	Due Date:	5 Day TAT
Sampler's Name:	Gilbert Moreno	TAT starts the day received by the lab, if received by 4:30pm	
PO/WO #:			

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Samples Received Intact:	(Yes) No	Thermometer ID:	IR#6C7
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	0.2
Total Containers:		Corrected Temperature:	0.0

Preservative Codes

None: NO — DI Water: H_2O
Cool: Cool — MeOH: Me
HCL: HC — HNO_3: HN
H_2S0_4: H_2 — NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	Sample Comments
HA-12	S	3.24.25	10:30	11	Grab/	1	X	X	X			Incident Number
HA-12	S	3.24.25	10:35	16	Grab/	1	X	X	X			nAPP2431628896
HA-12	S	3.24.25	10:40	21	Grab/	1	X	X	X			
HA-12	S	3.24.25	10:45	26	Grab/	1	X	X	X			

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		17:26 3/25			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Received by OCD: 11/4/2025 7:21:25 AM
Released to Imaging: 11/6/2025 3:18:49 PM

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Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Teel, Brianna	Carrier Tracking No(s): N/A	COC No: 890-4773.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Brianna.Teel@et.eurofinsus.com	State of Origin: Texas	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-7845-1
Address: 1211 W. Florida Ave, ,	Due Date Requested: 3/31/2025			
City: Midland	TAT Requested (days): N/A			
State, Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: spud muffin 31 30 #738H	Project #: 88001228			
Site: N/A	SSOW#: N/A			

Analysis Requested

Preservation Codes: -

Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8021B/5035FP_Calc BTEX	300_ORGFM_28D/DI_LEACH Chloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep 8015 NM	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
HA-12 (890-7845-1)	3/24/25	10:30 Central	G	Solid			X	X	X	X	1	
HA-12 (890-7845-2)	3/24/25	10:35 Central	G	Solid			X	X	X	X	1	
HA-12 (890-7845-3)	3/24/25	10:40 Central	G	Solid			X	X	X	X	1	
HA-12 (890-7845-4)	3/24/25	10:45 Central	G	Solid			X	X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3/25 1630				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 3/26/25 0800	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

Received by OCD: 11/4/2025 7:21:25 AM

Released to Imaging: 11/6/2025 3:18:49 PM

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7845-1
SDG Number: Eddy, NM

Login Number: 7845
List Number: 1
Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7845-1
SDG Number: Eddy, NM

Login Number: 7845
List Number: 2
Creator: Laing, Edmundo

List Source: Eurofins Midland
List Creation: 03/26/25 06:32 AM

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Gilbert Moreno
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 3/31/2025 1:19:05 PM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy, NM

JOB NUMBER

890-7846-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

Released to Imaging: 11/6/2025 3:18:49 PM

my EOL

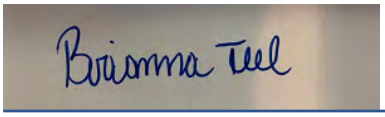
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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3/31/2025 1:19:05 PM

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

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Laboratory Job ID: 890-7846-1
SDG: Eddy, NM

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7846-1
SDG: Eddy, NM

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 890-7846-1
Project: Spud Muffin 31 30 #738H

Job ID: 890-7846-1 Eurofins Carlsbad

Job Narrative
890-7846-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 3/25/2025 3:26 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.0°C.

GC VOA
Method 8021B: The matrix spike (MS) recoveries for preparation batch 880-106089 and analytical batch 880-106082 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: HA-16 (890-7846-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

Diesel Range Organics
Method 8015MOD_NM: The method blank for preparation batch 880-106150 and analytical batch 880-106362 contained Gasoline Range Organics (GRO)-C6-C10 above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: HA-16 (890-7846-1), (LCS 880-106150/2-A), (LCSD 880-106150/3-A) and (890-7845-A-4-F MSD). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: HA-16 (890-7846-2), HA-16 (890-7846-3) and HA-16 (890-7846-4). Evidence of matrix interferences is not obvious.

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

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

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7846-1
SDG: Eddy, NM

Client Sample ID: HA-16

Lab Sample ID: 890-7846-1
Matrix: Solid
Date Collected: 03/25/25 10:30
Date Received: 03/25/25 15:26
Sample Depth: 11

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U F1	0.00202		mg/Kg		03/26/25 10:18	03/26/25 13:22	1
Toluene	<0.00202	U F1	0.00202		mg/Kg		03/26/25 10:18	03/26/25 13:22	1
Ethylbenzene	<0.00202	U F1	0.00202		mg/Kg		03/26/25 10:18	03/26/25 13:22	1
m-Xylene & p-Xylene	<0.00403	U F1	0.00403		mg/Kg		03/26/25 10:18	03/26/25 13:22	1
o-Xylene	<0.00202	U F1	0.00202		mg/Kg		03/26/25 10:18	03/26/25 13:22	1
Xylenes, Total	<0.00403	U F1	0.00403		mg/Kg		03/26/25 10:18	03/26/25 13:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*564*	*S1+*	*70 - 130*	*03/26/25 10:18*	*03/26/25 13:22*	*1*
1,4-Difluorobenzene (Surr)	*77*		*70 - 130*	*03/26/25 10:18*	*03/26/25 13:22*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			03/28/25 19:54	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	<49.9	U	49.9		mg/Kg		03/26/25 20:48	03/28/25 19:54	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		03/26/25 20:48	03/28/25 19:54	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		03/26/25 20:48	03/28/25 19:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*129*		*70 - 130*	*03/26/25 20:48*	*03/28/25 19:54*	*1*
o-Terphenyl	*136*	*S1+*	*70 - 130*	*03/26/25 20:48*	*03/28/25 19:54*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1390**		49.7		mg/Kg			03/27/25 23:01	5

Client Sample ID: HA-16

Lab Sample ID: 890-7846-2
Matrix: Solid
Date Collected: 03/25/25 10:35
Date Received: 03/25/25 15:26
Sample Depth: 16

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		03/26/25 10:18	03/26/25 13:43	1
Toluene	<0.00201	U	0.00201		mg/Kg		03/26/25 10:18	03/26/25 13:43	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		03/26/25 10:18	03/26/25 13:43	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		03/26/25 10:18	03/26/25 13:43	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		03/26/25 10:18	03/26/25 13:43	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		03/26/25 10:18	03/26/25 13:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*03/26/25 10:18*	*03/26/25 13:43*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*03/26/25 10:18*	*03/26/25 13:43*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7846-1
SDG: Eddy, NM

Client Sample ID: HA-16

Lab Sample ID: 890-7846-2
Matrix: Solid
Date Collected: 03/25/25 10:35
Date Received: 03/25/25 15:26
Sample Depth: 16

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<55.2	U	55.2		mg/Kg			03/28/25 20:10	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	<55.2	U	55.2		mg/Kg		03/26/25 20:48	03/28/25 20:10	1
Diesel Range Organics (Over C10-C28)	<55.2	U	55.2		mg/Kg		03/26/25 20:48	03/28/25 20:10	1
Oil Range Organics (Over C28-C36)	<55.2	U	55.2		mg/Kg		03/26/25 20:48	03/28/25 20:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*138*	*S1+*	*70 - 130*	*03/26/25 20:48*	*03/28/25 20:10*	*1*
o-Terphenyl	*144*	*S1+*	*70 - 130*	*03/26/25 20:48*	*03/28/25 20:10*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1940**		49.5		mg/Kg			03/27/25 23:10	5

Client Sample ID: HA-16

Lab Sample ID: 890-7846-3
Matrix: Solid
Date Collected: 03/25/25 10:40
Date Received: 03/25/25 15:26
Sample Depth: 21

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		03/26/25 10:18	03/26/25 14:03	1
Toluene	<0.00199	U	0.00199		mg/Kg		03/26/25 10:18	03/26/25 14:03	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		03/26/25 10:18	03/26/25 14:03	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		03/26/25 10:18	03/26/25 14:03	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		03/26/25 10:18	03/26/25 14:03	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		03/26/25 10:18	03/26/25 14:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*03/26/25 10:18*	*03/26/25 14:03*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*03/26/25 10:18*	*03/26/25 14:03*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			03/28/25 20:27	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	<50.0	U	50.0		mg/Kg		03/26/25 20:48	03/28/25 20:27	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/26/25 20:48	03/28/25 20:27	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/26/25 20:48	03/28/25 20:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*146*	*S1+*	*70 - 130*	*03/26/25 20:48*	*03/28/25 20:27*	*1*
o-Terphenyl	*153*	*S1+*	*70 - 130*	*03/26/25 20:48*	*03/28/25 20:27*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7846-1
SDG: Eddy, NM

Client Sample ID: HA-16
Lab Sample ID: 890-7846-3
Date Collected: 03/25/25 10:40
Matrix: Solid
Date Received: 03/25/25 15:26
Sample Depth: 21

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3190		50.1		mg/Kg			03/27/25 23:19	5

Client Sample ID: HA-16
Lab Sample ID: 890-7846-4
Date Collected: 03/25/25 10:45
Matrix: Solid
Date Received: 03/25/25 15:26
Sample Depth: 26

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		03/26/25 10:18	03/26/25 14:24	1
Toluene	<0.00198	U	0.00198		mg/Kg		03/26/25 10:18	03/26/25 14:24	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		03/26/25 10:18	03/26/25 14:24	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		03/26/25 10:18	03/26/25 14:24	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		03/26/25 10:18	03/26/25 14:24	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		03/26/25 10:18	03/26/25 14:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*03/26/25 10:18*	*03/26/25 14:24*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*03/26/25 10:18*	*03/26/25 14:24*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			03/28/25 20:43	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	<49.7	U	49.7		mg/Kg		03/26/25 20:48	03/28/25 20:43	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		03/26/25 20:48	03/28/25 20:43	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		03/26/25 20:48	03/28/25 20:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*135*	*S1+*	*70 - 130*	*03/26/25 20:48*	*03/28/25 20:43*	*1*
o-Terphenyl	*142*	*S1+*	*70 - 130*	*03/26/25 20:48*	*03/28/25 20:43*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3290		100		mg/Kg			03/27/25 23:28	10

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7846-1
SDG: Eddy, NM

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-7846-1	HA-16	564 S1+	77										
890-7846-1 MS	HA-16	104	98										
890-7846-1 MSD	HA-16	106	97										
890-7846-2	HA-16	109	91										
890-7846-3	HA-16	104	89										
890-7846-4	HA-16	100	92										
LCS 880-106089/1-A	Lab Control Sample	105	93										
LCSD 880-106089/2-A	Lab Control Sample Dup	107	98										
MB 880-106089/5-A	Method Blank	96	89										

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-7846-1	HA-16	129	136 S1+										
890-7846-2	HA-16	138 S1+	144 S1+										
890-7846-3	HA-16	146 S1+	153 S1+										
890-7846-4	HA-16	135 S1+	142 S1+										
LCS 880-106150/2-A	Lab Control Sample	115	136 S1+										
LCSD 880-106150/3-A	Lab Control Sample Dup	118	135 S1+										
MB 880-106150/1-A	Method Blank	119	125										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7846-1
SDG: Eddy, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-106089/5-A
Matrix: Solid
Analysis Batch: 106082

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106089

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/26/25 10:18	03/26/25 13:01	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/26/25 10:18	03/26/25 13:01	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/26/25 10:18	03/26/25 13:01	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		03/26/25 10:18	03/26/25 13:01	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/26/25 10:18	03/26/25 13:01	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		03/26/25 10:18	03/26/25 13:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*03/26/25 10:18*	*03/26/25 13:01*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*03/26/25 10:18*	*03/26/25 13:01*	*1*

Lab Sample ID: LCS 880-106089/1-A
Matrix: Solid
Analysis Batch: 106082

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106089

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09209		mg/Kg		92	70 - 130
Toluene	0.100	0.08709		mg/Kg		87	70 - 130
Ethylbenzene	0.100	0.08419		mg/Kg		84	70 - 130
m-Xylene & p-Xylene	0.200	0.1826		mg/Kg		91	70 - 130
o-Xylene	0.100	0.08761		mg/Kg		88	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

Lab Sample ID: LCSD 880-106089/2-A
Matrix: Solid
Analysis Batch: 106082

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106089

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1208		mg/Kg		121	70 - 130	27	35
Toluene	0.100	0.1135		mg/Kg		113	70 - 130	26	35
Ethylbenzene	0.100	0.1088		mg/Kg		109	70 - 130	26	35
m-Xylene & p-Xylene	0.200	0.2257		mg/Kg		113	70 - 130	21	35
o-Xylene	0.100	0.1064		mg/Kg		106	70 - 130	19	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: 890-7846-1 MS
Matrix: Solid
Analysis Batch: 106082

Client Sample ID: HA-16
Prep Type: Total/NA
Prep Batch: 106089

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00202	U F1	0.100	0.06775	F1	mg/Kg		68	70 - 130
Toluene	<0.00202	U F1	0.100	0.06521	F1	mg/Kg		65	70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7846-1
SDG: Eddy, NM

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

Lab Sample ID: 890-7846-1 MS
Matrix: Solid
Analysis Batch: 106082

Client Sample ID: HA-16
Prep Type: Total/NA
Prep Batch: 106089

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00202	U F1	0.100	0.06270	F1	mg/Kg		63	70 - 130
m-Xylene & p-Xylene	<0.00403	U F1	0.200	0.1343	F1	mg/Kg		67	70 - 130
o-Xylene	<0.00202	U F1	0.100	0.06570	F1	mg/Kg		66	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: 890-7846-1 MSD
Matrix: Solid
Analysis Batch: 106082

Client Sample ID: HA-16
Prep Type: Total/NA
Prep Batch: 106089

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U F1	0.100	0.09434		mg/Kg		94	70 - 130	33	35
Toluene	<0.00202	U F1	0.100	0.09294		mg/Kg		93	70 - 130	35	35
Ethylbenzene	<0.00202	U F1	0.100	0.08904		mg/Kg		89	70 - 130	35	35
m-Xylene & p-Xylene	<0.00403	U F1	0.200	0.1919		mg/Kg		96	70 - 130	35	35
o-Xylene	<0.00202	U F1	0.100	0.09148		mg/Kg		91	70 - 130	33	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*

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

Lab Sample ID: MB 880-106150/1-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106150

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		03/26/25 20:48	03/28/25 12:49	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/26/25 20:48	03/28/25 12:49	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/26/25 20:48	03/28/25 12:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*119*		*70 - 130*	*03/26/25 20:48*	*03/28/25 12:49*	*1*
o-Terphenyl	*125*		*70 - 130*	*03/26/25 20:48*	*03/28/25 12:49*	*1*

Lab Sample ID: LCS 880-106150/2-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106150

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1024		mg/Kg		102	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1210		mg/Kg		121	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7846-1
SDG: Eddy, NM

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

Lab Sample ID: LCS 880-106150/2-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	115		70 - 130
o-Terphenyl	136	S1+	70 - 130

Lab Sample ID: LCSD 880-106150/3-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106150

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1025		mg/Kg		103	70 - 130	0	20
Diesel Range Organics (Over C10-C28)			1000	1191		mg/Kg		119	70 - 130	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	118		70 - 130
o-Terphenyl	135	S1+	70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-106111/1-A
Matrix: Solid
Analysis Batch: 106199

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			03/27/25 20:31	1

Lab Sample ID: LCS 880-106111/2-A
Matrix: Solid
Analysis Batch: 106199

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	245.0		mg/Kg		98	90 - 110		

Lab Sample ID: LCSD 880-106111/3-A
Matrix: Solid
Analysis Batch: 106199

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	245.2		mg/Kg		98	90 - 110	0	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7846-1
SDG: Eddy, NM

GC VOA

Analysis Batch: 106082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7846-1	HA-16	Total/NA	Solid	8021B	106089
890-7846-2	HA-16	Total/NA	Solid	8021B	106089
890-7846-3	HA-16	Total/NA	Solid	8021B	106089
890-7846-4	HA-16	Total/NA	Solid	8021B	106089
MB 880-106089/5-A	Method Blank	Total/NA	Solid	8021B	106089
LCS 880-106089/1-A	Lab Control Sample	Total/NA	Solid	8021B	106089
LCSD 880-106089/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	106089
890-7846-1 MS	HA-16	Total/NA	Solid	8021B	106089
890-7846-1 MSD	HA-16	Total/NA	Solid	8021B	106089

Prep Batch: 106089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7846-1	HA-16	Total/NA	Solid	5035	
890-7846-2	HA-16	Total/NA	Solid	5035	
890-7846-3	HA-16	Total/NA	Solid	5035	
890-7846-4	HA-16	Total/NA	Solid	5035	
MB 880-106089/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-106089/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-106089/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-7846-1 MS	HA-16	Total/NA	Solid	5035	
890-7846-1 MSD	HA-16	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 106150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7846-1	HA-16	Total/NA	Solid	8015NM Prep	
890-7846-2	HA-16	Total/NA	Solid	8015NM Prep	
890-7846-3	HA-16	Total/NA	Solid	8015NM Prep	
890-7846-4	HA-16	Total/NA	Solid	8015NM Prep	
MB 880-106150/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-106150/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-106150/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 106362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7846-1	HA-16	Total/NA	Solid	8015B NM	106150
890-7846-2	HA-16	Total/NA	Solid	8015B NM	106150
890-7846-3	HA-16	Total/NA	Solid	8015B NM	106150
890-7846-4	HA-16	Total/NA	Solid	8015B NM	106150
MB 880-106150/1-A	Method Blank	Total/NA	Solid	8015B NM	106150
LCS 880-106150/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	106150
LCSD 880-106150/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	106150

Analysis Batch: 106521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7846-1	HA-16	Total/NA	Solid	8015 NM	
890-7846-2	HA-16	Total/NA	Solid	8015 NM	
890-7846-3	HA-16	Total/NA	Solid	8015 NM	
890-7846-4	HA-16	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7846-1
SDG: Eddy, NM

HPLC/IC

Leach Batch: 106111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7846-1	HA-16	Soluble	Solid	DI Leach	
890-7846-2	HA-16	Soluble	Solid	DI Leach	
890-7846-3	HA-16	Soluble	Solid	DI Leach	
890-7846-4	HA-16	Soluble	Solid	DI Leach	
MB 880-106111/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-106111/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-106111/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 106199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7846-1	HA-16	Soluble	Solid	300.0	106111
890-7846-2	HA-16	Soluble	Solid	300.0	106111
890-7846-3	HA-16	Soluble	Solid	300.0	106111
890-7846-4	HA-16	Soluble	Solid	300.0	106111
MB 880-106111/1-A	Method Blank	Soluble	Solid	300.0	106111
LCS 880-106111/2-A	Lab Control Sample	Soluble	Solid	300.0	106111
LCSD 880-106111/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	106111

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7846-1
SDG: Eddy, NM

Client Sample ID: HA-16
Date Collected: 03/25/25 10:30
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7846-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	106089	03/26/25 10:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106082	03/26/25 13:22	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106521	03/28/25 19:54	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	106150	03/26/25 20:48	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/28/25 19:54	TKC	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	106111	03/26/25 13:02	SA	EET MID
Soluble	Analysis	300.0		5			106199	03/27/25 23:01	CH	EET MID

Client Sample ID: HA-16
Date Collected: 03/25/25 10:35
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7846-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	106089	03/26/25 10:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106082	03/26/25 13:43	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106521	03/28/25 20:10	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.05 g	10 mL	106150	03/26/25 20:48	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/28/25 20:10	TKC	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	106111	03/26/25 13:02	SA	EET MID
Soluble	Analysis	300.0		5			106199	03/27/25 23:10	CH	EET MID

Client Sample ID: HA-16
Date Collected: 03/25/25 10:40
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7846-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	106089	03/26/25 10:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106082	03/26/25 14:03	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106521	03/28/25 20:27	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	106150	03/26/25 20:48	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/28/25 20:27	TKC	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	106111	03/26/25 13:02	SA	EET MID
Soluble	Analysis	300.0		5			106199	03/27/25 23:19	CH	EET MID

Client Sample ID: HA-16
Date Collected: 03/25/25 10:45
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7846-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	106089	03/26/25 10:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106082	03/26/25 14:24	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106521	03/28/25 20:43	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	106150	03/26/25 20:48	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/28/25 20:43	TKC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Job ID: 890-7846-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy, NM

Client Sample ID: HA-16
Lab Sample ID: 890-7846-4

Date Collected: 03/25/25 10:45
Matrix: Solid

Date Received: 03/25/25 15:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.98 g	50 mL	106111	03/26/25 13:02	SA	EET MID
Soluble	Analysis	300.0		10			106199	03/27/25 23:28	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 890-7846-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy, NM

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7846-1
SDG: Eddy, NM

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7846-1
SDG: Eddy, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-7846-1	HA-16	Solid	03/25/25 10:30	03/25/25 15:26	11
890-7846-2	HA-16	Solid	03/25/25 10:35	03/25/25 15:26	16
890-7846-3	HA-16	Solid	03/25/25 10:40	03/25/25 15:26	21
890-7846-4	HA-16	Solid	03/25/25 10:45	03/25/25 15:26	26

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Chain of Custody

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

890-7846 Chain of Custody

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	15995	☑ Routine ☐ Rush	
Project Location:	Eddy, NM	Due Date:	5 Day TAT
Sampler's Name:	Gilbert Moreno	TAT starts the day received by the lab, if received by 4:30pm	
PO/WO #:			

SAMPLE RECEIPT	Temp Blank: (Yes) No	Wet Ice: (Yes) No	
Samples Received Intact:	(Yes) No	Thermometer ID:	TNM00
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	0.2
Total Containers:		Corrected Temperature:	0.0

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2S0_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	Sample Comments
HA-16	S	3.25.25	10:30	11	Grab/	1	X	X	X			Incident Number
HA-16	S	3.25.25	10:35	16	Grab/	1	X	X	X			nAPP2431628896
HA-16	S	3.25.25	10:40	21	Grab/	1	X	X	X			
HA-16	S	3.25.25	10:45	26	Grab/	1	X	X	X			

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		15:26 3/28			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

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Received by OCD: 11/4/2025 7:21:25 AM

Released to Imaging: 11/6/2025 3:18:49 PM

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Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Teel, Brianna	Carrier Tracking No(s): N/A	COC No: 890-4774.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Brianna.Teel@et.eurofinsus.com	State of Origin: Texas	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-7846-1
Address: 1211 W. Florida Ave, ,	Due Date Requested: 3/31/2025			Preservation Codes: -
City: Midland	TAT Requested (days): N/A			
State, Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: spud muffin 31 30 #738H	Project #: 88001228			
Site: N/A	SSOW#: N/A			Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8021B/5035FP_Calc BTEX	300_ORGFM_28D/DI_LEACH Chloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep 8015 NM	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
HA-16 (890-7846-1)	3/25/25	10:30 Central	G	Solid			X	X	X	X	1	
HA-16 (890-7846-2)	3/25/25	10:35 Central	G	Solid			X	X	X	X	1	
HA-16 (890-7846-3)	3/25/25	10:40 Central	G	Solid			X	X	X	X	1	
HA-16 (890-7846-4)	3/25/25	10:45 Central	G	Solid			X	X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 3/25 1634	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: TKR	Date/Time: 3/26/25 0800	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

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3/31/2025
Released to Imaging: 11/6/2025 3:18:49 PM

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7846-1
SDG Number: Eddy, NM

Login Number: 7846
List Number: 1
Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

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	

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7846-1
SDG Number: Eddy, NM

Login Number: 7846
List Number: 2
Creator: Laing, Edmundo

List Source: Eurofins Midland
List Creation: 03/26/25 06:32 AM

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Gilbert Moreno
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 3/31/2025 1:19:36 PM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy,NM

JOB NUMBER

890-7848-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

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my EOL

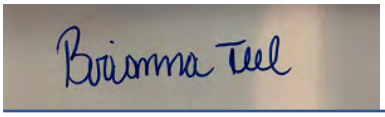
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Laboratory Job ID: 890-7848-1
SDG: Eddy,NM

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7848-1
SDG: Eddy,NM

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 890-7848-1
Project: Spud Muffin 31 30 #738H

Job ID: 890-7848-1 Eurofins Carlsbad

Job Narrative
890-7848-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 3/25/2025 3:26 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.0°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: Surrogate recovery for the following samples were outside control limits: (LCS 880-106198/2-A) and (LCSD 880-106198/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: HA-18 (890-7848-1), HA-18 (890-7848-2), HA-18 (890-7848-3), HA-18 (890-7848-4), (890-7861-A-5-B), (890-7861-A-5-C MS) and (890-7861-A-5-D MSD). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-106198 and analytical batch 880-106362 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.

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7848-1
SDG: Eddy,NM

Client Sample ID: HA-18

Lab Sample ID: 890-7848-1
Matrix: Solid
Date Collected: 03/24/25 12:30
Date Received: 03/25/25 15:26
Sample Depth: 11

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		03/27/25 10:00	03/27/25 12:43	1
Toluene	<0.00198	U	0.00198		mg/Kg		03/27/25 10:00	03/27/25 12:43	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		03/27/25 10:00	03/27/25 12:43	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		03/27/25 10:00	03/27/25 12:43	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		03/27/25 10:00	03/27/25 12:43	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		03/27/25 10:00	03/27/25 12:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*03/27/25 10:00*	*03/27/25 12:43*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*03/27/25 10:00*	*03/27/25 12:43*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6		mg/Kg			03/29/25 03:20	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	<49.6	U	49.6		mg/Kg		03/27/25 12:15	03/29/25 03:20	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6		mg/Kg		03/27/25 12:15	03/29/25 03:20	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6		mg/Kg		03/27/25 12:15	03/29/25 03:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*138*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 03:20*	*1*
o-Terphenyl	*145*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 03:20*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1780**		49.6		mg/Kg			03/28/25 15:36	5

Client Sample ID: HA-18

Lab Sample ID: 890-7848-2
Matrix: Solid
Date Collected: 03/24/25 12:35
Date Received: 03/25/25 15:26
Sample Depth: 16

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		03/27/25 10:00	03/27/25 13:04	1
Toluene	<0.00202	U	0.00202		mg/Kg		03/27/25 10:00	03/27/25 13:04	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		03/27/25 10:00	03/27/25 13:04	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		03/27/25 10:00	03/27/25 13:04	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		03/27/25 10:00	03/27/25 13:04	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		03/27/25 10:00	03/27/25 13:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*03/27/25 10:00*	*03/27/25 13:04*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*03/27/25 10:00*	*03/27/25 13:04*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7848-1
SDG: Eddy,NM

Client Sample ID: HA-18
Lab Sample ID: 890-7848-2
Date Collected: 03/24/25 12:35
Matrix: Solid
Date Received: 03/25/25 15:26
Sample Depth: 16

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			03/29/25 03:35	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	<49.7	U	49.7		mg/Kg		03/27/25 12:15	03/29/25 03:35	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		03/27/25 12:15	03/29/25 03:35	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		03/27/25 12:15	03/29/25 03:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*141*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 03:35*	*1*
o-Terphenyl	*150*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 03:35*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2660**		49.9		mg/Kg			03/28/25 15:53	5

Client Sample ID: HA-18
Lab Sample ID: 890-7848-3
Date Collected: 03/24/25 12:40
Matrix: Solid
Date Received: 03/25/25 15:26
Sample Depth: 21

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		03/27/25 10:00	03/27/25 13:24	1
Toluene	<0.00199	U	0.00199		mg/Kg		03/27/25 10:00	03/27/25 13:24	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		03/27/25 10:00	03/27/25 13:24	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		03/27/25 10:00	03/27/25 13:24	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		03/27/25 10:00	03/27/25 13:24	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		03/27/25 10:00	03/27/25 13:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*03/27/25 10:00*	*03/27/25 13:24*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*03/27/25 10:00*	*03/27/25 13:24*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			03/29/25 03:52	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	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 03:52	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 03:52	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 03:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*146*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 03:52*	*1*
o-Terphenyl	*154*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 03:52*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7848-1
SDG: Eddy,NM

Client Sample ID: HA-18
Lab Sample ID: 890-7848-3
Matrix: Solid
Date Collected: 03/24/25 12:40
Date Received: 03/25/25 15:26
Sample Depth: 21

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3120		50.4		mg/Kg			03/28/25 15:59	5

Client Sample ID: HA-18
Lab Sample ID: 890-7848-4
Matrix: Solid
Date Collected: 03/24/25 12:45
Date Received: 03/25/25 15:26
Sample Depth: 26

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 13:45	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 13:45	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 13:45	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		03/27/25 10:00	03/27/25 13:45	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 13:45	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		03/27/25 10:00	03/27/25 13:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*03/27/25 10:00*	*03/27/25 13:45*	*1*
1,4-Difluorobenzene (Surr)	*76*		*70 - 130*	*03/27/25 10:00*	*03/27/25 13:45*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			03/29/25 04:08	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	<49.8	U	49.8		mg/Kg		03/27/25 12:15	03/29/25 04:08	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		03/27/25 12:15	03/29/25 04:08	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		03/27/25 12:15	03/29/25 04:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*146*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 04:08*	*1*
o-Terphenyl	*152*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 04:08*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	976		10.0		mg/Kg			03/28/25 16:05	1

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7848-1
SDG: Eddy,NM

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-7848-1	HA-18	98	92										
890-7848-1 MS	HA-18	130	102										
890-7848-1 MSD	HA-18	103	89										
890-7848-2	HA-18	99	91										
890-7848-3	HA-18	101	94										
890-7848-4	HA-18	101	76										
LCS 880-106182/1-A	Lab Control Sample	127	90										
LCSD 880-106182/2-A	Lab Control Sample Dup	117	99										
MB 880-106182/5-A	Method Blank	93	89										

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-7848-1	HA-18	138 S1+	145 S1+										
890-7848-2	HA-18	141 S1+	150 S1+										
890-7848-3	HA-18	146 S1+	154 S1+										
890-7848-4	HA-18	146 S1+	152 S1+										
LCS 880-106198/2-A	Lab Control Sample	121	140 S1+										
LCSD 880-106198/3-A	Lab Control Sample Dup	124	143 S1+										
MB 880-106198/1-A	Method Blank	129	132 S1+										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7848-1
SDG: Eddy,NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-106182/5-A
Matrix: Solid
Analysis Batch: 106175

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106182

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 12:22	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 12:22	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 12:22	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		03/27/25 10:00	03/27/25 12:22	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:00	03/27/25 12:22	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		03/27/25 10:00	03/27/25 12:22	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*03/27/25 10:00*	*03/27/25 12:22*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*03/27/25 10:00*	*03/27/25 12:22*	*1*

Lab Sample ID: LCS 880-106182/1-A
Matrix: Solid
Analysis Batch: 106175

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106182

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09931		mg/Kg		99	70 - 130		
Toluene			0.100	0.09773		mg/Kg		98	70 - 130		
Ethylbenzene			0.100	0.1233		mg/Kg		123	70 - 130		
m-Xylene & p-Xylene			0.200	0.2374		mg/Kg		119	70 - 130		
o-Xylene			0.100	0.1137		mg/Kg		114	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*127*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: LCSD 880-106182/2-A
Matrix: Solid
Analysis Batch: 106175

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106182

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09850		mg/Kg		98	70 - 130	1	35
Toluene			0.100	0.09297		mg/Kg		93	70 - 130	5	35
Ethylbenzene			0.100	0.08745		mg/Kg		87	70 - 130	34	35
m-Xylene & p-Xylene			0.200	0.1691		mg/Kg		85	70 - 130	34	35
o-Xylene			0.100	0.1051		mg/Kg		105	70 - 130	8	35

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

Lab Sample ID: 890-7848-1 MS
Matrix: Solid
Analysis Batch: 106175

Client Sample ID: HA-18
Prep Type: Total/NA
Prep Batch: 106182

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00198	U	0.101	0.1014		mg/Kg		101	70 - 130		
Toluene	<0.00198	U	0.101	0.09517		mg/Kg		95	70 - 130		

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7848-1
SDG: Eddy,NM

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

Lab Sample ID: 890-7848-1 MS
Matrix: Solid
Analysis Batch: 106175

Client Sample ID: HA-18
Prep Type: Total/NA
Prep Batch: 106182

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00198	U	0.101	0.1180		mg/Kg		117	70 - 130
m-Xylene & p-Xylene	<0.00397	U	0.201	0.2331		mg/Kg		116	70 - 130
o-Xylene	<0.00198	U	0.101	0.1122		mg/Kg		112	70 - 130

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

Lab Sample ID: 890-7848-1 MSD
Matrix: Solid
Analysis Batch: 106175

Client Sample ID: HA-18
Prep Type: Total/NA
Prep Batch: 106182

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00198	U	0.100	0.09282		mg/Kg		93	70 - 130	9	35
Toluene	<0.00198	U	0.100	0.09157		mg/Kg		91	70 - 130	4	35
Ethylbenzene	<0.00198	U	0.100	0.08537		mg/Kg		85	70 - 130	32	35
m-Xylene & p-Xylene	<0.00397	U	0.200	0.1852		mg/Kg		92	70 - 130	23	35
o-Xylene	<0.00198	U	0.100	0.08887		mg/Kg		89	70 - 130	23	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*

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

Lab Sample ID: MB 880-106198/1-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106198

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 01:24	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 01:24	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 01:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*129*		*70 - 130*	*03/27/25 12:15*	*03/29/25 01:24*	*1*
o-Terphenyl	*132*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 01:24*	*1*

Lab Sample ID: LCS 880-106198/2-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106198

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1061		mg/Kg		106	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1262		mg/Kg		126	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7848-1
SDG: Eddy,NM

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

Lab Sample ID: LCS 880-106198/2-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106198

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	121		70 - 130
o-Terphenyl	140	S1+	70 - 130

Lab Sample ID: LCSD 880-106198/3-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106198

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1113		mg/Kg		111	70 - 130	5	20
Diesel Range Organics (Over C10-C28)			1000	1300		mg/Kg		130	70 - 130	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	124		70 - 130
o-Terphenyl	143	S1+	70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-106191/1-A
Matrix: Solid
Analysis Batch: 106228

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			03/28/25 15:19	1

Lab Sample ID: LCS 880-106191/2-A
Matrix: Solid
Analysis Batch: 106228

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	264.9		mg/Kg		106	90 - 110		

Lab Sample ID: LCSD 880-106191/3-A
Matrix: Solid
Analysis Batch: 106228

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	259.8		mg/Kg		104	90 - 110	2	20

Lab Sample ID: 890-7848-1 MS
Matrix: Solid
Analysis Batch: 106228

Client Sample ID: HA-18
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	1780		1240	3149		mg/Kg		110	90 - 110		

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7848-1
SDG: Eddy,NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-7848-1 MSD
Matrix: Solid
Analysis Batch: 106228

Client Sample ID: HA-18
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1780		1240	3152		mg/Kg		110	90 - 110	0	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7848-1
SDG: Eddy,NM

GC VOA

Analysis Batch: 106175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7848-1	HA-18	Total/NA	Solid	8021B	106182
890-7848-2	HA-18	Total/NA	Solid	8021B	106182
890-7848-3	HA-18	Total/NA	Solid	8021B	106182
890-7848-4	HA-18	Total/NA	Solid	8021B	106182
MB 880-106182/5-A	Method Blank	Total/NA	Solid	8021B	106182
LCS 880-106182/1-A	Lab Control Sample	Total/NA	Solid	8021B	106182
LCSD 880-106182/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	106182
890-7848-1 MS	HA-18	Total/NA	Solid	8021B	106182
890-7848-1 MSD	HA-18	Total/NA	Solid	8021B	106182

Prep Batch: 106182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7848-1	HA-18	Total/NA	Solid	5035	
890-7848-2	HA-18	Total/NA	Solid	5035	
890-7848-3	HA-18	Total/NA	Solid	5035	
890-7848-4	HA-18	Total/NA	Solid	5035	
MB 880-106182/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-106182/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-106182/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-7848-1 MS	HA-18	Total/NA	Solid	5035	
890-7848-1 MSD	HA-18	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 106198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7848-1	HA-18	Total/NA	Solid	8015NM Prep	
890-7848-2	HA-18	Total/NA	Solid	8015NM Prep	
890-7848-3	HA-18	Total/NA	Solid	8015NM Prep	
890-7848-4	HA-18	Total/NA	Solid	8015NM Prep	
MB 880-106198/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-106198/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-106198/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 106362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7848-1	HA-18	Total/NA	Solid	8015B NM	106198
890-7848-2	HA-18	Total/NA	Solid	8015B NM	106198
890-7848-3	HA-18	Total/NA	Solid	8015B NM	106198
890-7848-4	HA-18	Total/NA	Solid	8015B NM	106198
MB 880-106198/1-A	Method Blank	Total/NA	Solid	8015B NM	106198
LCS 880-106198/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	106198
LCSD 880-106198/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	106198

Analysis Batch: 106524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7848-1	HA-18	Total/NA	Solid	8015 NM	
890-7848-2	HA-18	Total/NA	Solid	8015 NM	
890-7848-3	HA-18	Total/NA	Solid	8015 NM	
890-7848-4	HA-18	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7848-1
SDG: Eddy,NM

HPLC/IC

Leach Batch: 106191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7848-1	HA-18	Soluble	Solid	DI Leach	
890-7848-2	HA-18	Soluble	Solid	DI Leach	
890-7848-3	HA-18	Soluble	Solid	DI Leach	
890-7848-4	HA-18	Soluble	Solid	DI Leach	
MB 880-106191/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-106191/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-106191/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-7848-1 MS	HA-18	Soluble	Solid	DI Leach	
890-7848-1 MSD	HA-18	Soluble	Solid	DI Leach	

Analysis Batch: 106228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7848-1	HA-18	Soluble	Solid	300.0	106191
890-7848-2	HA-18	Soluble	Solid	300.0	106191
890-7848-3	HA-18	Soluble	Solid	300.0	106191
890-7848-4	HA-18	Soluble	Solid	300.0	106191
MB 880-106191/1-A	Method Blank	Soluble	Solid	300.0	106191
LCS 880-106191/2-A	Lab Control Sample	Soluble	Solid	300.0	106191
LCSD 880-106191/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	106191
890-7848-1 MS	HA-18	Soluble	Solid	300.0	106191
890-7848-1 MSD	HA-18	Soluble	Solid	300.0	106191

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7848-1
SDG: Eddy,NM

Client Sample ID: HA-18
Date Collected: 03/24/25 12:30
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7848-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	106182	03/27/25 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106175	03/27/25 12:43	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106524	03/29/25 03:20	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 03:20	TKC	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		5			106228	03/28/25 15:36	CH	EET MID

Client Sample ID: HA-18
Date Collected: 03/24/25 12:35
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7848-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	106182	03/27/25 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106175	03/27/25 13:04	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106524	03/29/25 03:35	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 03:35	TKC	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		5			106228	03/28/25 15:53	CH	EET MID

Client Sample ID: HA-18
Date Collected: 03/24/25 12:40
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7848-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	106182	03/27/25 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106175	03/27/25 13:24	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106524	03/29/25 03:52	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 03:52	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		5			106228	03/28/25 15:59	CH	EET MID

Client Sample ID: HA-18
Date Collected: 03/24/25 12:45
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7848-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	106182	03/27/25 10:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106175	03/27/25 13:45	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106524	03/29/25 04:08	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 04:08	TKC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Job ID: 890-7848-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy,NM

Client Sample ID: HA-18
Lab Sample ID: 890-7848-4

Date Collected: 03/24/25 12:45
Matrix: Solid

Date Received: 03/25/25 15:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.99 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		1			106228	03/28/25 16:05	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 890-7848-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy,NM

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7848-1
SDG: Eddy,NM

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7848-1
SDG: Eddy,NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-7848-1	HA-18	Solid	03/24/25 12:30	03/25/25 15:26	11
890-7848-2	HA-18	Solid	03/24/25 12:35	03/25/25 15:26	16
890-7848-3	HA-18	Solid	03/24/25 12:40	03/25/25 15:26	21
890-7848-4	HA-18	Solid	03/24/25 12:45	03/25/25 15:26	26

Released to Imaging: 11/6/2025 3:18:49 PM
Received by OCD: 11/4/2025 7:21:25 AM

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Chain of Custody

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

890-7848 Chain of Custody

www.xenco.com Page 1 of 1

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	15995	☑ Routine ☐ Rush	
Project Location:	Eddy, NM	Due Date:	5 Day TAT
Sampler's Name:	Gilbert Moreno	TAT starts the day received by the lab, if received by 4:30pm	
PO/WO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Samples Received Intact:	(Yes) No	Thermometer ID:	TNM007
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	0.2
Total Containers:		Corrected Temperature:	0.0

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2S0_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	Sample Comments
HA-18	S	3.24.25	12:30	11	Grab/	1	X	X	X			Incident Number
HA-18	S	3.24.25	12:35	16	Grab/	1	X	X	X			nAPP2431628896
HA-18	S	3.24.25	12:40	21	Grab/	1	X	X	X			
HA-18	S	3.24.25	12:45	26	Grab/	1	X	X	X			

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		15:26 3/25	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Teel, Brianna	Carrier Tracking No(s): N/A	COC No: 890-4776.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Brianna.Teel@et.eurofinsus.com	State of Origin: Texas	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-7848-1
Address: 1211 W. Florida Ave, ,	Due Date Requested: 3/31/2025			Preservation Codes: -
City: Midland	TAT Requested (days): N/A			
State, Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: spud muffin 31 30 #738H	Project #: 88001228			
Site: N/A	SSOW#: N/A			Other: N/A

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8021B/5035FP_Calc BTEX	300_ORGFM_28D/DI_LEACH Chloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep 8015 NM	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
HA-18 (890-7848-1)	3/24/25	12:30 Central	G	Solid			X	X	X	X	1	
HA-18 (890-7848-2)	3/24/25	12:35 Central	G	Solid			X	X	X	X	1	
HA-18 (890-7848-3)	3/24/25	12:40 Central	G	Solid			X	X	X	X	1	
HA-18 (890-7848-4)	3/24/25	12:45 Central	G	Solid			X	X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by: TKR	Date/Time: 3/27/25 0800	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

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3/31/2025
Page 22 of 24
Released to Imaging: 11/6/2025 3:18:49 PM

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7848-1
SDG Number: Eddy,NM

Login Number: 7848
List Number: 1
Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

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	

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7848-1
SDG Number: Eddy,NM

Login Number: 7848
List Number: 2
Creator: Lee, Randell

List Source: Eurofins Midland
List Creation: 03/27/25 08:14 AM

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Gilbert Moreno
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 3/31/2025 1:19:05 PM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy, NM

JOB NUMBER

890-7847-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

Released to Imaging: 11/6/2025 3:18:49 PM

my EOL

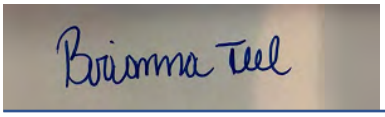
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Laboratory Job ID: 890-7847-1
SDG: Eddy, NM

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7847-1
SDG: Eddy, NM

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 890-7847-1
Project: Spud Muffin 31 30 #738H

Job ID: 890-7847-1 Eurofins Carlsbad

Job Narrative
890-7847-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 3/25/2025 3:26 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.0°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 method blank for preparation batch 880-106150 and analytical batch 880-106362 contained Gasoline Range Organics (GRO)-C6-C10 above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-106150/2-A), (LCSD 880-106150/3-A) and (890-7845-A-4-F MSD). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: HA-19 (890-7847-2), HA-19 (890-7847-3) and HA-19 (890-7847-4). Evidence of matrix interferences is not obvious.

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

HPLC/IC
Method 300_ORGFM_28D - Soluble: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-106111 and analytical batch 880-106199 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.

