



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 SCR, 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.

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- **April 25, 2025** - ESRR requested guidance from the NMOCD regarding background sampling. NMOCD provided the following conditions:
 - o *"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:

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

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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 NMOC 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.

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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.

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Sincerely,

EARTH SYSTEMS RESPONSE & RESTORATION

A handwritten signature in black ink, appearing to read "Gilbert Moreno".

Gilbert Moreno
Carlsbad Operations Manager/ Project Geologist

A handwritten signature in black ink, appearing to read "Kris Williams".

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



Figure 1 – Site Map

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

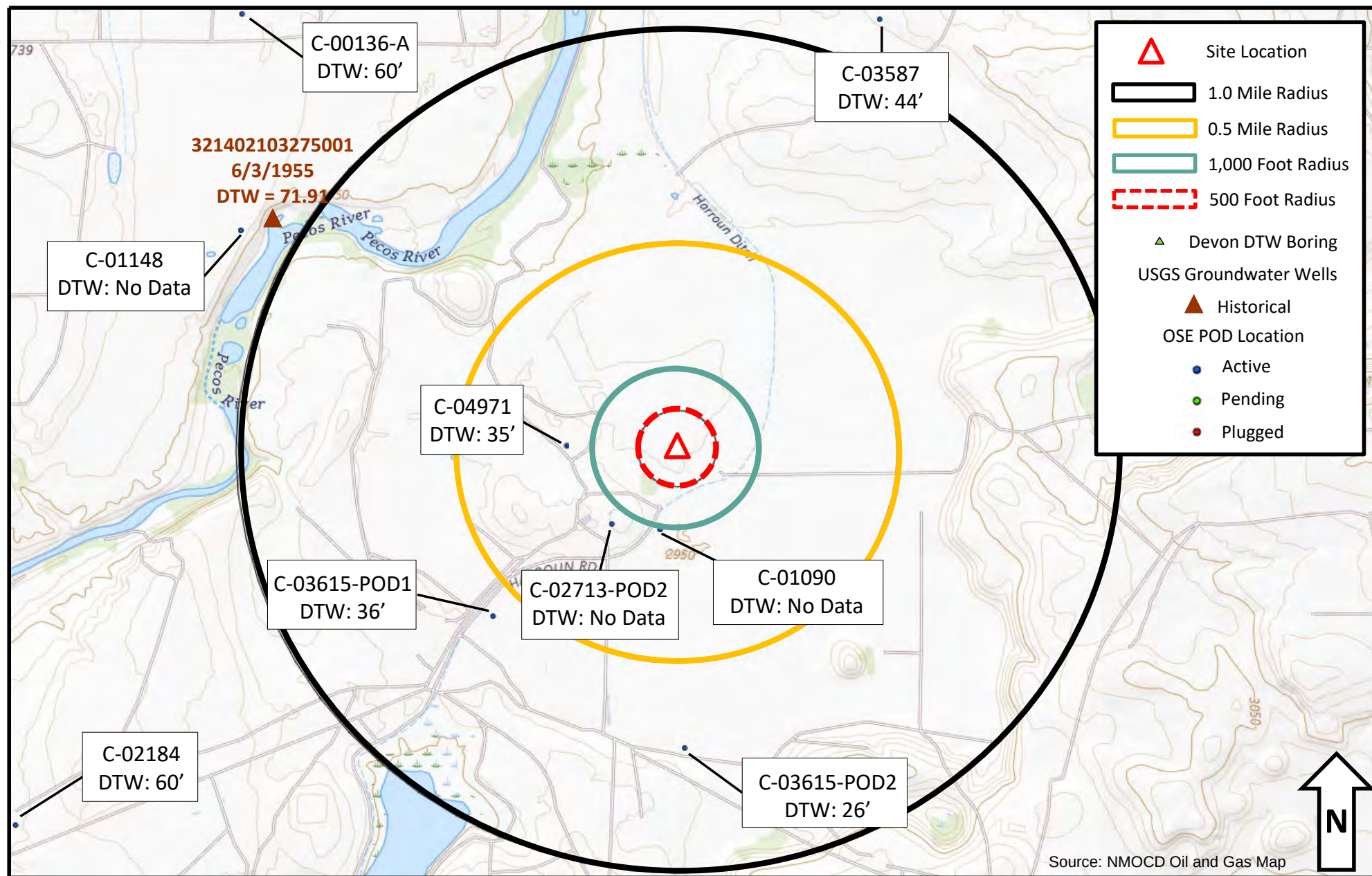


Figure 1A – Ground Water

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