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7847-1
SDG: Eddy, NM

Client Sample ID: HA-19

Lab Sample ID: 890-7847-1
Matrix: Solid
Date Collected: 03/24/25 15:00
Date Received: 03/25/25 15:26
Sample Depth: 11

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/26/25 10:18	03/26/25 14:44	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/26/25 10:18	03/26/25 14:44	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/26/25 10:18	03/26/25 14:44	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		03/26/25 10:18	03/26/25 14:44	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/26/25 10:18	03/26/25 14:44	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		03/26/25 10:18	03/26/25 14:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*03/26/25 10:18*	*03/26/25 14:44*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*03/26/25 10:18*	*03/26/25 14:44*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6		mg/Kg			03/28/25 18:49	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	<49.6	U	49.6		mg/Kg		03/26/25 20:48	03/28/25 18:49	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6		mg/Kg		03/26/25 20:48	03/28/25 18:49	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6		mg/Kg		03/26/25 20:48	03/28/25 18:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*106*		*70 - 130*	*03/26/25 20:48*	*03/28/25 18:49*	*1*
o-Terphenyl	*111*		*70 - 130*	*03/26/25 20:48*	*03/28/25 18:49*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1520**		50.5		mg/Kg			03/27/25 23:37	5

Client Sample ID: HA-19

Lab Sample ID: 890-7847-2
Matrix: Solid
Date Collected: 03/24/25 15:05
Date Received: 03/25/25 15:26
Sample Depth: 16

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/26/25 10:18	03/26/25 15:04	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/26/25 10:18	03/26/25 15:04	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/26/25 10:18	03/26/25 15:04	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		03/26/25 10:18	03/26/25 15:04	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/26/25 10:18	03/26/25 15:04	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		03/26/25 10:18	03/26/25 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*03/26/25 10:18*	*03/26/25 15:04*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*03/26/25 10:18*	*03/26/25 15:04*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7847-1
SDG: Eddy, NM

Client Sample ID: HA-19

Lab Sample ID: 890-7847-2
Matrix: Solid
Date Collected: 03/24/25 15:05
Date Received: 03/25/25 15:26
Sample Depth: 16

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<55.6	U	55.6		mg/Kg			03/28/25 19:05	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	<55.6	U	55.6		mg/Kg		03/26/25 20:48	03/28/25 19:05	1
Diesel Range Organics (Over C10-C28)	<55.6	U	55.6		mg/Kg		03/26/25 20:48	03/28/25 19:05	1
Oil Range Organics (Over C28-C36)	<55.6	U	55.6		mg/Kg		03/26/25 20:48	03/28/25 19:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*171*	*S1+*	*70 - 130*	*03/26/25 20:48*	*03/28/25 19:05*	*1*
o-Terphenyl	*180*	*S1+*	*70 - 130*	*03/26/25 20:48*	*03/28/25 19:05*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2150**	**F1**	49.8		mg/Kg			03/27/25 23:46	5

Client Sample ID: HA-19

Lab Sample ID: 890-7847-3
Matrix: Solid
Date Collected: 03/24/25 15:10
Date Received: 03/25/25 15:26
Sample Depth: 21

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		03/26/25 10:18	03/26/25 15:25	1
Toluene	<0.00202	U	0.00202		mg/Kg		03/26/25 10:18	03/26/25 15:25	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		03/26/25 10:18	03/26/25 15:25	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		03/26/25 10:18	03/26/25 15:25	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		03/26/25 10:18	03/26/25 15:25	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		03/26/25 10:18	03/26/25 15:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*	*03/26/25 10:18*	*03/26/25 15:25*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*03/26/25 10:18*	*03/26/25 15:25*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			03/28/25 19:21	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	<50.0	U	50.0		mg/Kg		03/26/25 20:48	03/28/25 19:21	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/26/25 20:48	03/28/25 19:21	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/26/25 20:48	03/28/25 19:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*195*	*S1+*	*70 - 130*	*03/26/25 20:48*	*03/28/25 19:21*	*1*
o-Terphenyl	*202*	*S1+*	*70 - 130*	*03/26/25 20:48*	*03/28/25 19:21*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7847-1
SDG: Eddy, NM

Client Sample ID: HA-19
Lab Sample ID: 890-7847-3
Matrix: Solid
Date Collected: 03/24/25 15:10
Date Received: 03/25/25 15:26
Sample Depth: 21

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	791		49.6		mg/Kg			03/28/25 00:14	5

Client Sample ID: HA-19
Lab Sample ID: 890-7847-4
Matrix: Solid
Date Collected: 03/24/25 15:15
Date Received: 03/25/25 15:26
Sample Depth: 26

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		03/26/25 10:18	03/26/25 15:45	1
Toluene	<0.00199	U	0.00199		mg/Kg		03/26/25 10:18	03/26/25 15:45	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		03/26/25 10:18	03/26/25 15:45	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		03/26/25 10:18	03/26/25 15:45	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		03/26/25 10:18	03/26/25 15:45	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		03/26/25 10:18	03/26/25 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*03/26/25 10:18*	*03/26/25 15:45*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*03/26/25 10:18*	*03/26/25 15:45*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.2	U	50.2		mg/Kg			03/28/25 19:38	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	<50.2	U	50.2		mg/Kg		03/26/25 20:48	03/28/25 19:38	1
Diesel Range Organics (Over C10-C28)	<50.2	U	50.2		mg/Kg		03/26/25 20:48	03/28/25 19:38	1
Oil Range Organics (Over C28-C36)	<50.2	U	50.2		mg/Kg		03/26/25 20:48	03/28/25 19:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*133*	*S1+*	*70 - 130*	*03/26/25 20:48*	*03/28/25 19:38*	*1*
o-Terphenyl	*141*	*S1+*	*70 - 130*	*03/26/25 20:48*	*03/28/25 19:38*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2100		50.1		mg/Kg			03/28/25 00:23	5

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7847-1
SDG: Eddy, NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-7847-1	HA-19	101	89										
890-7847-2	HA-19	103	92										
890-7847-3	HA-19	105	91										
890-7847-4	HA-19	102	92										
LCS 880-106089/1-A	Lab Control Sample	105	93										
LCSD 880-106089/2-A	Lab Control Sample Dup	107	98										
MB 880-106089/5-A	Method Blank	96	89										

Surrogate Legend

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

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-7847-1	HA-19	106	111										
890-7847-2	HA-19	171 S1+	180 S1+										
890-7847-3	HA-19	195 S1+	202 S1+										
890-7847-4	HA-19	133 S1+	141 S1+										
LCS 880-106150/2-A	Lab Control Sample	115	136 S1+										
LCSD 880-106150/3-A	Lab Control Sample Dup	118	135 S1+										
MB 880-106150/1-A	Method Blank	119	125										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7847-1
SDG: Eddy, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-106089/5-A
Matrix: Solid
Analysis Batch: 106082

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106089

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/26/25 10:18	03/26/25 13:01	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/26/25 10:18	03/26/25 13:01	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/26/25 10:18	03/26/25 13:01	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		03/26/25 10:18	03/26/25 13:01	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/26/25 10:18	03/26/25 13:01	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		03/26/25 10:18	03/26/25 13:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*03/26/25 10:18*	*03/26/25 13:01*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*03/26/25 10:18*	*03/26/25 13:01*	*1*

Lab Sample ID: LCS 880-106089/1-A
Matrix: Solid
Analysis Batch: 106082

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106089

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09209		mg/Kg		92	70 - 130		
Toluene			0.100	0.08709		mg/Kg		87	70 - 130		
Ethylbenzene			0.100	0.08419		mg/Kg		84	70 - 130		
m-Xylene & p-Xylene			0.200	0.1826		mg/Kg		91	70 - 130		
o-Xylene			0.100	0.08761		mg/Kg		88	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

Lab Sample ID: LCSD 880-106089/2-A
Matrix: Solid
Analysis Batch: 106082

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106089

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1208		mg/Kg		121	70 - 130	27	35
Toluene			0.100	0.1135		mg/Kg		113	70 - 130	26	35
Ethylbenzene			0.100	0.1088		mg/Kg		109	70 - 130	26	35
m-Xylene & p-Xylene			0.200	0.2257		mg/Kg		113	70 - 130	21	35
o-Xylene			0.100	0.1064		mg/Kg		106	70 - 130	19	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7847-1
SDG: Eddy, NM

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

Lab Sample ID: MB 880-106150/1-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106150

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		03/26/25 20:48	03/28/25 12:49	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/26/25 20:48	03/28/25 12:49	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/26/25 20:48	03/28/25 12:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*119*		*70 - 130*	*03/26/25 20:48*	*03/28/25 12:49*	*1*
o-Terphenyl	*125*		*70 - 130*	*03/26/25 20:48*	*03/28/25 12:49*	*1*

Lab Sample ID: LCS 880-106150/2-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106150

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1024		mg/Kg		102	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1210		mg/Kg		121	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*115*		*70 - 130*
o-Terphenyl	*136*	*S1+*	*70 - 130*

Lab Sample ID: LCSD 880-106150/3-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106150

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1025		mg/Kg		103	70 - 130	0	20
Diesel Range Organics (Over C10-C28)			1000	1191		mg/Kg		119	70 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*118*		*70 - 130*
o-Terphenyl	*135*	*S1+*	*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-106111/1-A
Matrix: Solid
Analysis Batch: 106199

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			03/27/25 20:31	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7847-1
SDG: Eddy, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-106111/2-A
Matrix: Solid
Analysis Batch: 106199

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	245.0		mg/Kg		98	90 - 110		

Lab Sample ID: LCSD 880-106111/3-A
Matrix: Solid
Analysis Batch: 106199

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	245.2		mg/Kg		98	90 - 110	0	20

Lab Sample ID: 890-7847-2 MS
Matrix: Solid
Analysis Batch: 106199

Client Sample ID: HA-19
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	2150	F1	1250	3662	F1	mg/Kg		122	90 - 110		

Lab Sample ID: 890-7847-2 MSD
Matrix: Solid
Analysis Batch: 106199

Client Sample ID: HA-19
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	2150	F1	1250	3668	F1	mg/Kg		122	90 - 110	0	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7847-1
SDG: Eddy, NM

GC VOA

Analysis Batch: 106082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7847-1	HA-19	Total/NA	Solid	8021B	106089
890-7847-2	HA-19	Total/NA	Solid	8021B	106089
890-7847-3	HA-19	Total/NA	Solid	8021B	106089
890-7847-4	HA-19	Total/NA	Solid	8021B	106089
MB 880-106089/5-A	Method Blank	Total/NA	Solid	8021B	106089
LCS 880-106089/1-A	Lab Control Sample	Total/NA	Solid	8021B	106089
LCSD 880-106089/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	106089

Prep Batch: 106089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7847-1	HA-19	Total/NA	Solid	5035	
890-7847-2	HA-19	Total/NA	Solid	5035	
890-7847-3	HA-19	Total/NA	Solid	5035	
890-7847-4	HA-19	Total/NA	Solid	5035	
MB 880-106089/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-106089/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-106089/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 106150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7847-1	HA-19	Total/NA	Solid	8015NM Prep	
890-7847-2	HA-19	Total/NA	Solid	8015NM Prep	
890-7847-3	HA-19	Total/NA	Solid	8015NM Prep	
890-7847-4	HA-19	Total/NA	Solid	8015NM Prep	
MB 880-106150/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-106150/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-106150/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 106362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7847-1	HA-19	Total/NA	Solid	8015B NM	106150
890-7847-2	HA-19	Total/NA	Solid	8015B NM	106150
890-7847-3	HA-19	Total/NA	Solid	8015B NM	106150
890-7847-4	HA-19	Total/NA	Solid	8015B NM	106150
MB 880-106150/1-A	Method Blank	Total/NA	Solid	8015B NM	106150
LCS 880-106150/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	106150
LCSD 880-106150/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	106150

Analysis Batch: 106520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7847-1	HA-19	Total/NA	Solid	8015 NM	
890-7847-2	HA-19	Total/NA	Solid	8015 NM	
890-7847-3	HA-19	Total/NA	Solid	8015 NM	
890-7847-4	HA-19	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 106111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7847-1	HA-19	Soluble	Solid	DI Leach	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7847-1
SDG: Eddy, NM

HPLC/IC (Continued)

Leach Batch: 106111 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7847-2	HA-19	Soluble	Solid	DI Leach	
890-7847-3	HA-19	Soluble	Solid	DI Leach	
890-7847-4	HA-19	Soluble	Solid	DI Leach	
MB 880-106111/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-106111/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-106111/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-7847-2 MS	HA-19	Soluble	Solid	DI Leach	
890-7847-2 MSD	HA-19	Soluble	Solid	DI Leach	

Analysis Batch: 106199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7847-1	HA-19	Soluble	Solid	300.0	106111
890-7847-2	HA-19	Soluble	Solid	300.0	106111
890-7847-3	HA-19	Soluble	Solid	300.0	106111
890-7847-4	HA-19	Soluble	Solid	300.0	106111
MB 880-106111/1-A	Method Blank	Soluble	Solid	300.0	106111
LCS 880-106111/2-A	Lab Control Sample	Soluble	Solid	300.0	106111
LCSD 880-106111/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	106111
890-7847-2 MS	HA-19	Soluble	Solid	300.0	106111
890-7847-2 MSD	HA-19	Soluble	Solid	300.0	106111

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7847-1
SDG: Eddy, NM

Client Sample ID: HA-19
Date Collected: 03/24/25 15:00
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7847-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	106089	03/26/25 10:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106082	03/26/25 14:44	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106520	03/28/25 18:49	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	106150	03/26/25 20:48	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/28/25 18:49	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	106111	03/26/25 13:02	SA	EET MID
Soluble	Analysis	300.0		5			106199	03/27/25 23:37	CH	EET MID

Client Sample ID: HA-19
Date Collected: 03/24/25 15:05
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7847-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	106089	03/26/25 10:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106082	03/26/25 15:04	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106520	03/28/25 19:05	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.00 g	10 mL	106150	03/26/25 20:48	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/28/25 19:05	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	106111	03/26/25 13:02	SA	EET MID
Soluble	Analysis	300.0		5			106199	03/27/25 23:46	CH	EET MID

Client Sample ID: HA-19
Date Collected: 03/24/25 15:10
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7847-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	106089	03/26/25 10:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106082	03/26/25 15:25	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106520	03/28/25 19:21	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	106150	03/26/25 20:48	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/28/25 19:21	TKC	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	106111	03/26/25 13:02	SA	EET MID
Soluble	Analysis	300.0		5			106199	03/28/25 00:14	CH	EET MID

Client Sample ID: HA-19
Date Collected: 03/24/25 15:15
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7847-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	106089	03/26/25 10:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106082	03/26/25 15:45	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106520	03/28/25 19:38	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.97 g	10 mL	106150	03/26/25 20:48	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/28/25 19:38	TKC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Job ID: 890-7847-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy, NM

Client Sample ID: HA-19
Lab Sample ID: 890-7847-4

Date Collected: 03/24/25 15:15
Matrix: Solid

Date Received: 03/25/25 15:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.99 g	50 mL	106111	03/26/25 13:02	SA	EET MID
Soluble	Analysis	300.0		5			106199	03/28/25 00:23	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 890-7847-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy, NM

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7847-1
SDG: Eddy, NM

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7847-1
SDG: Eddy, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-7847-1	HA-19	Solid	03/24/25 15:00	03/25/25 15:26	11
890-7847-2	HA-19	Solid	03/24/25 15:05	03/25/25 15:26	16
890-7847-3	HA-19	Solid	03/24/25 15:10	03/25/25 15:26	21
890-7847-4	HA-19	Solid	03/24/25 15:15	03/25/25 15:26	26

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Chain of Custody

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

Work Order: 890-7847 Chain of Custody

3/31/2025

www.xenco.com Page 1 of 1

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	15995	☑ Routine ☐ Rush	
Project Location:	Eddy, NM	Due Date:	5 Day TAT
Sampler's Name:	Gilbert Moreno	TAT starts the day received by the lab, if received by 4:30pm	
PO/WO #:			

SAMPLE RECEIPT			
Temp Blank:	Yes No	Wet Ice:	Yes No
Samples Received Intact:	Yes No	Thermometer ID:	TNmeo7
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Temperature Reading:	0.2
Total Containers:		Corrected Temperature:	0.0

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2S0_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	Parameters: TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	Sample Comments
HA-19	S	3.24.25	15:00	11	Grab/	1	X	X	X			Incident Number
HA-19	S	3.24.25	15:05	16	Grab/	1	X	X	X			nAPP2431628896
HA-19	S	3.24.25	15:10	21	Grab/	1	X	X	X			
HA-19	S	3.24.25	15:15	26	Grab/	1	X	X	X			

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	2	15:26 3/26	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Received by OCD: 11/4/2025 7:21:25 AM

Released to Imaging: 11/6/2025 3:18:49 PM

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Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Teel, Brianna	Carrier Tracking No(s): N/A	COC No: 890-4775.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Brianna.Teel@et.eurofinsus.com	State of Origin: Texas	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-7847-1
Address: 1211 W. Florida Ave,	Due Date Requested: 3/31/2025			Preservation Codes: -
City: Midland	TAT Requested (days): N/A			
State, Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: spud muffin 31 30 #738H	Project #: 88001228			
Site: N/A	SSOW#: N/A			Other: N/A

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8021B/5035FP_Calc BTEX	300_ORGFM_28D/DI_LEACH Chloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep 8015 NM	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
HA-19 (890-7847-1)	3/24/25	15:00 Central	G	Solid			X	X	X	X	1	
HA-19 (890-7847-2)	3/24/25	15:05 Central	G	Solid			X	X	X	X	1	
HA-19 (890-7847-3)	3/24/25	15:10 Central	G	Solid			X	X	X	X	1	
HA-19 (890-7847-4)	3/24/25	15:15 Central	G	Solid			X	X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/25 1630				
Relinquished by:	Date/Time:	Company	Received by: TRR	Date/Time: 3/26/25 0800	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

Received by OCD: 11/4/2025 7:21:25 AM

Released to Imaging: 11/6/2025 3:18:49 PM

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7847-1
SDG Number: Eddy, NM

Login Number: 7847
List Number: 1
Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

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	

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7847-1
SDG Number: Eddy, NM

Login Number: 7847
List Number: 2
Creator: Laing, Edmundo

List Source: Eurofins Midland
List Creation: 03/26/25 06:32 AM

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Gilbert Moreno
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 4/1/2025 12:14:08 PM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy, NM

JOB NUMBER

890-7852-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

Released to Imaging: 11/6/2025 3:18:49 PM

my EOL

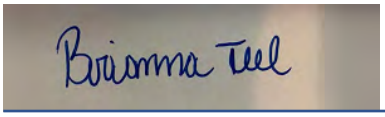
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



Generated
4/1/2025 12:14:08 PM

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

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Laboratory Job ID: 890-7852-1
SDG: Eddy, NM

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

Qualifiers

GC VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 890-7852-1
Project: Spud Muffin 31 30 #738H

Job ID: 890-7852-1 Eurofins Carlsbad

Job Narrative
890-7852-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 3/25/2025 3:26 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.0°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: Surrogate recovery for the following samples were outside control limits: (LCS 880-106198/2-A) and (LCSD 880-106198/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: HA-20 (890-7852-1), HA-20 (890-7852-2), HA-20 (890-7852-3), (890-7861-A-5-B), (890-7861-A-5-C MS) and (890-7861-A-5-D MSD). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-106198 and analytical batch 880-106362 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: HA-20 (890-7852-4). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCSD 880-106231/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCS 880-106231/2-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.

HPLC/IC
Method 300_ORGFM_28D - Soluble: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-106192 and analytical batch 880-106229 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.

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

Client Sample ID: HA-20

Lab Sample ID: 890-7852-1
Matrix: Solid
Date Collected: 03/24/25 12:50
Date Received: 03/25/25 15:26
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 15:55	1
Toluene	<0.00200	U *-	0.00200		mg/Kg		03/27/25 10:02	03/27/25 15:55	1
Ethylbenzene	<0.00200	U *-	0.00200		mg/Kg		03/27/25 10:02	03/27/25 15:55	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		03/27/25 10:02	03/27/25 15:55	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 15:55	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		03/27/25 10:02	03/27/25 15:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*03/27/25 10:02*	*03/27/25 15:55*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*03/27/25 10:02*	*03/27/25 15:55*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			03/29/25 07:38	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	<49.9	U	49.9		mg/Kg		03/27/25 12:15	03/29/25 07:38	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		03/27/25 12:15	03/29/25 07:38	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		03/27/25 12:15	03/29/25 07:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*135*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 07:38*	*1*
o-Terphenyl	*139*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 07:38*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**750**		9.90		mg/Kg			03/28/25 04:05	1

Client Sample ID: HA-20

Lab Sample ID: 890-7852-2
Matrix: Solid
Date Collected: 03/24/25 12:55
Date Received: 03/25/25 15:26
Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		03/27/25 10:02	03/27/25 17:29	1
Toluene	<0.00201	U *-	0.00201		mg/Kg		03/27/25 10:02	03/27/25 17:29	1
Ethylbenzene	<0.00201	U *-	0.00201		mg/Kg		03/27/25 10:02	03/27/25 17:29	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		03/27/25 10:02	03/27/25 17:29	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		03/27/25 10:02	03/27/25 17:29	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		03/27/25 10:02	03/27/25 17:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*	*03/27/25 10:02*	*03/27/25 17:29*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*03/27/25 10:02*	*03/27/25 17:29*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

Client Sample ID: HA-20

Lab Sample ID: 890-7852-2
Matrix: Solid
Date Collected: 03/24/25 12:55
Date Received: 03/25/25 15:26
Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6		mg/Kg			03/29/25 07:54	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	<49.6	U	49.6		mg/Kg		03/27/25 12:15	03/29/25 07:54	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6		mg/Kg		03/27/25 12:15	03/29/25 07:54	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6		mg/Kg		03/27/25 12:15	03/29/25 07:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*134*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 07:54*	*1*
o-Terphenyl	*134*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 07:54*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**155**		9.90		mg/Kg			03/28/25 04:32	1

Client Sample ID: HA-20

Lab Sample ID: 890-7852-3
Matrix: Solid
Date Collected: 03/24/25 13:00
Date Received: 03/25/25 15:26
Sample Depth: 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 17:50	1
Toluene	<0.00200	U *-	0.00200		mg/Kg		03/27/25 10:02	03/27/25 17:50	1
Ethylbenzene	<0.00200	U *-	0.00200		mg/Kg		03/27/25 10:02	03/27/25 17:50	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		03/27/25 10:02	03/27/25 17:50	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 17:50	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		03/27/25 10:02	03/27/25 17:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*	*03/27/25 10:02*	*03/27/25 17:50*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*03/27/25 10:02*	*03/27/25 17:50*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			03/29/25 08:11	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	<49.8	U	49.8		mg/Kg		03/27/25 12:15	03/29/25 08:11	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		03/27/25 12:15	03/29/25 08:11	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		03/27/25 12:15	03/29/25 08:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*132*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 08:11*	*1*
o-Terphenyl	*133*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 08:11*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

Client Sample ID: HA-20
Lab Sample ID: 890-7852-3
Matrix: Solid
Date Collected: 03/24/25 13:00
Date Received: 03/25/25 15:26
Sample Depth: 4

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	66.8		9.90		mg/Kg			03/28/25 04:42	1

Client Sample ID: HA-20
Lab Sample ID: 890-7852-4
Matrix: Solid
Date Collected: 03/24/25 13:05
Date Received: 03/25/25 15:26
Sample Depth: 6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 18:10	1
Toluene	<0.00200	U *-	0.00200		mg/Kg		03/27/25 10:02	03/27/25 18:10	1
Ethylbenzene	<0.00200	U *-	0.00200		mg/Kg		03/27/25 10:02	03/27/25 18:10	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		03/27/25 10:02	03/27/25 18:10	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 18:10	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		03/27/25 10:02	03/27/25 18:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*03/27/25 10:02*	*03/27/25 18:10*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*03/27/25 10:02*	*03/27/25 18:10*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			03/31/25 20:34	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	<49.7	U	49.7		mg/Kg		03/27/25 15:35	03/31/25 20:34	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		03/27/25 15:35	03/31/25 20:34	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		03/27/25 15:35	03/31/25 20:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*135*	*S1+*	*70 - 130*	*03/27/25 15:35*	*03/31/25 20:34*	*1*
o-Terphenyl	*130*		*70 - 130*	*03/27/25 15:35*	*03/31/25 20:34*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	105		10.1		mg/Kg			03/28/25 04:51	1

Client Sample ID: HA-20
Lab Sample ID: 890-7852-5
Matrix: Solid
Date Collected: 03/24/25 13:10
Date Received: 03/25/25 15:26
Sample Depth: 8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		03/27/25 10:02	03/27/25 18:30	1
Toluene	<0.00198	U *-	0.00198		mg/Kg		03/27/25 10:02	03/27/25 18:30	1
Ethylbenzene	<0.00198	U *-	0.00198		mg/Kg		03/27/25 10:02	03/27/25 18:30	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		03/27/25 10:02	03/27/25 18:30	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

Client Sample ID: HA-20

Lab Sample ID: 890-7852-5
Matrix: Solid
Date Collected: 03/24/25 13:10
Date Received: 03/25/25 15:26
Sample Depth: 8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00198	U	0.00198		mg/Kg		03/27/25 10:02	03/27/25 18:30	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		03/27/25 10:02	03/27/25 18:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*03/27/25 10:02*	*03/27/25 18:30*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*03/27/25 10:02*	*03/27/25 18:30*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6		mg/Kg			03/31/25 21:23	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	<49.6	U	49.6		mg/Kg		03/27/25 15:35	03/31/25 21:23	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6		mg/Kg		03/27/25 15:35	03/31/25 21:23	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6		mg/Kg		03/27/25 15:35	03/31/25 21:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*105*		*70 - 130*	*03/27/25 15:35*	*03/31/25 21:23*	*1*
o-Terphenyl	*99*		*70 - 130*	*03/27/25 15:35*	*03/31/25 21:23*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	283		10.0		mg/Kg			03/28/25 05:00	1

Client Sample ID: HA-20

Lab Sample ID: 890-7852-6
Matrix: Solid
Date Collected: 03/25/25 09:15
Date Received: 03/25/25 15:26
Sample Depth: 11

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		03/27/25 10:02	03/27/25 18:51	1
Toluene	<0.00199	U *-	0.00199		mg/Kg		03/27/25 10:02	03/27/25 18:51	1
Ethylbenzene	<0.00199	U *-	0.00199		mg/Kg		03/27/25 10:02	03/27/25 18:51	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		03/27/25 10:02	03/27/25 18:51	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		03/27/25 10:02	03/27/25 18:51	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		03/27/25 10:02	03/27/25 18:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*03/27/25 10:02*	*03/27/25 18:51*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*03/27/25 10:02*	*03/27/25 18:51*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			04/01/25 00:21	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

Client Sample ID: HA-20

Lab Sample ID: 890-7852-6
Matrix: Solid
Date Collected: 03/25/25 09:15
Date Received: 03/25/25 15:26
Sample Depth: 11

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	<49.7	U	49.7		mg/Kg		03/27/25 15:35	04/01/25 00:21	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		03/27/25 15:35	04/01/25 00:21	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		03/27/25 15:35	04/01/25 00:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*108*		*70 - 130*	*03/27/25 15:35*	*04/01/25 00:21*	*1*
o-Terphenyl	*104*		*70 - 130*	*03/27/25 15:35*	*04/01/25 00:21*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1530**		50.3		mg/Kg			03/28/25 05:09	5

Client Sample ID: HA-20

Lab Sample ID: 890-7852-7
Matrix: Solid
Date Collected: 03/25/25 09:20
Date Received: 03/25/25 15:26
Sample Depth: 16

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 19:12	1
Toluene	<0.00200	U *-	0.00200		mg/Kg		03/27/25 10:02	03/27/25 19:12	1
Ethylbenzene	<0.00200	U *-	0.00200		mg/Kg		03/27/25 10:02	03/27/25 19:12	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		03/27/25 10:02	03/27/25 19:12	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 19:12	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		03/27/25 10:02	03/27/25 19:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*03/27/25 10:02*	*03/27/25 19:12*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*03/27/25 10:02*	*03/27/25 19:12*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			04/01/25 00:38	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	<49.8	U	49.8		mg/Kg		03/27/25 15:35	04/01/25 00:38	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		03/27/25 15:35	04/01/25 00:38	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		03/27/25 15:35	04/01/25 00:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*107*		*70 - 130*	*03/27/25 15:35*	*04/01/25 00:38*	*1*
o-Terphenyl	*106*		*70 - 130*	*03/27/25 15:35*	*04/01/25 00:38*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2200**	**F1 F2**	50.5		mg/Kg			03/28/25 05:18	5

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

Client Sample ID: HA-20

Lab Sample ID: 890-7852-8
Matrix: Solid
Date Collected: 03/25/25 09:25
Date Received: 03/25/25 15:26
Sample Depth: 21

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 19:32	1
Toluene	<0.00200	U *-	0.00200		mg/Kg		03/27/25 10:02	03/27/25 19:32	1
Ethylbenzene	<0.00200	U *-	0.00200		mg/Kg		03/27/25 10:02	03/27/25 19:32	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		03/27/25 10:02	03/27/25 19:32	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 19:32	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		03/27/25 10:02	03/27/25 19:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*	*03/27/25 10:02*	*03/27/25 19:32*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*03/27/25 10:02*	*03/27/25 19:32*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6		mg/Kg			04/01/25 00:53	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	<49.6	U	49.6		mg/Kg		03/27/25 15:35	04/01/25 00:53	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6		mg/Kg		03/27/25 15:35	04/01/25 00:53	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6		mg/Kg		03/27/25 15:35	04/01/25 00:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*105*		*70 - 130*	*03/27/25 15:35*	*04/01/25 00:53*	*1*
o-Terphenyl	*103*		*70 - 130*	*03/27/25 15:35*	*04/01/25 00:53*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**3070**		50.4		mg/Kg			03/28/25 12:50	5

Client Sample ID: HA-20

Lab Sample ID: 890-7852-9
Matrix: Solid
Date Collected: 03/25/25 09:30
Date Received: 03/25/25 15:26
Sample Depth: 26

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		03/27/25 10:02	03/27/25 19:53	1
Toluene	<0.00198	U *-	0.00198		mg/Kg		03/27/25 10:02	03/27/25 19:53	1
Ethylbenzene	<0.00198	U *-	0.00198		mg/Kg		03/27/25 10:02	03/27/25 19:53	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		03/27/25 10:02	03/27/25 19:53	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		03/27/25 10:02	03/27/25 19:53	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		03/27/25 10:02	03/27/25 19:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*03/27/25 10:02*	*03/27/25 19:53*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*03/27/25 10:02*	*03/27/25 19:53*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

Client Sample ID: HA-20

Lab Sample ID: 890-7852-9
Date Collected: 03/25/25 09:30
Matrix: Solid
Date Received: 03/25/25 15:26
Sample Depth: 26

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			04/01/25 01:10	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	<50.0	U	50.0		mg/Kg		03/27/25 15:35	04/01/25 01:10	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/27/25 15:35	04/01/25 01:10	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/27/25 15:35	04/01/25 01:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*106*		*70 - 130*	*03/27/25 15:35*	*04/01/25 01:10*	*1*
o-Terphenyl	*105*		*70 - 130*	*03/27/25 15:35*	*04/01/25 01:10*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2410**		49.5		mg/Kg			03/28/25 05:55	5

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-7852-1	HA-20	110	91
890-7852-2	HA-20	105	89
890-7852-3	HA-20	117	91
890-7852-4	HA-20	118	89
890-7852-5	HA-20	109	89
890-7852-6	HA-20	109	89
890-7852-7	HA-20	113	91
890-7852-8	HA-20	107	91
890-7852-9	HA-20	109	88
LCS 880-106184/1-A	Lab Control Sample	107	92
LCSD 880-106184/2-A	Lab Control Sample Dup	101	90
MB 880-106184/5-A	Method Blank	103	85

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-7852-1	HA-20	135 S1+	139 S1+
890-7852-2	HA-20	134 S1+	134 S1+
890-7852-3	HA-20	132 S1+	133 S1+
890-7852-4	HA-20	135 S1+	130
890-7852-4 MS	HA-20	112	103
890-7852-4 MSD	HA-20	97	102
890-7852-5	HA-20	105	99
890-7852-6	HA-20	108	104
890-7852-7	HA-20	107	106
890-7852-8	HA-20	105	103
890-7852-9	HA-20	106	105
LCS 880-106198/2-A	Lab Control Sample	121	140 S1+
LCS 880-106231/2-A	Lab Control Sample	129	140 S1+
LCSD 880-106198/3-A	Lab Control Sample Dup	124	143 S1+
LCSD 880-106231/3-A	Lab Control Sample Dup	154 S1+	140 S1+
MB 880-106198/1-A	Method Blank	129	132 S1+
MB 880-106231/1-A	Method Blank	113	107

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-106184/5-A
Matrix: Solid
Analysis Batch: 106174

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106184

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 12:29	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 12:29	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 12:29	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		03/27/25 10:02	03/27/25 12:29	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 12:29	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		03/27/25 10:02	03/27/25 12:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*03/27/25 10:02*	*03/27/25 12:29*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*	*03/27/25 10:02*	*03/27/25 12:29*	*1*

Lab Sample ID: LCS 880-106184/1-A
Matrix: Solid
Analysis Batch: 106174

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106184

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.08525		mg/Kg		85	70 - 130		
Toluene			0.100	0.07751		mg/Kg		78	70 - 130		
Ethylbenzene			0.100	0.08190		mg/Kg		82	70 - 130		
m-Xylene & p-Xylene			0.200	0.1748		mg/Kg		87	70 - 130		
o-Xylene			0.100	0.08904		mg/Kg		89	70 - 130		

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

Lab Sample ID: LCSD 880-106184/2-A
Matrix: Solid
Analysis Batch: 106174

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106184

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.07121		mg/Kg		71	70 - 130	18	35
Toluene			0.100	0.06338	*-	mg/Kg		63	70 - 130	20	35
Ethylbenzene			0.100	0.06584	*-	mg/Kg		66	70 - 130	22	35
m-Xylene & p-Xylene			0.200	0.1391		mg/Kg		70	70 - 130	23	35
o-Xylene			0.100	0.07231		mg/Kg		72	70 - 130	21	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

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

Lab Sample ID: MB 880-106198/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 106362 — **Prep Batch: 106198**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 01:24	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 01:24	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 01:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*129*		*70 - 130*	*03/27/25 12:15*	*03/29/25 01:24*	*1*
o-Terphenyl	*132*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 01:24*	*1*

Lab Sample ID: LCS 880-106198/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 106362 — **Prep Batch: 106198**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1061		mg/Kg		106	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1262		mg/Kg		126	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*121*		*70 - 130*
o-Terphenyl	*140*	*S1+*	*70 - 130*

Lab Sample ID: LCSD 880-106198/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 106362 — **Prep Batch: 106198**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1113		mg/Kg		111	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	1000	1300		mg/Kg		130	70 - 130	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*124*		*70 - 130*
o-Terphenyl	*143*	*S1+*	*70 - 130*

Lab Sample ID: MB 880-106231/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 106488 — **Prep Batch: 106231**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		03/27/25 15:34	03/31/25 19:44	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/27/25 15:34	03/31/25 19:44	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/27/25 15:34	03/31/25 19:44	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

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

Lab Sample ID: MB 880-106231/1-A
Matrix: Solid
Analysis Batch: 106488

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106231

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	113		70 - 130	03/27/25 15:34	03/31/25 19:44	1
o-Terphenyl	107		70 - 130	03/27/25 15:34	03/31/25 19:44	1

Lab Sample ID: LCS 880-106231/2-A
Matrix: Solid
Analysis Batch: 106488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106231

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1061		mg/Kg		106	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1200		mg/Kg		120	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	129		70 - 130
o-Terphenyl	140	S1+	70 - 130

Lab Sample ID: LCSD 880-106231/3-A
Matrix: Solid
Analysis Batch: 106488

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106231

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1070		mg/Kg		107	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	1116		mg/Kg		112	70 - 130	7	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	154	S1+	70 - 130
o-Terphenyl	140	S1+	70 - 130

Lab Sample ID: 890-7852-4 MS
Matrix: Solid
Analysis Batch: 106488

Client Sample ID: HA-20
Prep Type: Total/NA
Prep Batch: 106231

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	999	730.4		mg/Kg		73	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.7	U	999	824.6		mg/Kg		83	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	112		70 - 130
o-Terphenyl	103		70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

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

Lab Sample ID: 890-7852-4 MSD — **Client Sample ID: HA-20**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 106488 — **Prep Batch: 106231**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.7	U	999	732.1		mg/Kg		73	70 - 130	0	20
Diesel Range Organics (Over C10-C28)	<49.7	U	999	883.7		mg/Kg		88	70 - 130	7	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*97*		*70 - 130*
o-Terphenyl	*102*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-106192/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 106229

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			03/28/25 02:42	1

Lab Sample ID: LCS 880-106192/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 106229

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	245.2		mg/Kg		98	90 - 110

Lab Sample ID: LCSD 880-106192/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 106229

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	246.3		mg/Kg		99	90 - 110	0	20

Lab Sample ID: 890-7852-7 MS — **Client Sample ID: HA-20**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 106229

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2200	F1 F2	1260	3577		mg/Kg		109	90 - 110

Lab Sample ID: 890-7852-7 MSD — **Client Sample ID: HA-20**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 106229

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	2200	F1 F2	1260	2539	F1 F2	mg/Kg		27	90 - 110	34	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

GC VOA

Analysis Batch: 106174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7852-1	HA-20	Total/NA	Solid	8021B	106184
890-7852-2	HA-20	Total/NA	Solid	8021B	106184
890-7852-3	HA-20	Total/NA	Solid	8021B	106184
890-7852-4	HA-20	Total/NA	Solid	8021B	106184
890-7852-5	HA-20	Total/NA	Solid	8021B	106184
890-7852-6	HA-20	Total/NA	Solid	8021B	106184
890-7852-7	HA-20	Total/NA	Solid	8021B	106184
890-7852-8	HA-20	Total/NA	Solid	8021B	106184
890-7852-9	HA-20	Total/NA	Solid	8021B	106184
MB 880-106184/5-A	Method Blank	Total/NA	Solid	8021B	106184
LCS 880-106184/1-A	Lab Control Sample	Total/NA	Solid	8021B	106184
LCSD 880-106184/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	106184

Prep Batch: 106184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7852-1	HA-20	Total/NA	Solid	5035	
890-7852-2	HA-20	Total/NA	Solid	5035	
890-7852-3	HA-20	Total/NA	Solid	5035	
890-7852-4	HA-20	Total/NA	Solid	5035	
890-7852-5	HA-20	Total/NA	Solid	5035	
890-7852-6	HA-20	Total/NA	Solid	5035	
890-7852-7	HA-20	Total/NA	Solid	5035	
890-7852-8	HA-20	Total/NA	Solid	5035	
890-7852-9	HA-20	Total/NA	Solid	5035	
MB 880-106184/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-106184/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-106184/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 106198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7852-1	HA-20	Total/NA	Solid	8015NM Prep	
890-7852-2	HA-20	Total/NA	Solid	8015NM Prep	
890-7852-3	HA-20	Total/NA	Solid	8015NM Prep	
MB 880-106198/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-106198/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-106198/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Prep Batch: 106231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7852-4	HA-20	Total/NA	Solid	8015NM Prep	
890-7852-5	HA-20	Total/NA	Solid	8015NM Prep	
890-7852-6	HA-20	Total/NA	Solid	8015NM Prep	
890-7852-7	HA-20	Total/NA	Solid	8015NM Prep	
890-7852-8	HA-20	Total/NA	Solid	8015NM Prep	
890-7852-9	HA-20	Total/NA	Solid	8015NM Prep	
MB 880-106231/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-106231/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-106231/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-7852-4 MS	HA-20	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

GC Semi VOA (Continued)

Prep Batch: 106231 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7852-4 MSD	HA-20	Total/NA	Solid	8015NM Prep	

Analysis Batch: 106362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7852-1	HA-20	Total/NA	Solid	8015B NM	106198
890-7852-2	HA-20	Total/NA	Solid	8015B NM	106198
890-7852-3	HA-20	Total/NA	Solid	8015B NM	106198
MB 880-106198/1-A	Method Blank	Total/NA	Solid	8015B NM	106198
LCS 880-106198/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	106198
LCSD 880-106198/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	106198

Analysis Batch: 106488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7852-4	HA-20	Total/NA	Solid	8015B NM	106231
890-7852-5	HA-20	Total/NA	Solid	8015B NM	106231
890-7852-6	HA-20	Total/NA	Solid	8015B NM	106231
890-7852-7	HA-20	Total/NA	Solid	8015B NM	106231
890-7852-8	HA-20	Total/NA	Solid	8015B NM	106231
890-7852-9	HA-20	Total/NA	Solid	8015B NM	106231
MB 880-106231/1-A	Method Blank	Total/NA	Solid	8015B NM	106231
LCS 880-106231/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	106231
LCSD 880-106231/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	106231
890-7852-4 MS	HA-20	Total/NA	Solid	8015B NM	106231
890-7852-4 MSD	HA-20	Total/NA	Solid	8015B NM	106231

Analysis Batch: 106527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7852-1	HA-20	Total/NA	Solid	8015 NM	
890-7852-2	HA-20	Total/NA	Solid	8015 NM	
890-7852-3	HA-20	Total/NA	Solid	8015 NM	
890-7852-4	HA-20	Total/NA	Solid	8015 NM	
890-7852-5	HA-20	Total/NA	Solid	8015 NM	
890-7852-6	HA-20	Total/NA	Solid	8015 NM	
890-7852-7	HA-20	Total/NA	Solid	8015 NM	
890-7852-8	HA-20	Total/NA	Solid	8015 NM	
890-7852-9	HA-20	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 106192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7852-1	HA-20	Soluble	Solid	DI Leach	
890-7852-2	HA-20	Soluble	Solid	DI Leach	
890-7852-3	HA-20	Soluble	Solid	DI Leach	
890-7852-4	HA-20	Soluble	Solid	DI Leach	
890-7852-5	HA-20	Soluble	Solid	DI Leach	
890-7852-6	HA-20	Soluble	Solid	DI Leach	
890-7852-7	HA-20	Soluble	Solid	DI Leach	
890-7852-8	HA-20	Soluble	Solid	DI Leach	
890-7852-9	HA-20	Soluble	Solid	DI Leach	
MB 880-106192/1-A	Method Blank	Soluble	Solid	DI Leach	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

HPLC/IC (Continued)

Leach Batch: 106192 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-106192/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-106192/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-7852-7 MS	HA-20	Soluble	Solid	DI Leach	
890-7852-7 MSD	HA-20	Soluble	Solid	DI Leach	

Analysis Batch: 106229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7852-1	HA-20	Soluble	Solid	300.0	106192
890-7852-2	HA-20	Soluble	Solid	300.0	106192
890-7852-3	HA-20	Soluble	Solid	300.0	106192
890-7852-4	HA-20	Soluble	Solid	300.0	106192
890-7852-5	HA-20	Soluble	Solid	300.0	106192
890-7852-6	HA-20	Soluble	Solid	300.0	106192
890-7852-7	HA-20	Soluble	Solid	300.0	106192
890-7852-8	HA-20	Soluble	Solid	300.0	106192
890-7852-9	HA-20	Soluble	Solid	300.0	106192
MB 880-106192/1-A	Method Blank	Soluble	Solid	300.0	106192
LCS 880-106192/2-A	Lab Control Sample	Soluble	Solid	300.0	106192
LCSD 880-106192/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	106192
890-7852-7 MS	HA-20	Soluble	Solid	300.0	106192
890-7852-7 MSD	HA-20	Soluble	Solid	300.0	106192

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

Client Sample ID: HA-20
Date Collected: 03/24/25 12:50
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7852-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 15:55	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106527	03/29/25 07:38	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 07:38	TKC	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		1			106229	03/28/25 04:05	CH	EET MID

Client Sample ID: HA-20
Date Collected: 03/24/25 12:55
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7852-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 17:29	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106527	03/29/25 07:54	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 07:54	TKC	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		1			106229	03/28/25 04:32	CH	EET MID

Client Sample ID: HA-20
Date Collected: 03/24/25 13:00
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7852-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 17:50	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106527	03/29/25 08:11	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 08:11	TKC	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		1			106229	03/28/25 04:42	CH	EET MID

Client Sample ID: HA-20
Date Collected: 03/24/25 13:05
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7852-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 18:10	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106527	03/31/25 20:34	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	03/31/25 20:34	TKC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

Client Sample ID: HA-20
Date Collected: 03/24/25 13:05
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7852-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.95 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		1			106229	03/28/25 04:51	CH	EET MID

Client Sample ID: HA-20
Date Collected: 03/24/25 13:10
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7852-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 18:30	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106527	03/31/25 21:23	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	03/31/25 21:23	TKC	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		1			106229	03/28/25 05:00	CH	EET MID

Client Sample ID: HA-20
Date Collected: 03/25/25 09:15
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7852-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 18:51	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106527	04/01/25 00:21	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	04/01/25 00:21	TKC	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		5			106229	03/28/25 05:09	CH	EET MID

Client Sample ID: HA-20
Date Collected: 03/25/25 09:20
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7852-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 19:12	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106527	04/01/25 00:38	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	04/01/25 00:38	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		5			106229	03/28/25 05:18	CH	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Job ID: 890-7852-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy, NM

Client Sample ID: HA-20
Lab Sample ID: 890-7852-8
Date Collected: 03/25/25 09:25
Matrix: Solid
Date Received: 03/25/25 15:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 19:32	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106527	04/01/25 00:53	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	04/01/25 00:53	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		5			106229	03/28/25 12:50	CH	EET MID

Client Sample ID: HA-20
Lab Sample ID: 890-7852-9
Date Collected: 03/25/25 09:30
Matrix: Solid
Date Received: 03/25/25 15:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 19:53	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106527	04/01/25 01:10	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	04/01/25 01:10	TKC	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		5			106229	03/28/25 05:55	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 890-7852-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy, NM

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
SDG: Eddy, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-7852-1	HA-20	Solid	03/24/25 12:50	03/25/25 15:26	0.5
890-7852-2	HA-20	Solid	03/24/25 12:55	03/25/25 15:26	2
890-7852-3	HA-20	Solid	03/24/25 13:00	03/25/25 15:26	4
890-7852-4	HA-20	Solid	03/24/25 13:05	03/25/25 15:26	6
890-7852-5	HA-20	Solid	03/24/25 13:10	03/25/25 15:26	8
890-7852-6	HA-20	Solid	03/25/25 09:15	03/25/25 15:26	11
890-7852-7	HA-20	Solid	03/25/25 09:20	03/25/25 15:26	16
890-7852-8	HA-20	Solid	03/25/25 09:25	03/25/25 15:26	21
890-7852-9	HA-20	Solid	03/25/25 09:30	03/25/25 15:26	26

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4/1/2025

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Chain of Custody

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

890-7852 Chain of Custody

www.xenco.com Page ____

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

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

Project Name:	Spud Muffin 31 30 #738H	**Turn Around**	
Project Number:	15995	☑ Routine ☐ Rush	
Project Location:	Eddy, NM	Due Date:	5 Day TAT
Sampler's Name:	Gilbert Moreno /SG	TAT starts the day received by the lab, if received by 4:30pm	
PO/WO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	TM007	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	0.2	
Total Containers:		Corrected Temperature:	0.0	

ANALYSIS REQUEST

Preservative Codes

None: NO | DI Water: H_2O
Cool: Cool | MeOH: Me
HCL: HC | HNO_3: HN
H_2S0_4: H_2 | NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	Sample Comments
HA-20	S	3.24.25	12:50	0.5	Grab/	1	X	X	X			Incident Number
HA-20	S	3.24.25	12:55	2	Grab/	1	X	X	X			nAPP2431628896
HA-20	S	3.24.25	13:00	4	Grab/	1	X	X	X			
HA-20	S	3.24.25	13:05	6	Grab/	1	X	X	X			
HA-20	S	3.24.25	13:10	8	Grab/	1	X	X	X			
HA-20	S	3.25.25	9:15	11	Grab/	1	X	X	X			
HA-20	S	3.25.25	9:20	16	Grab/	1	X	X	X			
HA-20	S	3.25.25	9:25	21	Grab/	1	X	X	X			
HA-20	S	3.25.25	9:30	26	Grab/	1	X	X	X			

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		15:26 3/25			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

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Received by OCD: 11/4/2025 7:21:25 AM

Released to Imaging: 11/6/2025 3:18:49 PM

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Teel, Brianna	Carrier Tracking No(s): N/A	COC No: 890-4780.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Brianna.Teel@et.eurofinsus.com	State of Origin: Texas	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-7852-1
Address: 1211 W. Florida Ave, ,	Due Date Requested: 3/31/2025			Preservation Codes: -
City: Midland	TAT Requested (days): N/A			
State, Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: Spud Muffin 31 30 #738H	Project #: 88001228			
Site: N/A	SSOW#: N/A			Other: N/A

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8021B/5035FP_Calc BTEX	300_ORGFM_28D/DI_LEACH Chloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep 8015 NM	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
HA-20 (890-7852-1)	3/24/25	12:50 Central	G	Solid			X	X	X	X	1	
HA-20 (890-7852-2)	3/24/25	12:55 Central	G	Solid			X	X	X	X	1	
HA-20 (890-7852-3)	3/24/25	13:00 Central	G	Solid			X	X	X	X	1	
HA-20 (890-7852-4)	3/24/25	13:05 Central	G	Solid			X	X	X	X	1	
HA-20 (890-7852-5)	3/24/25	13:10 Central	G	Solid			X	X	X	X	1	
HA-20 (890-7852-6)	3/25/25	09:15 Central	G	Solid			X	X	X	X	1	
HA-20 (890-7852-7)	3/25/25	09:20 Central	G	Solid			X	X	X	X	1	
HA-20 (890-7852-8)	3/25/25	09:25 Central	G	Solid			X	X	X	X	1	
HA-20 (890-7852-9)	3/25/25	09:30 Central	G	Solid			X	X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by: TKZ	Date/Time: 3/27/25 0800	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

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Received by OCD: 11/4/2025 7:21:25 AM
4/1/2025
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Released to Imaging: 11/6/2025 3:18:49 PM

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7852-1
SDG Number: Eddy, NM

Login Number: 7852
List Number: 1
Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

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	

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7852-1
SDG Number: Eddy, NM

Login Number: 7852
List Number: 2
Creator: Lee, Randell

List Source: Eurofins Midland
List Creation: 03/27/25 08:15 AM

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

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Gilbert Moreno
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 3/31/2025 1:20:13 PM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy, NM

JOB NUMBER

890-7849-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

Released to Imaging: 11/6/2025 3:18:49 PM

my EOL

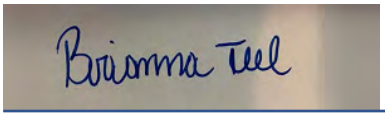
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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3/31/2025 1:20:13 PM

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

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Laboratory Job ID: 890-7849-1
SDG: Eddy, NM

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7849-1
SDG: Eddy, NM

Qualifiers

GC VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 890-7849-1
Project: Spud Muffin 31 30 #738H

Job ID: 890-7849-1 Eurofins Carlsbad

Job Narrative
890-7849-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 3/25/2025 3:26 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.0°C.

GC VOA
Method 8021B: Surrogate recovery for the following sample was outside control limits: (CCV 880-106171/20). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

Diesel Range Organics
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-106198/2-A) and (LCSD 880-106198/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: HA-21 (890-7849-1), HA-21 (890-7849-2), HA-21 (890-7849-3), HA-21 (890-7849-4), HA-21 (890-7849-5), (890-7861-A-5-B), (890-7861-A-5-C MS) and (890-7861-A-5-D MSD). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-106198 and analytical batch 880-106362 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.

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7849-1
SDG: Eddy, NM

Client Sample ID: HA-21

Lab Sample ID: 890-7849-1
Matrix: Solid
Date Collected: 03/24/25 13:15
Date Received: 03/25/25 15:26
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		03/27/25 09:46	03/27/25 16:26	1
Toluene	<0.00201	U	0.00201		mg/Kg		03/27/25 09:46	03/27/25 16:26	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		03/27/25 09:46	03/27/25 16:26	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		03/27/25 09:46	03/27/25 16:26	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		03/27/25 09:46	03/27/25 16:26	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		03/27/25 09:46	03/27/25 16:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*03/27/25 09:46*	*03/27/25 16:26*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*03/27/25 09:46*	*03/27/25 16:26*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			03/29/25 04:25	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	<49.9	U	49.9		mg/Kg		03/27/25 12:15	03/29/25 04:25	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		03/27/25 12:15	03/29/25 04:25	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		03/27/25 12:15	03/29/25 04:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*142*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 04:25*	*1*
o-Terphenyl	*143*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 04:25*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**444**		9.96		mg/Kg			03/28/25 16:10	1

Client Sample ID: HA-21

Lab Sample ID: 890-7849-2
Matrix: Solid
Date Collected: 03/24/25 13:20
Date Received: 03/25/25 15:26
Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:46	03/27/25 16:46	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:46	03/27/25 16:46	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:46	03/27/25 16:46	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		03/27/25 09:46	03/27/25 16:46	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:46	03/27/25 16:46	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		03/27/25 09:46	03/27/25 16:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*03/27/25 09:46*	*03/27/25 16:46*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*03/27/25 09:46*	*03/27/25 16:46*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7849-1
SDG: Eddy, NM

Client Sample ID: HA-21

Lab Sample ID: 890-7849-2
Matrix: Solid
Date Collected: 03/24/25 13:20
Date Received: 03/25/25 15:26
Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6		mg/Kg			03/29/25 04:41	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	<49.6	U	49.6		mg/Kg		03/27/25 12:15	03/29/25 04:41	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6		mg/Kg		03/27/25 12:15	03/29/25 04:41	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6		mg/Kg		03/27/25 12:15	03/29/25 04:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*140*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 04:41*	*1*
o-Terphenyl	*143*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 04:41*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**124**		9.92		mg/Kg			03/28/25 16:28	1

Client Sample ID: HA-21

Lab Sample ID: 890-7849-3
Matrix: Solid
Date Collected: 03/24/25 13:25
Date Received: 03/25/25 15:26
Sample Depth: 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:46	03/27/25 17:07	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:46	03/27/25 17:07	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:46	03/27/25 17:07	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		03/27/25 09:46	03/27/25 17:07	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:46	03/27/25 17:07	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		03/27/25 09:46	03/27/25 17:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*03/27/25 09:46*	*03/27/25 17:07*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*03/27/25 09:46*	*03/27/25 17:07*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			03/29/25 04:57	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	<49.8	U	49.8		mg/Kg		03/27/25 12:15	03/29/25 04:57	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		03/27/25 12:15	03/29/25 04:57	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		03/27/25 12:15	03/29/25 04:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*146*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 04:57*	*1*
o-Terphenyl	*148*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 04:57*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7849-1
SDG: Eddy, NM

Client Sample ID: HA-21
Lab Sample ID: 890-7849-3
Date Collected: 03/24/25 13:25
Matrix: Solid
Date Received: 03/25/25 15:26
Sample Depth: 4

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	156		10.0		mg/Kg			03/28/25 16:33	1

Client Sample ID: HA-21
Lab Sample ID: 890-7849-4
Date Collected: 03/24/25 13:30
Matrix: Solid
Date Received: 03/25/25 15:26
Sample Depth: 6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		03/27/25 09:46	03/27/25 17:27	1
Toluene	<0.00198	U	0.00198		mg/Kg		03/27/25 09:46	03/27/25 17:27	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		03/27/25 09:46	03/27/25 17:27	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		03/27/25 09:46	03/27/25 17:27	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		03/27/25 09:46	03/27/25 17:27	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		03/27/25 09:46	03/27/25 17:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*03/27/25 09:46*	*03/27/25 17:27*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*03/27/25 09:46*	*03/27/25 17:27*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			03/29/25 05:13	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	<49.9	U	49.9		mg/Kg		03/27/25 12:15	03/29/25 05:13	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		03/27/25 12:15	03/29/25 05:13	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		03/27/25 12:15	03/29/25 05:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*152*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 05:13*	*1*
o-Terphenyl	*154*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 05:13*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	903		10.1		mg/Kg			03/28/25 16:39	1

Client Sample ID: HA-21
Lab Sample ID: 890-7849-5
Date Collected: 03/24/25 12:35
Matrix: Solid
Date Received: 03/25/25 15:26
Sample Depth: 8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 20:34	1
Toluene	<0.00200	U *-	0.00200		mg/Kg		03/27/25 10:02	03/27/25 20:34	1
Ethylbenzene	<0.00200	U *-	0.00200		mg/Kg		03/27/25 10:02	03/27/25 20:34	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		03/27/25 10:02	03/27/25 20:34	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7849-1
SDG: Eddy, NM

Client Sample ID: HA-21

Lab Sample ID: 890-7849-5
Matrix: Solid
Date Collected: 03/24/25 12:35
Date Received: 03/25/25 15:26
Sample Depth: 8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 20:34	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		03/27/25 10:02	03/27/25 20:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*03/27/25 10:02*	*03/27/25 20:34*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*03/27/25 10:02*	*03/27/25 20:34*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			03/29/25 05:46	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	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 05:46	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 05:46	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 05:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*147*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 05:46*	*1*
o-Terphenyl	*153*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 05:46*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1610**		49.7		mg/Kg			03/28/25 16:45	5

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7849-1
SDG: Eddy, NM

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-7849-1	HA-21	108	98										
890-7849-2	HA-21	102	93										
890-7849-3	HA-21	101	92										
890-7849-4	HA-21	103	91										
890-7849-5	HA-21	108	90										
LCS 880-106178/1-A	Lab Control Sample	102	100										
LCS 880-106184/1-A	Lab Control Sample	107	92										
LCSD 880-106178/2-A	Lab Control Sample Dup	99	99										
LCSD 880-106184/2-A	Lab Control Sample Dup	101	90										
MB 880-106178/5-A	Method Blank	113	89										
MB 880-106184/5-A	Method Blank	103	85										

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-7849-1	HA-21	142 S1+	143 S1+										
890-7849-2	HA-21	140 S1+	143 S1+										
890-7849-3	HA-21	146 S1+	148 S1+										
890-7849-4	HA-21	152 S1+	154 S1+										
890-7849-5	HA-21	147 S1+	153 S1+										
LCS 880-106198/2-A	Lab Control Sample	121	140 S1+										
LCSD 880-106198/3-A	Lab Control Sample Dup	124	143 S1+										
MB 880-106198/1-A	Method Blank	129	132 S1+										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7849-1
SDG: Eddy, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-106178/5-A
Matrix: Solid
Analysis Batch: 106171

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106178

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:46	03/27/25 11:37	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:46	03/27/25 11:37	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:46	03/27/25 11:37	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		03/27/25 09:46	03/27/25 11:37	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:46	03/27/25 11:37	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		03/27/25 09:46	03/27/25 11:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*03/27/25 09:46*	*03/27/25 11:37*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*03/27/25 09:46*	*03/27/25 11:37*	*1*

Lab Sample ID: LCS 880-106178/1-A
Matrix: Solid
Analysis Batch: 106171

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106178

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.08010		mg/Kg		80	70 - 130		
Toluene			0.100	0.07999		mg/Kg		80	70 - 130		
Ethylbenzene			0.100	0.07431		mg/Kg		74	70 - 130		
m-Xylene & p-Xylene			0.200	0.1494		mg/Kg		75	70 - 130		
o-Xylene			0.100	0.07837		mg/Kg		78	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 880-106178/2-A
Matrix: Solid
Analysis Batch: 106171

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106178

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.08002		mg/Kg		80	70 - 130	0	35
Toluene			0.100	0.07977		mg/Kg		80	70 - 130	0	35
Ethylbenzene			0.100	0.07322		mg/Kg		73	70 - 130	1	35
m-Xylene & p-Xylene			0.200	0.1473		mg/Kg		74	70 - 130	1	35
o-Xylene			0.100	0.07659		mg/Kg		77	70 - 130	2	35

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

Lab Sample ID: MB 880-106184/5-A
Matrix: Solid
Analysis Batch: 106174

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106184

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 12:29	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 12:29	1

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QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7849-1
SDG: Eddy, NM

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

Lab Sample ID: MB 880-106184/5-A
Matrix: Solid
Analysis Batch: 106174

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106184

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 12:29	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		03/27/25 10:02	03/27/25 12:29	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 12:29	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		03/27/25 10:02	03/27/25 12:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*03/27/25 10:02*	*03/27/25 12:29*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*	*03/27/25 10:02*	*03/27/25 12:29*	*1*

Lab Sample ID: LCS 880-106184/1-A
Matrix: Solid
Analysis Batch: 106174

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106184

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.08525		mg/Kg		85	70 - 130
Toluene	0.100	0.07751		mg/Kg		78	70 - 130
Ethylbenzene	0.100	0.08190		mg/Kg		82	70 - 130
m-Xylene & p-Xylene	0.200	0.1748		mg/Kg		87	70 - 130
o-Xylene	0.100	0.08904		mg/Kg		89	70 - 130

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

Lab Sample ID: LCSD 880-106184/2-A
Matrix: Solid
Analysis Batch: 106174

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106184

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.07121		mg/Kg		71	70 - 130	18	35
Toluene	0.100	0.06338	*-	mg/Kg		63	70 - 130	20	35
Ethylbenzene	0.100	0.06584	*-	mg/Kg		66	70 - 130	22	35
m-Xylene & p-Xylene	0.200	0.1391		mg/Kg		70	70 - 130	23	35
o-Xylene	0.100	0.07231		mg/Kg		72	70 - 130	21	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

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

Lab Sample ID: MB 880-106198/1-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106198

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 01:24	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7849-1
SDG: Eddy, NM

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

Lab Sample ID: MB 880-106198/1-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106198

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 01:24	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/27/25 12:15	03/29/25 01:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*129*		*70 - 130*	*03/27/25 12:15*	*03/29/25 01:24*	*1*
o-Terphenyl	*132*	*S1+*	*70 - 130*	*03/27/25 12:15*	*03/29/25 01:24*	*1*

Lab Sample ID: LCS 880-106198/2-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106198

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1061		mg/Kg		106	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1262		mg/Kg		126	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*121*		*70 - 130*
o-Terphenyl	*140*	*S1+*	*70 - 130*

Lab Sample ID: LCSD 880-106198/3-A
Matrix: Solid
Analysis Batch: 106362

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106198

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1113		mg/Kg		111	70 - 130	5	20
Diesel Range Organics (Over C10-C28)			1000	1300		mg/Kg		130	70 - 130	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*124*		*70 - 130*
o-Terphenyl	*143*	*S1+*	*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-106191/1-A
Matrix: Solid
Analysis Batch: 106228

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			03/28/25 15:19	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7849-1
SDG: Eddy, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-106191/2-A
Matrix: Solid
Analysis Batch: 106228

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	264.9		mg/Kg		106	90 - 110

Lab Sample ID: LCSD 880-106191/3-A
Matrix: Solid
Analysis Batch: 106228

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	259.8		mg/Kg		104	90 - 110	2	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7849-1
SDG: Eddy, NM

GC VOA

Analysis Batch: 106171

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7849-1	HA-21	Total/NA	Solid	8021B	106178
890-7849-2	HA-21	Total/NA	Solid	8021B	106178
890-7849-3	HA-21	Total/NA	Solid	8021B	106178
890-7849-4	HA-21	Total/NA	Solid	8021B	106178
MB 880-106178/5-A	Method Blank	Total/NA	Solid	8021B	106178
LCS 880-106178/1-A	Lab Control Sample	Total/NA	Solid	8021B	106178
LCSD 880-106178/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	106178

Analysis Batch: 106174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7849-5	HA-21	Total/NA	Solid	8021B	106184
MB 880-106184/5-A	Method Blank	Total/NA	Solid	8021B	106184
LCS 880-106184/1-A	Lab Control Sample	Total/NA	Solid	8021B	106184
LCSD 880-106184/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	106184

Prep Batch: 106178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7849-1	HA-21	Total/NA	Solid	5035	
890-7849-2	HA-21	Total/NA	Solid	5035	
890-7849-3	HA-21	Total/NA	Solid	5035	
890-7849-4	HA-21	Total/NA	Solid	5035	
MB 880-106178/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-106178/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-106178/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Prep Batch: 106184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7849-5	HA-21	Total/NA	Solid	5035	
MB 880-106184/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-106184/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-106184/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 106198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7849-1	HA-21	Total/NA	Solid	8015NM Prep	
890-7849-2	HA-21	Total/NA	Solid	8015NM Prep	
890-7849-3	HA-21	Total/NA	Solid	8015NM Prep	
890-7849-4	HA-21	Total/NA	Solid	8015NM Prep	
890-7849-5	HA-21	Total/NA	Solid	8015NM Prep	
MB 880-106198/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-106198/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-106198/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 106362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7849-1	HA-21	Total/NA	Solid	8015B NM	106198
890-7849-2	HA-21	Total/NA	Solid	8015B NM	106198
890-7849-3	HA-21	Total/NA	Solid	8015B NM	106198
890-7849-4	HA-21	Total/NA	Solid	8015B NM	106198

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7849-1
SDG: Eddy, NM

GC Semi VOA (Continued)

Analysis Batch: 106362 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7849-5	HA-21	Total/NA	Solid	8015B NM	106198
MB 880-106198/1-A	Method Blank	Total/NA	Solid	8015B NM	106198
LCS 880-106198/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	106198
LCSD 880-106198/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	106198

Analysis Batch: 106525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7849-1	HA-21	Total/NA	Solid	8015 NM	
890-7849-2	HA-21	Total/NA	Solid	8015 NM	
890-7849-3	HA-21	Total/NA	Solid	8015 NM	
890-7849-4	HA-21	Total/NA	Solid	8015 NM	
890-7849-5	HA-21	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 106191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7849-1	HA-21	Soluble	Solid	DI Leach	
890-7849-2	HA-21	Soluble	Solid	DI Leach	
890-7849-3	HA-21	Soluble	Solid	DI Leach	
890-7849-4	HA-21	Soluble	Solid	DI Leach	
890-7849-5	HA-21	Soluble	Solid	DI Leach	
MB 880-106191/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-106191/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-106191/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 106228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7849-1	HA-21	Soluble	Solid	300.0	106191
890-7849-2	HA-21	Soluble	Solid	300.0	106191
890-7849-3	HA-21	Soluble	Solid	300.0	106191
890-7849-4	HA-21	Soluble	Solid	300.0	106191
890-7849-5	HA-21	Soluble	Solid	300.0	106191
MB 880-106191/1-A	Method Blank	Soluble	Solid	300.0	106191
LCS 880-106191/2-A	Lab Control Sample	Soluble	Solid	300.0	106191
LCSD 880-106191/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	106191

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7849-1
SDG: Eddy, NM

Client Sample ID: HA-21
Date Collected: 03/24/25 13:15
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7849-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	106178	03/27/25 09:46	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106171	03/27/25 16:26	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106525	03/29/25 04:25	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 04:25	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		1			106228	03/28/25 16:10	CH	EET MID

Client Sample ID: HA-21
Date Collected: 03/24/25 13:20
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7849-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	106178	03/27/25 09:46	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106171	03/27/25 16:46	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106525	03/29/25 04:41	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 04:41	TKC	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		1			106228	03/28/25 16:28	CH	EET MID

Client Sample ID: HA-21
Date Collected: 03/24/25 13:25
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7849-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	106178	03/27/25 09:46	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106171	03/27/25 17:07	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106525	03/29/25 04:57	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 04:57	TKC	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		1			106228	03/28/25 16:33	CH	EET MID

Client Sample ID: HA-21
Date Collected: 03/24/25 13:30
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7849-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	106178	03/27/25 09:46	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106171	03/27/25 17:27	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106525	03/29/25 05:13	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 05:13	TKC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Job ID: 890-7849-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy, NM

Client Sample ID: HA-21
Lab Sample ID: 890-7849-4
Date Collected: 03/24/25 13:30
Matrix: Solid
Date Received: 03/25/25 15:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.95 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		1			106228	03/28/25 16:39	CH	EET MID

Client Sample ID: HA-21
Lab Sample ID: 890-7849-5
Date Collected: 03/24/25 12:35
Matrix: Solid
Date Received: 03/25/25 15:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 20:34	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106525	03/29/25 05:46	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	106198	03/27/25 12:15	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106362	03/29/25 05:46	TKC	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		5			106228	03/28/25 16:45	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7849-1
SDG: Eddy, NM

Laboratory: Eurofins Midland

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

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

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

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7849-1
SDG: Eddy, NM

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7849-1
SDG: Eddy, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-7849-1	HA-21	Solid	03/24/25 13:15	03/25/25 15:26	0.5
890-7849-2	HA-21	Solid	03/24/25 13:20	03/25/25 15:26	2
890-7849-3	HA-21	Solid	03/24/25 13:25	03/25/25 15:26	4
890-7849-4	HA-21	Solid	03/24/25 13:30	03/25/25 15:26	6
890-7849-5	HA-21	Solid	03/24/25 12:35	03/25/25 15:26	8

Released to Imaging: 11/6/2025 3:18:49 PM
Received by OCD: 11/4/2025 7:21:25 AM

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Chain of Custody

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

890-7849 Chain of Custody

www.xenco.com Page _____ of _____

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

Program: UST/PST ☐ **PRP** ☐ **Brownfields** ☐ **RRC** ☐ **Superfund** ☐

State of Project:

Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐

Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Spud Muffin 31 30 #738H	**Turn Around**	
Project Number:	15995	☑ Routine ☐ Rush	
Project Location:	Eddy, NM	Due Date:	5 Day TAT
Sampler's Name:	Gilbert Moreno /SG	TAT starts the day received by the lab, if received by 4:30pm	
PO/WO #:			

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Samples Received Intact:	(Yes) No	Thermometer ID:	IR#7
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	0.2
Total Containers:		Corrected Temperature:	0.0

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2S0_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

ANALYSIS REQUEST

Pres. Code / Parameters

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	Sample Comments
HA-21	S	3.24.25	13:15	0.5	Grab/	1	X	X	X			Incident Number
HA-21	S	3.24.25	13:20	2	Grab/	1	X	X	X			nAPP2431628896
HA-21	S	3.24.25	13:25	4	Grab/	1	X	X	X			
HA-21	S	3.24.25	13:30	6	Grab/	1	X	X	X			
HA-21	S	3.24.25	13:35	8	Grab/	1	X	X	X			

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed

Hg: 1631 / 245.1 / 7470 / 7471

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		15:26 3/25	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

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Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Teel, Brianna	Carrier Tracking No(s): N/A	COC No: 890-4777.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Brianna.Teel@et.eurofinsus.com	State of Origin: Texas	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-7849-1
Address: 1211 W. Florida Ave, ,	Due Date Requested: 3/31/2025			Preservation Codes: -
City: Midland	TAT Requested (days): N/A			
State, Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: spud muffin 31 30 #738H	Project #: 88001228			
Site: N/A	SSOW#: N/A			Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8021B/5035FP_Calc BTEX	300_ORGFM_28D/DI_LEACH Chloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep 8015 NM	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
HA-21 (890-7849-1)	3/24/25	13:15 Central	G	Solid			X	X	X	X	1	
HA-21 (890-7849-2)	3/24/25	13:20 Central	G	Solid			X	X	X	X	1	
HA-21 (890-7849-3)	3/24/25	13:25 Central	G	Solid			X	X	X	X	1	
HA-21 (890-7849-4)	3/24/25	13:30 Central	G	Solid			X	X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by: TKL	Date/Time: 3/27/25 0800	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

Received by OCD: 11/4/2025 7:21:25 AM
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3/31/2025
Released to Imaging: 11/6/2025 3:18:49 PM

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7849-1
SDG Number: Eddy, NM

Login Number: 7849
List Number: 1
Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

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	

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7849-1
SDG Number: Eddy, NM

Login Number: 7849
List Number: 2
Creator: Lee, Randell

List Source: Eurofins Midland
List Creation: 03/27/25 08:13 AM

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Gilbert Moreno
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 4/1/2025 12:14:08 PM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy, NM

JOB NUMBER

890-7851-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

Released to Imaging: 11/6/2025 3:18:49 PM

my EOL

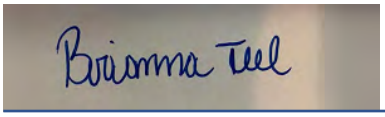
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



Generated
4/1/2025 12:14:08 PM

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

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Laboratory Job ID: 890-7851-1
SDG: Eddy, NM

Table of Contents

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Qualifiers

GC VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 890-7851-1
Project: Spud Muffin 31 30 #738H

Job ID: 890-7851-1 Eurofins Carlsbad

Job Narrative
890-7851-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 3/25/2025 3:26 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.0°C.

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: HA-22 (890-7851-1), HA-22 (890-7851-2), HA-22 (890-7851-3), HA-22 (890-7851-4), HA-22 (890-7851-5), HA-22 (890-7851-6), HA-22 (890-7851-7), HA-22 (890-7851-8) and HA-22 (890-7851-9).

GC VOA
Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-106184 and analytical batch 880-106174 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.

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: Surrogate recovery for the following sample was outside control limits: (LCSD 880-106231/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCS 880-106231/2-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.

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

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Client Sample ID: HA-22

Lab Sample ID: 890-7851-1
Matrix: Solid
Date Collected: 03/25/25 07:45
Date Received: 03/25/25 15:26
Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		03/27/25 10:02	03/27/25 12:51	1
Toluene	<0.00198	U *-	0.00198		mg/Kg		03/27/25 10:02	03/27/25 12:51	1
Ethylbenzene	<0.00198	U *-	0.00198		mg/Kg		03/27/25 10:02	03/27/25 12:51	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		03/27/25 10:02	03/27/25 12:51	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		03/27/25 10:02	03/27/25 12:51	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		03/27/25 10:02	03/27/25 12:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*03/27/25 10:02*	*03/27/25 12:51*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*03/27/25 10:02*	*03/27/25 12:51*	*1*

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<498	U	498		mg/Kg			03/31/25 21:39	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	<498	U	498		mg/Kg		03/27/25 15:35	03/31/25 21:39	1
Diesel Range Organics (Over C10-C28)	<498	U	498		mg/Kg		03/27/25 15:35	03/31/25 21:39	1
Oil Range Organics (Over C28-C36)	<498	U	498		mg/Kg		03/27/25 15:35	03/31/25 21:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*102*		*70 - 130*	*03/27/25 15:35*	*03/31/25 21:39*	*1*
o-Terphenyl	*96*		*70 - 130*	*03/27/25 15:35*	*03/31/25 21:39*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**609**		9.94		mg/Kg			03/28/25 17:48	1

Client Sample ID: HA-22

Lab Sample ID: 890-7851-2
Matrix: Solid
Date Collected: 03/25/25 07:50
Date Received: 03/25/25 15:26
Sample Depth: 2

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		03/27/25 10:02	03/27/25 13:11	1
Toluene	<0.00202	U *-	0.00202		mg/Kg		03/27/25 10:02	03/27/25 13:11	1
Ethylbenzene	<0.00202	U *-	0.00202		mg/Kg		03/27/25 10:02	03/27/25 13:11	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		03/27/25 10:02	03/27/25 13:11	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		03/27/25 10:02	03/27/25 13:11	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		03/27/25 10:02	03/27/25 13:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*03/27/25 10:02*	*03/27/25 13:11*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*03/27/25 10:02*	*03/27/25 13:11*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Client Sample ID: HA-22

Lab Sample ID: 890-7851-2
Matrix: Solid
Date Collected: 03/25/25 07:50
Date Received: 03/25/25 15:26
Sample Depth: 2

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6		mg/Kg			03/31/25 21:55	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	<49.6	U	49.6		mg/Kg		03/27/25 15:35	03/31/25 21:55	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6		mg/Kg		03/27/25 15:35	03/31/25 21:55	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6		mg/Kg		03/27/25 15:35	03/31/25 21:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*103*		*70 - 130*	*03/27/25 15:35*	*03/31/25 21:55*	*1*
o-Terphenyl	*98*		*70 - 130*	*03/27/25 15:35*	*03/31/25 21:55*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**286**		9.92		mg/Kg			03/28/25 17:54	1

Client Sample ID: HA-22

Lab Sample ID: 890-7851-3
Matrix: Solid
Date Collected: 03/25/25 07:55
Date Received: 03/25/25 15:26
Sample Depth: 4

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		03/27/25 10:02	03/27/25 13:32	1
Toluene	<0.00199	U *-	0.00199		mg/Kg		03/27/25 10:02	03/27/25 13:32	1
Ethylbenzene	<0.00199	U *-	0.00199		mg/Kg		03/27/25 10:02	03/27/25 13:32	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		03/27/25 10:02	03/27/25 13:32	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		03/27/25 10:02	03/27/25 13:32	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		03/27/25 10:02	03/27/25 13:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*03/27/25 10:02*	*03/27/25 13:32*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*03/27/25 10:02*	*03/27/25 13:32*	*1*

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5		mg/Kg			03/31/25 22:12	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	<50.5	U	50.5		mg/Kg		03/27/25 15:35	03/31/25 22:12	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5		mg/Kg		03/27/25 15:35	03/31/25 22:12	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5		mg/Kg		03/27/25 15:35	03/31/25 22:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*102*		*70 - 130*	*03/27/25 15:35*	*03/31/25 22:12*	*1*
o-Terphenyl	*98*		*70 - 130*	*03/27/25 15:35*	*03/31/25 22:12*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Client Sample ID: HA-22
Lab Sample ID: 890-7851-3
Date Collected: 03/25/25 07:55
Matrix: Solid
Date Received: 03/25/25 15:26
Sample Depth: 4

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	759		10.0		mg/Kg			03/28/25 17:59	1

Client Sample ID: HA-22
Lab Sample ID: 890-7851-4
Date Collected: 03/25/25 08:00
Matrix: Solid
Date Received: 03/25/25 15:26
Sample Depth: 6

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 13:52	1
Toluene	<0.00200	U *-	0.00200		mg/Kg		03/27/25 10:02	03/27/25 13:52	1
Ethylbenzene	<0.00200	U *-	0.00200		mg/Kg		03/27/25 10:02	03/27/25 13:52	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		03/27/25 10:02	03/27/25 13:52	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 13:52	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		03/27/25 10:02	03/27/25 13:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*	*03/27/25 10:02*	*03/27/25 13:52*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*03/27/25 10:02*	*03/27/25 13:52*	*1*

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			03/31/25 22:28	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	<49.8	U	49.8		mg/Kg		03/27/25 15:35	03/31/25 22:28	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		03/27/25 15:35	03/31/25 22:28	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		03/27/25 15:35	03/31/25 22:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*101*		*70 - 130*	*03/27/25 15:35*	*03/31/25 22:28*	*1*
o-Terphenyl	*96*		*70 - 130*	*03/27/25 15:35*	*03/31/25 22:28*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	548		10.1		mg/Kg			03/28/25 18:05	1

Client Sample ID: HA-22
Lab Sample ID: 890-7851-5
Date Collected: 03/25/25 08:05
Matrix: Solid
Date Received: 03/25/25 15:26
Sample Depth: 8

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		03/27/25 10:02	03/27/25 14:13	1
Toluene	<0.00202	U *-	0.00202		mg/Kg		03/27/25 10:02	03/27/25 14:13	1
Ethylbenzene	<0.00202	U *-	0.00202		mg/Kg		03/27/25 10:02	03/27/25 14:13	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		03/27/25 10:02	03/27/25 14:13	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Client Sample ID: HA-22

Lab Sample ID: 890-7851-5
Matrix: Solid
Date Collected: 03/25/25 08:05
Date Received: 03/25/25 15:26
Sample Depth: 8

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00202	U	0.00202		mg/Kg		03/27/25 10:02	03/27/25 14:13	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		03/27/25 10:02	03/27/25 14:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*03/27/25 10:02*	*03/27/25 14:13*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*03/27/25 10:02*	*03/27/25 14:13*	*1*

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6		mg/Kg			03/31/25 22:45	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	<49.6	U	49.6		mg/Kg		03/27/25 15:35	03/31/25 22:45	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6		mg/Kg		03/27/25 15:35	03/31/25 22:45	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6		mg/Kg		03/27/25 15:35	03/31/25 22:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*105*		*70 - 130*	*03/27/25 15:35*	*03/31/25 22:45*	*1*
o-Terphenyl	*101*		*70 - 130*	*03/27/25 15:35*	*03/31/25 22:45*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1710		49.5		mg/Kg			03/28/25 18:11	5

Client Sample ID: HA-22

Lab Sample ID: 890-7851-6
Matrix: Solid
Date Collected: 03/25/25 08:10
Date Received: 03/25/25 15:26
Sample Depth: 11

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 14:33	1
Toluene	<0.00200	U *-	0.00200		mg/Kg		03/27/25 10:02	03/27/25 14:33	1
Ethylbenzene	<0.00200	U *-	0.00200		mg/Kg		03/27/25 10:02	03/27/25 14:33	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		03/27/25 10:02	03/27/25 14:33	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 14:33	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		03/27/25 10:02	03/27/25 14:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*03/27/25 10:02*	*03/27/25 14:33*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*03/27/25 10:02*	*03/27/25 14:33*	*1*

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			03/31/25 23:00	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Client Sample ID: HA-22
Lab Sample ID: 890-7851-6
Date Collected: 03/25/25 08:10
Matrix: Solid
Date Received: 03/25/25 15:26
Sample Depth: 11

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	<49.9	U	49.9		mg/Kg		03/27/25 15:35	03/31/25 23:00	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		03/27/25 15:35	03/31/25 23:00	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		03/27/25 15:35	03/31/25 23:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*104*		*70 - 130*	*03/27/25 15:35*	*03/31/25 23:00*	*1*
o-Terphenyl	*103*		*70 - 130*	*03/27/25 15:35*	*03/31/25 23:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1630**		50.2		mg/Kg			03/28/25 03:10	5

Client Sample ID: HA-22
Lab Sample ID: 890-7851-7
Date Collected: 03/25/25 08:15
Matrix: Solid
Date Received: 03/25/25 15:26
Sample Depth: 16

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		03/27/25 10:02	03/27/25 14:54	1
Toluene	<0.00199	U *-	0.00199		mg/Kg		03/27/25 10:02	03/27/25 14:54	1
Ethylbenzene	<0.00199	U *-	0.00199		mg/Kg		03/27/25 10:02	03/27/25 14:54	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		03/27/25 10:02	03/27/25 14:54	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		03/27/25 10:02	03/27/25 14:54	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		03/27/25 10:02	03/27/25 14:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*03/27/25 10:02*	*03/27/25 14:54*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*03/27/25 10:02*	*03/27/25 14:54*	*1*

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			03/31/25 23:17	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	<50.0	U	50.0		mg/Kg		03/27/25 15:35	03/31/25 23:17	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/27/25 15:35	03/31/25 23:17	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/27/25 15:35	03/31/25 23:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*105*		*70 - 130*	*03/27/25 15:35*	*03/31/25 23:17*	*1*
o-Terphenyl	*104*		*70 - 130*	*03/27/25 15:35*	*03/31/25 23:17*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2540**		50.5		mg/Kg			03/28/25 03:37	5

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Client Sample ID: HA-22

Lab Sample ID: 890-7851-8
Matrix: Solid
Date Collected: 03/25/25 08:20
Date Received: 03/25/25 15:26
Sample Depth: 21

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		03/27/25 10:02	03/27/25 15:14	1
Toluene	<0.00201	U *-	0.00201		mg/Kg		03/27/25 10:02	03/27/25 15:14	1
Ethylbenzene	<0.00201	U *-	0.00201		mg/Kg		03/27/25 10:02	03/27/25 15:14	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		03/27/25 10:02	03/27/25 15:14	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		03/27/25 10:02	03/27/25 15:14	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		03/27/25 10:02	03/27/25 15:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*	*03/27/25 10:02*	*03/27/25 15:14*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*03/27/25 10:02*	*03/27/25 15:14*	*1*

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.4	U	50.4		mg/Kg			03/31/25 23:32	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	<50.4	U	50.4		mg/Kg		03/27/25 15:35	03/31/25 23:32	1
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4		mg/Kg		03/27/25 15:35	03/31/25 23:32	1
Oil Range Organics (Over C28-C36)	<50.4	U	50.4		mg/Kg		03/27/25 15:35	03/31/25 23:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*106*		*70 - 130*	*03/27/25 15:35*	*03/31/25 23:32*	*1*
o-Terphenyl	*105*		*70 - 130*	*03/27/25 15:35*	*03/31/25 23:32*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1770**		49.6		mg/Kg			03/28/25 03:47	5

Client Sample ID: HA-22

Lab Sample ID: 890-7851-9
Matrix: Solid
Date Collected: 03/25/25 08:25
Date Received: 03/25/25 15:26
Sample Depth: 26

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		03/27/25 10:02	03/27/25 15:35	1
Toluene	<0.00202	U *-	0.00202		mg/Kg		03/27/25 10:02	03/27/25 15:35	1
Ethylbenzene	<0.00202	U *-	0.00202		mg/Kg		03/27/25 10:02	03/27/25 15:35	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		03/27/25 10:02	03/27/25 15:35	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		03/27/25 10:02	03/27/25 15:35	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		03/27/25 10:02	03/27/25 15:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*	*03/27/25 10:02*	*03/27/25 15:35*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*03/27/25 10:02*	*03/27/25 15:35*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Client Sample ID: HA-22

Lab Sample ID: 890-7851-9
Matrix: Solid
Date Collected: 03/25/25 08:25
Date Received: 03/25/25 15:26
Sample Depth: 26

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.1	U	50.1		mg/Kg			04/01/25 00:05	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	<50.1	U	50.1		mg/Kg		03/27/25 15:35	04/01/25 00:05	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1		mg/Kg		03/27/25 15:35	04/01/25 00:05	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1		mg/Kg		03/27/25 15:35	04/01/25 00:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*107*		*70 - 130*	*03/27/25 15:35*	*04/01/25 00:05*	*1*
o-Terphenyl	*105*		*70 - 130*	*03/27/25 15:35*	*04/01/25 00:05*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2120**		50.4		mg/Kg			03/28/25 03:56	5

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)										
890-7851-1	HA-22	113	88										
890-7851-1 MS	HA-22	109	92										
890-7851-1 MSD	HA-22	101	93										
890-7851-2	HA-22	109	90										
890-7851-3	HA-22	109	91										
890-7851-4	HA-22	107	89										
890-7851-5	HA-22	108	89										
890-7851-6	HA-22	110	91										
890-7851-7	HA-22	110	90										
890-7851-8	HA-22	111	90										
890-7851-9	HA-22	106	89										
LCS 880-106184/1-A	Lab Control Sample	107	92										
LCSD 880-106184/2-A	Lab Control Sample Dup	101	90										
MB 880-106184/5-A	Method Blank	103	85										

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)										
890-7851-1	HA-22	102	96										
890-7851-2	HA-22	103	98										
890-7851-3	HA-22	102	98										
890-7851-4	HA-22	101	96										
890-7851-5	HA-22	105	101										
890-7851-6	HA-22	104	103										
890-7851-7	HA-22	105	104										
890-7851-8	HA-22	106	105										
890-7851-9	HA-22	107	105										
LCS 880-106231/2-A	Lab Control Sample	129	140 S1+										
LCSD 880-106231/3-A	Lab Control Sample Dup	154 S1+	140 S1+										
MB 880-106231/1-A	Method Blank	113	107										

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-106184/5-A
Matrix: Solid
Analysis Batch: 106174

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106184

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 12:29	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 12:29	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 12:29	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		03/27/25 10:02	03/27/25 12:29	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 10:02	03/27/25 12:29	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		03/27/25 10:02	03/27/25 12:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*03/27/25 10:02*	*03/27/25 12:29*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*	*03/27/25 10:02*	*03/27/25 12:29*	*1*

Lab Sample ID: LCS 880-106184/1-A
Matrix: Solid
Analysis Batch: 106174

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106184

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.08525		mg/Kg		85	70 - 130		
Toluene			0.100	0.07751		mg/Kg		78	70 - 130		
Ethylbenzene			0.100	0.08190		mg/Kg		82	70 - 130		
m-Xylene & p-Xylene			0.200	0.1748		mg/Kg		87	70 - 130		
o-Xylene			0.100	0.08904		mg/Kg		89	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: LCSD 880-106184/2-A
Matrix: Solid
Analysis Batch: 106174

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106184

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.07121		mg/Kg		71	70 - 130	18	35
Toluene			0.100	0.06338	*-	mg/Kg		63	70 - 130	20	35
Ethylbenzene			0.100	0.06584	*-	mg/Kg		66	70 - 130	22	35
m-Xylene & p-Xylene			0.200	0.1391		mg/Kg		70	70 - 130	23	35
o-Xylene			0.100	0.07231		mg/Kg		72	70 - 130	21	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: 890-7851-1 MS
Matrix: Solid
Analysis Batch: 106174

Client Sample ID: HA-22
Prep Type: Total/NA
Prep Batch: 106184

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00198	U	0.101	0.09485		mg/Kg		94	70 - 130		
Toluene	<0.00198	U *-	0.101	0.08596		mg/Kg		85	70 - 130		

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 890-7851-1 MS
Matrix: Solid
Analysis Batch: 106174

Client Sample ID: HA-22
Prep Type: Total/NA
Prep Batch: 106184

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00198	U *-	0.101	0.09071		mg/Kg		90	70 - 130
m-Xylene & p-Xylene	<0.00397	U	0.201	0.1939		mg/Kg		96	70 - 130
o-Xylene	<0.00198	U	0.101	0.09724		mg/Kg		97	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: 890-7851-1 MSD
Matrix: Solid
Analysis Batch: 106174

Client Sample ID: HA-22
Prep Type: Total/NA
Prep Batch: 106184

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00198	U	0.100	0.09299		mg/Kg		93	70 - 130	2	35
Toluene	<0.00198	U *-	0.100	0.08433		mg/Kg		84	70 - 130	2	35
Ethylbenzene	<0.00198	U *-	0.100	0.08895		mg/Kg		89	70 - 130	2	35
m-Xylene & p-Xylene	<0.00397	U	0.200	0.1887		mg/Kg		94	70 - 130	3	35
o-Xylene	<0.00198	U	0.100	0.09484		mg/Kg		95	70 - 130	3	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-106231/1-A
Matrix: Solid
Analysis Batch: 106488

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106231

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		03/27/25 15:34	03/31/25 19:44	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/27/25 15:34	03/31/25 19:44	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/27/25 15:34	03/31/25 19:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*113*		*70 - 130*	*03/27/25 15:34*	*03/31/25 19:44*	*1*
o-Terphenyl	*107*		*70 - 130*	*03/27/25 15:34*	*03/31/25 19:44*	*1*

Lab Sample ID: LCS 880-106231/2-A
Matrix: Solid
Analysis Batch: 106488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106231

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1061		mg/Kg		106	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1200		mg/Kg		120	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 880-106231/2-A
Matrix: Solid
Analysis Batch: 106488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106231

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	129		70 - 130
o-Terphenyl	140	S1+	70 - 130

Lab Sample ID: LCSD 880-106231/3-A
Matrix: Solid
Analysis Batch: 106488

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106231

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1070		mg/Kg		107	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	1116		mg/Kg		112	70 - 130	7	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	154	S1+	70 - 130
o-Terphenyl	140	S1+	70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-106191/1-A
Matrix: Solid
Analysis Batch: 106228

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			03/28/25 15:19	1

Lab Sample ID: LCS 880-106191/2-A
Matrix: Solid
Analysis Batch: 106228

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	264.9		mg/Kg		106	90 - 110		

Lab Sample ID: LCSD 880-106191/3-A
Matrix: Solid
Analysis Batch: 106228

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	259.8		mg/Kg		104	90 - 110	2	20

Lab Sample ID: MB 880-106192/1-A
Matrix: Solid
Analysis Batch: 106229

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			03/28/25 02:42	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-106192/2-A
Matrix: Solid
Analysis Batch: 106229

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	245.2		mg/Kg		98	90 - 110		

Lab Sample ID: LCSD 880-106192/3-A
Matrix: Solid
Analysis Batch: 106229

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	246.3		mg/Kg		99	90 - 110	0	20

Lab Sample ID: 890-7851-6 MS
Matrix: Solid
Analysis Batch: 106229

Client Sample ID: HA-22
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	1630		1260	2945		mg/Kg		104	90 - 110		

Lab Sample ID: 890-7851-6 MSD
Matrix: Solid
Analysis Batch: 106229

Client Sample ID: HA-22
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1630		1260	2946		mg/Kg		105	90 - 110	0	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

GC VOA

Analysis Batch: 106174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7851-1	HA-22	Total/NA	Solid	8021B	106184
890-7851-2	HA-22	Total/NA	Solid	8021B	106184
890-7851-3	HA-22	Total/NA	Solid	8021B	106184
890-7851-4	HA-22	Total/NA	Solid	8021B	106184
890-7851-5	HA-22	Total/NA	Solid	8021B	106184
890-7851-6	HA-22	Total/NA	Solid	8021B	106184
890-7851-7	HA-22	Total/NA	Solid	8021B	106184
890-7851-8	HA-22	Total/NA	Solid	8021B	106184
890-7851-9	HA-22	Total/NA	Solid	8021B	106184
MB 880-106184/5-A	Method Blank	Total/NA	Solid	8021B	106184
LCS 880-106184/1-A	Lab Control Sample	Total/NA	Solid	8021B	106184
LCSD 880-106184/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	106184
890-7851-1 MS	HA-22	Total/NA	Solid	8021B	106184
890-7851-1 MSD	HA-22	Total/NA	Solid	8021B	106184

Prep Batch: 106184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7851-1	HA-22	Total/NA	Solid	5035	
890-7851-2	HA-22	Total/NA	Solid	5035	
890-7851-3	HA-22	Total/NA	Solid	5035	
890-7851-4	HA-22	Total/NA	Solid	5035	
890-7851-5	HA-22	Total/NA	Solid	5035	
890-7851-6	HA-22	Total/NA	Solid	5035	
890-7851-7	HA-22	Total/NA	Solid	5035	
890-7851-8	HA-22	Total/NA	Solid	5035	
890-7851-9	HA-22	Total/NA	Solid	5035	
MB 880-106184/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-106184/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-106184/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-7851-1 MS	HA-22	Total/NA	Solid	5035	
890-7851-1 MSD	HA-22	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 106231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7851-1	HA-22	Total/NA	Solid	8015NM Prep	
890-7851-2	HA-22	Total/NA	Solid	8015NM Prep	
890-7851-3	HA-22	Total/NA	Solid	8015NM Prep	
890-7851-4	HA-22	Total/NA	Solid	8015NM Prep	
890-7851-5	HA-22	Total/NA	Solid	8015NM Prep	
890-7851-6	HA-22	Total/NA	Solid	8015NM Prep	
890-7851-7	HA-22	Total/NA	Solid	8015NM Prep	
890-7851-8	HA-22	Total/NA	Solid	8015NM Prep	
890-7851-9	HA-22	Total/NA	Solid	8015NM Prep	
MB 880-106231/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-106231/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-106231/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

GC Semi VOA

Analysis Batch: 106488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7851-1	HA-22	Total/NA	Solid	8015B NM	106231
890-7851-2	HA-22	Total/NA	Solid	8015B NM	106231
890-7851-3	HA-22	Total/NA	Solid	8015B NM	106231
890-7851-4	HA-22	Total/NA	Solid	8015B NM	106231
890-7851-5	HA-22	Total/NA	Solid	8015B NM	106231
890-7851-6	HA-22	Total/NA	Solid	8015B NM	106231
890-7851-7	HA-22	Total/NA	Solid	8015B NM	106231
890-7851-8	HA-22	Total/NA	Solid	8015B NM	106231
890-7851-9	HA-22	Total/NA	Solid	8015B NM	106231
MB 880-106231/1-A	Method Blank	Total/NA	Solid	8015B NM	106231
LCS 880-106231/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	106231
LCSD 880-106231/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	106231

Analysis Batch: 106655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7851-1	HA-22	Total/NA	Solid	8015 NM	
890-7851-2	HA-22	Total/NA	Solid	8015 NM	
890-7851-3	HA-22	Total/NA	Solid	8015 NM	
890-7851-4	HA-22	Total/NA	Solid	8015 NM	
890-7851-5	HA-22	Total/NA	Solid	8015 NM	
890-7851-6	HA-22	Total/NA	Solid	8015 NM	
890-7851-7	HA-22	Total/NA	Solid	8015 NM	
890-7851-8	HA-22	Total/NA	Solid	8015 NM	
890-7851-9	HA-22	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 106191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7851-1	HA-22	Soluble	Solid	DI Leach	
890-7851-2	HA-22	Soluble	Solid	DI Leach	
890-7851-3	HA-22	Soluble	Solid	DI Leach	
890-7851-4	HA-22	Soluble	Solid	DI Leach	
890-7851-5	HA-22	Soluble	Solid	DI Leach	
MB 880-106191/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-106191/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-106191/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Leach Batch: 106192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7851-6	HA-22	Soluble	Solid	DI Leach	
890-7851-7	HA-22	Soluble	Solid	DI Leach	
890-7851-8	HA-22	Soluble	Solid	DI Leach	
890-7851-9	HA-22	Soluble	Solid	DI Leach	
MB 880-106192/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-106192/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-106192/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-7851-6 MS	HA-22	Soluble	Solid	DI Leach	
890-7851-6 MSD	HA-22	Soluble	Solid	DI Leach	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

HPLC/IC

Analysis Batch: 106228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7851-1	HA-22	Soluble	Solid	300.0	106191
890-7851-2	HA-22	Soluble	Solid	300.0	106191
890-7851-3	HA-22	Soluble	Solid	300.0	106191
890-7851-4	HA-22	Soluble	Solid	300.0	106191
890-7851-5	HA-22	Soluble	Solid	300.0	106191
MB 880-106191/1-A	Method Blank	Soluble	Solid	300.0	106191
LCS 880-106191/2-A	Lab Control Sample	Soluble	Solid	300.0	106191
LCSD 880-106191/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	106191

Analysis Batch: 106229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7851-6	HA-22	Soluble	Solid	300.0	106192
890-7851-7	HA-22	Soluble	Solid	300.0	106192
890-7851-8	HA-22	Soluble	Solid	300.0	106192
890-7851-9	HA-22	Soluble	Solid	300.0	106192
MB 880-106192/1-A	Method Blank	Soluble	Solid	300.0	106192
LCS 880-106192/2-A	Lab Control Sample	Soluble	Solid	300.0	106192
LCSD 880-106192/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	106192
890-7851-6 MS	HA-22	Soluble	Solid	300.0	106192
890-7851-6 MSD	HA-22	Soluble	Solid	300.0	106192

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Client Sample ID: HA-22
Date Collected: 03/25/25 07:45
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7851-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 12:51	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106655	03/31/25 21:39	AJ	EET MID
Total/NA	Prep	8015NM Prep			1.004 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	03/31/25 21:39	TKC	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		1			106228	03/28/25 17:48	CH	EET MID

Client Sample ID: HA-22
Date Collected: 03/25/25 07:50
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7851-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 13:11	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106655	03/31/25 21:55	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	03/31/25 21:55	TKC	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		1			106228	03/28/25 17:54	CH	EET MID

Client Sample ID: HA-22
Date Collected: 03/25/25 07:55
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7851-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 13:32	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106655	03/31/25 22:12	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.91 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	03/31/25 22:12	TKC	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		1			106228	03/28/25 17:59	CH	EET MID

Client Sample ID: HA-22
Date Collected: 03/25/25 08:00
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7851-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 13:52	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106655	03/31/25 22:28	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	03/31/25 22:28	TKC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Client Sample ID: HA-22
Date Collected: 03/25/25 08:00
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7851-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.95 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		1			106228	03/28/25 18:05	CH	EET MID

Client Sample ID: HA-22
Date Collected: 03/25/25 08:05
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7851-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 14:13	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106655	03/31/25 22:45	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	03/31/25 22:45	TKC	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	106191	03/27/25 10:47	SA	EET MID
Soluble	Analysis	300.0		5			106228	03/28/25 18:11	CH	EET MID

Client Sample ID: HA-22
Date Collected: 03/25/25 08:10
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7851-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 14:33	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106655	03/31/25 23:00	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	03/31/25 23:00	TKC	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		5			106229	03/28/25 03:10	CH	EET MID

Client Sample ID: HA-22
Date Collected: 03/25/25 08:15
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7851-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 14:54	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106655	03/31/25 23:17	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	03/31/25 23:17	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		5			106229	03/28/25 03:37	CH	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Job ID: 890-7851-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy, NM

Client Sample ID: HA-22
Lab Sample ID: 890-7851-8
Date Collected: 03/25/25 08:20
Matrix: Solid
Date Received: 03/25/25 15:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 15:14	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106655	03/31/25 23:32	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.93 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	03/31/25 23:32	TKC	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		5			106229	03/28/25 03:47	CH	EET MID

Client Sample ID: HA-22
Lab Sample ID: 890-7851-9
Date Collected: 03/25/25 08:25
Matrix: Solid
Date Received: 03/25/25 15:26

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	106184	03/27/25 10:02	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	106174	03/27/25 15:35	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106655	04/01/25 00:05	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	04/01/25 00:05	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		5			106229	03/28/25 03:56	CH	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400	06-30-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7851-1
SDG: Eddy, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-7851-1	HA-22	Solid	03/25/25 07:45	03/25/25 15:26	0.5
890-7851-2	HA-22	Solid	03/25/25 07:50	03/25/25 15:26	2
890-7851-3	HA-22	Solid	03/25/25 07:55	03/25/25 15:26	4
890-7851-4	HA-22	Solid	03/25/25 08:00	03/25/25 15:26	6
890-7851-5	HA-22	Solid	03/25/25 08:05	03/25/25 15:26	8
890-7851-6	HA-22	Solid	03/25/25 08:10	03/25/25 15:26	11
890-7851-7	HA-22	Solid	03/25/25 08:15	03/25/25 15:26	16
890-7851-8	HA-22	Solid	03/25/25 08:20	03/25/25 15:26	21
890-7851-9	HA-22	Solid	03/25/25 08:25	03/25/25 15:26	26

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Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Wo 890-7851 Chain of Custody

4/1/2025

www.xenco.com Page 1 of 1

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	15995	☑ Routine ☐ Rush	
~~Project Location:~~	~~Eddy, NM~~	~~Due Date:~~	5 Day TAT
~~Sampler's Name:~~	~~Gilbert Moreno~~	TAT starts the day received by the lab, if received by 4:30pm	
PO/WO #:			

SAMPLE RECEIPT	Temp Blank: (Yes) No	Wet Ice: (Yes) No	
Samples Received Intact:	(Yes) No	Thermometer ID:	IR#507
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	0.2
Total Containers:		Corrected Temperature:	0.0

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2S0_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	Pres. Code	Parameters: TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	Sample Comments
HA-22	S	3.25.25	7:45	0.5	Grab/	1		X	X	X			Incident Number
HA-22	S	3.25.25	7:50	2	Grab/	1		X	X	X			nAPP2431628896
HA-22	S	3.25.25	7:55	4	Grab/	1		X	X	X			
HA-22	S	3.25.25	8:00	6	Grab/	1		X	X	X			
HA-22	S	3.25.25	8:05	8	Grab/	1		X	X	X			
HA-22	S	3.25.25	8:10	11	Grab/	1		X	X	X			
HA-22	S	3.25.25	8:15	16	Grab/	1		X	X	X			
HA-22	S	3.25.25	8:20	21	Grab/	1		X	X	X			
HA-22	S	3.25.25	8:25	26	Grab/	1		X	X	X			

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed
Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of $85.00 will be applied to each project and a charge of $5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0			2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

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Received by OCD: 11/4/2025 7:21:25 AM

Released to Imaging: 11/6/2025 3:18:49 PM

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Teel, Brianna	Carrier Tracking No(s): N/A	COC No: 890-4779.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Brianna.Teel@et.eurofinsus.com	State of Origin: Texas	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-7851-1
Address: 1211 W. Florida Ave, ,	Due Date Requested: 3/31/2025			Preservation Codes: -
City: Midland	TAT Requested (days): N/A			
State, Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: Spud Muffin 31 30 #738H	Project #: 88001228			
Site: N/A	SSOW#: N/A			Other: N/A

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8021B/5035FP_Calc BTEX	300_ORGFM_28D/DI_LEACH Chloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep 8015 NM	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
HA-22 (890-7851-1)	3/25/25	07:45 Central	G	Solid			X	X	X	X	1	
HA-22 (890-7851-2)	3/25/25	07:50 Central	G	Solid			X	X	X	X	1	
HA-22 (890-7851-3)	3/25/25	07:55 Central	G	Solid			X	X	X	X	1	
HA-22 (890-7851-4)	3/25/25	08:00 Central	G	Solid			X	X	X	X	1	
HA-22 (890-7851-5)	3/25/25	08:05 Central	G	Solid			X	X	X	X	1	
HA-22 (890-7851-6)	3/25/25	08:10 Central	G	Solid			X	X	X	X	1	
HA-22 (890-7851-7)	3/25/25	08:15 Central	G	Solid			X	X	X	X	1	
HA-22 (890-7851-8)	3/25/25	08:20 Central	G	Solid			X	X	X	X	1	
HA-22 (890-7851-9)	3/25/25	08:25 Central	G	Solid			X	X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by: THP	Date/Time: 3/27/25 0800	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

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Received by OCD: 11/4/2025 7:21:25 AM
4/1/2025
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Released to Imaging: 11/6/2025 3:18:49 PM

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7851-1
SDG Number: Eddy, NM

Login Number: 7851
List Number: 1
Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

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	

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7851-1
SDG Number: Eddy, NM

Login Number: 7851
List Number: 2
Creator: Lee, Randell

List Source: Eurofins Midland
List Creation: 03/27/25 08:14 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Gilbert Moreno
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 4/1/2025 12:14:45 PM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy, NM

JOB NUMBER

890-7853-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

Released to Imaging: 11/6/2025 3:18:49 PM

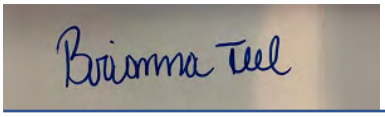
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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Authorized for release by
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Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Laboratory Job ID: 890-7853-1
SDG: Eddy, NM

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

Qualifiers

GC VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 890-7853-1
Project: Spud Muffin 31 30 #738H

Job ID: 890-7853-1 Eurofins Carlsbad

Job Narrative
890-7853-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 3/25/2025 3:26 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.0°C.

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: HA-23 (890-7853-1), HA-23 (890-7853-2), HA-23 (890-7853-3), HA-23 (890-7853-4), HA-23 (890-7853-5), HA-23 (890-7853-6), HA-23 (890-7853-7), HA-23 (890-7853-8) and HA-23 (890-7853-9).

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: Surrogate recovery for the following sample was outside control limits: (LCS 880-106290/2-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCSD 880-106231/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following sample was outside control limits: (LCS 880-106231/2-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.

HPLC/IC
Method 300_ORGFM_28D - Soluble: The Chloride matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-106193 and analytical batch 880-106370 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: HA-23 (890-7853-8) and HA-23 (890-7853-9).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

Client Sample ID: HA-23

Lab Sample ID: 890-7853-1
Matrix: Solid
Date Collected: 03/25/25 11:45
Date Received: 03/25/25 15:26
Sample Depth: 0.5

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		03/27/25 09:56	03/27/25 17:45	1
Toluene	**0.0172**		0.00201		mg/Kg		03/27/25 09:56	03/27/25 17:45	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		03/27/25 09:56	03/27/25 17:45	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		03/27/25 09:56	03/27/25 17:45	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		03/27/25 09:56	03/27/25 17:45	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		03/27/25 09:56	03/27/25 17:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*03/27/25 09:56*	*03/27/25 17:45*	*1*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*03/27/25 09:56*	*03/27/25 17:45*	*1*

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**224**		49.7		mg/Kg			04/01/25 01:26	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	<49.7	U	49.7		mg/Kg		03/27/25 15:35	04/01/25 01:26	1
Diesel Range Organics (Over C10-C28)	**224**		49.7		mg/Kg		03/27/25 15:35	04/01/25 01:26	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		03/27/25 15:35	04/01/25 01:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*99*		*70 - 130*	*03/27/25 15:35*	*04/01/25 01:26*	*1*
o-Terphenyl	*94*		*70 - 130*	*03/27/25 15:35*	*04/01/25 01:26*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1350**		49.5		mg/Kg			03/28/25 06:23	5

Client Sample ID: HA-23

Lab Sample ID: 890-7853-2
Matrix: Solid
Date Collected: 03/25/25 11:50
Date Received: 03/25/25 15:26
Sample Depth: 2

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 18:05	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 18:05	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 18:05	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		03/27/25 09:56	03/27/25 18:05	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 18:05	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		03/27/25 09:56	03/27/25 18:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*03/27/25 09:56*	*03/27/25 18:05*	*1*
1,4-Difluorobenzene (Surr)	*83*		*70 - 130*	*03/27/25 09:56*	*03/27/25 18:05*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

Client Sample ID: HA-23

Lab Sample ID: 890-7853-2
Matrix: Solid
Date Collected: 03/25/25 11:50
Date Received: 03/25/25 15:26
Sample Depth: 2

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.2	U	50.2		mg/Kg			04/01/25 01:42	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	<50.2	U	50.2		mg/Kg		03/27/25 15:35	04/01/25 01:42	1
Diesel Range Organics (Over C10-C28)	<50.2	U	50.2		mg/Kg		03/27/25 15:35	04/01/25 01:42	1
Oil Range Organics (Over C28-C36)	<50.2	U	50.2		mg/Kg		03/27/25 15:35	04/01/25 01:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*103*		*70 - 130*	*03/27/25 15:35*	*04/01/25 01:42*	*1*
o-Terphenyl	*100*		*70 - 130*	*03/27/25 15:35*	*04/01/25 01:42*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**223**		9.92		mg/Kg			03/28/25 06:32	1

Client Sample ID: HA-23

Lab Sample ID: 890-7853-3
Matrix: Solid
Date Collected: 03/25/25 11:55
Date Received: 03/25/25 15:26
Sample Depth: 4

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 18:25	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 18:25	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 18:25	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		03/27/25 09:56	03/27/25 18:25	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 18:25	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		03/27/25 09:56	03/27/25 18:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*03/27/25 09:56*	*03/27/25 18:25*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*03/27/25 09:56*	*03/27/25 18:25*	*1*

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.4	U	50.4		mg/Kg			04/01/25 01:59	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	<50.4	U	50.4		mg/Kg		03/27/25 15:35	04/01/25 01:59	1
Diesel Range Organics (Over C10-C28)	<50.4	U	50.4		mg/Kg		03/27/25 15:35	04/01/25 01:59	1
Oil Range Organics (Over C28-C36)	<50.4	U	50.4		mg/Kg		03/27/25 15:35	04/01/25 01:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*108*		*70 - 130*	*03/27/25 15:35*	*04/01/25 01:59*	*1*
o-Terphenyl	*103*		*70 - 130*	*03/27/25 15:35*	*04/01/25 01:59*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

Client Sample ID: HA-23
Date Collected: 03/25/25 11:55
Date Received: 03/25/25 15:26
Sample Depth: 4

Lab Sample ID: 890-7853-3
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	623		10.1		mg/Kg			03/28/25 06:41	1

Client Sample ID: HA-23
Date Collected: 03/25/25 12:00
Date Received: 03/25/25 15:26
Sample Depth: 6

Lab Sample ID: 890-7853-4
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		03/27/25 09:56	03/27/25 18:46	1
Toluene	<0.00198	U	0.00198		mg/Kg		03/27/25 09:56	03/27/25 18:46	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		03/27/25 09:56	03/27/25 18:46	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		03/27/25 09:56	03/27/25 18:46	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		03/27/25 09:56	03/27/25 18:46	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		03/27/25 09:56	03/27/25 18:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*03/27/25 09:56*	*03/27/25 18:46*	*1*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*03/27/25 09:56*	*03/27/25 18:46*	*1*

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			04/01/25 02:14	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	<50.0	U	50.0		mg/Kg		03/27/25 15:35	04/01/25 02:14	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/27/25 15:35	04/01/25 02:14	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/27/25 15:35	04/01/25 02:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*107*		*70 - 130*	*03/27/25 15:35*	*04/01/25 02:14*	*1*
o-Terphenyl	*102*		*70 - 130*	*03/27/25 15:35*	*04/01/25 02:14*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	655		9.94		mg/Kg			03/28/25 06:50	1

Client Sample ID: HA-23
Date Collected: 03/25/25 12:05
Date Received: 03/25/25 15:26
Sample Depth: 8

Lab Sample ID: 890-7853-5
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		03/27/25 09:56	03/27/25 19:06	1
Toluene	<0.00199	U	0.00199		mg/Kg		03/27/25 09:56	03/27/25 19:06	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		03/27/25 09:56	03/27/25 19:06	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		03/27/25 09:56	03/27/25 19:06	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

Client Sample ID: HA-23

Lab Sample ID: 890-7853-5
Matrix: Solid
Date Collected: 03/25/25 12:05
Date Received: 03/25/25 15:26
Sample Depth: 8

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00199	U	0.00199		mg/Kg		03/27/25 09:56	03/27/25 19:06	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		03/27/25 09:56	03/27/25 19:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*03/27/25 09:56*	*03/27/25 19:06*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*03/27/25 09:56*	*03/27/25 19:06*	*1*

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			04/01/25 02:31	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	<49.8	U	49.8		mg/Kg		03/27/25 15:35	04/01/25 02:31	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		03/27/25 15:35	04/01/25 02:31	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		03/27/25 15:35	04/01/25 02:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*03/27/25 15:35*	*04/01/25 02:31*	*1*
o-Terphenyl	*106*		*70 - 130*	*03/27/25 15:35*	*04/01/25 02:31*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1490**		49.8		mg/Kg			03/28/25 06:59	5

Client Sample ID: HA-23

Lab Sample ID: 890-7853-6
Matrix: Solid
Date Collected: 03/25/25 12:10
Date Received: 03/25/25 15:26
Sample Depth: 11

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 19:27	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 19:27	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 19:27	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		03/27/25 09:56	03/27/25 19:27	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 19:27	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		03/27/25 09:56	03/27/25 19:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*03/27/25 09:56*	*03/27/25 19:27*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*03/27/25 09:56*	*03/27/25 19:27*	*1*

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			03/28/25 20:43	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

Client Sample ID: HA-23

Lab Sample ID: 890-7853-6
Matrix: Solid
Date Collected: 03/25/25 12:10
Date Received: 03/25/25 15:26
Sample Depth: 11

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	<49.8	U	49.8		mg/Kg		03/28/25 07:02	03/28/25 20:43	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		03/28/25 07:02	03/28/25 20:43	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		03/28/25 07:02	03/28/25 20:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*86*		*70 - 130*	*03/28/25 07:02*	*03/28/25 20:43*	*1*
o-Terphenyl	*85*		*70 - 130*	*03/28/25 07:02*	*03/28/25 20:43*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1520**		49.9		mg/Kg			03/28/25 07:08	5

Client Sample ID: HA-23

Lab Sample ID: 890-7853-7
Matrix: Solid
Date Collected: 03/25/25 12:15
Date Received: 03/25/25 15:26
Sample Depth: 16

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 19:47	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 19:47	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 19:47	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		03/27/25 09:56	03/27/25 19:47	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 19:47	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		03/27/25 09:56	03/27/25 19:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*	*03/27/25 09:56*	*03/27/25 19:47*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*03/27/25 09:56*	*03/27/25 19:47*	*1*

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			03/28/25 20:59	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	<49.9	U	49.9		mg/Kg		03/28/25 07:02	03/28/25 20:59	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		03/28/25 07:02	03/28/25 20:59	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		03/28/25 07:02	03/28/25 20:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*88*		*70 - 130*	*03/28/25 07:02*	*03/28/25 20:59*	*1*
o-Terphenyl	*88*		*70 - 130*	*03/28/25 07:02*	*03/28/25 20:59*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2910**		49.9		mg/Kg			03/28/25 07:18	5

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

Client Sample ID: HA-23

Lab Sample ID: 890-7853-8
Matrix: Solid
Date Collected: 03/25/25 12:20
Date Received: 03/25/25 15:26
Sample Depth: 21

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		03/27/25 09:56	03/27/25 20:08	1
Toluene	<0.00198	U	0.00198		mg/Kg		03/27/25 09:56	03/27/25 20:08	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		03/27/25 09:56	03/27/25 20:08	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		03/27/25 09:56	03/27/25 20:08	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		03/27/25 09:56	03/27/25 20:08	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		03/27/25 09:56	03/27/25 20:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*	*03/27/25 09:56*	*03/27/25 20:08*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*03/27/25 09:56*	*03/27/25 20:08*	*1*

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			03/28/25 21:33	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	<49.8	U	49.8		mg/Kg		03/28/25 07:02	03/28/25 21:33	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		03/28/25 07:02	03/28/25 21:33	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		03/28/25 07:02	03/28/25 21:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*88*		*70 - 130*	*03/28/25 07:02*	*03/28/25 21:33*	*1*
o-Terphenyl	*89*		*70 - 130*	*03/28/25 07:02*	*03/28/25 21:33*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2780**		49.7		mg/Kg			03/31/25 18:58	5

Client Sample ID: HA-23

Lab Sample ID: 890-7853-9
Matrix: Solid
Date Collected: 03/25/25 12:25
Date Received: 03/25/25 15:26
Sample Depth: 26

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		03/27/25 09:56	03/27/25 20:28	1
Toluene	<0.00199	U	0.00199		mg/Kg		03/27/25 09:56	03/27/25 20:28	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		03/27/25 09:56	03/27/25 20:28	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		03/27/25 09:56	03/27/25 20:28	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		03/27/25 09:56	03/27/25 20:28	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		03/27/25 09:56	03/27/25 20:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*	*03/27/25 09:56*	*03/27/25 20:28*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*03/27/25 09:56*	*03/27/25 20:28*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

Client Sample ID: HA-23

Lab Sample ID: 890-7853-9
Matrix: Solid
Date Collected: 03/25/25 12:25
Date Received: 03/25/25 15:26
Sample Depth: 26

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			03/28/25 21:50	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	<49.9	U	49.9		mg/Kg		03/28/25 07:02	03/28/25 21:50	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		03/28/25 07:02	03/28/25 21:50	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		03/28/25 07:02	03/28/25 21:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*88*		*70 - 130*	*03/28/25 07:02*	*03/28/25 21:50*	*1*
o-Terphenyl	*84*		*70 - 130*	*03/28/25 07:02*	*03/28/25 21:50*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2210**		49.5		mg/Kg			03/31/25 19:05	5

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-7853-1	HA-23	97	86										
890-7853-2	HA-23	103	83										
890-7853-3	HA-23	100	91										
890-7853-4	HA-23	102	86										
890-7853-5	HA-23	101	102										
890-7853-6	HA-23	104	92										
890-7853-7	HA-23	111	96										
890-7853-8	HA-23	107	100										
890-7853-9	HA-23	112	97										
LCS 880-106180/1-A	Lab Control Sample	99	97										
LCSD 880-106180/2-A	Lab Control Sample Dup	101	94										
MB 880-106180/5-A	Method Blank	198 S1+	115										

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
		1CO1	OTPH1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
890-7853-1	HA-23	99	94										
890-7853-2	HA-23	103	100										
890-7853-3	HA-23	108	103										
890-7853-4	HA-23	107	102										
890-7853-5	HA-23	112	106										
890-7853-6	HA-23	86	85										
890-7853-7	HA-23	88	88										
890-7853-8	HA-23	88	89										
890-7853-9	HA-23	88	84										
LCS 880-106231/2-A	Lab Control Sample	129	140 S1+										
LCS 880-106290/2-A	Lab Control Sample	135 S1+	126										
LCSD 880-106231/3-A	Lab Control Sample Dup	154 S1+	140 S1+										
LCSD 880-106290/3-A	Lab Control Sample Dup	127	120										
MB 880-106231/1-A	Method Blank	113	107										
MB 880-106290/1-A	Method Blank	99	98										

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-106180/5-A
Matrix: Solid
Analysis Batch: 105975

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106180

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 12:01	1
Toluene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 12:01	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 12:01	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		03/27/25 09:56	03/27/25 12:01	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		03/27/25 09:56	03/27/25 12:01	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		03/27/25 09:56	03/27/25 12:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*198*	*S1+*	*70 - 130*	*03/27/25 09:56*	*03/27/25 12:01*	*1*
1,4-Difluorobenzene (Surr)	*115*		*70 - 130*	*03/27/25 09:56*	*03/27/25 12:01*	*1*

Lab Sample ID: LCS 880-106180/1-A
Matrix: Solid
Analysis Batch: 105975

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106180

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09242		mg/Kg		92	70 - 130		
Toluene			0.100	0.08500		mg/Kg		85	70 - 130		
Ethylbenzene			0.100	0.08979		mg/Kg		90	70 - 130		
m-Xylene & p-Xylene			0.200	0.1946		mg/Kg		97	70 - 130		
o-Xylene			0.100	0.09488		mg/Kg		95	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: LCSD 880-106180/2-A
Matrix: Solid
Analysis Batch: 105975

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106180

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09297		mg/Kg		93	70 - 130	1	35
Toluene			0.100	0.08537		mg/Kg		85	70 - 130	0	35
Ethylbenzene			0.100	0.09551		mg/Kg		96	70 - 130	6	35
m-Xylene & p-Xylene			0.200	0.2010		mg/Kg		101	70 - 130	3	35
o-Xylene			0.100	0.09596		mg/Kg		96	70 - 130	1	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-106231/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 106488 — **Prep Batch: 106231**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		03/27/25 15:34	03/31/25 19:44	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/27/25 15:34	03/31/25 19:44	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/27/25 15:34	03/31/25 19:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*113*		*70 - 130*	*03/27/25 15:34*	*03/31/25 19:44*	*1*
o-Terphenyl	*107*		*70 - 130*	*03/27/25 15:34*	*03/31/25 19:44*	*1*

Lab Sample ID: LCS 880-106231/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 106488 — **Prep Batch: 106231**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1061		mg/Kg		106	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1200		mg/Kg		120	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*129*		*70 - 130*
o-Terphenyl	*140*	*S1+*	*70 - 130*

Lab Sample ID: LCSD 880-106231/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 106488 — **Prep Batch: 106231**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1070		mg/Kg		107	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	1116		mg/Kg		112	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*154*	*S1+*	*70 - 130*
o-Terphenyl	*140*	*S1+*	*70 - 130*

Lab Sample ID: MB 880-106290/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 106360 — **Prep Batch: 106290**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		03/28/25 07:02	03/28/25 12:49	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		03/28/25 07:02	03/28/25 12:49	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		03/28/25 07:02	03/28/25 12:49	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 880-106290/1-A
Matrix: Solid
Analysis Batch: 106360

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 106290

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	99		70 - 130	03/28/25 07:02	03/28/25 12:49	1
o-Terphenyl	98		70 - 130	03/28/25 07:02	03/28/25 12:49	1

Lab Sample ID: LCS 880-106290/2-A
Matrix: Solid
Analysis Batch: 106360

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 106290

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	914.5		mg/Kg		91	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1014		mg/Kg		101	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	135	S1+	70 - 130
o-Terphenyl	126		70 - 130

Lab Sample ID: LCSD 880-106290/3-A
Matrix: Solid
Analysis Batch: 106360

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 106290

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	892.2		mg/Kg		89	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	1000	958.3		mg/Kg		96	70 - 130	6	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	127		70 - 130
o-Terphenyl	120		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-106192/1-A
Matrix: Solid
Analysis Batch: 106229

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			03/28/25 02:42	1

Lab Sample ID: LCS 880-106192/2-A
Matrix: Solid
Analysis Batch: 106229

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	245.2		mg/Kg		98	90 - 110

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-106192/3-A
Matrix: Solid
Analysis Batch: 106229

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	246.3		mg/Kg		99	90 - 110	0	20

Lab Sample ID: MB 880-106193/1-A
Matrix: Solid
Analysis Batch: 106370

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			03/31/25 15:58	1

Lab Sample ID: LCS 880-106193/2-A
Matrix: Solid
Analysis Batch: 106370

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	257.9		mg/Kg		103	90 - 110		

Lab Sample ID: LCSD 880-106193/3-A
Matrix: Solid
Analysis Batch: 106370

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	256.4		mg/Kg		103	90 - 110	1	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

GC VOA

Analysis Batch: 105975

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7853-1	HA-23	Total/NA	Solid	8021B	106180
890-7853-2	HA-23	Total/NA	Solid	8021B	106180
890-7853-3	HA-23	Total/NA	Solid	8021B	106180
890-7853-4	HA-23	Total/NA	Solid	8021B	106180
890-7853-5	HA-23	Total/NA	Solid	8021B	106180
890-7853-6	HA-23	Total/NA	Solid	8021B	106180
890-7853-7	HA-23	Total/NA	Solid	8021B	106180
890-7853-8	HA-23	Total/NA	Solid	8021B	106180
890-7853-9	HA-23	Total/NA	Solid	8021B	106180
MB 880-106180/5-A	Method Blank	Total/NA	Solid	8021B	106180
LCS 880-106180/1-A	Lab Control Sample	Total/NA	Solid	8021B	106180
LCSD 880-106180/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	106180

Prep Batch: 106180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7853-1	HA-23	Total/NA	Solid	5035	
890-7853-2	HA-23	Total/NA	Solid	5035	
890-7853-3	HA-23	Total/NA	Solid	5035	
890-7853-4	HA-23	Total/NA	Solid	5035	
890-7853-5	HA-23	Total/NA	Solid	5035	
890-7853-6	HA-23	Total/NA	Solid	5035	
890-7853-7	HA-23	Total/NA	Solid	5035	
890-7853-8	HA-23	Total/NA	Solid	5035	
890-7853-9	HA-23	Total/NA	Solid	5035	
MB 880-106180/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-106180/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-106180/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 106231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7853-1	HA-23	Total/NA	Solid	8015NM Prep	
890-7853-2	HA-23	Total/NA	Solid	8015NM Prep	
890-7853-3	HA-23	Total/NA	Solid	8015NM Prep	
890-7853-4	HA-23	Total/NA	Solid	8015NM Prep	
890-7853-5	HA-23	Total/NA	Solid	8015NM Prep	
MB 880-106231/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-106231/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-106231/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Prep Batch: 106290

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7853-6	HA-23	Total/NA	Solid	8015NM Prep	
890-7853-7	HA-23	Total/NA	Solid	8015NM Prep	
890-7853-8	HA-23	Total/NA	Solid	8015NM Prep	
890-7853-9	HA-23	Total/NA	Solid	8015NM Prep	
MB 880-106290/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-106290/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-106290/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

GC Semi VOA

Analysis Batch: 106360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7853-6	HA-23	Total/NA	Solid	8015B NM	106290
890-7853-7	HA-23	Total/NA	Solid	8015B NM	106290
890-7853-8	HA-23	Total/NA	Solid	8015B NM	106290
890-7853-9	HA-23	Total/NA	Solid	8015B NM	106290
MB 880-106290/1-A	Method Blank	Total/NA	Solid	8015B NM	106290
LCS 880-106290/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	106290
LCSD 880-106290/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	106290

Analysis Batch: 106488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7853-1	HA-23	Total/NA	Solid	8015B NM	106231
890-7853-2	HA-23	Total/NA	Solid	8015B NM	106231
890-7853-3	HA-23	Total/NA	Solid	8015B NM	106231
890-7853-4	HA-23	Total/NA	Solid	8015B NM	106231
890-7853-5	HA-23	Total/NA	Solid	8015B NM	106231
MB 880-106231/1-A	Method Blank	Total/NA	Solid	8015B NM	106231
LCS 880-106231/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	106231
LCSD 880-106231/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	106231

Analysis Batch: 106514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7853-1	HA-23	Total/NA	Solid	8015 NM	
890-7853-2	HA-23	Total/NA	Solid	8015 NM	
890-7853-3	HA-23	Total/NA	Solid	8015 NM	
890-7853-4	HA-23	Total/NA	Solid	8015 NM	
890-7853-5	HA-23	Total/NA	Solid	8015 NM	
890-7853-6	HA-23	Total/NA	Solid	8015 NM	
890-7853-7	HA-23	Total/NA	Solid	8015 NM	
890-7853-8	HA-23	Total/NA	Solid	8015 NM	
890-7853-9	HA-23	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 106192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7853-1	HA-23	Soluble	Solid	DI Leach	
890-7853-2	HA-23	Soluble	Solid	DI Leach	
890-7853-3	HA-23	Soluble	Solid	DI Leach	
890-7853-4	HA-23	Soluble	Solid	DI Leach	
890-7853-5	HA-23	Soluble	Solid	DI Leach	
890-7853-6	HA-23	Soluble	Solid	DI Leach	
890-7853-7	HA-23	Soluble	Solid	DI Leach	
MB 880-106192/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-106192/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-106192/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Leach Batch: 106193

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7853-8	HA-23	Soluble	Solid	DI Leach	
890-7853-9	HA-23	Soluble	Solid	DI Leach	
MB 880-106193/1-A	Method Blank	Soluble	Solid	DI Leach	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

HPLC/IC (Continued)

Leach Batch: 106193 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-106193/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-106193/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 106229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7853-1	HA-23	Soluble	Solid	300.0	106192
890-7853-2	HA-23	Soluble	Solid	300.0	106192
890-7853-3	HA-23	Soluble	Solid	300.0	106192
890-7853-4	HA-23	Soluble	Solid	300.0	106192
890-7853-5	HA-23	Soluble	Solid	300.0	106192
890-7853-6	HA-23	Soluble	Solid	300.0	106192
890-7853-7	HA-23	Soluble	Solid	300.0	106192
MB 880-106192/1-A	Method Blank	Soluble	Solid	300.0	106192
LCS 880-106192/2-A	Lab Control Sample	Soluble	Solid	300.0	106192
LCSD 880-106192/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	106192

Analysis Batch: 106370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-7853-8	HA-23	Soluble	Solid	300.0	106193
890-7853-9	HA-23	Soluble	Solid	300.0	106193
MB 880-106193/1-A	Method Blank	Soluble	Solid	300.0	106193
LCS 880-106193/2-A	Lab Control Sample	Soluble	Solid	300.0	106193
LCSD 880-106193/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	106193

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

Client Sample ID: HA-23
Date Collected: 03/25/25 11:45
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7853-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	106180	03/27/25 09:56	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	105975	03/27/25 17:45	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106514	04/01/25 01:26	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.07 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	04/01/25 01:26	TKC	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		5			106229	03/28/25 06:23	CH	EET MID

Client Sample ID: HA-23
Date Collected: 03/25/25 11:50
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7853-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	106180	03/27/25 09:56	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	105975	03/27/25 18:05	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106514	04/01/25 01:42	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.97 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	04/01/25 01:42	TKC	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		1			106229	03/28/25 06:32	CH	EET MID

Client Sample ID: HA-23
Date Collected: 03/25/25 11:55
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7853-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	106180	03/27/25 09:56	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	105975	03/27/25 18:25	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106514	04/01/25 01:59	AJ	EET MID
Total/NA	Prep	8015NM Prep			9.93 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	04/01/25 01:59	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		1			106229	03/28/25 06:41	CH	EET MID

Client Sample ID: HA-23
Date Collected: 03/25/25 12:00
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7853-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	106180	03/27/25 09:56	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	105975	03/27/25 18:46	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106514	04/01/25 02:14	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	04/01/25 02:14	TKC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

Client Sample ID: HA-23
Date Collected: 03/25/25 12:00
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7853-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.03 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		1			106229	03/28/25 06:50	CH	EET MID

Client Sample ID: HA-23
Date Collected: 03/25/25 12:05
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7853-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	106180	03/27/25 09:56	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	105975	03/27/25 19:06	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106514	04/01/25 02:31	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	106231	03/27/25 15:35	FC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106488	04/01/25 02:31	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		5			106229	03/28/25 06:59	CH	EET MID

Client Sample ID: HA-23
Date Collected: 03/25/25 12:10
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7853-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	106180	03/27/25 09:56	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	105975	03/27/25 19:27	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106514	03/28/25 20:43	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	106290	03/28/25 07:02	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106360	03/28/25 20:43	TKC	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		5			106229	03/28/25 07:08	CH	EET MID

Client Sample ID: HA-23
Date Collected: 03/25/25 12:15
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7853-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	106180	03/27/25 09:56	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	105975	03/27/25 19:47	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106514	03/28/25 20:59	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	106290	03/28/25 07:02	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106360	03/28/25 20:59	TKC	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	106192	03/27/25 10:49	SA	EET MID
Soluble	Analysis	300.0		5			106229	03/28/25 07:18	CH	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Job ID: 890-7853-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy, NM

Client Sample ID: HA-23
Lab Sample ID: 890-7853-8
Date Collected: 03/25/25 12:20
Matrix: Solid
Date Received: 03/25/25 15:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	106180	03/27/25 09:56	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	105975	03/27/25 20:08	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106514	03/28/25 21:33	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	106290	03/28/25 07:02	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106360	03/28/25 21:33	TKC	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	106193	03/27/25 10:51	SA	EET MID
Soluble	Analysis	300.0		5			106370	03/31/25 18:58	SMC	EET MID

Client Sample ID: HA-23
Lab Sample ID: 890-7853-9
Date Collected: 03/25/25 12:25
Matrix: Solid
Date Received: 03/25/25 15:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	106180	03/27/25 09:56	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	105975	03/27/25 20:28	MNR	EET MID
Total/NA	Analysis	8015 NM		1			106514	03/28/25 21:50	AJ	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	106290	03/28/25 07:02	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	106360	03/28/25 21:50	TKC	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	106193	03/27/25 10:51	SA	EET MID
Soluble	Analysis	300.0		5			106370	03/31/25 19:05	SMC	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 890-7853-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy, NM

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400	06-30-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
SDG: Eddy, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-7853-1	HA-23	Solid	03/25/25 11:45	03/25/25 15:26	0.5
890-7853-2	HA-23	Solid	03/25/25 11:50	03/25/25 15:26	2
890-7853-3	HA-23	Solid	03/25/25 11:55	03/25/25 15:26	4
890-7853-4	HA-23	Solid	03/25/25 12:00	03/25/25 15:26	6
890-7853-5	HA-23	Solid	03/25/25 12:05	03/25/25 15:26	8
890-7853-6	HA-23	Solid	03/25/25 12:10	03/25/25 15:26	11
890-7853-7	HA-23	Solid	03/25/25 12:15	03/25/25 15:26	16
890-7853-8	HA-23	Solid	03/25/25 12:20	03/25/25 15:26	21
890-7853-9	HA-23	Solid	03/25/25 12:25	03/25/25 15:26	26

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Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Wor

890-7853 Chain of Custody

4/1/2025

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

Program: UST/PST ☐ **PRP** ☐ **Brownfields** ☐ **RRC** ☐ **Superfund** ☐

State of Project:

Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐

Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Spud Muffin 31 30 #738H	**Turn Around**	
Project Number:	15995	☑ Routine ☐ Rush	
Project Location:	Eddy, NM	Due Date:	5 Day TAT
~~Sampler's Name:~~	Gilbert Moreno	TAT starts the day received by the lab, if received by 4:30pm	
~~PO/WO #:~~			

SAMPLE RECEIPT				
Temp Blank:	~~Yes~~ No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	TNuc#7	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	0.2	
Total Containers:		Corrected Temperature:	0.0	

Preservative Codes

None: NO | DI Water: H_2O
Cool: Cool | MeOH: Me
HCL: HC | HNO_3: HN
H_2S0_4: H_2 | NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	Sample Comments
HA-23	S	3.25.25	11:45	0.5	Grab/	1	X	X	X			Incident Number
HA-23	S	3.25.25	11:50	2	Grab/	1	X	X	X			nAPP2431628896
HA-23	S	3.25.25	11:55	4	Grab/	1	X	X	X			
HA-23	S	3.25.25	12:00	6	Grab/	1	X	X	X			
HA-23	S	3.25.25	12:05	8	Grab/	1	X	X	X			
HA-23	S	3.25.25	12:10	11	Grab/	1	X	X	X			
HA-23	S	3.25.25	12:15	16	Grab/	1	X	X	X			
HA-23	S	3.25.25	12:20	21	Grab/	1	X	X	X			
HA-23	S	3.25.25	12:25	26	Grab/	1	X	X	X			

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed — Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of $85.00 will be applied to each project and a charge of $5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		15:26 3/25			
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

Received by OCD: 11/4/2025 7:21:25 AM

Released to Imaging: 11/6/2025 3:18:49 PM

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Teel, Brianna	Carrier Tracking No(s): N/A	COC No: 890-4781.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Brianna.Teel@et.eurofinsus.com	State of Origin: Texas	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-7853-1
Address: 1211 W. Florida Ave, ,	Due Date Requested: 3/31/2025	Analysis Requested		Preservation Codes: -
City: Midland	TAT Requested (days): N/A			
State, Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: Spud Muffin 31 30 #738H	Project #: 88001228			
Site: N/A	SSOW#: N/A			Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8021B/5035FP_Calc BTEX	300_ORGFM_28D/DI_LEACH Chloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep 8015 NM	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
HA-23 (890-7853-1)	3/25/25	11:45 Central	G	Solid			X	X	X	X	1	
HA-23 (890-7853-2)	3/25/25	11:50 Central	G	Solid			X	X	X	X	1	
HA-23 (890-7853-3)	3/25/25	11:55 Central	G	Solid			X	X	X	X	1	
HA-23 (890-7853-4)	3/25/25	12:00 Central	G	Solid			X	X	X	X	1	
HA-23 (890-7853-5)	3/25/25	12:05 Central	G	Solid			X	X	X	X	1	
HA-23 (890-7853-6)	3/25/25	12:10 Central	G	Solid			X	X	X	X	1	
HA-23 (890-7853-7)	3/25/25	12:15 Central	G	Solid			X	X	X	X	1	
HA-23 (890-7853-8)	3/25/25	12:20 Central	G	Solid			X	X	X	X	1	
HA-23 (890-7853-9)	3/25/25	12:25 Central	G	Solid			X	X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by: TKR	Date/Time: 3/27/25 0800	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

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4/1/2025
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Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7853-1
SDG Number: Eddy, NM

Login Number: 7853
List Number: 1
Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

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	

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7853-1
SDG Number: Eddy, NM

Login Number: 7853
List Number: 2
Creator: Lee, Randell

List Source: Eurofins Midland
List Creation: 03/27/25 08:16 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Gilbert Moreno
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 9/15/2025 7:02:59 PM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy County, NM

JOB NUMBER

890-8786-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

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my EOL

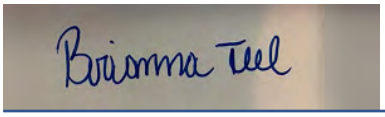
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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Authorized for release by
Brianna Teel, Project Manager
Brianna.Teel@et.eurofinsus.com
(432)704-5440

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Laboratory Job ID: 890-8786-1
SDG: Eddy County, NM

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 890-8786-1
Project: Spud Muffin 31 30 #738H

Job ID: 890-8786-1 Eurofins Carlsbad

Job Narrative
890-8786-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 9/11/2025 2:10 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 4.0°C.

GC VOA
Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-118752 and analytical batch 880-118666 was outside the upper control limits.

Method 8021B: Surrogate recovery for the following samples were outside control limits: BG-01 (890-8786-1), BG-01 (890-8786-2), BG-01 (890-8786-3), BG-01 (890-8786-5), BG-01 (890-8786-7), BG-01 (890-8786-8), BG-01 (890-8786-9), BG-01 (890-8786-10) and BG-01 (890-8786-13). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-118752 and analytical batch 880-118666 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.

Diesel Range Organics
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (LCS 880-118762/2-A) and (LCSD 880-118762/3-A). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Client Sample ID: BG-01

Lab Sample ID: 890-8786-1
Matrix: Solid
Date Collected: 09/10/25 09:00
Date Received: 09/11/25 14:10
Sample Depth: 0.5

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U F1	0.00200		mg/Kg		09/12/25 13:00	09/13/25 00:49	1
Toluene	<0.00200	U F1	0.00200		mg/Kg		09/12/25 13:00	09/13/25 00:49	1
Ethylbenzene	<0.00200	U F1	0.00200		mg/Kg		09/12/25 13:00	09/13/25 00:49	1
m-Xylene & p-Xylene	<0.00399	U F1	0.00399		mg/Kg		09/12/25 13:00	09/13/25 00:49	1
o-Xylene	**0.00279**	**F1**	0.00200		mg/Kg		09/12/25 13:00	09/13/25 00:49	1
Xylenes, Total	<0.00399	U F1	0.00399		mg/Kg		09/12/25 13:00	09/13/25 00:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*183*	*S1+*	*70 - 130*	*09/12/25 13:00*	*09/13/25 00:49*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*09/12/25 13:00*	*09/13/25 00:49*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			09/13/25 00:49	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			09/14/25 00:01	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	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/14/25 00:01	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/14/25 00:01	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/14/25 00:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*80*		*70 - 130*	*09/12/25 10:30*	*09/14/25 00:01*	*1*
o-Terphenyl	*75*		*70 - 130*	*09/12/25 10:30*	*09/14/25 00:01*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**98.6**		10.1		mg/Kg			09/12/25 16:18	1

Client Sample ID: BG-01

Lab Sample ID: 890-8786-2
Matrix: Solid
Date Collected: 09/10/25 09:02
Date Received: 09/11/25 14:10
Sample Depth: 1

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		09/12/25 13:00	09/13/25 01:10	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/12/25 13:00	09/13/25 01:10	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		09/12/25 13:00	09/13/25 01:10	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		09/12/25 13:00	09/13/25 01:10	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		09/12/25 13:00	09/13/25 01:10	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		09/12/25 13:00	09/13/25 01:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*131*	*S1+*	*70 - 130*	*09/12/25 13:00*	*09/13/25 01:10*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Client Sample ID: BG-01

Lab Sample ID: 890-8786-2
Matrix: Solid
Date Collected: 09/10/25 09:02
Date Received: 09/11/25 14:10
Sample Depth: 1

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*118*		*70 - 130*	*09/12/25 13:00*	*09/13/25 01:10*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			09/13/25 01:10	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.1	U	50.1		mg/Kg			09/14/25 00:17	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	<50.1	U	50.1		mg/Kg		09/12/25 10:30	09/14/25 00:17	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1		mg/Kg		09/12/25 10:30	09/14/25 00:17	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1		mg/Kg		09/12/25 10:30	09/14/25 00:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*77*		*70 - 130*	*09/12/25 10:30*	*09/14/25 00:17*	*1*
o-Terphenyl	*73*		*70 - 130*	*09/12/25 10:30*	*09/14/25 00:17*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**33.0**		10.0		mg/Kg			09/12/25 16:36	1

Client Sample ID: BG-01

Lab Sample ID: 890-8786-3
Matrix: Solid
Date Collected: 09/10/25 09:04
Date Received: 09/11/25 14:10
Sample Depth: 2

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/12/25 13:00	09/13/25 01:30	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/25 13:00	09/13/25 01:30	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/25 13:00	09/13/25 01:30	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/25 13:00	09/13/25 01:30	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/12/25 13:00	09/13/25 01:30	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/25 13:00	09/13/25 01:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*137*	*S1+*	*70 - 130*	*09/12/25 13:00*	*09/13/25 01:30*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*09/12/25 13:00*	*09/13/25 01:30*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			09/13/25 01:30	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.1	U	50.1		mg/Kg			09/13/25 18:45	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Client Sample ID: BG-01

Lab Sample ID: 890-8786-3
Matrix: Solid
Date Collected: 09/10/25 09:04
Date Received: 09/11/25 14:10
Sample Depth: 2

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	<50.1	U	50.1		mg/Kg		09/12/25 10:30	09/13/25 18:45	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1		mg/Kg		09/12/25 10:30	09/13/25 18:45	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1		mg/Kg		09/12/25 10:30	09/13/25 18:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*09/12/25 10:30*	*09/13/25 18:45*	*1*
o-Terphenyl	*101*		*70 - 130*	*09/12/25 10:30*	*09/13/25 18:45*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**151**		10.0		mg/Kg			09/12/25 16:42	1

Client Sample ID: BG-01

Lab Sample ID: 890-8786-4
Matrix: Solid
Date Collected: 09/10/25 09:06
Date Received: 09/11/25 14:10
Sample Depth: 3

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		09/12/25 13:00	09/13/25 01:51	1
Toluene	<0.00202	U	0.00202		mg/Kg		09/12/25 13:00	09/13/25 01:51	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		09/12/25 13:00	09/13/25 01:51	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		09/12/25 13:00	09/13/25 01:51	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		09/12/25 13:00	09/13/25 01:51	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		09/12/25 13:00	09/13/25 01:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*128*		*70 - 130*	*09/12/25 13:00*	*09/13/25 01:51*	*1*
1,4-Difluorobenzene (Surr)	*112*		*70 - 130*	*09/12/25 13:00*	*09/13/25 01:51*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404		mg/Kg			09/13/25 01:51	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			09/13/25 19:30	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	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 19:30	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 19:30	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 19:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*09/12/25 10:30*	*09/13/25 19:30*	*1*
o-Terphenyl	*103*		*70 - 130*	*09/12/25 10:30*	*09/13/25 19:30*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Client Sample ID: BG-01
Lab Sample ID: 890-8786-4
Date Collected: 09/10/25 09:06
Matrix: Solid
Date Received: 09/11/25 14:10
Sample Depth: 3

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	274		9.96		mg/Kg			09/12/25 16:47	1

Client Sample ID: BG-01
Lab Sample ID: 890-8786-5
Date Collected: 09/10/25 09:08
Matrix: Solid
Date Received: 09/11/25 14:10
Sample Depth: 4

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		09/12/25 13:00	09/13/25 02:11	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/25 13:00	09/13/25 02:11	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/25 13:00	09/13/25 02:11	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/25 13:00	09/13/25 02:11	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/25 13:00	09/13/25 02:11	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/25 13:00	09/13/25 02:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*187*	*S1+*	*70 - 130*	*09/12/25 13:00*	*09/13/25 02:11*	*1*
1,4-Difluorobenzene (Surr)	*121*		*70 - 130*	*09/12/25 13:00*	*09/13/25 02:11*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			09/13/25 02:11	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			09/13/25 19:45	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	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 19:45	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 19:45	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 19:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*99*		*70 - 130*	*09/12/25 10:30*	*09/13/25 19:45*	*1*
o-Terphenyl	*109*		*70 - 130*	*09/12/25 10:30*	*09/13/25 19:45*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	857		50.5		mg/Kg			09/12/25 16:53	5

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Client Sample ID: BG-01

Lab Sample ID: 890-8786-6
Matrix: Solid
Date Collected: 09/10/25 09:10
Date Received: 09/11/25 14:10
Sample Depth: 5

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/12/25 13:00	09/13/25 02:32	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/25 13:00	09/13/25 02:32	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/25 13:00	09/13/25 02:32	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		09/12/25 13:00	09/13/25 02:32	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/25 13:00	09/13/25 02:32	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		09/12/25 13:00	09/13/25 02:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*09/12/25 13:00*	*09/13/25 02:32*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*09/12/25 13:00*	*09/13/25 02:32*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			09/13/25 02:32	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.7	U	49.7		mg/Kg			09/13/25 20:00	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	<49.7	U	49.7		mg/Kg		09/12/25 10:30	09/13/25 20:00	1
Diesel Range Organics (Over C10-C28)	<49.7	U	49.7		mg/Kg		09/12/25 10:30	09/13/25 20:00	1
Oil Range Organics (Over C28-C36)	<49.7	U	49.7		mg/Kg		09/12/25 10:30	09/13/25 20:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*103*		*70 - 130*	*09/12/25 10:30*	*09/13/25 20:00*	*1*
o-Terphenyl	*114*		*70 - 130*	*09/12/25 10:30*	*09/13/25 20:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**987**		50.3		mg/Kg			09/12/25 16:59	5

Client Sample ID: BG-01

Lab Sample ID: 890-8786-7
Matrix: Solid
Date Collected: 09/10/25 09:12
Date Received: 09/11/25 14:10
Sample Depth: 6

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/12/25 13:00	09/13/25 02:52	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/25 13:00	09/13/25 02:52	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/25 13:00	09/13/25 02:52	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/25 13:00	09/13/25 02:52	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/12/25 13:00	09/13/25 02:52	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/25 13:00	09/13/25 02:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*131*	*S1+*	*70 - 130*	*09/12/25 13:00*	*09/13/25 02:52*	*1*

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Client Sample ID: BG-01

Lab Sample ID: 890-8786-7
Matrix: Solid
Date Collected: 09/10/25 09:12
Date Received: 09/11/25 14:10
Sample Depth: 6

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*112*		*70 - 130*	*09/12/25 13:00*	*09/13/25 02:52*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			09/13/25 02:52	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			09/13/25 20:15	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	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 20:15	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 20:15	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 20:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*101*		*70 - 130*	*09/12/25 10:30*	*09/13/25 20:15*	*1*
o-Terphenyl	*107*		*70 - 130*	*09/12/25 10:30*	*09/13/25 20:15*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1030**		49.5		mg/Kg			09/12/25 17:05	5

Client Sample ID: BG-01

Lab Sample ID: 890-8786-8
Matrix: Solid
Date Collected: 09/10/25 09:14
Date Received: 09/11/25 14:10
Sample Depth: 8

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		09/12/25 13:00	09/13/25 03:12	1
Toluene	<0.00202	U	0.00202		mg/Kg		09/12/25 13:00	09/13/25 03:12	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		09/12/25 13:00	09/13/25 03:12	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		09/12/25 13:00	09/13/25 03:12	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		09/12/25 13:00	09/13/25 03:12	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		09/12/25 13:00	09/13/25 03:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*152*	*S1+*	*70 - 130*	*09/12/25 13:00*	*09/13/25 03:12*	*1*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*	*09/12/25 13:00*	*09/13/25 03:12*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			09/13/25 03:12	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			09/13/25 20:30	1

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Client Sample ID: BG-01

Lab Sample ID: 890-8786-8
Matrix: Solid
Date Collected: 09/10/25 09:14
Date Received: 09/11/25 14:10
Sample Depth: 8

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	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 20:30	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 20:30	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 20:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*91*		*70 - 130*	*09/12/25 10:30*	*09/13/25 20:30*	*1*
o-Terphenyl	*101*		*70 - 130*	*09/12/25 10:30*	*09/13/25 20:30*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1130**		50.5		mg/Kg			09/12/25 17:11	5

Client Sample ID: BG-01

Lab Sample ID: 890-8786-9
Matrix: Solid
Date Collected: 09/10/25 09:16
Date Received: 09/11/25 14:10
Sample Depth: 12

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		09/12/25 13:00	09/13/25 03:33	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/25 13:00	09/13/25 03:33	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/25 13:00	09/13/25 03:33	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/25 13:00	09/13/25 03:33	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/25 13:00	09/13/25 03:33	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/25 13:00	09/13/25 03:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*159*	*S1+*	*70 - 130*	*09/12/25 13:00*	*09/13/25 03:33*	*1*
1,4-Difluorobenzene (Surr)	*120*		*70 - 130*	*09/12/25 13:00*	*09/13/25 03:33*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			09/13/25 03:33	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			09/13/25 20:45	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	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 20:45	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 20:45	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 20:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*99*		*70 - 130*	*09/12/25 10:30*	*09/13/25 20:45*	*1*
o-Terphenyl	*105*		*70 - 130*	*09/12/25 10:30*	*09/13/25 20:45*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Client Sample ID: BG-01
Lab Sample ID: 890-8786-9
Matrix: Solid
Date Collected: 09/10/25 09:16
Date Received: 09/11/25 14:10
Sample Depth: 12

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1140		49.6		mg/Kg			09/12/25 19:22	5

Client Sample ID: BG-01
Lab Sample ID: 890-8786-10
Matrix: Solid
Date Collected: 09/10/25 09:18
Date Received: 09/11/25 14:10
Sample Depth: 16

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		09/12/25 13:00	09/13/25 03:53	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/12/25 13:00	09/13/25 03:53	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		09/12/25 13:00	09/13/25 03:53	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		09/12/25 13:00	09/13/25 03:53	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		09/12/25 13:00	09/13/25 03:53	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		09/12/25 13:00	09/13/25 03:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*141*	*S1+*	*70 - 130*	*09/12/25 13:00*	*09/13/25 03:53*	*1*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*	*09/12/25 13:00*	*09/13/25 03:53*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			09/13/25 03:53	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			09/13/25 21:00	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	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 21:00	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 21:00	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 21:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*96*		*70 - 130*	*09/12/25 10:30*	*09/13/25 21:00*	*1*
o-Terphenyl	*102*		*70 - 130*	*09/12/25 10:30*	*09/13/25 21:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1580		50.5		mg/Kg			09/12/25 19:27	5

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Client Sample ID: BG-01

Lab Sample ID: 890-8786-11
Matrix: Solid
Date Collected: 09/10/25 09:20
Date Received: 09/11/25 14:10
Sample Depth: 20

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		09/12/25 13:00	09/13/25 05:43	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/12/25 13:00	09/13/25 05:43	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		09/12/25 13:00	09/13/25 05:43	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		09/12/25 13:00	09/13/25 05:43	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		09/12/25 13:00	09/13/25 05:43	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		09/12/25 13:00	09/13/25 05:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*09/12/25 13:00*	*09/13/25 05:43*	*1*
1,4-Difluorobenzene (Surr)	*115*		*70 - 130*	*09/12/25 13:00*	*09/13/25 05:43*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			09/13/25 05:43	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			09/13/25 21:15	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	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 21:15	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 21:15	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 21:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*93*		*70 - 130*	*09/12/25 10:30*	*09/13/25 21:15*	*1*
o-Terphenyl	*98*		*70 - 130*	*09/12/25 10:30*	*09/13/25 21:15*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1460**		50.3		mg/Kg			09/12/25 19:44	5

Client Sample ID: BG-01

Lab Sample ID: 890-8786-12
Matrix: Solid
Date Collected: 09/10/25 09:22
Date Received: 09/11/25 14:10
Sample Depth: 24

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/12/25 13:00	09/13/25 06:03	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/25 13:00	09/13/25 06:03	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/25 13:00	09/13/25 06:03	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/25 13:00	09/13/25 06:03	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/12/25 13:00	09/13/25 06:03	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/25 13:00	09/13/25 06:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*129*		*70 - 130*	*09/12/25 13:00*	*09/13/25 06:03*	*1*

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Client Sample ID: BG-01

Lab Sample ID: 890-8786-12
Matrix: Solid
Date Collected: 09/10/25 09:22
Date Received: 09/11/25 14:10
Sample Depth: 24

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*114*		*70 - 130*	*09/12/25 13:00*	*09/13/25 06:03*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			09/13/25 06:03	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			09/13/25 21:30	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	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 21:30	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 21:30	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 21:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*09/12/25 10:30*	*09/13/25 21:30*	*1*
o-Terphenyl	*96*		*70 - 130*	*09/12/25 10:30*	*09/13/25 21:30*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1540**		49.9		mg/Kg			09/12/25 19:50	5

Client Sample ID: BG-01

Lab Sample ID: 890-8786-13
Matrix: Solid
Date Collected: 09/10/25 09:24
Date Received: 09/11/25 14:10
Sample Depth: 28

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		09/12/25 13:00	09/13/25 06:24	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/25 13:00	09/13/25 06:24	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/25 13:00	09/13/25 06:24	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/25 13:00	09/13/25 06:24	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/25 13:00	09/13/25 06:24	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/25 13:00	09/13/25 06:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*139*	*S1+*	*70 - 130*	*09/12/25 13:00*	*09/13/25 06:24*	*1*
1,4-Difluorobenzene (Surr)	*122*		*70 - 130*	*09/12/25 13:00*	*09/13/25 06:24*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			09/13/25 06:24	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			09/13/25 22:00	1

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Client Sample ID: BG-01

Date Collected: 09/10/25 09:24
Date Received: 09/11/25 14:10
Sample Depth: 28

Lab Sample ID: 890-8786-13

Matrix: Solid

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	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 22:00	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 22:00	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 22:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*09/12/25 10:30*	*09/13/25 22:00*	*1*
o-Terphenyl	*102*		*70 - 130*	*09/12/25 10:30*	*09/13/25 22:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2530**		50.5		mg/Kg			09/12/25 19:56	5

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-8786-1	BG-01	183 S1+	104
890-8786-1 MS	BG-01	116	106
890-8786-1 MSD	BG-01	105	109
890-8786-2	BG-01	131 S1+	118
890-8786-3	BG-01	137 S1+	96
890-8786-4	BG-01	128	112
890-8786-5	BG-01	187 S1+	121
890-8786-6	BG-01	103	92
890-8786-7	BG-01	131 S1+	112
890-8786-8	BG-01	152 S1+	111
890-8786-9	BG-01	159 S1+	120
890-8786-10	BG-01	141 S1+	111
890-8786-11	BG-01	108	115
890-8786-12	BG-01	129	114
890-8786-13	BG-01	139 S1+	122
LCS 880-118752/1-A	Lab Control Sample	114	106
LCSD 880-118752/2-A	Lab Control Sample Dup	121	111
MB 880-118666/8	Method Blank	176 S1+	94
MB 880-118752/5-A	Method Blank	159 S1+	81

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-8786-1	BG-01	80	75
890-8786-2	BG-01	77	73
890-8786-3	BG-01	92	101
890-8786-3 MS	BG-01	91	102
890-8786-3 MSD	BG-01	92	99
890-8786-4	BG-01	97	103
890-8786-5	BG-01	99	109
890-8786-6	BG-01	103	114
890-8786-7	BG-01	101	107
890-8786-8	BG-01	91	101
890-8786-9	BG-01	99	105
890-8786-10	BG-01	96	102
890-8786-11	BG-01	93	98
890-8786-12	BG-01	90	96
890-8786-13	BG-01	97	102
LCS 880-118761/2-A	Lab Control Sample	120	114
LCS 880-118762/2-A	Lab Control Sample	118	134 S1+
LCSD 880-118761/3-A	Lab Control Sample Dup	116	110
LCSD 880-118762/3-A	Lab Control Sample Dup	118	136 S1+
MB 880-118761/1-A	Method Blank	79	80

Surrogate Summary

Client: Earth Systems Response and Restoration
Job ID: 890-8786-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County, NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		1CO1	OTPH1								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
MB 880-118762/1-A	Method Blank	90	96								

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-118666/8
Matrix: Solid
Analysis Batch: 118666

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg			09/12/25 12:43	1
Toluene	<0.00200	U	0.00200		mg/Kg			09/12/25 12:43	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg			09/12/25 12:43	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg			09/12/25 12:43	1
o-Xylene	<0.00200	U	0.00200		mg/Kg			09/12/25 12:43	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg			09/12/25 12:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*176*	*S1+*	*70 - 130*		*09/12/25 12:43*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*		*09/12/25 12:43*	*1*

Lab Sample ID: MB 880-118752/5-A
Matrix: Solid
Analysis Batch: 118666

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118752

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/12/25 13:00	09/13/25 00:21	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/25 13:00	09/13/25 00:21	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/25 13:00	09/13/25 00:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/12/25 13:00	09/13/25 00:21	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/25 13:00	09/13/25 00:21	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/12/25 13:00	09/13/25 00:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*159*	*S1+*	*70 - 130*	*09/12/25 13:00*	*09/13/25 00:21*	*1*
1,4-Difluorobenzene (Surr)	*81*		*70 - 130*	*09/12/25 13:00*	*09/13/25 00:21*	*1*

Lab Sample ID: LCS 880-118752/1-A
Matrix: Solid
Analysis Batch: 118666

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 118752

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09106		mg/Kg		91	70 - 130		
Toluene			0.100	0.08319		mg/Kg		83	70 - 130		
Ethylbenzene			0.100	0.07702		mg/Kg		77	70 - 130		
m-Xylene & p-Xylene			0.200	0.1891		mg/Kg		95	70 - 130		
o-Xylene			0.100	0.1011		mg/Kg		101	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*

Lab Sample ID: LCSD 880-118752/2-A
Matrix: Solid
Analysis Batch: 118666

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 118752

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1044		mg/Kg		104	70 - 130	14	35

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCSD 880-118752/2-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118666 — **Prep Batch: 118752**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.08053		mg/Kg		81	70 - 130	3	35
Ethylbenzene			0.100	0.09107		mg/Kg		91	70 - 130	17	35
m-Xylene & p-Xylene			0.200	0.2030		mg/Kg		101	70 - 130	7	35
o-Xylene			0.100	0.1122		mg/Kg		112	70 - 130	10	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*121*		*70 - 130*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*

Lab Sample ID: 890-8786-1 MS — **Client Sample ID: BG-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118666 — **Prep Batch: 118752**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U F1	0.100	0.07179		mg/Kg		72	70 - 130
Toluene	<0.00200	U F1	0.100	0.06221	F1	mg/Kg		62	70 - 130
Ethylbenzene	<0.00200	U F1	0.100	0.06025	F1	mg/Kg		60	70 - 130
m-Xylene & p-Xylene	<0.00399	U F1	0.200	0.1675		mg/Kg		84	70 - 130
o-Xylene	0.00279	F1	0.100	0.08519		mg/Kg		82	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*

Lab Sample ID: 890-8786-1 MSD — **Client Sample ID: BG-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118666 — **Prep Batch: 118752**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F1	0.100	0.06576	F1	mg/Kg		66	70 - 130	9	35
Toluene	<0.00200	U F1	0.100	0.05298	F1	mg/Kg		53	70 - 130	16	35
Ethylbenzene	<0.00200	U F1	0.100	0.04434	F1	mg/Kg		44	70 - 130	30	35
m-Xylene & p-Xylene	<0.00399	U F1	0.200	0.1192	F1	mg/Kg		60	70 - 130	34	35
o-Xylene	0.00279	F1	0.100	0.07130	F1	mg/Kg		69	70 - 130	18	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
1,4-Difluorobenzene (Surr)	*109*		*70 - 130*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-118761/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118836 — **Prep Batch: 118761**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 07:59	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 880-118761/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118836 — **Prep Batch: 118761**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 07:59	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 07:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*79*		*70 - 130*	*09/12/25 10:30*	*09/13/25 07:59*	*1*
o-Terphenyl	*80*		*70 - 130*	*09/12/25 10:30*	*09/13/25 07:59*	*1*

Lab Sample ID: LCS 880-118761/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118836 — **Prep Batch: 118761**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1046		mg/Kg		105	70 - 130
Diesel Range Organics (Over C10-C28)	1000	971.3		mg/Kg		97	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*120*		*70 - 130*
o-Terphenyl	*114*		*70 - 130*

Lab Sample ID: LCSD 880-118761/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118836 — **Prep Batch: 118761**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1021		mg/Kg		102	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	1000	949.7		mg/Kg		95	70 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*116*		*70 - 130*
o-Terphenyl	*110*		*70 - 130*

Lab Sample ID: MB 880-118762/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118839 — **Prep Batch: 118762**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 07:59	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 07:59	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 07:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*09/12/25 10:30*	*09/13/25 07:59*	*1*

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 880-118762/1-A
Matrix: Solid
Analysis Batch: 118839

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118762

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	96		70 - 130	09/12/25 10:30	09/13/25 07:59	1

Lab Sample ID: LCS 880-118762/2-A
Matrix: Solid
Analysis Batch: 118839

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 118762

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1030		mg/Kg		103	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	902.6		mg/Kg		90	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	118		70 - 130
o-Terphenyl	134	S1+	70 - 130

Lab Sample ID: LCSD 880-118762/3-A
Matrix: Solid
Analysis Batch: 118839

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 118762

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1026		mg/Kg		103	70 - 130	0	20
Diesel Range Organics (Over C10-C28)			1000	904.4		mg/Kg		90	70 - 130	0	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	118		70 - 130
o-Terphenyl	136	S1+	70 - 130

Lab Sample ID: 890-8786-3 MS
Matrix: Solid
Analysis Batch: 118839

Client Sample ID: BG-01
Prep Type: Total/NA
Prep Batch: 118762

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<50.1	U	999	920.7		mg/Kg		92	70 - 130		
Diesel Range Organics (Over C10-C28)	<50.1	U	999	827.0		mg/Kg		83	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	91		70 - 130
o-Terphenyl	102		70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 890-8786-3 MSD — **Client Sample ID: BG-01**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118839 — **Prep Batch: 118762**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.1	U	999	938.3		mg/Kg		94	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<50.1	U	999	820.8		mg/Kg		82	70 - 130	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*92*		*70 - 130*
o-Terphenyl	*99*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-118733/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 118760

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			09/12/25 14:15	1

Lab Sample ID: LCS 880-118733/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 118760

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	260.6		mg/Kg		104	90 - 110

Lab Sample ID: LCSD 880-118733/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 118760

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	259.7		mg/Kg		104	90 - 110	0	20

Lab Sample ID: MB 880-118806/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 118823

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			09/12/25 17:29	1

Lab Sample ID: LCS 880-118806/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 118823

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	249.4		mg/Kg		100	90 - 110

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-118806/3-A
Matrix: Solid
Analysis Batch: 118823

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	251.1		mg/Kg		100	90 - 110	1	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

GC VOA

Analysis Batch: 118666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8786-1	BG-01	Total/NA	Solid	8021B	118752
890-8786-2	BG-01	Total/NA	Solid	8021B	118752
890-8786-3	BG-01	Total/NA	Solid	8021B	118752
890-8786-4	BG-01	Total/NA	Solid	8021B	118752
890-8786-5	BG-01	Total/NA	Solid	8021B	118752
890-8786-6	BG-01	Total/NA	Solid	8021B	118752
890-8786-7	BG-01	Total/NA	Solid	8021B	118752
890-8786-8	BG-01	Total/NA	Solid	8021B	118752
890-8786-9	BG-01	Total/NA	Solid	8021B	118752
890-8786-10	BG-01	Total/NA	Solid	8021B	118752
890-8786-11	BG-01	Total/NA	Solid	8021B	118752
890-8786-12	BG-01	Total/NA	Solid	8021B	118752
890-8786-13	BG-01	Total/NA	Solid	8021B	118752
MB 880-118666/8	Method Blank	Total/NA	Solid	8021B	
MB 880-118752/5-A	Method Blank	Total/NA	Solid	8021B	118752
LCS 880-118752/1-A	Lab Control Sample	Total/NA	Solid	8021B	118752
LCSD 880-118752/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	118752
890-8786-1 MS	BG-01	Total/NA	Solid	8021B	118752
890-8786-1 MSD	BG-01	Total/NA	Solid	8021B	118752

Prep Batch: 118752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8786-1	BG-01	Total/NA	Solid	5035	
890-8786-2	BG-01	Total/NA	Solid	5035	
890-8786-3	BG-01	Total/NA	Solid	5035	
890-8786-4	BG-01	Total/NA	Solid	5035	
890-8786-5	BG-01	Total/NA	Solid	5035	
890-8786-6	BG-01	Total/NA	Solid	5035	
890-8786-7	BG-01	Total/NA	Solid	5035	
890-8786-8	BG-01	Total/NA	Solid	5035	
890-8786-9	BG-01	Total/NA	Solid	5035	
890-8786-10	BG-01	Total/NA	Solid	5035	
890-8786-11	BG-01	Total/NA	Solid	5035	
890-8786-12	BG-01	Total/NA	Solid	5035	
890-8786-13	BG-01	Total/NA	Solid	5035	
MB 880-118752/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-118752/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-118752/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-8786-1 MS	BG-01	Total/NA	Solid	5035	
890-8786-1 MSD	BG-01	Total/NA	Solid	5035	

Analysis Batch: 118978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8786-1	BG-01	Total/NA	Solid	Total BTEX	
890-8786-2	BG-01	Total/NA	Solid	Total BTEX	
890-8786-3	BG-01	Total/NA	Solid	Total BTEX	
890-8786-4	BG-01	Total/NA	Solid	Total BTEX	
890-8786-5	BG-01	Total/NA	Solid	Total BTEX	
890-8786-6	BG-01	Total/NA	Solid	Total BTEX	
890-8786-7	BG-01	Total/NA	Solid	Total BTEX	
890-8786-8	BG-01	Total/NA	Solid	Total BTEX	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

GC VOA (Continued)

Analysis Batch: 118978 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8786-9	BG-01	Total/NA	Solid	Total BTEX	
890-8786-10	BG-01	Total/NA	Solid	Total BTEX	
890-8786-11	BG-01	Total/NA	Solid	Total BTEX	
890-8786-12	BG-01	Total/NA	Solid	Total BTEX	
890-8786-13	BG-01	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 118761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8786-1	BG-01	Total/NA	Solid	8015NM Prep	
890-8786-2	BG-01	Total/NA	Solid	8015NM Prep	
MB 880-118761/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-118761/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-118761/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Prep Batch: 118762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8786-3	BG-01	Total/NA	Solid	8015NM Prep	
890-8786-4	BG-01	Total/NA	Solid	8015NM Prep	
890-8786-5	BG-01	Total/NA	Solid	8015NM Prep	
890-8786-6	BG-01	Total/NA	Solid	8015NM Prep	
890-8786-7	BG-01	Total/NA	Solid	8015NM Prep	
890-8786-8	BG-01	Total/NA	Solid	8015NM Prep	
890-8786-9	BG-01	Total/NA	Solid	8015NM Prep	
890-8786-10	BG-01	Total/NA	Solid	8015NM Prep	
890-8786-11	BG-01	Total/NA	Solid	8015NM Prep	
890-8786-12	BG-01	Total/NA	Solid	8015NM Prep	
890-8786-13	BG-01	Total/NA	Solid	8015NM Prep	
MB 880-118762/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-118762/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-118762/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-8786-3 MS	BG-01	Total/NA	Solid	8015NM Prep	
890-8786-3 MSD	BG-01	Total/NA	Solid	8015NM Prep	

Analysis Batch: 118836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8786-1	BG-01	Total/NA	Solid	8015B NM	118761
890-8786-2	BG-01	Total/NA	Solid	8015B NM	118761
MB 880-118761/1-A	Method Blank	Total/NA	Solid	8015B NM	118761
LCS 880-118761/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	118761
LCSD 880-118761/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	118761

Analysis Batch: 118839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8786-3	BG-01	Total/NA	Solid	8015B NM	118762
890-8786-4	BG-01	Total/NA	Solid	8015B NM	118762
890-8786-5	BG-01	Total/NA	Solid	8015B NM	118762
890-8786-6	BG-01	Total/NA	Solid	8015B NM	118762
890-8786-7	BG-01	Total/NA	Solid	8015B NM	118762
890-8786-8	BG-01	Total/NA	Solid	8015B NM	118762

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

GC Semi VOA (Continued)

Analysis Batch: 118839 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8786-9	BG-01	Total/NA	Solid	8015B NM	118762
890-8786-10	BG-01	Total/NA	Solid	8015B NM	118762
890-8786-11	BG-01	Total/NA	Solid	8015B NM	118762
890-8786-12	BG-01	Total/NA	Solid	8015B NM	118762
890-8786-13	BG-01	Total/NA	Solid	8015B NM	118762
MB 880-118762/1-A	Method Blank	Total/NA	Solid	8015B NM	118762
LCS 880-118762/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	118762
LCSD 880-118762/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	118762
890-8786-3 MS	BG-01	Total/NA	Solid	8015B NM	118762
890-8786-3 MSD	BG-01	Total/NA	Solid	8015B NM	118762

Analysis Batch: 118921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8786-1	BG-01	Total/NA	Solid	8015 NM	
890-8786-2	BG-01	Total/NA	Solid	8015 NM	
890-8786-3	BG-01	Total/NA	Solid	8015 NM	
890-8786-4	BG-01	Total/NA	Solid	8015 NM	
890-8786-5	BG-01	Total/NA	Solid	8015 NM	
890-8786-6	BG-01	Total/NA	Solid	8015 NM	
890-8786-7	BG-01	Total/NA	Solid	8015 NM	
890-8786-8	BG-01	Total/NA	Solid	8015 NM	
890-8786-9	BG-01	Total/NA	Solid	8015 NM	
890-8786-10	BG-01	Total/NA	Solid	8015 NM	
890-8786-11	BG-01	Total/NA	Solid	8015 NM	
890-8786-12	BG-01	Total/NA	Solid	8015 NM	
890-8786-13	BG-01	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 118733

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8786-1	BG-01	Soluble	Solid	DI Leach	
890-8786-2	BG-01	Soluble	Solid	DI Leach	
890-8786-3	BG-01	Soluble	Solid	DI Leach	
890-8786-4	BG-01	Soluble	Solid	DI Leach	
890-8786-5	BG-01	Soluble	Solid	DI Leach	
890-8786-6	BG-01	Soluble	Solid	DI Leach	
890-8786-7	BG-01	Soluble	Solid	DI Leach	
890-8786-8	BG-01	Soluble	Solid	DI Leach	
MB 880-118733/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-118733/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-118733/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 118760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8786-1	BG-01	Soluble	Solid	300.0	118733
890-8786-2	BG-01	Soluble	Solid	300.0	118733
890-8786-3	BG-01	Soluble	Solid	300.0	118733
890-8786-4	BG-01	Soluble	Solid	300.0	118733
890-8786-5	BG-01	Soluble	Solid	300.0	118733
890-8786-6	BG-01	Soluble	Solid	300.0	118733

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

HPLC/IC (Continued)

Analysis Batch: 118760 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8786-7	BG-01	Soluble	Solid	300.0	118733
890-8786-8	BG-01	Soluble	Solid	300.0	118733
MB 880-118733/1-A	Method Blank	Soluble	Solid	300.0	118733
LCS 880-118733/2-A	Lab Control Sample	Soluble	Solid	300.0	118733
LCSD 880-118733/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	118733

Leach Batch: 118806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8786-9	BG-01	Soluble	Solid	DI Leach	
890-8786-10	BG-01	Soluble	Solid	DI Leach	
890-8786-11	BG-01	Soluble	Solid	DI Leach	
890-8786-12	BG-01	Soluble	Solid	DI Leach	
890-8786-13	BG-01	Soluble	Solid	DI Leach	
MB 880-118806/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-118806/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-118806/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 118823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8786-9	BG-01	Soluble	Solid	300.0	118806
890-8786-10	BG-01	Soluble	Solid	300.0	118806
890-8786-11	BG-01	Soluble	Solid	300.0	118806
890-8786-12	BG-01	Soluble	Solid	300.0	118806
890-8786-13	BG-01	Soluble	Solid	300.0	118806
MB 880-118806/1-A	Method Blank	Soluble	Solid	300.0	118806
LCS 880-118806/2-A	Lab Control Sample	Soluble	Solid	300.0	118806
LCSD 880-118806/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	118806

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Client Sample ID: BG-01
Date Collected: 09/10/25 09:00
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8786-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	118752	09/12/25 13:00	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118666	09/13/25 00:49	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			118978	09/13/25 00:49	SA	EET MID
Total/NA	Analysis	8015 NM		1			118921	09/14/25 00:01	SA	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/14/25 00:01	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	118733	09/11/25 15:58	SI	EET MID
Soluble	Analysis	300.0		1			118760	09/12/25 16:18	CS	EET MID

Client Sample ID: BG-01
Date Collected: 09/10/25 09:02
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8786-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	118752	09/12/25 13:00	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118666	09/13/25 01:10	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			118978	09/13/25 01:10	SA	EET MID
Total/NA	Analysis	8015 NM		1			118921	09/14/25 00:17	SA	EET MID
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/14/25 00:17	TKC	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	118733	09/11/25 15:58	SI	EET MID
Soluble	Analysis	300.0		1			118760	09/12/25 16:36	CS	EET MID

Client Sample ID: BG-01
Date Collected: 09/10/25 09:04
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8786-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	118752	09/12/25 13:00	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118666	09/13/25 01:30	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			118978	09/13/25 01:30	SA	EET MID
Total/NA	Analysis	8015 NM		1			118921	09/13/25 18:45	SA	EET MID
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	118762	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118839	09/13/25 18:45	TKC	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	118733	09/11/25 15:58	SI	EET MID
Soluble	Analysis	300.0		1			118760	09/12/25 16:42	CS	EET MID

Client Sample ID: BG-01
Date Collected: 09/10/25 09:06
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8786-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	118752	09/12/25 13:00	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118666	09/13/25 01:51	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			118978	09/13/25 01:51	SA	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Job ID: 890-8786-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County, NM

Client Sample ID: BG-01
Lab Sample ID: 890-8786-4
Date Collected: 09/10/25 09:06
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			118921	09/13/25 19:30	SA	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	118762	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118839	09/13/25 19:30	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	118733	09/11/25 15:58	SI	EET MID
Soluble	Analysis	300.0		1			118760	09/12/25 16:47	CS	EET MID

Client Sample ID: BG-01
Lab Sample ID: 890-8786-5
Date Collected: 09/10/25 09:08
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	118752	09/12/25 13:00	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118666	09/13/25 02:11	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			118978	09/13/25 02:11	SA	EET MID
Total/NA	Analysis	8015 NM		1			118921	09/13/25 19:45	SA	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	118762	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118839	09/13/25 19:45	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	118733	09/11/25 15:58	SI	EET MID
Soluble	Analysis	300.0		5			118760	09/12/25 16:53	CS	EET MID

Client Sample ID: BG-01
Lab Sample ID: 890-8786-6
Date Collected: 09/10/25 09:10
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	118752	09/12/25 13:00	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118666	09/13/25 02:32	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			118978	09/13/25 02:32	SA	EET MID
Total/NA	Analysis	8015 NM		1			118921	09/13/25 20:00	SA	EET MID
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	118762	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118839	09/13/25 20:00	TKC	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	118733	09/11/25 15:58	SI	EET MID
Soluble	Analysis	300.0		5			118760	09/12/25 16:59	CS	EET MID

Client Sample ID: BG-01
Lab Sample ID: 890-8786-7
Date Collected: 09/10/25 09:12
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	118752	09/12/25 13:00	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118666	09/13/25 02:52	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			118978	09/13/25 02:52	SA	EET MID
Total/NA	Analysis	8015 NM		1			118921	09/13/25 20:15	SA	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	118762	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118839	09/13/25 20:15	TKC	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Client Sample ID: BG-01
Date Collected: 09/10/25 09:12
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8786-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.05 g	50 mL	118733	09/11/25 15:58	SI	EET MID
Soluble	Analysis	300.0		5			118760	09/12/25 17:05	CS	EET MID

Client Sample ID: BG-01
Date Collected: 09/10/25 09:14
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8786-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	118752	09/12/25 13:00	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118666	09/13/25 03:12	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			118978	09/13/25 03:12	SA	EET MID
Total/NA	Analysis	8015 NM		1			118921	09/13/25 20:30	SA	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	118762	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118839	09/13/25 20:30	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	118733	09/11/25 15:58	SI	EET MID
Soluble	Analysis	300.0		5			118760	09/12/25 17:11	CS	EET MID

Client Sample ID: BG-01
Date Collected: 09/10/25 09:16
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8786-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	118752	09/12/25 13:00	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118666	09/13/25 03:33	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			118978	09/13/25 03:33	SA	EET MID
Total/NA	Analysis	8015 NM		1			118921	09/13/25 20:45	SA	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	118762	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118839	09/13/25 20:45	TKC	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	118806	09/12/25 16:10	SI	EET MID
Soluble	Analysis	300.0		5	10 mL	10 mL	118823	09/12/25 19:22	CS	EET MID

Client Sample ID: BG-01
Date Collected: 09/10/25 09:18
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8786-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	118752	09/12/25 13:00	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118666	09/13/25 03:53	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			118978	09/13/25 03:53	SA	EET MID
Total/NA	Analysis	8015 NM		1			118921	09/13/25 21:00	SA	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	118762	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118839	09/13/25 21:00	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	118806	09/12/25 16:10	SI	EET MID
Soluble	Analysis	300.0		5	10 mL	10 mL	118823	09/12/25 19:27	CS	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Job ID: 890-8786-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County, NM

Client Sample ID: BG-01
Lab Sample ID: 890-8786-11
Date Collected: 09/10/25 09:20
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	118752	09/12/25 13:00	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118666	09/13/25 05:43	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			118978	09/13/25 05:43	SA	EET MID
Total/NA	Analysis	8015 NM		1			118921	09/13/25 21:15	SA	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	118762	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118839	09/13/25 21:15	TKC	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	118806	09/12/25 16:10	SI	EET MID
Soluble	Analysis	300.0		5	10 mL	10 mL	118823	09/12/25 19:44	CS	EET MID

Client Sample ID: BG-01
Lab Sample ID: 890-8786-12
Date Collected: 09/10/25 09:22
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	118752	09/12/25 13:00	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118666	09/13/25 06:03	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			118978	09/13/25 06:03	SA	EET MID
Total/NA	Analysis	8015 NM		1			118921	09/13/25 21:30	SA	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	118762	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118839	09/13/25 21:30	TKC	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	118806	09/12/25 16:10	SI	EET MID
Soluble	Analysis	300.0		5	10 mL	10 mL	118823	09/12/25 19:50	CS	EET MID

Client Sample ID: BG-01
Lab Sample ID: 890-8786-13
Date Collected: 09/10/25 09:24
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	118752	09/12/25 13:00	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118666	09/13/25 06:24	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			118978	09/13/25 06:24	SA	EET MID
Total/NA	Analysis	8015 NM		1			118921	09/13/25 22:00	SA	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	118762	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118839	09/13/25 22:00	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	118806	09/12/25 16:10	SI	EET MID
Soluble	Analysis	300.0		5	10 mL	10 mL	118823	09/12/25 19:56	CS	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 890-8786-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County, NM

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400	06-30-26

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8786-1
SDG: Eddy County, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-8786-1	BG-01	Solid	09/10/25 09:00	09/11/25 14:10	0.5
890-8786-2	BG-01	Solid	09/10/25 09:02	09/11/25 14:10	1
890-8786-3	BG-01	Solid	09/10/25 09:04	09/11/25 14:10	2
890-8786-4	BG-01	Solid	09/10/25 09:06	09/11/25 14:10	3
890-8786-5	BG-01	Solid	09/10/25 09:08	09/11/25 14:10	4
890-8786-6	BG-01	Solid	09/10/25 09:10	09/11/25 14:10	5
890-8786-7	BG-01	Solid	09/10/25 09:12	09/11/25 14:10	6
890-8786-8	BG-01	Solid	09/10/25 09:14	09/11/25 14:10	8
890-8786-9	BG-01	Solid	09/10/25 09:16	09/11/25 14:10	12
890-8786-10	BG-01	Solid	09/10/25 09:18	09/11/25 14:10	16
890-8786-11	BG-01	Solid	09/10/25 09:20	09/11/25 14:10	20
890-8786-12	BG-01	Solid	09/10/25 09:22	09/11/25 14:10	24
890-8786-13	BG-01	Solid	09/10/25 09:24	09/11/25 14:10	28

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EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

890-8786 Chain of Custody

www.xenco.com Page 1 of 2

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

Program: UST/PST ☐ **PRP** ☐ **Brownfields** ☐ **RRC** ☐ **Superfund** ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	15995	☑ Routine ☐ Rush	
Project Location:	Eddy County, NM	Due Date:	Routine TAT
Sampler's Name:	Gilbert Moreno, Santiago Giron	TAT starts the day received by the lab, if received by 4:30pm	
CC/WO #:	21441869		

SAMPLE RECEIPT				
Temp Blank:	Yes (No)	Wet Ice:	Yes (No)	
Samples Received Intact:	(Yes) No	Thermometer ID:	TM0009	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	4.2	
Total Containers:		Corrected Temperature:	4.0	

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2SO_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	Sample Comments
BG-01	S	9.10.25	9:00	0.5	Grab/	1	X	X	X			Incident Number
BG-01	S	9.10.25	9:02	1	Grab/	1	X	X	X			nAPP2431628896
BG-01	S	9.10.25	9:04	2	Grab/	1	X	X	X			
BG-01	S	9.10.25	9:06	3	Grab/	1	X	X	X			
BG-01	S	9.10.25	9:08	4	Grab/	1	X	X	X			
BG-01	S	9.10.25	9:10	5	Grab/	1	X	X	X			
BG-01	S	9.10.25	9:12	6	Grab/	1	X	X	X			
BG-01	S	9.10.25	9:14	8	Grab/	1	X	X	X			
BG-01	S	9.10.25	9:16	12	Grab/	1	X	X	X			

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed
Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of $85.00 will be applied to each project and a charge of $5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0	Burns	9/11 14:10	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

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Received by OCD: 11/4/2025 7:21:25 AM

Released to Imaging: 11/6/2025 3:18:49 PM

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9/15/2025

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Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: _____

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Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

Program: UST/PST ☐ **PRP** ☐ **Brownfields** ☐ **RRC** ☐ **Superfund** ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Spud Muffin 31 30 #738H	**Turn Around**	
Project Number:	15995	☑ Routine ☐ Rush	
Project Location:	Eddy County, NM	Due Date:	Routine TAT
Sampler's Name:	Gilbert Moreno, Santiago Giron	TAT starts the day received by the lab, if received by 4:30pm	
CC/WO #:	21441869		

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Samples Received Intact:	(Yes) No	Thermometer ID:	IR#6
~~Cooler Custody Seals:~~	~~Yes No~~ (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	4.2
Total Containers:		Corrected Temperature:	4.0

Preservative Codes

None: NO | DI Water: H_2O
Cool: Cool | MeOH: Me
HCL: HC | HNO_3: HN
H_2S0_4: H_2 | NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	Sample Comments
BG-01	S	9.10.25	9:18	16	Grab/	1	X	X	X			Incident Number
BG-01	S	9.10.25	9:20	20	Grab/	1	X	X	X			nAPP2431628896
BG-01	S	9.10.25	9:22	24	Grab/	1	X	X	X			
BG-01	S	9.10.25	9:24	28	Grab/	1	X	X	X			

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed
Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of $86.00 will be applied to each project and a charge of $5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0			2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

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Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Teel, Brianna	Carrier Tracking No(s): N/A	COC No: 890-5860.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Brianna.Teel@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 1 of 2
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-8786-1
Address: 1211 W. Florida Ave, ,	Due Date Requested: 9/17/2025			Preservation Codes: -
City: Midland	TAT Requested (days): N/A			
State, Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: spud muffin 31 30 #738H	Project #: 88001228			
Site: N/A	SSOW#: N/A			Other: N/A

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total_BTEX_GCV	8021B/5035FP_CalcBTEX	300_ORGFM_28D/DI_LEACHChloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep8015 NM	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
BG-01 (890-8786-1)	9/10/25	09:00 Mountain	G	Solid			X	X	X	X	X	1	
BG-01 (890-8786-2)	9/10/25	09:02 Mountain	G	Solid			X	X	X	X	X	1	
BG-01 (890-8786-3)	9/10/25	09:04 Mountain	G	Solid			X	X	X	X	X	1	
BG-01 (890-8786-4)	9/10/25	09:06 Mountain	G	Solid			X	X	X	X	X	1	
BG-01 (890-8786-5)	9/10/25	09:08 Mountain	G	Solid			X	X	X	X	X	1	
BG-01 (890-8786-6)	9/10/25	09:10 Mountain	G	Solid			X	X	X	X	X	1	
BG-01 (890-8786-7)	9/10/25	09:12 Mountain	G	Solid			X	X	X	X	X	1	
BG-01 (890-8786-8)	9/10/25	09:14 Mountain	G	Solid			X	X	X	X	X	1	
BG-01 (890-8786-9)	9/10/25	09:16 Mountain	G	Solid			X	X	X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

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Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Teel, Brianna	Carrier Tracking No(s): N/A	COC No: 890-5860.2
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Brianna.Teel@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 2 of 2
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-8786-1
Address: 1211 W. Florida Ave, ,	Due Date Requested: 9/17/2025			
City: Midland	TAT Requested (days): N/A			
State, Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: spud muffin 31 30 #738H	Project #: 88001228			
Site: N/A	SSOW#: N/A			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total_BTEX_GCV	8021B/5035FP_CalcBTEX	300_ORGFM_28D/DI_LEACHChloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep8015 NM	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
BG-01 (890-8786-10)	9/10/25	09:18 Mountain	G	Solid			X	X	X	X	X	1	
BG-01 (890-8786-11)	9/10/25	09:20 Mountain	G	Solid			X	X	X	X	X	1	
BG-01 (890-8786-12)	9/10/25	09:22 Mountain	G	Solid			X	X	X	X	X	1	
BG-01 (890-8786-13)	9/10/25	09:24 Mountain	G	Solid			X	X	X	X	X	1	

Preservation Codes: -

Other: N/A

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	9/11 1630				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 9/12/25 800	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

Received by OCD: 11/4/2025 7:21:25 AM
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Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-8786-1
SDG Number: Eddy County, NM

Login Number: 8786
List Number: 1
Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

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	

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-8786-1
SDG Number: Eddy County, NM

Login Number: 8786
List Number: 2
Creator: Laing, Edmundo

List Source: Eurofins Midland
List Creation: 09/12/25 10:07 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Gilbert Moreno
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 9/16/2025 9:39:00 AM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy County, NM

JOB NUMBER

890-8784-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

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my EOL

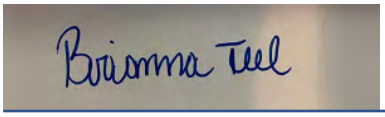
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
9/16/2025 9:39:00 AM

Authorized for release by
Brianna Teel, Project Manager
Brianna.Teel@et.eurofinsus.com
(432)704-5440

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Laboratory Job ID: 890-8784-1
SDG: Eddy County, NM

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Definitions/Glossary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Qualifiers

GC VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 890-8784-1
Project: Spud Muffin 31 30 #738H

Job ID: 890-8784-1 Eurofins Carlsbad

Job Narrative
890-8784-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 9/11/2025 2:10 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 4.0°C.

GC VOA
Method 8021B: Surrogate recovery for the following sample was outside control limits: (CCV 880-118741/33). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-118748 and analytical batch 880-118741 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: Surrogate recovery for the following samples were outside control limits: (LCS 880-118748/1-A) and (LCSD 880-118748/2-A). Evidence of matrix interferences is not obvious.

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-118748 and analytical batch 880-118741 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.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Client Sample ID: BG - 02

Lab Sample ID: 890-8784-1
Matrix: Solid
Date Collected: 09/10/25 10:00
Date Received: 09/11/25 14:10
Sample Depth: 0.5

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 18:18	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 18:18	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 18:18	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		09/12/25 09:58	09/12/25 18:18	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 18:18	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		09/12/25 09:58	09/12/25 18:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*70 - 130*	*09/12/25 09:58*	*09/12/25 18:18*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*09/12/25 09:58*	*09/12/25 18:18*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			09/12/25 18:18	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			09/13/25 20:00	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	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 20:00	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 20:00	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 20:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*73*		*70 - 130*	*09/12/25 10:30*	*09/13/25 20:00*	*1*
o-Terphenyl	*71*		*70 - 130*	*09/12/25 10:30*	*09/13/25 20:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**17.2**		10.1		mg/Kg			09/12/25 12:11	1

Client Sample ID: BG - 02

Lab Sample ID: 890-8784-2
Matrix: Solid
Date Collected: 09/10/25 10:02
Date Received: 09/11/25 14:10
Sample Depth: 1

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 18:39	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 18:39	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 18:39	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/25 09:58	09/12/25 18:39	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 18:39	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/25 09:58	09/12/25 18:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*09/12/25 09:58*	*09/12/25 18:39*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Client Sample ID: BG - 02

Lab Sample ID: 890-8784-2
Matrix: Solid
Date Collected: 09/10/25 10:02
Date Received: 09/11/25 14:10
Sample Depth: 1

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*09/12/25 09:58*	*09/12/25 18:39*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			09/12/25 18:39	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			09/13/25 20:15	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	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 20:15	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 20:15	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 20:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*74*		*70 - 130*	*09/12/25 10:30*	*09/13/25 20:15*	*1*
o-Terphenyl	*70*		*70 - 130*	*09/12/25 10:30*	*09/13/25 20:15*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**21.8**		10.1		mg/Kg			09/12/25 12:17	1

Client Sample ID: BG - 02

Lab Sample ID: 890-8784-3
Matrix: Solid
Date Collected: 09/10/25 10:04
Date Received: 09/11/25 14:10
Sample Depth: 2

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		09/12/25 09:58	09/12/25 18:59	1
Toluene	<0.00202	U	0.00202		mg/Kg		09/12/25 09:58	09/12/25 18:59	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		09/12/25 09:58	09/12/25 18:59	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		09/12/25 09:58	09/12/25 18:59	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		09/12/25 09:58	09/12/25 18:59	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		09/12/25 09:58	09/12/25 18:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*	*09/12/25 09:58*	*09/12/25 18:59*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*09/12/25 09:58*	*09/12/25 18:59*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404		mg/Kg			09/12/25 18:59	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			09/13/25 20:30	1

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Client Sample ID: BG - 02
Date Collected: 09/10/25 10:04
Date Received: 09/11/25 14:10
Sample Depth: 2

Lab Sample ID: 890-8784-3
Matrix: Solid

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	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 20:30	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 20:30	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 20:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*76*		*70 - 130*	*09/12/25 10:30*	*09/13/25 20:30*	*1*
o-Terphenyl	*72*		*70 - 130*	*09/12/25 10:30*	*09/13/25 20:30*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**16.1**		9.98		mg/Kg			09/12/25 12:23	1

Client Sample ID: BG - 02
Date Collected: 09/10/25 10:06
Date Received: 09/11/25 14:10
Sample Depth: 3

Lab Sample ID: 890-8784-4
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		09/12/25 09:58	09/12/25 19:20	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/25 09:58	09/12/25 19:20	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/25 09:58	09/12/25 19:20	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/25 09:58	09/12/25 19:20	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/25 09:58	09/12/25 19:20	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/25 09:58	09/12/25 19:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*	*09/12/25 09:58*	*09/12/25 19:20*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*09/12/25 09:58*	*09/12/25 19:20*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			09/12/25 19:20	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			09/13/25 20:45	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	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 20:45	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 20:45	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 20:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*77*		*70 - 130*	*09/12/25 10:30*	*09/13/25 20:45*	*1*
o-Terphenyl	*72*		*70 - 130*	*09/12/25 10:30*	*09/13/25 20:45*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Client Sample ID: BG - 02
Date Collected: 09/10/25 10:06
Date Received: 09/11/25 14:10
Sample Depth: 3

Lab Sample ID: 890-8784-4
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	30.2		10.1		mg/Kg			09/12/25 12:28	1

Client Sample ID: BG - 02
Date Collected: 09/10/25 10:08
Date Received: 09/11/25 14:10
Sample Depth: 4

Lab Sample ID: 890-8784-5
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		09/12/25 09:58	09/12/25 19:40	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/12/25 09:58	09/12/25 19:40	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		09/12/25 09:58	09/12/25 19:40	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		09/12/25 09:58	09/12/25 19:40	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		09/12/25 09:58	09/12/25 19:40	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		09/12/25 09:58	09/12/25 19:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*09/12/25 09:58*	*09/12/25 19:40*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*09/12/25 09:58*	*09/12/25 19:40*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			09/12/25 19:40	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			09/13/25 21:00	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	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 21:00	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 21:00	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 21:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*75*		*70 - 130*	*09/12/25 10:30*	*09/13/25 21:00*	*1*
o-Terphenyl	*71*		*70 - 130*	*09/12/25 10:30*	*09/13/25 21:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	103		10.1		mg/Kg			09/12/25 12:34	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Client Sample ID: BG - 02

Lab Sample ID: 890-8784-6
Matrix: Solid
Date Collected: 09/10/25 10:10
Date Received: 09/11/25 14:10
Sample Depth: 5

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 13:02	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 13:02	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 13:02	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		09/12/25 10:14	09/12/25 13:02	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 13:02	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		09/12/25 10:14	09/12/25 13:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*	*09/12/25 10:14*	*09/12/25 13:02*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*09/12/25 10:14*	*09/12/25 13:02*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			09/12/25 13:02	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			09/13/25 21:15	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	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 21:15	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 21:15	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 21:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*76*		*70 - 130*	*09/12/25 10:30*	*09/13/25 21:15*	*1*
o-Terphenyl	*72*		*70 - 130*	*09/12/25 10:30*	*09/13/25 21:15*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**36.3**		9.96		mg/Kg			09/12/25 12:52	1

Client Sample ID: BG - 02

Lab Sample ID: 890-8784-7
Matrix: Solid
Date Collected: 09/10/25 10:12
Date Received: 09/11/25 14:10
Sample Depth: 6

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 13:23	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 13:23	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 13:23	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/25 10:14	09/12/25 13:23	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 13:23	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/25 10:14	09/12/25 13:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*	*09/12/25 10:14*	*09/12/25 13:23*	*1*

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Client Sample ID: BG - 02

Lab Sample ID: 890-8784-7
Matrix: Solid
Date Collected: 09/10/25 10:12
Date Received: 09/11/25 14:10
Sample Depth: 6

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*09/12/25 10:14*	*09/12/25 13:23*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			09/12/25 13:23	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			09/13/25 21:30	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	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 21:30	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 21:30	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 21:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*76*		*70 - 130*	*09/12/25 10:30*	*09/13/25 21:30*	*1*
o-Terphenyl	*73*		*70 - 130*	*09/12/25 10:30*	*09/13/25 21:30*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**284**		9.98		mg/Kg			09/12/25 12:58	1

Client Sample ID: BG - 02

Lab Sample ID: 890-8784-8
Matrix: Solid
Date Collected: 09/10/25 10:14
Date Received: 09/11/25 14:10
Sample Depth: 8

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:21	09/12/25 19:40	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:21	09/12/25 19:40	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:21	09/12/25 19:40	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/25 09:21	09/12/25 19:40	1
o-Xylene	<0.00201	U *+	0.00201		mg/Kg		09/12/25 09:21	09/12/25 19:40	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/25 09:21	09/12/25 19:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*74*		*70 - 130*	*09/12/25 09:21*	*09/12/25 19:40*	*1*
1,4-Difluorobenzene (Surr)	*77*		*70 - 130*	*09/12/25 09:21*	*09/12/25 19:40*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			09/12/25 19:40	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			09/13/25 22:00	1

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Client Sample ID: BG - 02
Date Collected: 09/10/25 10:14
Date Received: 09/11/25 14:10
Sample Depth: 8

Lab Sample ID: 890-8784-8
Matrix: Solid

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	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 22:00	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 22:00	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 22:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*77*		*70 - 130*	*09/12/25 10:30*	*09/13/25 22:00*	*1*
o-Terphenyl	*74*		*70 - 130*	*09/12/25 10:30*	*09/13/25 22:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**795**		10.0		mg/Kg			09/12/25 13:15	1

Client Sample ID: BG - 02
Date Collected: 09/10/25 10:16
Date Received: 09/11/25 14:10
Sample Depth: 12

Lab Sample ID: 890-8784-9
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/12/25 15:15	09/12/25 23:16	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/25 15:15	09/12/25 23:16	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/25 15:15	09/12/25 23:16	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/25 15:15	09/12/25 23:16	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/12/25 15:15	09/12/25 23:16	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/25 15:15	09/12/25 23:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*09/12/25 15:15*	*09/12/25 23:16*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*09/12/25 15:15*	*09/12/25 23:16*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			09/12/25 23:16	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			09/13/25 22:15	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	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 22:15	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 22:15	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 22:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*79*		*70 - 130*	*09/12/25 10:30*	*09/13/25 22:15*	*1*
o-Terphenyl	*77*		*70 - 130*	*09/12/25 10:30*	*09/13/25 22:15*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Client Sample ID: BG - 02
Lab Sample ID: 890-8784-9
Date Collected: 09/10/25 10:16
Matrix: Solid
Date Received: 09/11/25 14:10
Sample Depth: 12

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1140		49.7		mg/Kg			09/15/25 09:01	5

Client Sample ID: BG - 02
Lab Sample ID: 890-8784-10
Date Collected: 09/10/25 10:18
Matrix: Solid
Date Received: 09/11/25 14:10
Sample Depth: 16

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		09/12/25 15:15	09/12/25 23:36	1
Toluene	<0.00202	U	0.00202		mg/Kg		09/12/25 15:15	09/12/25 23:36	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		09/12/25 15:15	09/12/25 23:36	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		09/12/25 15:15	09/12/25 23:36	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		09/12/25 15:15	09/12/25 23:36	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		09/12/25 15:15	09/12/25 23:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*09/12/25 15:15*	*09/12/25 23:36*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*09/12/25 15:15*	*09/12/25 23:36*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404		mg/Kg			09/12/25 23:36	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			09/13/25 22:31	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	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 22:31	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 22:31	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 22:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*79*		*70 - 130*	*09/12/25 10:30*	*09/13/25 22:31*	*1*
o-Terphenyl	*78*		*70 - 130*	*09/12/25 10:30*	*09/13/25 22:31*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1750		49.6		mg/Kg			09/12/25 13:23	5

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Client Sample ID: BG - 02

Lab Sample ID: 890-8784-11
Matrix: Solid
Date Collected: 09/10/25 10:20
Date Received: 09/11/25 14:10
Sample Depth: 20

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		09/12/25 15:15	09/12/25 23:57	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/25 15:15	09/12/25 23:57	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/25 15:15	09/12/25 23:57	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/25 15:15	09/12/25 23:57	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/25 15:15	09/12/25 23:57	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/25 15:15	09/12/25 23:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*	*09/12/25 15:15*	*09/12/25 23:57*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*09/12/25 15:15*	*09/12/25 23:57*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			09/12/25 23:57	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			09/13/25 22:46	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	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 22:46	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 22:46	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 22:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*79*		*70 - 130*	*09/12/25 10:30*	*09/13/25 22:46*	*1*
o-Terphenyl	*78*		*70 - 130*	*09/12/25 10:30*	*09/13/25 22:46*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1730**		49.5		mg/Kg			09/12/25 13:29	5

Client Sample ID: BG - 02

Lab Sample ID: 890-8784-12
Matrix: Solid
Date Collected: 09/10/25 10:22
Date Received: 09/11/25 14:10
Sample Depth: 24

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		09/12/25 15:15	09/13/25 00:17	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/12/25 15:15	09/13/25 00:17	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		09/12/25 15:15	09/13/25 00:17	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		09/12/25 15:15	09/13/25 00:17	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		09/12/25 15:15	09/13/25 00:17	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		09/12/25 15:15	09/13/25 00:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*	*09/12/25 15:15*	*09/13/25 00:17*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Client Sample ID: BG - 02

Lab Sample ID: 890-8784-12
Matrix: Solid
Date Collected: 09/10/25 10:22
Date Received: 09/11/25 14:10
Sample Depth: 24

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*09/12/25 15:15*	*09/13/25 00:17*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			09/13/25 00:17	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			09/13/25 23:01	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	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 23:01	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 23:01	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 23:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*79*		*70 - 130*	*09/12/25 10:30*	*09/13/25 23:01*	*1*
o-Terphenyl	*77*		*70 - 130*	*09/12/25 10:30*	*09/13/25 23:01*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1120**		50.5		mg/Kg			09/12/25 13:34	5

Client Sample ID: BG - 02

Lab Sample ID: 890-8784-13
Matrix: Solid
Date Collected: 09/10/25 10:24
Date Received: 09/11/25 14:10
Sample Depth: 28

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/12/25 15:15	09/13/25 00:38	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/25 15:15	09/13/25 00:38	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/25 15:15	09/13/25 00:38	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/25 15:15	09/13/25 00:38	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/12/25 15:15	09/13/25 00:38	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/25 15:15	09/13/25 00:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*09/12/25 15:15*	*09/13/25 00:38*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*09/12/25 15:15*	*09/13/25 00:38*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			09/13/25 00:38	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			09/13/25 23:16	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Client Sample ID: BG - 02

Date Collected: 09/10/25 10:24
Date Received: 09/11/25 14:10
Sample Depth: 28

Lab Sample ID: 890-8784-13

Matrix: Solid

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	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 23:16	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 23:16	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 23:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*80*		*70 - 130*	*09/12/25 10:30*	*09/13/25 23:16*	*1*
o-Terphenyl	*79*		*70 - 130*	*09/12/25 10:30*	*09/13/25 23:16*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1730**		50.3		mg/Kg			09/12/25 13:40	5

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-8784-1	BG - 02	72	93
890-8784-2	BG - 02	96	97
890-8784-3	BG - 02	88	90
890-8784-4	BG - 02	89	94
890-8784-5	BG - 02	93	93
890-8784-6	BG - 02	94	102
890-8784-7	BG - 02	95	103
890-8784-8	BG - 02	74	77
890-8784-9	BG - 02	100	91
890-8784-10	BG - 02	93	94
890-8784-11	BG - 02	91	95
890-8784-12	BG - 02	87	100
890-8784-13	BG - 02	93	93
LCS 880-118748/1-A	Lab Control Sample	143 S1+	96
LCS 880-118751/1-A	Lab Control Sample	96	100
LCS 880-118756/1-A	Lab Control Sample	107	95
LCS 880-118824/1-A	Lab Control Sample	107	93
LCSD 880-118748/2-A	Lab Control Sample Dup	134 S1+	96
LCSD 880-118751/2-A	Lab Control Sample Dup	102	100
LCSD 880-118756/2-A	Lab Control Sample Dup	108	94
LCSD 880-118824/2-A	Lab Control Sample Dup	103	94
MB 880-118748/5-A	Method Blank	132 S1+	93
MB 880-118751/5-A	Method Blank	94	88
MB 880-118756/5-A	Method Blank	88	113
MB 880-118824/5-A	Method Blank	100	86

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-8784-1	BG - 02	73	71
890-8784-2	BG - 02	74	70
890-8784-3	BG - 02	76	72
890-8784-4	BG - 02	77	72
890-8784-5	BG - 02	75	71
890-8784-6	BG - 02	76	72
890-8784-7	BG - 02	76	73
890-8784-8	BG - 02	77	74
890-8784-9	BG - 02	79	77
890-8784-10	BG - 02	79	78
890-8784-11	BG - 02	79	78
890-8784-12	BG - 02	79	77
890-8784-13	BG - 02	80	79
LCS 880-118761/2-A	Lab Control Sample	120	114

Surrogate Summary

Client: Earth Systems Response and Restoration
Job ID: 890-8784-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County, NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		1CO1	OTPH1								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
LCSD 880-118761/3-A	Lab Control Sample Dup	116	110								
MB 880-118761/1-A	Method Blank	79	80								

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-118748/5-A
Matrix: Solid
Analysis Batch: 118741

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118748

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:21	09/12/25 11:36	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:21	09/12/25 11:36	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:21	09/12/25 11:36	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/12/25 09:21	09/12/25 11:36	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:21	09/12/25 11:36	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/12/25 09:21	09/12/25 11:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*132*	*S1+*	*70 - 130*	*09/12/25 09:21*	*09/12/25 11:36*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*09/12/25 09:21*	*09/12/25 11:36*	*1*

Lab Sample ID: LCS 880-118748/1-A
Matrix: Solid
Analysis Batch: 118741

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 118748

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1043		mg/Kg		104	70 - 130		
Toluene			0.100	0.1065		mg/Kg		107	70 - 130		
Ethylbenzene			0.100	0.1244		mg/Kg		124	70 - 130		
m-Xylene & p-Xylene			0.200	0.2550		mg/Kg		128	70 - 130		
o-Xylene			0.100	0.1320	*+	mg/Kg		132	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*143*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: LCSD 880-118748/2-A
Matrix: Solid
Analysis Batch: 118741

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 118748

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1014		mg/Kg		101	70 - 130	3	35
Toluene			0.100	0.1045		mg/Kg		105	70 - 130	2	35
Ethylbenzene			0.100	0.1225		mg/Kg		122	70 - 130	2	35
m-Xylene & p-Xylene			0.200	0.2490		mg/Kg		124	70 - 130	2	35
o-Xylene			0.100	0.1292		mg/Kg		129	70 - 130	2	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*134*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: MB 880-118751/5-A
Matrix: Solid
Analysis Batch: 118742

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118751

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 11:36	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 11:36	1

Eurofins Carlsbad

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 880-118751/5-A
Matrix: Solid
Analysis Batch: 118742

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118751

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 11:36	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/12/25 09:58	09/12/25 11:36	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 11:36	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/12/25 09:58	09/12/25 11:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*	*09/12/25 09:58*	*09/12/25 11:36*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*09/12/25 09:58*	*09/12/25 11:36*	*1*

Lab Sample ID: LCS 880-118751/1-A
Matrix: Solid
Analysis Batch: 118742

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 118751

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09415		mg/Kg		94	70 - 130
Toluene	0.100	0.07901		mg/Kg		79	70 - 130
Ethylbenzene	0.100	0.07835		mg/Kg		78	70 - 130
m-Xylene & p-Xylene	0.200	0.1535		mg/Kg		77	70 - 130
o-Xylene	0.100	0.07571		mg/Kg		76	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 880-118751/2-A
Matrix: Solid
Analysis Batch: 118742

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 118751

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09988		mg/Kg		100	70 - 130	6	35
Toluene	0.100	0.08828		mg/Kg		88	70 - 130	11	35
Ethylbenzene	0.100	0.09068		mg/Kg		91	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.1798		mg/Kg		90	70 - 130	16	35
o-Xylene	0.100	0.08893		mg/Kg		89	70 - 130	16	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: MB 880-118756/5-A
Matrix: Solid
Analysis Batch: 118743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118756

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/12/25 10:14	09/12/25 11:39	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/25 10:14	09/12/25 11:39	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/25 10:14	09/12/25 11:39	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/12/25 10:14	09/12/25 11:39	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 880-118756/5-A
Matrix: Solid
Analysis Batch: 118743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118756

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/25 10:14	09/12/25 11:39	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/12/25 10:14	09/12/25 11:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*	*09/12/25 10:14*	*09/12/25 11:39*	*1*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*	*09/12/25 10:14*	*09/12/25 11:39*	*1*

Lab Sample ID: LCS 880-118756/1-A
Matrix: Solid
Analysis Batch: 118743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 118756

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09475		mg/Kg		95	70 - 130
Toluene	0.100	0.1008		mg/Kg		101	70 - 130
Ethylbenzene	0.100	0.1055		mg/Kg		105	70 - 130
m-Xylene & p-Xylene	0.200	0.2013		mg/Kg		101	70 - 130
o-Xylene	0.100	0.1007		mg/Kg		101	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: LCSD 880-118756/2-A
Matrix: Solid
Analysis Batch: 118743

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 118756

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09602		mg/Kg		96	70 - 130	1	35
Toluene	0.100	0.1056		mg/Kg		106	70 - 130	5	35
Ethylbenzene	0.100	0.1098		mg/Kg		110	70 - 130	4	35
m-Xylene & p-Xylene	0.200	0.2122		mg/Kg		106	70 - 130	5	35
o-Xylene	0.100	0.1062		mg/Kg		106	70 - 130	5	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

Lab Sample ID: MB 880-118824/5-A
Matrix: Solid
Analysis Batch: 118742

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118824

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/12/25 15:15	09/12/25 22:33	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/25 15:15	09/12/25 22:33	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/25 15:15	09/12/25 22:33	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/12/25 15:15	09/12/25 22:33	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/25 15:15	09/12/25 22:33	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/12/25 15:15	09/12/25 22:33	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	09/12/25 15:15	09/12/25 22:33	1
1,4-Difluorobenzene (Surr)	86		70 - 130	09/12/25 15:15	09/12/25 22:33	1

Lab Sample ID: LCS 880-118824/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118742 — **Prep Batch: 118824**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09204		mg/Kg		92	70 - 130		
Toluene			0.100	0.09283		mg/Kg		93	70 - 130		
Ethylbenzene			0.100	0.1000		mg/Kg		100	70 - 130		
m-Xylene & p-Xylene			0.200	0.2040		mg/Kg		102	70 - 130		
o-Xylene			0.100	0.1017		mg/Kg		102	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Lab Sample ID: LCSD 880-118824/2-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118742 — **Prep Batch: 118824**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.08503		mg/Kg		85	70 - 130	8	35
Toluene			0.100	0.08168		mg/Kg		82	70 - 130	13	35
Ethylbenzene			0.100	0.08329		mg/Kg		83	70 - 130	18	35
m-Xylene & p-Xylene			0.200	0.1675		mg/Kg		84	70 - 130	20	35
o-Xylene			0.100	0.08250		mg/Kg		82	70 - 130	21	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-118761/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118836 — **Prep Batch: 118761**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 07:59	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 07:59	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 07:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	79		70 - 130	09/12/25 10:30	09/13/25 07:59	1
o-Terphenyl	80		70 - 130	09/12/25 10:30	09/13/25 07:59	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 880-118761/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118836 — **Prep Batch: 118761**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1046		mg/Kg		105	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	971.3		mg/Kg		97	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*120*		*70 - 130*
o-Terphenyl	*114*		*70 - 130*

Lab Sample ID: LCSD 880-118761/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118836 — **Prep Batch: 118761**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1021		mg/Kg		102	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	949.7		mg/Kg		95	70 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*116*		*70 - 130*
o-Terphenyl	*110*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-118730/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 118753

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			09/12/25 10:55	1

Lab Sample ID: LCS 880-118730/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 118753

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	258.1		mg/Kg		103	90 - 110		

Lab Sample ID: LCSD 880-118730/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 118753

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	256.6		mg/Kg		103	90 - 110	1	20

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-8784-5 MS
Matrix: Solid
Analysis Batch: 118753

Client Sample ID: BG - 02
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	103		252	365.2		mg/Kg		104	90 - 110		

Lab Sample ID: 890-8784-5 MSD
Matrix: Solid
Analysis Batch: 118753

Client Sample ID: BG - 02
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	103		252	364.5		mg/Kg		104	90 - 110	0	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

GC VOA

Analysis Batch: 118741

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8784-8	BG - 02	Total/NA	Solid	8021B	118748
MB 880-118748/5-A	Method Blank	Total/NA	Solid	8021B	118748
LCS 880-118748/1-A	Lab Control Sample	Total/NA	Solid	8021B	118748
LCSD 880-118748/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	118748

Analysis Batch: 118742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8784-1	BG - 02	Total/NA	Solid	8021B	118751
890-8784-2	BG - 02	Total/NA	Solid	8021B	118751
890-8784-3	BG - 02	Total/NA	Solid	8021B	118751
890-8784-4	BG - 02	Total/NA	Solid	8021B	118751
890-8784-5	BG - 02	Total/NA	Solid	8021B	118751
890-8784-9	BG - 02	Total/NA	Solid	8021B	118824
890-8784-10	BG - 02	Total/NA	Solid	8021B	118824
890-8784-11	BG - 02	Total/NA	Solid	8021B	118824
890-8784-12	BG - 02	Total/NA	Solid	8021B	118824
890-8784-13	BG - 02	Total/NA	Solid	8021B	118824
MB 880-118751/5-A	Method Blank	Total/NA	Solid	8021B	118751
MB 880-118824/5-A	Method Blank	Total/NA	Solid	8021B	118824
LCS 880-118751/1-A	Lab Control Sample	Total/NA	Solid	8021B	118751
LCS 880-118824/1-A	Lab Control Sample	Total/NA	Solid	8021B	118824
LCSD 880-118751/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	118751
LCSD 880-118824/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	118824

Analysis Batch: 118743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8784-6	BG - 02	Total/NA	Solid	8021B	118756
890-8784-7	BG - 02	Total/NA	Solid	8021B	118756
MB 880-118756/5-A	Method Blank	Total/NA	Solid	8021B	118756
LCS 880-118756/1-A	Lab Control Sample	Total/NA	Solid	8021B	118756
LCSD 880-118756/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	118756

Prep Batch: 118748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8784-8	BG - 02	Total/NA	Solid	5035	
MB 880-118748/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-118748/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-118748/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Prep Batch: 118751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8784-1	BG - 02	Total/NA	Solid	5035	
890-8784-2	BG - 02	Total/NA	Solid	5035	
890-8784-3	BG - 02	Total/NA	Solid	5035	
890-8784-4	BG - 02	Total/NA	Solid	5035	
890-8784-5	BG - 02	Total/NA	Solid	5035	
MB 880-118751/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-118751/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-118751/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

GC VOA

Prep Batch: 118756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8784-6	BG - 02	Total/NA	Solid	5035	
890-8784-7	BG - 02	Total/NA	Solid	5035	
MB 880-118756/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-118756/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-118756/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 118817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8784-1	BG - 02	Total/NA	Solid	Total BTEX	
890-8784-2	BG - 02	Total/NA	Solid	Total BTEX	
890-8784-3	BG - 02	Total/NA	Solid	Total BTEX	
890-8784-4	BG - 02	Total/NA	Solid	Total BTEX	
890-8784-5	BG - 02	Total/NA	Solid	Total BTEX	
890-8784-6	BG - 02	Total/NA	Solid	Total BTEX	
890-8784-7	BG - 02	Total/NA	Solid	Total BTEX	
890-8784-8	BG - 02	Total/NA	Solid	Total BTEX	
890-8784-9	BG - 02	Total/NA	Solid	Total BTEX	
890-8784-10	BG - 02	Total/NA	Solid	Total BTEX	
890-8784-11	BG - 02	Total/NA	Solid	Total BTEX	
890-8784-12	BG - 02	Total/NA	Solid	Total BTEX	
890-8784-13	BG - 02	Total/NA	Solid	Total BTEX	

Prep Batch: 118824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8784-9	BG - 02	Total/NA	Solid	5035	
890-8784-10	BG - 02	Total/NA	Solid	5035	
890-8784-11	BG - 02	Total/NA	Solid	5035	
890-8784-12	BG - 02	Total/NA	Solid	5035	
890-8784-13	BG - 02	Total/NA	Solid	5035	
MB 880-118824/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-118824/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-118824/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 118761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8784-1	BG - 02	Total/NA	Solid	8015NM Prep	
890-8784-2	BG - 02	Total/NA	Solid	8015NM Prep	
890-8784-3	BG - 02	Total/NA	Solid	8015NM Prep	
890-8784-4	BG - 02	Total/NA	Solid	8015NM Prep	
890-8784-5	BG - 02	Total/NA	Solid	8015NM Prep	
890-8784-6	BG - 02	Total/NA	Solid	8015NM Prep	
890-8784-7	BG - 02	Total/NA	Solid	8015NM Prep	
890-8784-8	BG - 02	Total/NA	Solid	8015NM Prep	
890-8784-9	BG - 02	Total/NA	Solid	8015NM Prep	
890-8784-10	BG - 02	Total/NA	Solid	8015NM Prep	
890-8784-11	BG - 02	Total/NA	Solid	8015NM Prep	
890-8784-12	BG - 02	Total/NA	Solid	8015NM Prep	
890-8784-13	BG - 02	Total/NA	Solid	8015NM Prep	
MB 880-118761/1-A	Method Blank	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

GC Semi VOA (Continued)

Prep Batch: 118761 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-118761/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-118761/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 118836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8784-1	BG - 02	Total/NA	Solid	8015B NM	118761
890-8784-2	BG - 02	Total/NA	Solid	8015B NM	118761
890-8784-3	BG - 02	Total/NA	Solid	8015B NM	118761
890-8784-4	BG - 02	Total/NA	Solid	8015B NM	118761
890-8784-5	BG - 02	Total/NA	Solid	8015B NM	118761
890-8784-6	BG - 02	Total/NA	Solid	8015B NM	118761
890-8784-7	BG - 02	Total/NA	Solid	8015B NM	118761
890-8784-8	BG - 02	Total/NA	Solid	8015B NM	118761
890-8784-9	BG - 02	Total/NA	Solid	8015B NM	118761
890-8784-10	BG - 02	Total/NA	Solid	8015B NM	118761
890-8784-11	BG - 02	Total/NA	Solid	8015B NM	118761
890-8784-12	BG - 02	Total/NA	Solid	8015B NM	118761
890-8784-13	BG - 02	Total/NA	Solid	8015B NM	118761
MB 880-118761/1-A	Method Blank	Total/NA	Solid	8015B NM	118761
LCS 880-118761/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	118761
LCSD 880-118761/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	118761

Analysis Batch: 118924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8784-1	BG - 02	Total/NA	Solid	8015 NM	
890-8784-2	BG - 02	Total/NA	Solid	8015 NM	
890-8784-3	BG - 02	Total/NA	Solid	8015 NM	
890-8784-4	BG - 02	Total/NA	Solid	8015 NM	
890-8784-5	BG - 02	Total/NA	Solid	8015 NM	
890-8784-6	BG - 02	Total/NA	Solid	8015 NM	
890-8784-7	BG - 02	Total/NA	Solid	8015 NM	
890-8784-8	BG - 02	Total/NA	Solid	8015 NM	
890-8784-9	BG - 02	Total/NA	Solid	8015 NM	
890-8784-10	BG - 02	Total/NA	Solid	8015 NM	
890-8784-11	BG - 02	Total/NA	Solid	8015 NM	
890-8784-12	BG - 02	Total/NA	Solid	8015 NM	
890-8784-13	BG - 02	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 118730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8784-1	BG - 02	Soluble	Solid	DI Leach	
890-8784-2	BG - 02	Soluble	Solid	DI Leach	
890-8784-3	BG - 02	Soluble	Solid	DI Leach	
890-8784-4	BG - 02	Soluble	Solid	DI Leach	
890-8784-5	BG - 02	Soluble	Solid	DI Leach	
890-8784-6	BG - 02	Soluble	Solid	DI Leach	
890-8784-7	BG - 02	Soluble	Solid	DI Leach	
890-8784-8	BG - 02	Soluble	Solid	DI Leach	
890-8784-9	BG - 02	Soluble	Solid	DI Leach	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

HPLC/IC (Continued)

Leach Batch: 118730 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8784-10	BG - 02	Soluble	Solid	DI Leach	
890-8784-11	BG - 02	Soluble	Solid	DI Leach	
890-8784-12	BG - 02	Soluble	Solid	DI Leach	
890-8784-13	BG - 02	Soluble	Solid	DI Leach	
MB 880-118730/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-118730/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-118730/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-8784-5 MS	BG - 02	Soluble	Solid	DI Leach	
890-8784-5 MSD	BG - 02	Soluble	Solid	DI Leach	

Analysis Batch: 118753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8784-1	BG - 02	Soluble	Solid	300.0	118730
890-8784-2	BG - 02	Soluble	Solid	300.0	118730
890-8784-3	BG - 02	Soluble	Solid	300.0	118730
890-8784-4	BG - 02	Soluble	Solid	300.0	118730
890-8784-5	BG - 02	Soluble	Solid	300.0	118730
890-8784-6	BG - 02	Soluble	Solid	300.0	118730
890-8784-7	BG - 02	Soluble	Solid	300.0	118730
890-8784-8	BG - 02	Soluble	Solid	300.0	118730
890-8784-9	BG - 02	Soluble	Solid	300.0	118730
890-8784-10	BG - 02	Soluble	Solid	300.0	118730
890-8784-11	BG - 02	Soluble	Solid	300.0	118730
890-8784-12	BG - 02	Soluble	Solid	300.0	118730
890-8784-13	BG - 02	Soluble	Solid	300.0	118730
MB 880-118730/1-A	Method Blank	Soluble	Solid	300.0	118730
LCS 880-118730/2-A	Lab Control Sample	Soluble	Solid	300.0	118730
LCSD 880-118730/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	118730
890-8784-5 MS	BG - 02	Soluble	Solid	300.0	118730
890-8784-5 MSD	BG - 02	Soluble	Solid	300.0	118730

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Client Sample ID: BG - 02
Date Collected: 09/10/25 10:00
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8784-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	118751	09/12/25 09:58	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 18:18	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118817	09/12/25 18:18	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118924	09/13/25 20:00	SA	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/13/25 20:00	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		1			118753	09/12/25 12:11	CS	EET MID

Client Sample ID: BG - 02
Date Collected: 09/10/25 10:02
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8784-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	118751	09/12/25 09:58	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 18:39	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118817	09/12/25 18:39	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118924	09/13/25 20:15	SA	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/13/25 20:15	TKC	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		1			118753	09/12/25 12:17	CS	EET MID

Client Sample ID: BG - 02
Date Collected: 09/10/25 10:04
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8784-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	118751	09/12/25 09:58	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 18:59	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118817	09/12/25 18:59	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118924	09/13/25 20:30	SA	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/13/25 20:30	TKC	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		1			118753	09/12/25 12:23	CS	EET MID

Client Sample ID: BG - 02
Date Collected: 09/10/25 10:06
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8784-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	118751	09/12/25 09:58	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 19:20	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118817	09/12/25 19:20	AJ	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Earth Systems Response and Restoration
Job ID: 890-8784-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County, NM

Client Sample ID: BG - 02
Lab Sample ID: 890-8784-4
Date Collected: 09/10/25 10:06
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			118924	09/13/25 20:45	SA	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/13/25 20:45	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		1			118753	09/12/25 12:28	CS	EET MID

Client Sample ID: BG - 02
Lab Sample ID: 890-8784-5
Date Collected: 09/10/25 10:08
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	118751	09/12/25 09:58	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 19:40	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118817	09/12/25 19:40	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118924	09/13/25 21:00	SA	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/13/25 21:00	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		1			118753	09/12/25 12:34	CS	EET MID

Client Sample ID: BG - 02
Lab Sample ID: 890-8784-6
Date Collected: 09/10/25 10:10
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	118756	09/12/25 10:14	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118743	09/12/25 13:02	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118817	09/12/25 13:02	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118924	09/13/25 21:15	SA	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/13/25 21:15	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		1			118753	09/12/25 12:52	CS	EET MID

Client Sample ID: BG - 02
Lab Sample ID: 890-8784-7
Date Collected: 09/10/25 10:12
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	118756	09/12/25 10:14	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118743	09/12/25 13:23	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118817	09/12/25 13:23	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118924	09/13/25 21:30	SA	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/13/25 21:30	TKC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Job ID: 890-8784-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County, NM

Client Sample ID: BG - 02
Lab Sample ID: 890-8784-7
Date Collected: 09/10/25 10:12
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.01 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		1			118753	09/12/25 12:58	CS	EET MID

Client Sample ID: BG - 02
Lab Sample ID: 890-8784-8
Date Collected: 09/10/25 10:14
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	118748	09/12/25 09:21	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118741	09/12/25 19:40	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118817	09/12/25 19:40	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118924	09/13/25 22:00	SA	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/13/25 22:00	TKC	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		1			118753	09/12/25 13:15	CS	EET MID

Client Sample ID: BG - 02
Lab Sample ID: 890-8784-9
Date Collected: 09/10/25 10:16
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	118824	09/12/25 15:15	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 23:16	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118817	09/12/25 23:16	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118924	09/13/25 22:15	SA	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/13/25 22:15	TKC	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		5			118753	09/15/25 09:01	CS	EET MID

Client Sample ID: BG - 02
Lab Sample ID: 890-8784-10
Date Collected: 09/10/25 10:18
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	118824	09/12/25 15:15	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 23:36	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118817	09/12/25 23:36	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118924	09/13/25 22:31	SA	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/13/25 22:31	TKC	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		5			118753	09/12/25 13:23	CS	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Job ID: 890-8784-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County, NM

Client Sample ID: BG - 02
Lab Sample ID: 890-8784-11
Date Collected: 09/10/25 10:20
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	118824	09/12/25 15:15	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 23:57	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118817	09/12/25 23:57	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118924	09/13/25 22:46	SA	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/13/25 22:46	TKC	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		5			118753	09/12/25 13:29	CS	EET MID

Client Sample ID: BG - 02
Lab Sample ID: 890-8784-12
Date Collected: 09/10/25 10:22
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	118824	09/12/25 15:15	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/13/25 00:17	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118817	09/13/25 00:17	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118924	09/13/25 23:01	SA	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/13/25 23:01	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		5			118753	09/12/25 13:34	CS	EET MID

Client Sample ID: BG - 02
Lab Sample ID: 890-8784-13
Date Collected: 09/10/25 10:24
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	118824	09/12/25 15:15	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/13/25 00:38	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118817	09/13/25 00:38	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118924	09/13/25 23:16	SA	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/13/25 23:16	TKC	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		5			118753	09/12/25 13:40	CS	EET MID

Laboratory References:
EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 890-8784-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County, NM

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400	06-30-26

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-8784-1	BG - 02	Solid	09/10/25 10:00	09/11/25 14:10	0.5
890-8784-2	BG - 02	Solid	09/10/25 10:02	09/11/25 14:10	1
890-8784-3	BG - 02	Solid	09/10/25 10:04	09/11/25 14:10	2
890-8784-4	BG - 02	Solid	09/10/25 10:06	09/11/25 14:10	3
890-8784-5	BG - 02	Solid	09/10/25 10:08	09/11/25 14:10	4
890-8784-6	BG - 02	Solid	09/10/25 10:10	09/11/25 14:10	5
890-8784-7	BG - 02	Solid	09/10/25 10:12	09/11/25 14:10	6
890-8784-8	BG - 02	Solid	09/10/25 10:14	09/11/25 14:10	8
890-8784-9	BG - 02	Solid	09/10/25 10:16	09/11/25 14:10	12
890-8784-10	BG - 02	Solid	09/10/25 10:18	09/11/25 14:10	16
890-8784-11	BG - 02	Solid	09/10/25 10:20	09/11/25 14:10	20
890-8784-12	BG - 02	Solid	09/10/25 10:22	09/11/25 14:10	24
890-8784-13	BG - 02	Solid	09/10/25 10:24	09/11/25 14:10	28

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Chain of Custody

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Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: _____

www.xenco.com Page 1 of 2

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Spud Muffin 31 30 #738H	**Turn Around**	
Project Number:	15995	☑ Routine ☐ Rush	
Project Location:	Eddy County, NM	Due Date:	Routine TAT
Sampler's Name:	Gilbert Moreno, Santiago Giron	TAT starts the day received by the lab, if received by 4:30pm	
CC/WO #:	21441869		

SAMPLE RECEIPT	Temp Blank: (Yes) No	Wet Ice: (Yes) No	
Samples Received Intact:	(Yes) No	Thermometer ID:	TNM007
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	4.2
Total Containers:		Corrected Temperature:	4.0

ANALYSIS REQUEST

890-8784 Chain of Custody

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2SO_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush
BG-02	S	9.10.25	10:00	0.5	Grab/	1	X	X	X		
BG-02	S	9.10.25	10:02	1	Grab/	1	X	X	X		
BG-02	S	9.10.25	10:04	2	Grab/	1	X	X	X		
BG-02	S	9.10.25	10:06	3	Grab/	1	X	X	X		
BG-02	S	9.10.25	10:08	4	Grab/	1	X	X	X		
BG-02	S	9.10.25	10:10	5	Grab/	1	X	X	X		
BG-02	S	9.10.25	10:12	6	Grab/	1	X	X	X		
BG-02	S	9.10.25	10:14	8	Grab/	1	X	X	X		
BG-02	S	9.10.25	10:16	12	Grab/	1	X	X	X		

Sample Comments

Incident Number
nAPP2431628896

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed
Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of $85.00 will be applied to each project and a charge of $5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		9/11 14:10	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

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Chain of Custody

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Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: _____

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Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Spud Muffin 31 30 #738H	Turn Around	☑ Routine ☐ Rush
Project Number:	15995	Due Date:	Routine TAT
Project Location:	Eddy County, NM	TAT starts the day received by the lab, if received by 4:30pm	
Sampler's Name:	Gilbert Moreno, Santiago Giron		
CC/WO #:	21441869		

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Samples Received Intact:	(Yes) No	Thermometer ID:	TM007
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	4.2
Total Containers:		Corrected Temperature:	4.0

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2S0_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	Pres. Code	Parameters: TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	Sample Comments
BG-02	S	9.10.25	10:18	16	Grab/	1		X	X	X			Incident Number
BG-02	S	9.10.25	10:20	20	Grab/	1		X	X	X			nAPP2431628896
BG-02	S	9.10.25	10:22	24	Grab/	1		X	X	X			
BG-02	S	9.10.25	10:24	28	Grab/	1		X	X	X			

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed

Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of $85.00 will be applied to each project and a charge of $5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0			9/11 1410	2		
3				4		
5				6		

Revised Date: 08/25/2020 Rev. 2020.2

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Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Teel, Brianna	Carrier Tracking No(s): N/A	COC No: 890-5858.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Brianna.Teel@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 1 of 2
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-8784-1
Address: 1211 W. Florida Ave,	Due Date Requested: 9/17/2025			
City: Midland	TAT Requested (days): N/A			
State, Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: SPUD MUFFIN 31 30 #738 H	Project #: 88001228			
Site: N/A	SSOW#: N/A			

Analysis Requested

Preservation Codes: -

Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total_BTEX_GCV	8021B/5035FP_CalcBTEX	300_ORGFM_28D/DI_LEACHChloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep8015 NM	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
BG - 02 (890-8784-1)	9/10/25	10:00 Mountain	G	Solid			X	X	X	X	X	1	
BG - 02 (890-8784-2)	9/10/25	10:02 Mountain	G	Solid			X	X	X	X	X	1	
BG - 02 (890-8784-3)	9/10/25	10:04 Mountain	G	Solid			X	X	X	X	X	1	
BG - 02 (890-8784-4)	9/10/25	10:06 Mountain	G	Solid			X	X	X	X	X	1	
BG - 02 (890-8784-5)	9/10/25	10:08 Mountain	G	Solid			X	X	X	X	X	1	
BG - 02 (890-8784-6)	9/10/25	10:10 Mountain	G	Solid			X	X	X	X	X	1	
BG - 02 (890-8784-7)	9/10/25	10:12 Mountain	G	Solid			X	X	X	X	X	1	
BG - 02 (890-8784-8)	9/10/25	10:14 Mountain	G	Solid			X	X	X	X	X	1	
BG - 02 (890-8784-9)	9/10/25	10:16 Mountain	G	Solid			X	X	X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	[signature]	9/11 1630		[signature]		
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 9/12/25 800	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.9/2.5

Ver: 10/10/2024

Received by OCD: 11/4/2025 7:21:25 AM

Released to Imaging: 11/6/2025 3:18:49 PM

Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Teel, Brianna	Carrier Tracking No(s): N/A	COC No: 890-5858.2
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Brianna.Teel@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 2 of 2
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-8784-1
Address: 1211 W. Florida Ave, ,	Due Date Requested: 9/17/2025			Preservation Codes: .
City: Midland	TAT Requested (days): N/A			
State, Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: SPUD MUFFIN 31 30 #738 H	Project #: 88001228			
Site: N/A	SSOW#: N/A			Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total_BTEX_GCV	8021B/5035FP_CalcBTEX	300_ORGFM_28D/DI_LEACHChloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep8015 NM	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
BG - 02 (890-8784-10)	9/10/25	10:18 Mountain	G	Solid			X	X	X	X	X	1	
BG - 02 (890-8784-11)	9/10/25	10:20 Mountain	G	Solid			X	X	X	X	X	1	
BG - 02 (890-8784-12)	9/10/25	10:22 Mountain	G	Solid			X	X	X	X	X	1	
BG - 02 (890-8784-13)	9/10/25	10:24 Mountain	G	Solid			X	X	X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

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9/16/2025
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Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-8784-1
SDG Number: Eddy County, NM

Login Number: 8784
List Number: 1
Creator: Bruns, Shannon

List Source: Eurofins Carlsbad

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	

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-8784-1
SDG Number: Eddy County, NM

Login Number: 8784
List Number: 2
Creator: Laing, Edmundo

List Source: Eurofins Midland
List Creation: 09/12/25 10:07 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Gilbert Moreno
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 9/16/2025 9:38:59 AM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy County, NM

JOB NUMBER

890-8782-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

Released to Imaging: 11/6/2025 3:18:49 PM

my EOL

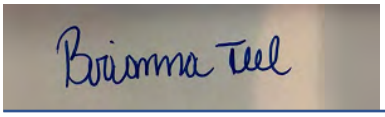
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
9/16/2025 9:38:59 AM

Authorized for release by
Brianna Teel, Project Manager
Brianna.Teel@et.eurofinsus.com
(432)704-5440

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Surrogate Summary 17
QC Sample Results 19
QC Association Summary 25
Lab Chronicle 29
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Sample Summary 35
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Definitions/Glossary

Client: Earth Systems Response and Restoration Job ID: 890-8782-1
Project/Site: Spud Muffin 31 30 #738H SDG: Eddy County, NM

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 890-8782-1
Project: Spud Muffin 31 30 #738H

Job ID: 890-8782-1 Eurofins Carlsbad

Job Narrative
890-8782-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 9/11/2025 2:10 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 4.0°C.

GC VOA
Method 8021B: The matrix spike (MS) recoveries for preparation batch 880-118824 and analytical batch 880-118742 were outside control limits. Non-homogeneity is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: Spike compounds were inadvertently omitted during the extraction process for the matrix spike duplicate (MSD); therefore, matrix spike recoveries are unavailable for preparation batch 880-118824 and analytical batch 880-118742. The associated laboratory control sample (LCS) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
Method 8015MOD_NM: No LCSD with batch, MS/MSD shows recovery for batch therefore the data has been qualified and reported.

(LCS 880-118593/2-A)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 300_ORGFM_28D - Soluble: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-118731 and analytical batch 880-118811 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.

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Client Sample ID: BG-03

Lab Sample ID: 890-8782-1
Matrix: Solid
Date Collected: 09/10/25 11:00
Date Received: 09/11/25 14:10
Sample Depth: 0.5

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U F1	0.00200		mg/Kg		09/12/25 15:15	09/12/25 22:55	1
Toluene	<0.00200	U F1	0.00200		mg/Kg		09/12/25 15:15	09/12/25 22:55	1
Ethylbenzene	<0.00200	U F1	0.00200		mg/Kg		09/12/25 15:15	09/12/25 22:55	1
m-Xylene & p-Xylene	<0.00399	U F1	0.00399		mg/Kg		09/12/25 15:15	09/12/25 22:55	1
o-Xylene	<0.00200	U F1	0.00200		mg/Kg		09/12/25 15:15	09/12/25 22:55	1
Xylenes, Total	<0.00399	U F1	0.00399		mg/Kg		09/12/25 15:15	09/12/25 22:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*	*09/12/25 15:15*	*09/12/25 22:55*	*1*
1,4-Difluorobenzene (Surr)	*78*		*70 - 130*	*09/12/25 15:15*	*09/12/25 22:55*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			09/12/25 22:55	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.1	U	50.1		mg/Kg			09/12/25 23:12	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	<50.1	U	50.1		mg/Kg		09/10/25 08:47	09/12/25 23:12	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1		mg/Kg		09/10/25 08:47	09/12/25 23:12	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1		mg/Kg		09/10/25 08:47	09/12/25 23:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*84*		*70 - 130*	*09/10/25 08:47*	*09/12/25 23:12*	*1*
o-Terphenyl	*80*		*70 - 130*	*09/10/25 08:47*	*09/12/25 23:12*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**21.1**	**F1**	10.0		mg/Kg			09/12/25 17:58	1

Client Sample ID: BG-03

Lab Sample ID: 890-8782-2
Matrix: Solid
Date Collected: 09/10/25 11:02
Date Received: 09/11/25 14:10
Sample Depth: 1

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		09/12/25 09:58	09/12/25 12:59	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/12/25 09:58	09/12/25 12:59	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		09/12/25 09:58	09/12/25 12:59	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		09/12/25 09:58	09/12/25 12:59	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		09/12/25 09:58	09/12/25 12:59	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		09/12/25 09:58	09/12/25 12:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*09/12/25 09:58*	*09/12/25 12:59*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Client Sample ID: BG-03

Lab Sample ID: 890-8782-2
Matrix: Solid
Date Collected: 09/10/25 11:02
Date Received: 09/11/25 14:10
Sample Depth: 1

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*09/12/25 09:58*	*09/12/25 12:59*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			09/12/25 12:59	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			09/12/25 23:27	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	<49.9	U	49.9		mg/Kg		09/10/25 08:47	09/12/25 23:27	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/10/25 08:47	09/12/25 23:27	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/10/25 08:47	09/12/25 23:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*75*		*70 - 130*	*09/10/25 08:47*	*09/12/25 23:27*	*1*
o-Terphenyl	*71*		*70 - 130*	*09/10/25 08:47*	*09/12/25 23:27*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**13.3**		9.98		mg/Kg			09/12/25 18:07	1

Client Sample ID: BG-03

Lab Sample ID: 890-8782-3
Matrix: Solid
Date Collected: 09/10/25 11:04
Date Received: 09/11/25 14:10
Sample Depth: 2

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 13:20	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 13:20	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 13:20	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/25 09:58	09/12/25 13:20	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 13:20	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/25 09:58	09/12/25 13:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*	*09/12/25 09:58*	*09/12/25 13:20*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*09/12/25 09:58*	*09/12/25 13:20*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			09/12/25 13:20	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			09/12/25 23:42	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Client Sample ID: BG-03

Lab Sample ID: 890-8782-3
Matrix: Solid
Date Collected: 09/10/25 11:04
Date Received: 09/11/25 14:10
Sample Depth: 2

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	<49.8	U	49.8		mg/Kg		09/10/25 08:47	09/12/25 23:42	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		09/10/25 08:47	09/12/25 23:42	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/10/25 08:47	09/12/25 23:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*78*		*70 - 130*	*09/10/25 08:47*	*09/12/25 23:42*	*1*
o-Terphenyl	*75*		*70 - 130*	*09/10/25 08:47*	*09/12/25 23:42*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**39.4**		10.1		mg/Kg			09/12/25 18:13	1

Client Sample ID: BG-03

Lab Sample ID: 890-8782-4
Matrix: Solid
Date Collected: 09/10/25 11:06
Date Received: 09/11/25 14:10
Sample Depth: 3

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		09/12/25 09:58	09/12/25 13:40	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/25 09:58	09/12/25 13:40	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/25 09:58	09/12/25 13:40	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/25 09:58	09/12/25 13:40	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/25 09:58	09/12/25 13:40	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/25 09:58	09/12/25 13:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*09/12/25 09:58*	*09/12/25 13:40*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*09/12/25 09:58*	*09/12/25 13:40*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			09/12/25 13:40	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			09/13/25 01:46	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	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 01:46	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 01:46	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 01:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*09/12/25 10:30*	*09/13/25 01:46*	*1*
o-Terphenyl	*87*		*70 - 130*	*09/12/25 10:30*	*09/13/25 01:46*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Client Sample ID: BG-03
Lab Sample ID: 890-8782-4
Date Collected: 09/10/25 11:06
Matrix: Solid
Date Received: 09/11/25 14:10
Sample Depth: 3

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	44.5		10.0		mg/Kg			09/12/25 18:19	1

Client Sample ID: BG-03
Lab Sample ID: 890-8782-5
Date Collected: 09/10/25 11:08
Matrix: Solid
Date Received: 09/11/25 14:10
Sample Depth: 4

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 14:01	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 14:01	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 14:01	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/12/25 09:58	09/12/25 14:01	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 14:01	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/12/25 09:58	09/12/25 14:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*	*09/12/25 09:58*	*09/12/25 14:01*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*09/12/25 09:58*	*09/12/25 14:01*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			09/12/25 14:01	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			09/13/25 02:32	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	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 02:32	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 02:32	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 02:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*09/12/25 10:30*	*09/13/25 02:32*	*1*
o-Terphenyl	*87*		*70 - 130*	*09/12/25 10:30*	*09/13/25 02:32*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	323		9.96		mg/Kg			09/12/25 18:25	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Client Sample ID: BG-03

Lab Sample ID: 890-8782-6
Matrix: Solid
Date Collected: 09/10/25 11:10
Date Received: 09/11/25 14:10
Sample Depth: 5

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 14:21	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 14:21	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 14:21	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/25 09:58	09/12/25 14:21	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 14:21	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/25 09:58	09/12/25 14:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*	*09/12/25 09:58*	*09/12/25 14:21*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*09/12/25 09:58*	*09/12/25 14:21*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			09/12/25 14:21	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.1	U	50.1		mg/Kg			09/13/25 02:47	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	<50.1	U	50.1		mg/Kg		09/12/25 10:30	09/13/25 02:47	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1		mg/Kg		09/12/25 10:30	09/13/25 02:47	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1		mg/Kg		09/12/25 10:30	09/13/25 02:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*93*		*70 - 130*	*09/12/25 10:30*	*09/13/25 02:47*	*1*
o-Terphenyl	*89*		*70 - 130*	*09/12/25 10:30*	*09/13/25 02:47*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**603**		10.1		mg/Kg			09/12/25 18:42	1

Client Sample ID: BG-03

Lab Sample ID: 890-8782-7
Matrix: Solid
Date Collected: 09/10/25 11:12
Date Received: 09/11/25 14:10
Sample Depth: 6

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 14:42	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 14:42	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 14:42	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/25 09:58	09/12/25 14:42	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 14:42	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/25 09:58	09/12/25 14:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*09/12/25 09:58*	*09/12/25 14:42*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Client Sample ID: BG-03

Lab Sample ID: 890-8782-7
Matrix: Solid
Date Collected: 09/10/25 11:12
Date Received: 09/11/25 14:10
Sample Depth: 6

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*09/12/25 09:58*	*09/12/25 14:42*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			09/12/25 14:42	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			09/13/25 03:02	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	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 03:02	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 03:02	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 03:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*94*		*70 - 130*	*09/12/25 10:30*	*09/13/25 03:02*	*1*
o-Terphenyl	*90*		*70 - 130*	*09/12/25 10:30*	*09/13/25 03:02*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1030**		10.1		mg/Kg			09/12/25 18:48	1

Client Sample ID: BG-03

Lab Sample ID: 890-8782-8
Matrix: Solid
Date Collected: 09/10/25 11:14
Date Received: 09/11/25 14:10
Sample Depth: 8

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		09/12/25 09:58	09/12/25 15:02	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/12/25 09:58	09/12/25 15:02	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		09/12/25 09:58	09/12/25 15:02	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		09/12/25 09:58	09/12/25 15:02	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		09/12/25 09:58	09/12/25 15:02	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		09/12/25 09:58	09/12/25 15:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*	*09/12/25 09:58*	*09/12/25 15:02*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*09/12/25 09:58*	*09/12/25 15:02*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			09/12/25 15:02	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.1	U	50.1		mg/Kg			09/13/25 03:18	1

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Client Sample ID: BG-03

Lab Sample ID: 890-8782-8
Matrix: Solid
Date Collected: 09/10/25 11:14
Date Received: 09/11/25 14:10
Sample Depth: 8

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	<50.1	U	50.1		mg/Kg		09/12/25 10:30	09/13/25 03:18	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1		mg/Kg		09/12/25 10:30	09/13/25 03:18	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1		mg/Kg		09/12/25 10:30	09/13/25 03:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*95*		*70 - 130*	*09/12/25 10:30*	*09/13/25 03:18*	*1*
o-Terphenyl	*92*		*70 - 130*	*09/12/25 10:30*	*09/13/25 03:18*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1010**		9.92		mg/Kg			09/12/25 18:54	1

Client Sample ID: BG-03

Lab Sample ID: 890-8782-9
Matrix: Solid
Date Collected: 09/10/25 11:16
Date Received: 09/11/25 14:10
Sample Depth: 12

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		09/12/25 09:58	09/12/25 16:36	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/25 09:58	09/12/25 16:36	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/25 09:58	09/12/25 16:36	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/25 09:58	09/12/25 16:36	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/25 09:58	09/12/25 16:36	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/25 09:58	09/12/25 16:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*	*09/12/25 09:58*	*09/12/25 16:36*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*09/12/25 09:58*	*09/12/25 16:36*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			09/12/25 16:36	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			09/13/25 03:32	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	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 03:32	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 03:32	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 03:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*91*		*70 - 130*	*09/12/25 10:30*	*09/13/25 03:32*	*1*
o-Terphenyl	*90*		*70 - 130*	*09/12/25 10:30*	*09/13/25 03:32*	*1*

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Client Sample ID: BG-03
Lab Sample ID: 890-8782-9
Date Collected: 09/10/25 11:16
Matrix: Solid
Date Received: 09/11/25 14:10
Sample Depth: 12

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	195		10.1		mg/Kg			09/12/25 19:00	1

Client Sample ID: BG-03
Lab Sample ID: 890-8782-10
Date Collected: 09/10/25 11:18
Matrix: Solid
Date Received: 09/11/25 14:10
Sample Depth: 16

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 16:56	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 16:56	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 16:56	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/12/25 09:58	09/12/25 16:56	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 16:56	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/12/25 09:58	09/12/25 16:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*09/12/25 09:58*	*09/12/25 16:56*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*09/12/25 09:58*	*09/12/25 16:56*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			09/12/25 16:56	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			09/13/25 03:48	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	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 03:48	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 03:48	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 03:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*09/12/25 10:30*	*09/13/25 03:48*	*1*
o-Terphenyl	*95*		*70 - 130*	*09/12/25 10:30*	*09/13/25 03:48*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	366		10.1		mg/Kg			09/12/25 19:05	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Client Sample ID: BG-03

Lab Sample ID: 890-8782-11
Matrix: Solid
Date Collected: 09/10/25 11:20
Date Received: 09/11/25 14:10
Sample Depth: 20

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		09/12/25 09:58	09/12/25 17:17	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/12/25 09:58	09/12/25 17:17	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		09/12/25 09:58	09/12/25 17:17	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		09/12/25 09:58	09/12/25 17:17	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		09/12/25 09:58	09/12/25 17:17	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		09/12/25 09:58	09/12/25 17:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*09/12/25 09:58*	*09/12/25 17:17*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*09/12/25 09:58*	*09/12/25 17:17*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			09/12/25 17:17	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			09/13/25 04:03	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	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 04:03	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 04:03	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 04:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*09/12/25 10:30*	*09/13/25 04:03*	*1*
o-Terphenyl	*94*		*70 - 130*	*09/12/25 10:30*	*09/13/25 04:03*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**377**	**F1**	9.96		mg/Kg			09/12/25 19:11	1

Client Sample ID: BG-03

Lab Sample ID: 890-8782-12
Matrix: Solid
Date Collected: 09/10/25 11:22
Date Received: 09/11/25 14:10
Sample Depth: 24

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 17:37	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 17:37	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 17:37	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/25 09:58	09/12/25 17:37	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/12/25 09:58	09/12/25 17:37	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/25 09:58	09/12/25 17:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*	*09/12/25 09:58*	*09/12/25 17:37*	*1*

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Client Sample ID: BG-03

Lab Sample ID: 890-8782-12
Matrix: Solid
Date Collected: 09/10/25 11:22
Date Received: 09/11/25 14:10
Sample Depth: 24

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*09/12/25 09:58*	*09/12/25 17:37*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			09/12/25 17:37	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			09/13/25 04:18	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	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 04:18	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 04:18	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 04:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*09/12/25 10:30*	*09/13/25 04:18*	*1*
o-Terphenyl	*93*		*70 - 130*	*09/12/25 10:30*	*09/13/25 04:18*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**353**		10.1		mg/Kg			09/12/25 19:29	1

Client Sample ID: BG-03

Lab Sample ID: 890-8782-13
Matrix: Solid
Date Collected: 09/10/25 11:24
Date Received: 09/11/25 14:10
Sample Depth: 28

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		09/12/25 09:58	09/12/25 17:58	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/25 09:58	09/12/25 17:58	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/25 09:58	09/12/25 17:58	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/25 09:58	09/12/25 17:58	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/25 09:58	09/12/25 17:58	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/25 09:58	09/12/25 17:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*09/12/25 09:58*	*09/12/25 17:58*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*09/12/25 09:58*	*09/12/25 17:58*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			09/12/25 17:58	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			09/13/25 04:33	1

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Client Sample ID: BG-03

Date Collected: 09/10/25 11:24
Date Received: 09/11/25 14:10
Sample Depth: 28

Lab Sample ID: 890-8782-13

Matrix: Solid

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	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 04:33	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 04:33	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 04:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*97*		*70 - 130*	*09/12/25 10:30*	*09/13/25 04:33*	*1*
o-Terphenyl	*103*		*70 - 130*	*09/12/25 10:30*	*09/13/25 04:33*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**434**		10.1		mg/Kg			09/12/25 19:35	1

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)										
890-8782-1	BG-03	87	78										
890-8782-1 MS	BG-03	101	95										
890-8782-1 MSD	BG-03	84	101										
890-8782-2	BG-03	98	97										
890-8782-3	BG-03	85	96										
890-8782-4	BG-03	93	92										
890-8782-5	BG-03	92	94										
890-8782-6	BG-03	93	96										
890-8782-7	BG-03	96	93										
890-8782-8	BG-03	89	97										
890-8782-9	BG-03	94	90										
890-8782-10	BG-03	101	93										
890-8782-11	BG-03	99	93										
890-8782-12	BG-03	88	95										
890-8782-13	BG-03	96	98										
LCS 880-118751/1-A	Lab Control Sample	96	100										
LCS 880-118824/1-A	Lab Control Sample	107	93										
LCSD 880-118751/2-A	Lab Control Sample Dup	102	100										
LCSD 880-118824/2-A	Lab Control Sample Dup	103	94										
MB 880-118751/5-A	Method Blank	94	88										
MB 880-118824/5-A	Method Blank	100	86										

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)										
890-8782-1	BG-03	84	80										
890-8782-2	BG-03	75	71										
890-8782-3	BG-03	78	75										
890-8782-4	BG-03	92	87										
890-8782-4 MS	BG-03	105	90										
890-8782-4 MSD	BG-03	88	89										
890-8782-5	BG-03	92	87										
890-8782-6	BG-03	93	89										
890-8782-7	BG-03	94	90										
890-8782-8	BG-03	95	92										
890-8782-9	BG-03	91	90										
890-8782-10	BG-03	92	95										
890-8782-11	BG-03	90	94										
890-8782-12	BG-03	90	93										
890-8782-13	BG-03	97	103										
LCS 880-118593/2-A	Lab Control Sample	111	105										
LCS 880-118759/2-A	Lab Control Sample	111	121										
LCSD 880-118759/3-A	Lab Control Sample Dup	112	126										

Surrogate Summary

Client: Earth Systems Response and Restoration
Job ID: 890-8782-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County, NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		1CO1	OTPH1								
Lab Sample ID	Client Sample ID	(70-130)	(70-130)								
MB 880-118593/1-A	Method Blank	72	72								
MB 880-118759/1-A	Method Blank	111	117								

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-118751/5-A
Matrix: Solid
Analysis Batch: 118742

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118751

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 11:36	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 11:36	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 11:36	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/12/25 09:58	09/12/25 11:36	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/25 09:58	09/12/25 11:36	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/12/25 09:58	09/12/25 11:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*	*09/12/25 09:58*	*09/12/25 11:36*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*09/12/25 09:58*	*09/12/25 11:36*	*1*

Lab Sample ID: LCS 880-118751/1-A
Matrix: Solid
Analysis Batch: 118742

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 118751

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09415		mg/Kg		94	70 - 130
Toluene	0.100	0.07901		mg/Kg		79	70 - 130
Ethylbenzene	0.100	0.07835		mg/Kg		78	70 - 130
m-Xylene & p-Xylene	0.200	0.1535		mg/Kg		77	70 - 130
o-Xylene	0.100	0.07571		mg/Kg		76	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 880-118751/2-A
Matrix: Solid
Analysis Batch: 118742

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 118751

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09988		mg/Kg		100	70 - 130	6	35
Toluene	0.100	0.08828		mg/Kg		88	70 - 130	11	35
Ethylbenzene	0.100	0.09068		mg/Kg		91	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.1798		mg/Kg		90	70 - 130	16	35
o-Xylene	0.100	0.08893		mg/Kg		89	70 - 130	16	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: MB 880-118824/5-A
Matrix: Solid
Analysis Batch: 118742

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118824

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/12/25 15:15	09/12/25 22:33	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/25 15:15	09/12/25 22:33	1

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QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 880-118824/5-A
Matrix: Solid
Analysis Batch: 118742

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118824

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/25 15:15	09/12/25 22:33	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/12/25 15:15	09/12/25 22:33	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/25 15:15	09/12/25 22:33	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/12/25 15:15	09/12/25 22:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*09/12/25 15:15*	*09/12/25 22:33*	*1*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*09/12/25 15:15*	*09/12/25 22:33*	*1*

Lab Sample ID: LCS 880-118824/1-A
Matrix: Solid
Analysis Batch: 118742

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 118824

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09204		mg/Kg		92	70 - 130
Toluene	0.100	0.09283		mg/Kg		93	70 - 130
Ethylbenzene	0.100	0.1000		mg/Kg		100	70 - 130
m-Xylene & p-Xylene	0.200	0.2040		mg/Kg		102	70 - 130
o-Xylene	0.100	0.1017		mg/Kg		102	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

Lab Sample ID: LCSD 880-118824/2-A
Matrix: Solid
Analysis Batch: 118742

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 118824

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.08503		mg/Kg		85	70 - 130	8	35
Toluene	0.100	0.08168		mg/Kg		82	70 - 130	13	35
Ethylbenzene	0.100	0.08329		mg/Kg		83	70 - 130	18	35
m-Xylene & p-Xylene	0.200	0.1675		mg/Kg		84	70 - 130	20	35
o-Xylene	0.100	0.08250		mg/Kg		82	70 - 130	21	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

Lab Sample ID: 890-8782-1 MS
Matrix: Solid
Analysis Batch: 118742

Client Sample ID: BG-03
Prep Type: Total/NA
Prep Batch: 118824

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U F1	0.100	0.09250		mg/Kg		91	70 - 130
Toluene	<0.00200	U F1	0.100	0.07637		mg/Kg		76	70 - 130
Ethylbenzene	<0.00200	U F1	0.100	0.07392		mg/Kg		73	70 - 130
m-Xylene & p-Xylene	<0.00399	U F1	0.200	0.1437		mg/Kg		72	70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 890-8782-1 MS
Matrix: Solid
Analysis Batch: 118742

Client Sample ID: BG-03
Prep Type: Total/NA
Prep Batch: 118824

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
o-Xylene	<0.00200	U F1	0.100	0.06974	F1	mg/Kg		68	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: 890-8782-1 MSD
Matrix: Solid
Analysis Batch: 118742

Client Sample ID: BG-03
Prep Type: Total/NA
Prep Batch: 118824

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F1	0.100	<0.00200	U F1	mg/Kg		0	70 - 130	NC	35
Toluene	<0.00200	U F1	0.100	<0.00200	U F1	mg/Kg		0	70 - 130	NC	35
Ethylbenzene	<0.00200	U F1	0.100	<0.00200	U F1	mg/Kg		0	70 - 130	NC	35
m-Xylene & p-Xylene	<0.00399	U F1	0.200	<0.00400	U F1	mg/Kg		0	70 - 130	NC	35
o-Xylene	<0.00200	U F1	0.100	<0.00200	U F1	mg/Kg		0	70 - 130	NC	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-118593/1-A
Matrix: Solid
Analysis Batch: 118835

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118593

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		09/10/25 08:47	09/12/25 16:48	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/10/25 08:47	09/12/25 16:48	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/10/25 08:47	09/12/25 16:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*72*		*70 - 130*	*09/10/25 08:47*	*09/12/25 16:48*	*1*
o-Terphenyl	*72*		*70 - 130*	*09/10/25 08:47*	*09/12/25 16:48*	*1*

Lab Sample ID: LCS 880-118593/2-A
Matrix: Solid
Analysis Batch: 118835

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 118593

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	984.9		mg/Kg		98	70 - 130
Diesel Range Organics (Over C10-C28)	1000	899.0		mg/Kg		90	70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 880-118593/2-A
Matrix: Solid
Analysis Batch: 118835

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 118593

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	111		70 - 130
o-Terphenyl	105		70 - 130

Lab Sample ID: MB 880-118759/1-A
Matrix: Solid
Analysis Batch: 118802

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118759

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 00:59	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 00:59	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 00:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	111		70 - 130	09/12/25 10:30	09/13/25 00:59	1
o-Terphenyl	117		70 - 130	09/12/25 10:30	09/13/25 00:59	1

Lab Sample ID: LCS 880-118759/2-A
Matrix: Solid
Analysis Batch: 118802

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 118759

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	964.2		mg/Kg		96	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	835.7		mg/Kg		84	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	111		70 - 130
o-Terphenyl	121		70 - 130

Lab Sample ID: LCSD 880-118759/3-A
Matrix: Solid
Analysis Batch: 118802

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 118759

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	974.1		mg/Kg		97	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	854.1		mg/Kg		85	70 - 130	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	112		70 - 130
o-Terphenyl	126		70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 890-8782-4 MS
Matrix: Solid
Analysis Batch: 118802

Client Sample ID: BG-03
Prep Type: Total/NA
Prep Batch: 118759

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	811.8		mg/Kg		81	70 - 130
Diesel Range Organics (Over C10-C28)	<50.0	U	998	742.7		mg/Kg		73	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*105*		*70 - 130*
o-Terphenyl	*90*		*70 - 130*

Lab Sample ID: 890-8782-4 MSD
Matrix: Solid
Analysis Batch: 118802

Client Sample ID: BG-03
Prep Type: Total/NA
Prep Batch: 118759

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	831.4		mg/Kg		83	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<50.0	U	998	780.1		mg/Kg		77	70 - 130	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*88*		*70 - 130*
o-Terphenyl	*89*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-118731/1-A
Matrix: Solid
Analysis Batch: 118811

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			09/12/25 17:40	1

Lab Sample ID: LCS 880-118731/2-A
Matrix: Solid
Analysis Batch: 118811

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	260.8		mg/Kg		104	90 - 110

Lab Sample ID: LCSD 880-118731/3-A
Matrix: Solid
Analysis Batch: 118811

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	262.9		mg/Kg		105	90 - 110	1	20

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-8782-1 MS
Matrix: Solid
Analysis Batch: 118811

Client Sample ID: BG-03
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	21.1	F1	251	316.2	F1	mg/Kg		118	90 - 110		

Lab Sample ID: 890-8782-1 MSD
Matrix: Solid
Analysis Batch: 118811

Client Sample ID: BG-03
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	21.1	F1	251	312.1	F1	mg/Kg		116	90 - 110	1	20

Lab Sample ID: 890-8782-11 MS
Matrix: Solid
Analysis Batch: 118811

Client Sample ID: BG-03
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	377	F1	249	660.9	F1	mg/Kg		114	90 - 110		

Lab Sample ID: 890-8782-11 MSD
Matrix: Solid
Analysis Batch: 118811

Client Sample ID: BG-03
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	377	F1	249	661.5	F1	mg/Kg		114	90 - 110	0	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

GC VOA

Analysis Batch: 118742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8782-1	BG-03	Total/NA	Solid	8021B	118824
890-8782-2	BG-03	Total/NA	Solid	8021B	118751
890-8782-3	BG-03	Total/NA	Solid	8021B	118751
890-8782-4	BG-03	Total/NA	Solid	8021B	118751
890-8782-5	BG-03	Total/NA	Solid	8021B	118751
890-8782-6	BG-03	Total/NA	Solid	8021B	118751
890-8782-7	BG-03	Total/NA	Solid	8021B	118751
890-8782-8	BG-03	Total/NA	Solid	8021B	118751
890-8782-9	BG-03	Total/NA	Solid	8021B	118751
890-8782-10	BG-03	Total/NA	Solid	8021B	118751
890-8782-11	BG-03	Total/NA	Solid	8021B	118751
890-8782-12	BG-03	Total/NA	Solid	8021B	118751
890-8782-13	BG-03	Total/NA	Solid	8021B	118751
MB 880-118751/5-A	Method Blank	Total/NA	Solid	8021B	118751
MB 880-118824/5-A	Method Blank	Total/NA	Solid	8021B	118824
LCS 880-118751/1-A	Lab Control Sample	Total/NA	Solid	8021B	118751
LCS 880-118824/1-A	Lab Control Sample	Total/NA	Solid	8021B	118824
LCSD 880-118751/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	118751
LCSD 880-118824/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	118824
890-8782-1 MS	BG-03	Total/NA	Solid	8021B	118824
890-8782-1 MSD	BG-03	Total/NA	Solid	8021B	118824

Prep Batch: 118751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8782-2	BG-03	Total/NA	Solid	5035	
890-8782-3	BG-03	Total/NA	Solid	5035	
890-8782-4	BG-03	Total/NA	Solid	5035	
890-8782-5	BG-03	Total/NA	Solid	5035	
890-8782-6	BG-03	Total/NA	Solid	5035	
890-8782-7	BG-03	Total/NA	Solid	5035	
890-8782-8	BG-03	Total/NA	Solid	5035	
890-8782-9	BG-03	Total/NA	Solid	5035	
890-8782-10	BG-03	Total/NA	Solid	5035	
890-8782-11	BG-03	Total/NA	Solid	5035	
890-8782-12	BG-03	Total/NA	Solid	5035	
890-8782-13	BG-03	Total/NA	Solid	5035	
MB 880-118751/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-118751/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-118751/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 118816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8782-1	BG-03	Total/NA	Solid	Total BTEX	
890-8782-2	BG-03	Total/NA	Solid	Total BTEX	
890-8782-3	BG-03	Total/NA	Solid	Total BTEX	
890-8782-4	BG-03	Total/NA	Solid	Total BTEX	
890-8782-5	BG-03	Total/NA	Solid	Total BTEX	
890-8782-6	BG-03	Total/NA	Solid	Total BTEX	
890-8782-7	BG-03	Total/NA	Solid	Total BTEX	
890-8782-8	BG-03	Total/NA	Solid	Total BTEX	
890-8782-9	BG-03	Total/NA	Solid	Total BTEX	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

GC VOA (Continued)

Analysis Batch: 118816 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8782-10	BG-03	Total/NA	Solid	Total BTEX	
890-8782-11	BG-03	Total/NA	Solid	Total BTEX	
890-8782-12	BG-03	Total/NA	Solid	Total BTEX	
890-8782-13	BG-03	Total/NA	Solid	Total BTEX	

Prep Batch: 118824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8782-1	BG-03	Total/NA	Solid	5035	
MB 880-118824/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-118824/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-118824/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-8782-1 MS	BG-03	Total/NA	Solid	5035	
890-8782-1 MSD	BG-03	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 118593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8782-1	BG-03	Total/NA	Solid	8015NM Prep	
890-8782-2	BG-03	Total/NA	Solid	8015NM Prep	
890-8782-3	BG-03	Total/NA	Solid	8015NM Prep	
MB 880-118593/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-118593/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	

Prep Batch: 118759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8782-4	BG-03	Total/NA	Solid	8015NM Prep	
890-8782-5	BG-03	Total/NA	Solid	8015NM Prep	
890-8782-6	BG-03	Total/NA	Solid	8015NM Prep	
890-8782-7	BG-03	Total/NA	Solid	8015NM Prep	
890-8782-8	BG-03	Total/NA	Solid	8015NM Prep	
890-8782-9	BG-03	Total/NA	Solid	8015NM Prep	
890-8782-10	BG-03	Total/NA	Solid	8015NM Prep	
890-8782-11	BG-03	Total/NA	Solid	8015NM Prep	
890-8782-12	BG-03	Total/NA	Solid	8015NM Prep	
890-8782-13	BG-03	Total/NA	Solid	8015NM Prep	
MB 880-118759/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-118759/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-118759/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-8782-4 MS	BG-03	Total/NA	Solid	8015NM Prep	
890-8782-4 MSD	BG-03	Total/NA	Solid	8015NM Prep	

Analysis Batch: 118802

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8782-4	BG-03	Total/NA	Solid	8015B NM	118759
890-8782-5	BG-03	Total/NA	Solid	8015B NM	118759
890-8782-6	BG-03	Total/NA	Solid	8015B NM	118759
890-8782-7	BG-03	Total/NA	Solid	8015B NM	118759
890-8782-8	BG-03	Total/NA	Solid	8015B NM	118759
890-8782-9	BG-03	Total/NA	Solid	8015B NM	118759
890-8782-10	BG-03	Total/NA	Solid	8015B NM	118759

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

GC Semi VOA (Continued)

Analysis Batch: 118802 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8782-11	BG-03	Total/NA	Solid	8015B NM	118759
890-8782-12	BG-03	Total/NA	Solid	8015B NM	118759
890-8782-13	BG-03	Total/NA	Solid	8015B NM	118759
MB 880-118759/1-A	Method Blank	Total/NA	Solid	8015B NM	118759
LCS 880-118759/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	118759
LCSD 880-118759/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	118759
890-8782-4 MS	BG-03	Total/NA	Solid	8015B NM	118759
890-8782-4 MSD	BG-03	Total/NA	Solid	8015B NM	118759

Analysis Batch: 118835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8782-1	BG-03	Total/NA	Solid	8015B NM	118593
890-8782-2	BG-03	Total/NA	Solid	8015B NM	118593
890-8782-3	BG-03	Total/NA	Solid	8015B NM	118593
MB 880-118593/1-A	Method Blank	Total/NA	Solid	8015B NM	118593
LCS 880-118593/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	118593

Analysis Batch: 118861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8782-1	BG-03	Total/NA	Solid	8015 NM	
890-8782-2	BG-03	Total/NA	Solid	8015 NM	
890-8782-3	BG-03	Total/NA	Solid	8015 NM	
890-8782-4	BG-03	Total/NA	Solid	8015 NM	
890-8782-5	BG-03	Total/NA	Solid	8015 NM	
890-8782-6	BG-03	Total/NA	Solid	8015 NM	
890-8782-7	BG-03	Total/NA	Solid	8015 NM	
890-8782-8	BG-03	Total/NA	Solid	8015 NM	
890-8782-9	BG-03	Total/NA	Solid	8015 NM	
890-8782-10	BG-03	Total/NA	Solid	8015 NM	
890-8782-11	BG-03	Total/NA	Solid	8015 NM	
890-8782-12	BG-03	Total/NA	Solid	8015 NM	
890-8782-13	BG-03	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 118731

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8782-1	BG-03	Soluble	Solid	DI Leach	
890-8782-2	BG-03	Soluble	Solid	DI Leach	
890-8782-3	BG-03	Soluble	Solid	DI Leach	
890-8782-4	BG-03	Soluble	Solid	DI Leach	
890-8782-5	BG-03	Soluble	Solid	DI Leach	
890-8782-6	BG-03	Soluble	Solid	DI Leach	
890-8782-7	BG-03	Soluble	Solid	DI Leach	
890-8782-8	BG-03	Soluble	Solid	DI Leach	
890-8782-9	BG-03	Soluble	Solid	DI Leach	
890-8782-10	BG-03	Soluble	Solid	DI Leach	
890-8782-11	BG-03	Soluble	Solid	DI Leach	
890-8782-12	BG-03	Soluble	Solid	DI Leach	
890-8782-13	BG-03	Soluble	Solid	DI Leach	
MB 880-118731/1-A	Method Blank	Soluble	Solid	DI Leach	

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

HPLC/IC (Continued)

Leach Batch: 118731 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-118731/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-118731/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-8782-1 MS	BG-03	Soluble	Solid	DI Leach	
890-8782-1 MSD	BG-03	Soluble	Solid	DI Leach	
890-8782-11 MS	BG-03	Soluble	Solid	DI Leach	
890-8782-11 MSD	BG-03	Soluble	Solid	DI Leach	

Analysis Batch: 118811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8782-1	BG-03	Soluble	Solid	300.0	118731
890-8782-2	BG-03	Soluble	Solid	300.0	118731
890-8782-3	BG-03	Soluble	Solid	300.0	118731
890-8782-4	BG-03	Soluble	Solid	300.0	118731
890-8782-5	BG-03	Soluble	Solid	300.0	118731
890-8782-6	BG-03	Soluble	Solid	300.0	118731
890-8782-7	BG-03	Soluble	Solid	300.0	118731
890-8782-8	BG-03	Soluble	Solid	300.0	118731
890-8782-9	BG-03	Soluble	Solid	300.0	118731
890-8782-10	BG-03	Soluble	Solid	300.0	118731
890-8782-11	BG-03	Soluble	Solid	300.0	118731
890-8782-12	BG-03	Soluble	Solid	300.0	118731
890-8782-13	BG-03	Soluble	Solid	300.0	118731
MB 880-118731/1-A	Method Blank	Soluble	Solid	300.0	118731
LCS 880-118731/2-A	Lab Control Sample	Soluble	Solid	300.0	118731
LCSD 880-118731/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	118731
890-8782-1 MS	BG-03	Soluble	Solid	300.0	118731
890-8782-1 MSD	BG-03	Soluble	Solid	300.0	118731
890-8782-11 MS	BG-03	Soluble	Solid	300.0	118731
890-8782-11 MSD	BG-03	Soluble	Solid	300.0	118731

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Client Sample ID: BG-03
Date Collected: 09/10/25 11:00
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8782-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	118824	09/12/25 15:15	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 22:55	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118816	09/12/25 22:55	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118861	09/12/25 23:12	SA	EET MID
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	118593	09/10/25 08:47	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118835	09/12/25 23:12	TKC	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 17:58	CS	EET MID

Client Sample ID: BG-03
Date Collected: 09/10/25 11:02
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8782-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	118751	09/12/25 09:58	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 12:59	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118816	09/12/25 12:59	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118861	09/12/25 23:27	SA	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	118593	09/10/25 08:47	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118835	09/12/25 23:27	TKC	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 18:07	CS	EET MID

Client Sample ID: BG-03
Date Collected: 09/10/25 11:04
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8782-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	118751	09/12/25 09:58	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 13:20	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118816	09/12/25 13:20	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118861	09/12/25 23:42	SA	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	118593	09/10/25 08:47	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118835	09/12/25 23:42	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 18:13	CS	EET MID

Client Sample ID: BG-03
Date Collected: 09/10/25 11:06
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8782-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	118751	09/12/25 09:58	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 13:40	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118816	09/12/25 13:40	AJ	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Client Sample ID: BG-03

Date Collected: 09/10/25 11:06
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8782-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			118861	09/13/25 01:46	SA	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 01:46	TKC	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 18:19	CS	EET MID

Client Sample ID: BG-03

Date Collected: 09/10/25 11:08
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8782-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	118751	09/12/25 09:58	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 14:01	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118816	09/12/25 14:01	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118861	09/13/25 02:32	SA	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 02:32	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 18:25	CS	EET MID

Client Sample ID: BG-03

Date Collected: 09/10/25 11:10
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8782-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	118751	09/12/25 09:58	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 14:21	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118816	09/12/25 14:21	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118861	09/13/25 02:47	SA	EET MID
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 02:47	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 18:42	CS	EET MID

Client Sample ID: BG-03

Date Collected: 09/10/25 11:12
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8782-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	118751	09/12/25 09:58	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 14:42	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118816	09/12/25 14:42	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118861	09/13/25 03:02	SA	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 03:02	TKC	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Client Sample ID: BG-03
Date Collected: 09/10/25 11:12
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8782-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.97 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 18:48	CS	EET MID

Client Sample ID: BG-03
Date Collected: 09/10/25 11:14
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8782-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	118751	09/12/25 09:58	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 15:02	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118816	09/12/25 15:02	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118861	09/13/25 03:18	SA	EET MID
Total/NA	Prep	8015NM Prep			9.99 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 03:18	TKC	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 18:54	CS	EET MID

Client Sample ID: BG-03
Date Collected: 09/10/25 11:16
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8782-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	118751	09/12/25 09:58	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 16:36	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118816	09/12/25 16:36	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118861	09/13/25 03:32	SA	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 03:32	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 19:00	CS	EET MID

Client Sample ID: BG-03
Date Collected: 09/10/25 11:18
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8782-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	118751	09/12/25 09:58	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 16:56	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118816	09/12/25 16:56	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118861	09/13/25 03:48	SA	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 03:48	TKC	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 19:05	CS	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Client Sample ID: BG-03
Date Collected: 09/10/25 11:20
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8782-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	118751	09/12/25 09:58	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 17:17	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118816	09/12/25 17:17	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118861	09/13/25 04:03	SA	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 04:03	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 19:11	CS	EET MID

Client Sample ID: BG-03
Date Collected: 09/10/25 11:22
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8782-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	118751	09/12/25 09:58	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 17:37	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118816	09/12/25 17:37	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118861	09/13/25 04:18	SA	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 04:18	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 19:29	CS	EET MID

Client Sample ID: BG-03
Date Collected: 09/10/25 11:24
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8782-13
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	118751	09/12/25 09:58	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118742	09/12/25 17:58	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118816	09/12/25 17:58	AJ	EET MID
Total/NA	Analysis	8015 NM		1			118861	09/13/25 04:33	SA	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 04:33	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 19:35	CS	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 890-8782-1
Project/Site: Spud Muffin 31 30 #738H
SDG: Eddy County, NM

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400	06-30-26

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8782-1
SDG: Eddy County, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-8782-1	BG-03	Solid	09/10/25 11:00	09/11/25 14:10	0.5
890-8782-2	BG-03	Solid	09/10/25 11:02	09/11/25 14:10	1
890-8782-3	BG-03	Solid	09/10/25 11:04	09/11/25 14:10	2
890-8782-4	BG-03	Solid	09/10/25 11:06	09/11/25 14:10	3
890-8782-5	BG-03	Solid	09/10/25 11:08	09/11/25 14:10	4
890-8782-6	BG-03	Solid	09/10/25 11:10	09/11/25 14:10	5
890-8782-7	BG-03	Solid	09/10/25 11:12	09/11/25 14:10	6
890-8782-8	BG-03	Solid	09/10/25 11:14	09/11/25 14:10	8
890-8782-9	BG-03	Solid	09/10/25 11:16	09/11/25 14:10	12
890-8782-10	BG-03	Solid	09/10/25 11:18	09/11/25 14:10	16
890-8782-11	BG-03	Solid	09/10/25 11:20	09/11/25 14:10	20
890-8782-12	BG-03	Solid	09/10/25 11:22	09/11/25 14:10	24
890-8782-13	BG-03	Solid	09/10/25 11:24	09/11/25 14:10	28

Released to Imaging: 11/6/2025 3:18:49 PM
Received by OCD: 11/4/2025 7:21:25 AM

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Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

890-8782 Chain of Custody

www.xenco.com Page 1 of 2

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	15995	☑ Routine ☐ Rush	
Project Location:	Eddy County, NM	Due Date:	Routine TAT
Sampler's Name:	Gilbert Moreno, Santiago Giron	TAT starts the day received by the lab, if received by 4:30pm	
CC/WO #:	21441869		

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Samples Received Intact:	(Yes) No	Thermometer ID:	TM002
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	4.2
Total Containers:		Corrected Temperature:	4.0

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2S0_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	Pres. Code	Parameters: TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	Sample Comments
BG-03	S	9.10.25	11:00	0.5	Grab/	1		X	X	X			Incident Number
BG-03	S	9.10.25	11:02	1	Grab/	1		X	X	X			nAPP2431628896
BG-02 3	S	9.10.25	11:04	2	Grab/	1		X	X	X			
BG-02 3	S	9.10.25	11:06	3	Grab/	1		X	X	X			
BG-02 3	S	9.10.25	11:08	4	Grab/	1		X	X	X			
BG-02 3	S	9.10.25	11:10	5	Grab/	1		X	X	X			
BG-02 3	S	9.10.25	11:12	6	Grab/	1		X	X	X			
BG-02 3	S	9.10.25	11:14	8	Grab/	1		X	X	X			
BG-02 3	S	9.10.25	11:16	12	Grab/	1		X	X	X			

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of $85.00 will be applied to each project and a charge of $5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		9/11 1410	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

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Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Teel, Brianna	Carrier Tracking No(s): N/A	COC No: 890-5856.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Brianna.Teel@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 1 of 2
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-8782-1
Address: 1211 W. Florida Ave, ,	Due Date Requested: 9/17/2025			Preservation Codes: -
City: Midland	TAT Requested (days): N/A			
State, Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: spud muffin 31 30 #738H	Project #: 88001228			
Site: N/A	SSOW#: N/A			Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total_BTEX_GCV	8021B/5035FP_CalcBTEX	300_ORGFM_28D/DI_LEACHChloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep8015 NM	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
BG-03 (890-8782-1)	9/10/25	11:00 Mountain	G	Solid			X	X	X	X	X	1	
BG-03 (890-8782-2)	9/10/25	11:02 Mountain	G	Solid			X	X	X	X	X	1	
BG-03 (890-8782-3)	9/10/25	11:04 Mountain	G	Solid			X	X	X	X	X	1	
BG-03 (890-8782-4)	9/10/25	11:06 Mountain	G	Solid			X	X	X	X	X	1	
BG-03 (890-8782-5)	9/10/25	11:08 Mountain	G	Solid			X	X	X	X	X	1	
BG-03 (890-8782-6)	9/10/25	11:10 Mountain	G	Solid			X	X	X	X	X	1	
BG-03 (890-8782-7)	9/10/25	11:12 Mountain	G	Solid			X	X	X	X	X	1	
BG-03 (890-8782-8)	9/10/25	11:14 Mountain	G	Solid			X	X	X	X	X	1	
BG-03 (890-8782-9)	9/10/25	11:16 Mountain	G	Solid			X	X	X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	9/11 1630				
2	Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 9/12/25 800	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.6/2.5

Ver: 10/10/2024

Received by OCD: 11/4/2025 7:21:25 AM

Released to Imaging: 11/6/2025 3:18:49 PM

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Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Teel, Brianna	Carrier Tracking No(s): N/A	COC No: 890-5856.2
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Brianna.Teel@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 2 of 2
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-8782-1
Address: 1211 W. Florida Ave, ,	Due Date Requested: 9/17/2025			
City: Midland	TAT Requested (days): N/A			
State, Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: spud muffin 31 30 #738H	Project #: 88001228			
Site: N/A	SSOW#: N/A			

Analysis Requested

Preservation Codes: -

Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total_BTEX_GCV	8021B/5035FP_CalcBTEX	300_ORGFM_28D/DI_LEACHChloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep8015 NM	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
BG-03 (890-8782-10)	9/10/25	11:18 Mountain	G	Solid			X	X	X	X	X	1	
BG-03 (890-8782-11)	9/10/25	11:20 Mountain	G	Solid			X	X	X	X	X	1	
BG-03 (890-8782-12)	9/10/25	11:22 Mountain	G	Solid			X	X	X	X	X	1	
BG-03 (890-8782-13)	9/10/25	11:24 Mountain	G	Solid			X	X	X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 9/11 1630	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 9/12/25 0800	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

Received by OCD: 11/4/2025 7:21:25 AM
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9/16/2025
Released to Imaging: 11/6/2025 3:18:49 PM

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-8782-1
SDG Number: Eddy County, NM

Login Number: 8782
List Number: 1
Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

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	

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-8782-1
SDG Number: Eddy County, NM

Login Number: 8782
List Number: 2
Creator: Laing, Edmundo

List Source: Eurofins Midland
List Creation: 09/12/25 10:07 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Gilbert Moreno
Earth Systems Response and Restoration
4115 South County Road 1297
Odessa, Texas 79765

Generated 9/15/2025 4:28:06 PM

JOB DESCRIPTION

SPUD MUFFIN 31 30 #738 H
15995

JOB NUMBER

890-8783-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

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my EOL

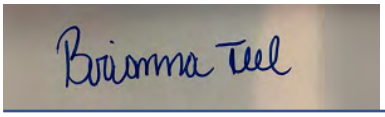
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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9/15/2025 4:28:06 PM

Authorized for release by
Brianna Teel, Project Manager
Brianna.Teel@et.eurofinsus.com
(432)704-5440

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Laboratory Job ID: 890-8783-1
SDG: 15995

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Definitions/Glossary

Client: Earth Systems Response and Restoration Job ID: 890-8783-1
Project/Site: SPUD MUFFIN 31 30 #738 H SDG: 15995

Qualifiers

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Earth Systems Response and Restoration Job ID: 890-8783-1
Project: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1 Eurofins Carlsbad

Job Narrative
890-8783-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 9/11/2025 2:10 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 4.0°C.

Receipt Exceptions
The following samples analyzed were received and analyzed from an unpreserved bulk soil jar: BG - 04 (890-8783-1), BG - 04 (890-8783-2), BG - 04 (890-8783-3), BG - 04 (890-8783-4), BG - 04 (890-8783-5), BG - 04 (890-8783-6), BG - 04 (890-8783-7), BG - 04 (890-8783-8), BG - 04 (890-8783-9), BG - 04 (890-8783-10), BG - 04 (890-8783-11), BG - 04 (890-8783-12) and BG - 04 (890-8783-13).

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Diesel Range Organics
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 300_ORGFM_28D - Soluble: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-118730 and analytical batch 880-118753 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.

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Client Sample ID: BG - 04

Lab Sample ID: 890-8783-1
Matrix: Solid
Date Collected: 09/10/25 13:30
Date Received: 09/11/25 14:10
Sample Depth: 0.5

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 14:24	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 14:24	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 14:24	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		09/12/25 10:14	09/12/25 14:24	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 14:24	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		09/12/25 10:14	09/12/25 14:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*09/12/25 10:14*	*09/12/25 14:24*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*09/12/25 10:14*	*09/12/25 14:24*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			09/12/25 14:24	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			09/13/25 05:02	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	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 05:02	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 05:02	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 05:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*09/12/25 10:30*	*09/13/25 05:02*	*1*
o-Terphenyl	*88*		*70 - 130*	*09/12/25 10:30*	*09/13/25 05:02*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**12.0**		10.0		mg/Kg			09/12/25 19:52	1

Client Sample ID: BG - 04

Lab Sample ID: 890-8783-2
Matrix: Solid
Date Collected: 09/10/25 13:32
Date Received: 09/11/25 14:10
Sample Depth: 1

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 14:45	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 14:45	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 14:45	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/25 10:14	09/12/25 14:45	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 14:45	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/25 10:14	09/12/25 14:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*09/12/25 10:14*	*09/12/25 14:45*	*1*

Eurofins Carlsbad

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Client Sample ID: BG - 04

Lab Sample ID: 890-8783-2
Matrix: Solid
Date Collected: 09/10/25 13:32
Date Received: 09/11/25 14:10
Sample Depth: 1

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*09/12/25 10:14*	*09/12/25 14:45*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			09/12/25 14:45	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			09/13/25 05:17	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	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 05:17	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 05:17	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 05:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*95*		*70 - 130*	*09/12/25 10:30*	*09/13/25 05:17*	*1*
o-Terphenyl	*90*		*70 - 130*	*09/12/25 10:30*	*09/13/25 05:17*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.1	U	10.1		mg/Kg			09/12/25 19:58	1

Client Sample ID: BG - 04

Lab Sample ID: 890-8783-3
Matrix: Solid
Date Collected: 09/10/25 13:34
Date Received: 09/11/25 14:10
Sample Depth: 2

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		09/12/25 10:14	09/12/25 15:05	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/25 10:14	09/12/25 15:05	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/25 10:14	09/12/25 15:05	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/25 10:14	09/12/25 15:05	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/25 10:14	09/12/25 15:05	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/25 10:14	09/12/25 15:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*	*09/12/25 10:14*	*09/12/25 15:05*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*09/12/25 10:14*	*09/12/25 15:05*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			09/12/25 15:05	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			09/13/25 05:31	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Client Sample ID: BG - 04

Lab Sample ID: 890-8783-3
Matrix: Solid
Date Collected: 09/10/25 13:34
Date Received: 09/11/25 14:10
Sample Depth: 2

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	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 05:31	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 05:31	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 05:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*87*		*70 - 130*	*09/12/25 10:30*	*09/13/25 05:31*	*1*
o-Terphenyl	*84*		*70 - 130*	*09/12/25 10:30*	*09/13/25 05:31*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.1	U	10.1		mg/Kg			09/12/25 20:04	1

Client Sample ID: BG - 04

Lab Sample ID: 890-8783-4
Matrix: Solid
Date Collected: 09/10/25 13:36
Date Received: 09/11/25 14:10
Sample Depth: 3

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 16:39	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 16:39	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 16:39	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		09/12/25 10:14	09/12/25 16:39	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 16:39	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		09/12/25 10:14	09/12/25 16:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*09/12/25 10:14*	*09/12/25 16:39*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*09/12/25 10:14*	*09/12/25 16:39*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			09/12/25 16:39	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			09/13/25 05:46	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	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 05:46	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 05:46	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 05:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*94*		*70 - 130*	*09/12/25 10:30*	*09/13/25 05:46*	*1*
o-Terphenyl	*95*		*70 - 130*	*09/12/25 10:30*	*09/13/25 05:46*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Client Sample ID: BG - 04
Date Collected: 09/10/25 13:36
Date Received: 09/11/25 14:10
Sample Depth: 3

Lab Sample ID: 890-8783-4
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<9.96	U	9.96		mg/Kg			09/15/25 09:42	1

Client Sample ID: BG - 04
Date Collected: 09/10/25 13:38
Date Received: 09/11/25 14:10
Sample Depth: 4

Lab Sample ID: 890-8783-5
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 16:59	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 16:59	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 16:59	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		09/12/25 10:14	09/12/25 16:59	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 16:59	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		09/12/25 10:14	09/12/25 16:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*09/12/25 10:14*	*09/12/25 16:59*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*09/12/25 10:14*	*09/12/25 16:59*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			09/12/25 16:59	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			09/13/25 06:00	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	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 06:00	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 06:00	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 06:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*09/12/25 10:30*	*09/13/25 06:00*	*1*
o-Terphenyl	*88*		*70 - 130*	*09/12/25 10:30*	*09/13/25 06:00*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**21.9**		9.92		mg/Kg			09/12/25 20:12	1

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Client Sample ID: BG - 04

Lab Sample ID: 890-8783-6
Matrix: Solid
Date Collected: 09/10/25 13:40
Date Received: 09/11/25 14:10
Sample Depth: 5

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/12/25 10:14	09/12/25 17:20	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/25 10:14	09/12/25 17:20	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/25 10:14	09/12/25 17:20	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/12/25 10:14	09/12/25 17:20	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/25 10:14	09/12/25 17:20	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/12/25 10:14	09/12/25 17:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*09/12/25 10:14*	*09/12/25 17:20*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*	*09/12/25 10:14*	*09/12/25 17:20*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			09/12/25 17:20	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			09/13/25 06:15	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	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 06:15	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 06:15	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 06:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*91*		*70 - 130*	*09/12/25 10:30*	*09/13/25 06:15*	*1*
o-Terphenyl	*92*		*70 - 130*	*09/12/25 10:30*	*09/13/25 06:15*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**482**		10.1		mg/Kg			09/12/25 20:17	1

Client Sample ID: BG - 04

Lab Sample ID: 890-8783-7
Matrix: Solid
Date Collected: 09/10/25 13:42
Date Received: 09/11/25 14:10
Sample Depth: 6

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 17:40	1
Toluene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 17:40	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 17:40	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		09/12/25 10:14	09/12/25 17:40	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		09/12/25 10:14	09/12/25 17:40	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		09/12/25 10:14	09/12/25 17:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*09/12/25 10:14*	*09/12/25 17:40*	*1*

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Client Sample ID: BG - 04

Date Collected: 09/10/25 13:42
Date Received: 09/11/25 14:10
Sample Depth: 6

Lab Sample ID: 890-8783-7
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*09/12/25 10:14*	*09/12/25 17:40*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			09/12/25 17:40	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			09/13/25 06:29	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	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 06:29	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 06:29	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 06:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*90*		*70 - 130*	*09/12/25 10:30*	*09/13/25 06:29*	*1*
o-Terphenyl	*93*		*70 - 130*	*09/12/25 10:30*	*09/13/25 06:29*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**954**		10.1		mg/Kg			09/12/25 20:23	1

Client Sample ID: BG - 04

Date Collected: 09/10/25 13:44
Date Received: 09/11/25 14:10
Sample Depth: 8

Lab Sample ID: 890-8783-8
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 18:01	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 18:01	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 18:01	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/25 10:14	09/12/25 18:01	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 18:01	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/25 10:14	09/12/25 18:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*09/12/25 10:14*	*09/12/25 18:01*	*1*
1,4-Difluorobenzene (Surr)	*106*		*70 - 130*	*09/12/25 10:14*	*09/12/25 18:01*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			09/12/25 18:01	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			09/13/25 06:44	1

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Client Sample ID: BG - 04

Date Collected: 09/10/25 13:44
Date Received: 09/11/25 14:10
Sample Depth: 8

Lab Sample ID: 890-8783-8
Matrix: Solid

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	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 06:44	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 06:44	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 06:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*93*		*70 - 130*	*09/12/25 10:30*	*09/13/25 06:44*	*1*
o-Terphenyl	*92*		*70 - 130*	*09/12/25 10:30*	*09/13/25 06:44*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**765**	**F1**	10.0		mg/Kg			09/12/25 11:12	1

Client Sample ID: BG - 04

Date Collected: 09/10/25 13:46
Date Received: 09/11/25 14:10
Sample Depth: 12

Lab Sample ID: 890-8783-9
Matrix: Solid

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 18:21	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 18:21	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 18:21	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/25 10:14	09/12/25 18:21	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 18:21	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/25 10:14	09/12/25 18:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*	*09/12/25 10:14*	*09/12/25 18:21*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*	*09/12/25 10:14*	*09/12/25 18:21*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			09/12/25 18:21	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			09/13/25 06:58	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	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 06:58	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 06:58	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 06:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*94*		*70 - 130*	*09/12/25 10:30*	*09/13/25 06:58*	*1*
o-Terphenyl	*98*		*70 - 130*	*09/12/25 10:30*	*09/13/25 06:58*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Client Sample ID: BG - 04

Lab Sample ID: 890-8783-9
Matrix: Solid
Date Collected: 09/10/25 13:46
Date Received: 09/11/25 14:10
Sample Depth: 12

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2040		49.5		mg/Kg			09/12/25 11:30	5

Client Sample ID: BG - 04

Lab Sample ID: 890-8783-10
Matrix: Solid
Date Collected: 09/10/25 13:48
Date Received: 09/11/25 14:10
Sample Depth: 16

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		09/12/25 10:14	09/12/25 18:42	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/25 10:14	09/12/25 18:42	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/25 10:14	09/12/25 18:42	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/25 10:14	09/12/25 18:42	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/25 10:14	09/12/25 18:42	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/25 10:14	09/12/25 18:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*	*09/12/25 10:14*	*09/12/25 18:42*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*	*09/12/25 10:14*	*09/12/25 18:42*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			09/12/25 18:42	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			09/13/25 07:13	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	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 07:13	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 07:13	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		09/12/25 10:30	09/13/25 07:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*94*		*70 - 130*	*09/12/25 10:30*	*09/13/25 07:13*	*1*
o-Terphenyl	*97*		*70 - 130*	*09/12/25 10:30*	*09/13/25 07:13*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1410		50.5		mg/Kg			09/12/25 11:36	5

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Client Sample ID: BG - 04

Lab Sample ID: 890-8783-11
Matrix: Solid
Date Collected: 09/10/25 13:50
Date Received: 09/11/25 14:10
Sample Depth: 20

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/12/25 10:14	09/12/25 19:02	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/25 10:14	09/12/25 19:02	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/25 10:14	09/12/25 19:02	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		09/12/25 10:14	09/12/25 19:02	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/25 10:14	09/12/25 19:02	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		09/12/25 10:14	09/12/25 19:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*	*09/12/25 10:14*	*09/12/25 19:02*	*1*
1,4-Difluorobenzene (Surr)	*129*		*70 - 130*	*09/12/25 10:14*	*09/12/25 19:02*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			09/12/25 19:02	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			09/13/25 18:45	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	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 18:45	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 18:45	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 18:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*80*		*70 - 130*	*09/12/25 10:30*	*09/13/25 18:45*	*1*
o-Terphenyl	*78*		*70 - 130*	*09/12/25 10:30*	*09/13/25 18:45*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1310**		50.3		mg/Kg			09/12/25 11:42	5

Client Sample ID: BG - 04

Lab Sample ID: 890-8783-12
Matrix: Solid
Date Collected: 09/10/25 13:52
Date Received: 09/11/25 14:10
Sample Depth: 24

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 19:23	1
Toluene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 19:23	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 19:23	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		09/12/25 10:14	09/12/25 19:23	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		09/12/25 10:14	09/12/25 19:23	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		09/12/25 10:14	09/12/25 19:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*09/12/25 10:14*	*09/12/25 19:23*	*1*

Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Client Sample ID: BG - 04

Lab Sample ID: 890-8783-12
Matrix: Solid
Date Collected: 09/10/25 13:52
Date Received: 09/11/25 14:10
Sample Depth: 24

Method: SW846 8021B - Volatile Organic Compounds (GC) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*	*09/12/25 10:14*	*09/12/25 19:23*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			09/12/25 19:23	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			09/13/25 19:30	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	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 19:30	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 19:30	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		09/12/25 10:30	09/13/25 19:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*76*		*70 - 130*	*09/12/25 10:30*	*09/13/25 19:30*	*1*
o-Terphenyl	*76*		*70 - 130*	*09/12/25 10:30*	*09/13/25 19:30*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2310**		49.5		mg/Kg			09/12/25 11:47	5

Client Sample ID: BG - 04

Lab Sample ID: 890-8783-13
Matrix: Solid
Date Collected: 09/10/25 13:54
Date Received: 09/11/25 14:10
Sample Depth: 26

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		09/12/25 10:14	09/12/25 19:43	1
Toluene	<0.00199	U	0.00199		mg/Kg		09/12/25 10:14	09/12/25 19:43	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		09/12/25 10:14	09/12/25 19:43	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		09/12/25 10:14	09/12/25 19:43	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		09/12/25 10:14	09/12/25 19:43	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		09/12/25 10:14	09/12/25 19:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*09/12/25 10:14*	*09/12/25 19:43*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*09/12/25 10:14*	*09/12/25 19:43*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			09/12/25 19:43	1

Method: SW846 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			09/13/25 19:45	1

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Client Sample Results

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Client Sample ID: BG - 04
Date Collected: 09/10/25 13:54
Date Received: 09/11/25 14:10
Sample Depth: 26

Lab Sample ID: 890-8783-13
Matrix: Solid

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	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 19:45	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 19:45	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 19:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*77*		*70 - 130*	*09/12/25 10:30*	*09/13/25 19:45*	*1*
o-Terphenyl	*76*		*70 - 130*	*09/12/25 10:30*	*09/13/25 19:45*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2830**		50.5		mg/Kg			09/12/25 12:05	5

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-8783-1	BG - 04	96	103
890-8783-2	BG - 04	102	106
890-8783-3	BG - 04	103	104
890-8783-4	BG - 04	96	101
890-8783-5	BG - 04	96	101
890-8783-6	BG - 04	97	100
890-8783-7	BG - 04	96	102
890-8783-8	BG - 04	101	106
890-8783-9	BG - 04	99	102
890-8783-10	BG - 04	98	103
890-8783-11	BG - 04	115	129
890-8783-12	BG - 04	96	101
890-8783-13	BG - 04	101	99
LCS 880-118756/1-A	Lab Control Sample	107	95
LCSD 880-118756/2-A	Lab Control Sample Dup	108	94
MB 880-118756/5-A	Method Blank	88	113

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-8783-1	BG - 04	92	88
890-8783-2	BG - 04	95	90
890-8783-3	BG - 04	87	84
890-8783-4	BG - 04	94	95
890-8783-5	BG - 04	90	88
890-8783-6	BG - 04	91	92
890-8783-7	BG - 04	90	93
890-8783-8	BG - 04	93	92
890-8783-9	BG - 04	94	98
890-8783-10	BG - 04	94	97
890-8783-11	BG - 04	80	78
890-8783-11 MS	BG - 04	90	79
890-8783-11 MSD	BG - 04	91	80
890-8783-12	BG - 04	76	76
890-8783-13	BG - 04	77	76
LCS 880-118759/2-A	Lab Control Sample	111	121
LCS 880-118761/2-A	Lab Control Sample	120	114
LCSD 880-118759/3-A	Lab Control Sample Dup	112	126
LCSD 880-118761/3-A	Lab Control Sample Dup	116	110
MB 880-118759/1-A	Method Blank	111	117
MB 880-118761/1-A	Method Blank	79	80

Surrogate Legend

1CO = 1-Chlorooctane

Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

OTPH = o-Terphenyl

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-118756/5-A
Matrix: Solid
Analysis Batch: 118743

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118756

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		09/12/25 10:14	09/12/25 11:39	1
Toluene	<0.00200	U	0.00200		mg/Kg		09/12/25 10:14	09/12/25 11:39	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		09/12/25 10:14	09/12/25 11:39	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		09/12/25 10:14	09/12/25 11:39	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		09/12/25 10:14	09/12/25 11:39	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		09/12/25 10:14	09/12/25 11:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*	*09/12/25 10:14*	*09/12/25 11:39*	*1*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*	*09/12/25 10:14*	*09/12/25 11:39*	*1*

Lab Sample ID: LCS 880-118756/1-A
Matrix: Solid
Analysis Batch: 118743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 118756

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09475		mg/Kg		95	70 - 130		
Toluene			0.100	0.1008		mg/Kg		101	70 - 130		
Ethylbenzene			0.100	0.1055		mg/Kg		105	70 - 130		
m-Xylene & p-Xylene			0.200	0.2013		mg/Kg		101	70 - 130		
o-Xylene			0.100	0.1007		mg/Kg		101	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: LCSD 880-118756/2-A
Matrix: Solid
Analysis Batch: 118743

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 118756

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09602		mg/Kg		96	70 - 130	1	35
Toluene			0.100	0.1056		mg/Kg		106	70 - 130	5	35
Ethylbenzene			0.100	0.1098		mg/Kg		110	70 - 130	4	35
m-Xylene & p-Xylene			0.200	0.2122		mg/Kg		106	70 - 130	5	35
o-Xylene			0.100	0.1062		mg/Kg		106	70 - 130	5	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-118759/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118802 — **Prep Batch: 118759**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 00:59	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 00:59	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 00:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*111*		*70 - 130*	*09/12/25 10:30*	*09/13/25 00:59*	*1*
o-Terphenyl	*117*		*70 - 130*	*09/12/25 10:30*	*09/13/25 00:59*	*1*

Lab Sample ID: LCS 880-118759/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118802 — **Prep Batch: 118759**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	964.2		mg/Kg		96	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	835.7		mg/Kg		84	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*111*		*70 - 130*
o-Terphenyl	*121*		*70 - 130*

Lab Sample ID: LCSD 880-118759/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118802 — **Prep Batch: 118759**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	974.1		mg/Kg		97	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	854.1		mg/Kg		85	70 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*112*		*70 - 130*
o-Terphenyl	*126*		*70 - 130*

Lab Sample ID: MB 880-118761/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118836 — **Prep Batch: 118761**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 07:59	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 07:59	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		09/12/25 10:30	09/13/25 07:59	1

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 880-118761/1-A
Matrix: Solid
Analysis Batch: 118836

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 118761

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	79		70 - 130	09/12/25 10:30	09/13/25 07:59	1
o-Terphenyl	80		70 - 130	09/12/25 10:30	09/13/25 07:59	1

Lab Sample ID: LCS 880-118761/2-A
Matrix: Solid
Analysis Batch: 118836

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 118761

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1046		mg/Kg		105	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	971.3		mg/Kg		97	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	120		70 - 130
o-Terphenyl	114		70 - 130

Lab Sample ID: LCSD 880-118761/3-A
Matrix: Solid
Analysis Batch: 118836

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 118761

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1021		mg/Kg		102	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	949.7		mg/Kg		95	70 - 130	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	116		70 - 130
o-Terphenyl	110		70 - 130

Lab Sample ID: 890-8783-11 MS
Matrix: Solid
Analysis Batch: 118836

Client Sample ID: BG - 04
Prep Type: Total/NA
Prep Batch: 118761

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	883.5		mg/Kg		88	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	999	835.6		mg/Kg		84	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	90		70 - 130
o-Terphenyl	79		70 - 130

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 890-8783-11 MSD — **Client Sample ID: BG - 04**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 118836 — **Prep Batch: 118761**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	904.9		mg/Kg		91	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<49.9	U	999	852.6		mg/Kg		85	70 - 130	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*91*		*70 - 130*
o-Terphenyl	*80*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-118730/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 118753

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			09/12/25 10:55	1

Lab Sample ID: LCS 880-118730/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 118753

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	258.1		mg/Kg		103	90 - 110

Lab Sample ID: LCSD 880-118730/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 118753

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	256.6		mg/Kg		103	90 - 110	1	20

Lab Sample ID: 890-8783-8 MS — **Client Sample ID: BG - 04**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 118753

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	765	F1	251	994.5		mg/Kg		92	90 - 110

Lab Sample ID: 890-8783-8 MSD — **Client Sample ID: BG - 04**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 118753

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	765	F1	251	981.6	F1	mg/Kg		87	90 - 110	1	20

QC Sample Results

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 880-118731/1-A
Matrix: Solid
Analysis Batch: 118811

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			09/12/25 17:40	1

Lab Sample ID: LCS 880-118731/2-A
Matrix: Solid
Analysis Batch: 118811

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	260.8		mg/Kg		104	90 - 110		

Lab Sample ID: LCSD 880-118731/3-A
Matrix: Solid
Analysis Batch: 118811

Client Sample ID: Lab Control Sample Dup
Prep Type: Soluble

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	262.9		mg/Kg		105	90 - 110	1	20

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

GC VOA

Analysis Batch: 118743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8783-1	BG - 04	Total/NA	Solid	8021B	118756
890-8783-2	BG - 04	Total/NA	Solid	8021B	118756
890-8783-3	BG - 04	Total/NA	Solid	8021B	118756
890-8783-4	BG - 04	Total/NA	Solid	8021B	118756
890-8783-5	BG - 04	Total/NA	Solid	8021B	118756
890-8783-6	BG - 04	Total/NA	Solid	8021B	118756
890-8783-7	BG - 04	Total/NA	Solid	8021B	118756
890-8783-8	BG - 04	Total/NA	Solid	8021B	118756
890-8783-9	BG - 04	Total/NA	Solid	8021B	118756
890-8783-10	BG - 04	Total/NA	Solid	8021B	118756
890-8783-11	BG - 04	Total/NA	Solid	8021B	118756
890-8783-12	BG - 04	Total/NA	Solid	8021B	118756
890-8783-13	BG - 04	Total/NA	Solid	8021B	118756
MB 880-118756/5-A	Method Blank	Total/NA	Solid	8021B	118756
LCS 880-118756/1-A	Lab Control Sample	Total/NA	Solid	8021B	118756
LCSD 880-118756/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	118756

Prep Batch: 118756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8783-1	BG - 04	Total/NA	Solid	5035	
890-8783-2	BG - 04	Total/NA	Solid	5035	
890-8783-3	BG - 04	Total/NA	Solid	5035	
890-8783-4	BG - 04	Total/NA	Solid	5035	
890-8783-5	BG - 04	Total/NA	Solid	5035	
890-8783-6	BG - 04	Total/NA	Solid	5035	
890-8783-7	BG - 04	Total/NA	Solid	5035	
890-8783-8	BG - 04	Total/NA	Solid	5035	
890-8783-9	BG - 04	Total/NA	Solid	5035	
890-8783-10	BG - 04	Total/NA	Solid	5035	
890-8783-11	BG - 04	Total/NA	Solid	5035	
890-8783-12	BG - 04	Total/NA	Solid	5035	
890-8783-13	BG - 04	Total/NA	Solid	5035	
MB 880-118756/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-118756/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-118756/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 118959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8783-1	BG - 04	Total/NA	Solid	Total BTEX	
890-8783-2	BG - 04	Total/NA	Solid	Total BTEX	
890-8783-3	BG - 04	Total/NA	Solid	Total BTEX	
890-8783-4	BG - 04	Total/NA	Solid	Total BTEX	
890-8783-5	BG - 04	Total/NA	Solid	Total BTEX	
890-8783-6	BG - 04	Total/NA	Solid	Total BTEX	
890-8783-7	BG - 04	Total/NA	Solid	Total BTEX	
890-8783-8	BG - 04	Total/NA	Solid	Total BTEX	
890-8783-9	BG - 04	Total/NA	Solid	Total BTEX	
890-8783-10	BG - 04	Total/NA	Solid	Total BTEX	
890-8783-11	BG - 04	Total/NA	Solid	Total BTEX	
890-8783-12	BG - 04	Total/NA	Solid	Total BTEX	
890-8783-13	BG - 04	Total/NA	Solid	Total BTEX	

QC Association Summary

Client: Earth Systems Response and Restoration
Job ID: 890-8783-1
Project/Site: SPUD MUFFIN 31 30 #738 H
SDG: 15995

GC Semi VOA

Prep Batch: 118759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8783-1	BG - 04	Total/NA	Solid	8015NM Prep	
890-8783-2	BG - 04	Total/NA	Solid	8015NM Prep	
890-8783-3	BG - 04	Total/NA	Solid	8015NM Prep	
890-8783-4	BG - 04	Total/NA	Solid	8015NM Prep	
890-8783-5	BG - 04	Total/NA	Solid	8015NM Prep	
890-8783-6	BG - 04	Total/NA	Solid	8015NM Prep	
890-8783-7	BG - 04	Total/NA	Solid	8015NM Prep	
890-8783-8	BG - 04	Total/NA	Solid	8015NM Prep	
890-8783-9	BG - 04	Total/NA	Solid	8015NM Prep	
890-8783-10	BG - 04	Total/NA	Solid	8015NM Prep	
MB 880-118759/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-118759/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-118759/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Prep Batch: 118761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8783-11	BG - 04	Total/NA	Solid	8015NM Prep	
890-8783-12	BG - 04	Total/NA	Solid	8015NM Prep	
890-8783-13	BG - 04	Total/NA	Solid	8015NM Prep	
MB 880-118761/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-118761/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-118761/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-8783-11 MS	BG - 04	Total/NA	Solid	8015NM Prep	
890-8783-11 MSD	BG - 04	Total/NA	Solid	8015NM Prep	

Analysis Batch: 118802

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8783-1	BG - 04	Total/NA	Solid	8015B NM	118759
890-8783-2	BG - 04	Total/NA	Solid	8015B NM	118759
890-8783-3	BG - 04	Total/NA	Solid	8015B NM	118759
890-8783-4	BG - 04	Total/NA	Solid	8015B NM	118759
890-8783-5	BG - 04	Total/NA	Solid	8015B NM	118759
890-8783-6	BG - 04	Total/NA	Solid	8015B NM	118759
890-8783-7	BG - 04	Total/NA	Solid	8015B NM	118759
890-8783-8	BG - 04	Total/NA	Solid	8015B NM	118759
890-8783-9	BG - 04	Total/NA	Solid	8015B NM	118759
890-8783-10	BG - 04	Total/NA	Solid	8015B NM	118759
MB 880-118759/1-A	Method Blank	Total/NA	Solid	8015B NM	118759
LCS 880-118759/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	118759
LCSD 880-118759/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	118759

Analysis Batch: 118836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8783-11	BG - 04	Total/NA	Solid	8015B NM	118761
890-8783-12	BG - 04	Total/NA	Solid	8015B NM	118761
890-8783-13	BG - 04	Total/NA	Solid	8015B NM	118761
MB 880-118761/1-A	Method Blank	Total/NA	Solid	8015B NM	118761
LCS 880-118761/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	118761
LCSD 880-118761/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	118761
890-8783-11 MS	BG - 04	Total/NA	Solid	8015B NM	118761
890-8783-11 MSD	BG - 04	Total/NA	Solid	8015B NM	118761

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

GC Semi VOA

Analysis Batch: 118889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8783-1	BG - 04	Total/NA	Solid	8015 NM	
890-8783-2	BG - 04	Total/NA	Solid	8015 NM	
890-8783-3	BG - 04	Total/NA	Solid	8015 NM	
890-8783-4	BG - 04	Total/NA	Solid	8015 NM	
890-8783-5	BG - 04	Total/NA	Solid	8015 NM	
890-8783-6	BG - 04	Total/NA	Solid	8015 NM	
890-8783-7	BG - 04	Total/NA	Solid	8015 NM	
890-8783-8	BG - 04	Total/NA	Solid	8015 NM	
890-8783-9	BG - 04	Total/NA	Solid	8015 NM	
890-8783-10	BG - 04	Total/NA	Solid	8015 NM	
890-8783-11	BG - 04	Total/NA	Solid	8015 NM	
890-8783-12	BG - 04	Total/NA	Solid	8015 NM	
890-8783-13	BG - 04	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 118730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8783-8	BG - 04	Soluble	Solid	DI Leach	
890-8783-9	BG - 04	Soluble	Solid	DI Leach	
890-8783-10	BG - 04	Soluble	Solid	DI Leach	
890-8783-11	BG - 04	Soluble	Solid	DI Leach	
890-8783-12	BG - 04	Soluble	Solid	DI Leach	
890-8783-13	BG - 04	Soluble	Solid	DI Leach	
MB 880-118730/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-118730/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-118730/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-8783-8 MS	BG - 04	Soluble	Solid	DI Leach	
890-8783-8 MSD	BG - 04	Soluble	Solid	DI Leach	

Leach Batch: 118731

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8783-1	BG - 04	Soluble	Solid	DI Leach	
890-8783-2	BG - 04	Soluble	Solid	DI Leach	
890-8783-3	BG - 04	Soluble	Solid	DI Leach	
890-8783-4	BG - 04	Soluble	Solid	DI Leach	
890-8783-5	BG - 04	Soluble	Solid	DI Leach	
890-8783-6	BG - 04	Soluble	Solid	DI Leach	
890-8783-7	BG - 04	Soluble	Solid	DI Leach	
MB 880-118731/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-118731/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-118731/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 118753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8783-8	BG - 04	Soluble	Solid	300.0	118730
890-8783-9	BG - 04	Soluble	Solid	300.0	118730
890-8783-10	BG - 04	Soluble	Solid	300.0	118730
890-8783-11	BG - 04	Soluble	Solid	300.0	118730
890-8783-12	BG - 04	Soluble	Solid	300.0	118730
890-8783-13	BG - 04	Soluble	Solid	300.0	118730

QC Association Summary

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

HPLC/IC (Continued)

Analysis Batch: 118753 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-118730/1-A	Method Blank	Soluble	Solid	300.0	118730
LCS 880-118730/2-A	Lab Control Sample	Soluble	Solid	300.0	118730
LCSD 880-118730/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	118730
890-8783-8 MS	BG - 04	Soluble	Solid	300.0	118730
890-8783-8 MSD	BG - 04	Soluble	Solid	300.0	118730

Analysis Batch: 118811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-8783-1	BG - 04	Soluble	Solid	300.0	118731
890-8783-2	BG - 04	Soluble	Solid	300.0	118731
890-8783-3	BG - 04	Soluble	Solid	300.0	118731
890-8783-4	BG - 04	Soluble	Solid	300.0	118731
890-8783-5	BG - 04	Soluble	Solid	300.0	118731
890-8783-6	BG - 04	Soluble	Solid	300.0	118731
890-8783-7	BG - 04	Soluble	Solid	300.0	118731
MB 880-118731/1-A	Method Blank	Soluble	Solid	300.0	118731
LCS 880-118731/2-A	Lab Control Sample	Soluble	Solid	300.0	118731
LCSD 880-118731/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	118731

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Client Sample ID: BG - 04
Date Collected: 09/10/25 13:30
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8783-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	118756	09/12/25 10:14	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118743	09/12/25 14:24	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118959	09/12/25 14:24	SA	EET MID
Total/NA	Analysis	8015 NM		1			118889	09/13/25 05:02	SA	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 05:02	TKC	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 19:52	CS	EET MID

Client Sample ID: BG - 04
Date Collected: 09/10/25 13:32
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8783-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	118756	09/12/25 10:14	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118743	09/12/25 14:45	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118959	09/12/25 14:45	SA	EET MID
Total/NA	Analysis	8015 NM		1			118889	09/13/25 05:17	SA	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 05:17	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 19:58	CS	EET MID

Client Sample ID: BG - 04
Date Collected: 09/10/25 13:34
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8783-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	118756	09/12/25 10:14	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118743	09/12/25 15:05	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118959	09/12/25 15:05	SA	EET MID
Total/NA	Analysis	8015 NM		1			118889	09/13/25 05:31	SA	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 05:31	TKC	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 20:04	CS	EET MID

Client Sample ID: BG - 04
Date Collected: 09/10/25 13:36
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8783-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	118756	09/12/25 10:14	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118743	09/12/25 16:39	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118959	09/12/25 16:39	SA	EET MID

Lab Chronicle

Client: Earth Systems Response and Restoration
Job ID: 890-8783-1
Project/Site: SPUD MUFFIN 31 30 #738 H
SDG: 15995

Client Sample ID: BG - 04
Lab Sample ID: 890-8783-4
Date Collected: 09/10/25 13:36
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			118889	09/13/25 05:46	SA	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 05:46	TKC	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/15/25 09:42	CS	EET MID

Client Sample ID: BG - 04
Lab Sample ID: 890-8783-5
Date Collected: 09/10/25 13:38
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	118756	09/12/25 10:14	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118743	09/12/25 16:59	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118959	09/12/25 16:59	SA	EET MID
Total/NA	Analysis	8015 NM		1			118889	09/13/25 06:00	SA	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 06:00	TKC	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 20:12	CS	EET MID

Client Sample ID: BG - 04
Lab Sample ID: 890-8783-6
Date Collected: 09/10/25 13:40
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	118756	09/12/25 10:14	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118743	09/12/25 17:20	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118959	09/12/25 17:20	SA	EET MID
Total/NA	Analysis	8015 NM		1			118889	09/13/25 06:15	SA	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 06:15	TKC	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 20:17	CS	EET MID

Client Sample ID: BG - 04
Lab Sample ID: 890-8783-7
Date Collected: 09/10/25 13:42
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	118756	09/12/25 10:14	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118743	09/12/25 17:40	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118959	09/12/25 17:40	SA	EET MID
Total/NA	Analysis	8015 NM		1			118889	09/13/25 06:29	SA	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 06:29	TKC	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Earth Systems Response and Restoration
Job ID: 890-8783-1
Project/Site: SPUD MUFFIN 31 30 #738 H
SDG: 15995

Client Sample ID: BG - 04
Lab Sample ID: 890-8783-7
Date Collected: 09/10/25 13:42
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.97 g	50 mL	118731	09/11/25 15:54	SI	EET MID
Soluble	Analysis	300.0		1			118811	09/12/25 20:23	CS	EET MID

Client Sample ID: BG - 04
Lab Sample ID: 890-8783-8
Date Collected: 09/10/25 13:44
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	118756	09/12/25 10:14	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118743	09/12/25 18:01	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118959	09/12/25 18:01	SA	EET MID
Total/NA	Analysis	8015 NM		1			118889	09/13/25 06:44	SA	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 06:44	TKC	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		1			118753	09/12/25 11:12	CS	EET MID

Client Sample ID: BG - 04
Lab Sample ID: 890-8783-9
Date Collected: 09/10/25 13:46
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	118756	09/12/25 10:14	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118743	09/12/25 18:21	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118959	09/12/25 18:21	SA	EET MID
Total/NA	Analysis	8015 NM		1			118889	09/13/25 06:58	SA	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 06:58	TKC	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		5			118753	09/12/25 11:30	CS	EET MID

Client Sample ID: BG - 04
Lab Sample ID: 890-8783-10
Date Collected: 09/10/25 13:48
Matrix: Solid
Date Received: 09/11/25 14:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	118756	09/12/25 10:14	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118743	09/12/25 18:42	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118959	09/12/25 18:42	SA	EET MID
Total/NA	Analysis	8015 NM		1			118889	09/13/25 07:13	SA	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	118759	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118802	09/13/25 07:13	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		5			118753	09/12/25 11:36	CS	EET MID

Eurofins Carlsbad

Lab Chronicle

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Client Sample ID: BG - 04
Date Collected: 09/10/25 13:50
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8783-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	118756	09/12/25 10:14	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118743	09/12/25 19:02	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118959	09/12/25 19:02	SA	EET MID
Total/NA	Analysis	8015 NM		1			118889	09/13/25 18:45	SA	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/13/25 18:45	TKC	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		5			118753	09/12/25 11:42	CS	EET MID

Client Sample ID: BG - 04
Date Collected: 09/10/25 13:52
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8783-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	118756	09/12/25 10:14	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118743	09/12/25 19:23	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118959	09/12/25 19:23	SA	EET MID
Total/NA	Analysis	8015 NM		1			118889	09/13/25 19:30	SA	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/13/25 19:30	TKC	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		5			118753	09/12/25 11:47	CS	EET MID

Client Sample ID: BG - 04
Date Collected: 09/10/25 13:54
Date Received: 09/11/25 14:10

Lab Sample ID: 890-8783-13
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	118756	09/12/25 10:14	AA	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	118743	09/12/25 19:43	EL	EET MID
Total/NA	Analysis	Total BTEX		1			118959	09/12/25 19:43	SA	EET MID
Total/NA	Analysis	8015 NM		1			118889	09/13/25 19:45	SA	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	118761	09/12/25 10:30	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	118836	09/13/25 19:45	TKC	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	118730	09/11/25 15:51	SI	EET MID
Soluble	Analysis	300.0		5			118753	09/12/25 12:05	CS	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Job ID: 890-8783-1
Project/Site: SPUD MUFFIN 31 30 #738 H
SDG: 15995

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400	06-30-26

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5035	Closed System Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
SDG: 15995

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-8783-1	BG - 04	Solid	09/10/25 13:30	09/11/25 14:10	0.5
890-8783-2	BG - 04	Solid	09/10/25 13:32	09/11/25 14:10	1
890-8783-3	BG - 04	Solid	09/10/25 13:34	09/11/25 14:10	2
890-8783-4	BG - 04	Solid	09/10/25 13:36	09/11/25 14:10	3
890-8783-5	BG - 04	Solid	09/10/25 13:38	09/11/25 14:10	4
890-8783-6	BG - 04	Solid	09/10/25 13:40	09/11/25 14:10	5
890-8783-7	BG - 04	Solid	09/10/25 13:42	09/11/25 14:10	6
890-8783-8	BG - 04	Solid	09/10/25 13:44	09/11/25 14:10	8
890-8783-9	BG - 04	Solid	09/10/25 13:46	09/11/25 14:10	12
890-8783-10	BG - 04	Solid	09/10/25 13:48	09/11/25 14:10	16
890-8783-11	BG - 04	Solid	09/10/25 13:50	09/11/25 14:10	20
890-8783-12	BG - 04	Solid	09/10/25 13:52	09/11/25 14:10	24
890-8783-13	BG - 04	Solid	09/10/25 13:54	09/11/25 14:10	26

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Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: _____

www.xenco.com Page 1 of 2

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	15995	☑ Routine ☐ Rush	
Project Location:	Eddy County, NM	Due Date:	Routine TAT
Sampler's Name:	Gilbert Moreno, Santiago Giron	TAT starts the day received by the lab, if received by 4:30pm	
CC/WO #:	21441869		

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	TNM00	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	4.2	
Total Containers:		Corrected Temperature:	4.0	

890-8783 Chain of Custody

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2S0_4: H_2 NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	TPH-NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	Sample Comments
BG-04	S	9.10.25	13:30	0.5	Grab/	1	X	X	X			Incident Number
BG-04	S	9.10.25	13:32	1	Grab/	1	X	X	X			nAPP2431628896
BG-04	S	9.10.25	13:34	2	Grab/	1	X	X	X			
BG-04	S	9.10.25	13:36	3	Grab/	1	X	X	X			
BG-04	S	9.10.25	13:38	4	Grab/	1	X	X	X			
BG-04	S	9.10.25	13:40	5	Grab/	1	X	X	X			
BG-04	S	9.10.25	13:42	6	Grab/	1	X	X	X			
BG-04	S	9.10.25	13:44	8	Grab/	1	X	X	X			
BG-04	S	9.10.25	13:46	12	Grab/	1	X	X	X			

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of $85.00 will be applied to each project and a charge of $5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		9/11 14:10	2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

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9/15/2025

eurofins | Environment Testing Xenco

Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: _____

www.xenco.com Page 1 of 2

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

Program: UST/PST ☐ **PRP** ☐ **Brownfields** ☐ **RRC** ☐ **Superfund** ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Spud Muffin 31 30 #738H	**Turn Around**	
Project Number:	15995	☑ Routine ☐ Rush	
Project Location:	Eddy County, NM	Due Date:	Routine TAT
Sampler's Name:	Gilbert Moreno, Santiago Giron	TAT starts the day received by the lab, if received by 4:30pm	
CC/WO #:	21441869		

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Samples Received Intact:	(Yes) No	Thermometer ID:	TNM00
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	4.2
Total Containers:		Corrected Temperature:	4.0

890-8783 Chain of Custody

Preservative Codes

None: NO — DI Water: H_2O
Cool: Cool — MeOH: Me
HCL: HC — HNO_3: HN
H_2SO_4: H_2 — NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	Sample Comments
BG-04	S	9.10.25	13:30	0.5	Grab/	1	X	X	X			Incident Number
BG-04	S	9.10.25	13:32	1	Grab/	1	X	X	X			nAPP2431628896
BG-04	S	9.10.25	13:34	2	Grab/	1	X	X	X			
BG-04	S	9.10.25	13:36	3	Grab/	1	X	X	X			
BG-04	S	9.10.25	13:38	4	Grab/	1	X	X	X			
BG-04	S	9.10.25	13:40	5	Grab/	1	X	X	X			
BG-04	S	9.10.25	13:42	6	Grab/	1	X	X	X			
BG-04	S	9.10.25	13:44	8	Grab/	1	X	X	X			
BG-04	S	9.10.25	13:46	12	Grab/	1	X	X	X			

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed
Hg: 1631 / 245.1 / 7470 / 7471

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0		9/11 14:10	2		
3			4		
5			6		

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Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
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EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: _____

www.xenco.com Page 1 of 2

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

Program: UST/PST ☐ **PRP** ☐ **Brownfields** ☐ **RRC** ☐ **Superfund** ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Spud Muffin 31 30 #738H	**Turn Around**	
Project Number:	15995	☑ Routine ☐ Rush	
Project Location:	Eddy County, NM	Due Date:	Routine TAT
Sampler's Name:	Gilbert Moreno, Santiago Giron	TAT starts the day received by the lab, if received by 4:30pm	
CC/WO #:	21441869		

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Thermometer ID:	IR#007	
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No N/A	Temperature Reading:	4.2	
Total Containers:		Corrected Temperature:	4.0	

ANALYSIS REQUEST

890-8783 Chain of Custody

Preservative Codes

None: NO DI Water: H_2O
Cool: Cool MeOH: Me
HCL: HC HNO_3: HN
H_2S0_4: H_2 NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	Pres. Code	TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	Sample Comments
BG-04	S	9.10.25	13:30	0.5	Grab/	1		X	X	X			Incident Number
BG-04	S	9.10.25	13:32	1	Grab/	1		X	X	X			nAPP2431628896
BG-04	S	9.10.25	13:34	2	Grab/	1		X	X	X			
BG-04	S	9.10.25	13:36	3	Grab/	1		X	X	X			
BG-04	S	9.10.25	13:38	4	Grab/	1		X	X	X			
BG-04	S	9.10.25	13:40	5	Grab/	1		X	X	X			
BG-04	S	9.10.25	13:42	6	Grab/	1		X	X	X			
BG-04	S	9.10.25	13:44	8	Grab/	1		X	X	X			
BG-04	S	9.10.25	13:46	12	Grab/	1		X	X	X			

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed
Hg: 1631 / 245.1 / 7470 / 7471

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0			2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

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Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: _____

www.xenco.com Page 2 of 2

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Raley
Company Name:	Earth Systems R&R	Company Name:	Devon Energy
Address:	1910 Resource Ct.	Address:	
City, State ZIP:	Carlsbad, NM, 88220	City, State ZIP:	
Phone:	832-541-7719	Email:	gmoreno@earthsys.net

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Spud Muffin 31 30 #738H	Turn Around	
Project Number:	15995	☑ Routine ☐ Rush	
Project Location:	Eddy County, NM	Due Date:	Routine TAT
Sampler's Name:	Gilbert Moreno, Santiago Giron	TAT starts the day received by the lab, if received by 4:30pm	
CC/WO #:	21441869		

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Samples Received Intact:	(Yes) No	Thermometer ID:	Tumoc5	
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No (N/A)	Temperature Reading:	4.2	
Total Containers:		Corrected Temperature:	4.0	

Preservative Codes

None: NO | DI Water: H_2O
Cool: Cool | MeOH: Me
HCL: HC | HNO_3: HN
H_2S0_4: H_2 | NaOH: Na
H_3PO_4: HP
$NaHSO_4$: NABIS
$Na_2S_2O_3$: $NaSO_3$
Zn Acetate+NaOH: Zn
NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/ Comp	# of Cont	TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	Sample Comments
BG-04	S	9.10.25	13:48	16	Grab/	1	X	X	X			Incident Number
BG-04	S	9.10.25	13:50	20	Grab/	1	X	X	X			nAPP2431628896
BG-04	S	9.10.25	13:52	24	Grab/	1	X	X	X			
BG-04	S	9.10.25	13:54	26	Grab/	1	X	X	X			

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed
Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of $85.00 will be applied to each project and a charge of $5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0			2		
3			4		
5			6		

Revised Date: 08/25/2020 Rev. 2020.2

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Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Teel, Brianna	Carrier Tracking No(s): N/A	COC No: 890-5857.1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Brianna.Teel@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 1 of 2
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-8783-1
Address: 1211 W. Florida Ave, ,	Due Date Requested: 9/17/2025			
City: Midland	TAT Requested (days): N/A			
State, Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: SPUD MUFFIN 31 30 #738 H	Project #: 88001228			
Site: N/A	SSOW#: N/A			

Analysis Requested

Preservation Codes: -

Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total_BTEX_GCV	8021B/5035FP_CalcBTEX	300_ORGFM_28D/DI_LEACHChloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep8015 NM	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
BG - 04 (890-8783-1)	9/10/25	13:30 Mountain	G	Solid			X	X	X	X	X	1	
BG - 04 (890-8783-2)	9/10/25	13:32 Mountain	G	Solid			X	X	X	X	X	1	
BG - 04 (890-8783-3)	9/10/25	13:34 Mountain	G	Solid			X	X	X	X	X	1	
BG - 04 (890-8783-4)	9/10/25	13:36 Mountain	G	Solid			X	X	X	X	X	1	
BG - 04 (890-8783-5)	9/10/25	13:38 Mountain	G	Solid			X	X	X	X	X	1	
BG - 04 (890-8783-6)	9/10/25	13:40 Mountain	G	Solid			X	X	X	X	X	1	
BG - 04 (890-8783-7)	9/10/25	13:42 Mountain	G	Solid			X	X	X	X	X	1	
BG - 04 (890-8783-8)	9/10/25	13:44 Mountain	G	Solid			X	X	X	X	X	1	
BG - 04 (890-8783-9)	9/10/25	13:46 Mountain	G	Solid			X	X	X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 9/11 1630	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 9/12/25 800	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.6 2.5

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Eurofins Carlsbad
1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Teel, Brianna	Carrier Tracking No(s): N/A	COC No: 890-5857.2
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Brianna.Teel@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 2 of 2
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 890-8783-1
Address: 1211 W. Florida Ave, ,	Due Date Requested: 9/17/2025			
City: Midland	TAT Requested (days): N/A			
State, Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: SPUD MUFFIN 31 30 #738 H	Project #: 88001228			
Site: N/A	SSOW#: N/A			

Analysis Requested

Preservation Codes: -

Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total_BTEX_GCV	8021B/5035FP_CalcBTEX	300_ORGFM_28D/DI_LEACHChloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep8015 NM	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
BG - 04 (890-8783-10)	9/10/25	13:48 Mountain	G	Solid			X	X	X	X	X	1	
BG - 04 (890-8783-11)	9/10/25	13:50 Mountain	G	Solid			X	X	X	X	X	1	
BG - 04 (890-8783-12)	9/10/25	13:52 Mountain	G	Solid			X	X	X	X	X	1	
BG - 04 (890-8783-13)	9/10/25	13:54 Mountain	G	Solid			X	X	X	X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	9/11 1630				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 9/12/25 730	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

Received by OCD: 11/4/2025 7:21:25 AM
Page 40 of 42
9/15/2025
Released to Imaging: 11/6/2025 3:18:49 PM

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-8783-1
SDG Number: 15995

Login Number: 8783
List Number: 1
Creator: Bruns, Shannon

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	N/A	Refer to Job Narrative for details.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-8783-1
SDG Number: 15995

Login Number: 8783
List Number: 2
Creator: Laing, Edmundo

List Source: Eurofins Midland
List Creation: 09/12/25 10:07 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

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Santa Fe, NM 87505

QUESTIONS

Action 522744

QUESTIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 522744
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nAPP2431628896**
Incident Name	**NAPP2431628896 SPUD MUFFIN 31 30 #738H @ 30-015-44757**
Incident Type	**Produced Water Release**
Incident Status	**Remediation Plan Received**
Incident Well	**[30-015-44757] SPUD MUFFIN 31 30 #738H**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	SPUD MUFFIN 31 30 #738H
Date Release Discovered	11/10/2024
Surface Owner	Private

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	Cause: Equipment Failure | Flow Line - Production | Crude Oil | Released: 5 BBL | Recovered: 3 BBL | Lost: 2 BBL.
Produced Water Released (bbls) Details	Cause: Equipment Failure | Flow Line - Production | Produced Water | Released: 81 BBL | Recovered: 0 BBL | Lost: 81 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)	Flowline failure releasing fluids to pad surface.

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QUESTIONS (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 522744
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**No, according to supplied volumes this does not appear to be a "gas only" report.**
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	**Yes**
Reasons why this would be considered a submission for a notification of a major release	**From paragraph A. "Major release" determine using:** **(1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.**

With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.

Initial Response	
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	*Not answered.*

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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: James Raley Title: EHS Professional Email: jim.raley@dvn.com Date: 11/04/2025

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QUESTIONS (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 522744
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

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 26 and 50 (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 1000 (ft.) and ½ (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1000 (ft.) and ½ (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1000 (ft.) and ½ (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Between 1 and 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Medium
A 100-year floodplain	Between ½ and 1 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	Yes

Remediation Plan	
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.	
Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	8150
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	4420
GRO+DRO (EPA SW-846 Method 8015M)	4420
BTEX (EPA SW-846 Method 8021B or 8260B)	26
Benzene (EPA SW-846 Method 8021B or 8260B)	0
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.	
On what estimated date will the remediation commence	02/01/2026
On what date will (or did) the final sampling or liner inspection occur	09/10/2025
On what date will (or was) the remediation complete(d)	03/01/2026
What is the estimated surface area (in square feet) that will be reclaimed	13651
What is the estimated volume (in cubic yards) that will be reclaimed	839
What is the estimated surface area (in square feet) that will be remediated	13651
What is the estimated volume (in cubic yards) that will be remediated	839
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.	
The OCD recognizes that proposed remediation measures may have to be minimally adjusted 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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QUESTIONS (continued)

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	Action Number: 522744
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

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	fEEM0112334510 HALFWAY DISPOSAL AND LANDFILL
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: James Raley Title: EHS Professional Email: jim.raley@dvn.com Date: 11/04/2025
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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QUESTIONS (continued)

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	Action Number: 522744
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

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 (continued)

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 522744
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	**502746**
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	**09/10/2025**
What was the (estimated) number of samples that were to be gathered	**40**
What was the sampling surface area in square feet	**800**

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	No

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CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 522744
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

CONDITIONS

Created By	Condition	Condition Date
scwells	Remediation plan is approved with the following conditions:	11/6/2025
scwells	1) The request to use “the upper bound background value for BG-04 (Range: 2,065 mg/kg) …as the closure criteria for any confirmation floor samples collected at 4 feet bgs” is denied. As stated in previous guidance given by OCD via email on 4/29/25, the background samples collected may be averaged at each depth collected. The average of the 4 samples can then be used as the background chloride value for a given depth. Devon must remediate the release at nAPP2431628896 to the Closure Criteria. Should excavation continue to 6’ depth for instance, the average of the background samples may be used as your RRAL for chlorides which in this case is 825 mg/kg. If you have questions regarding this reach out to the reviewer.	11/6/2025
scwells	2) Under the Site Characterization portion of the C-141 application, to the question, “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,” was answered, “Between 1000 (ft.) and 1/2 (mi.)”. Harroun Ditch is located between 300 and 500 feet from the release area. The minimum distance is required to be updated under the Site Characterization portion of the C-141 application, during report resubmission as well as within the report itself.	11/6/2025
scwells	Submit remediation closure report to the OCD by 2/4/26.	11/6/2025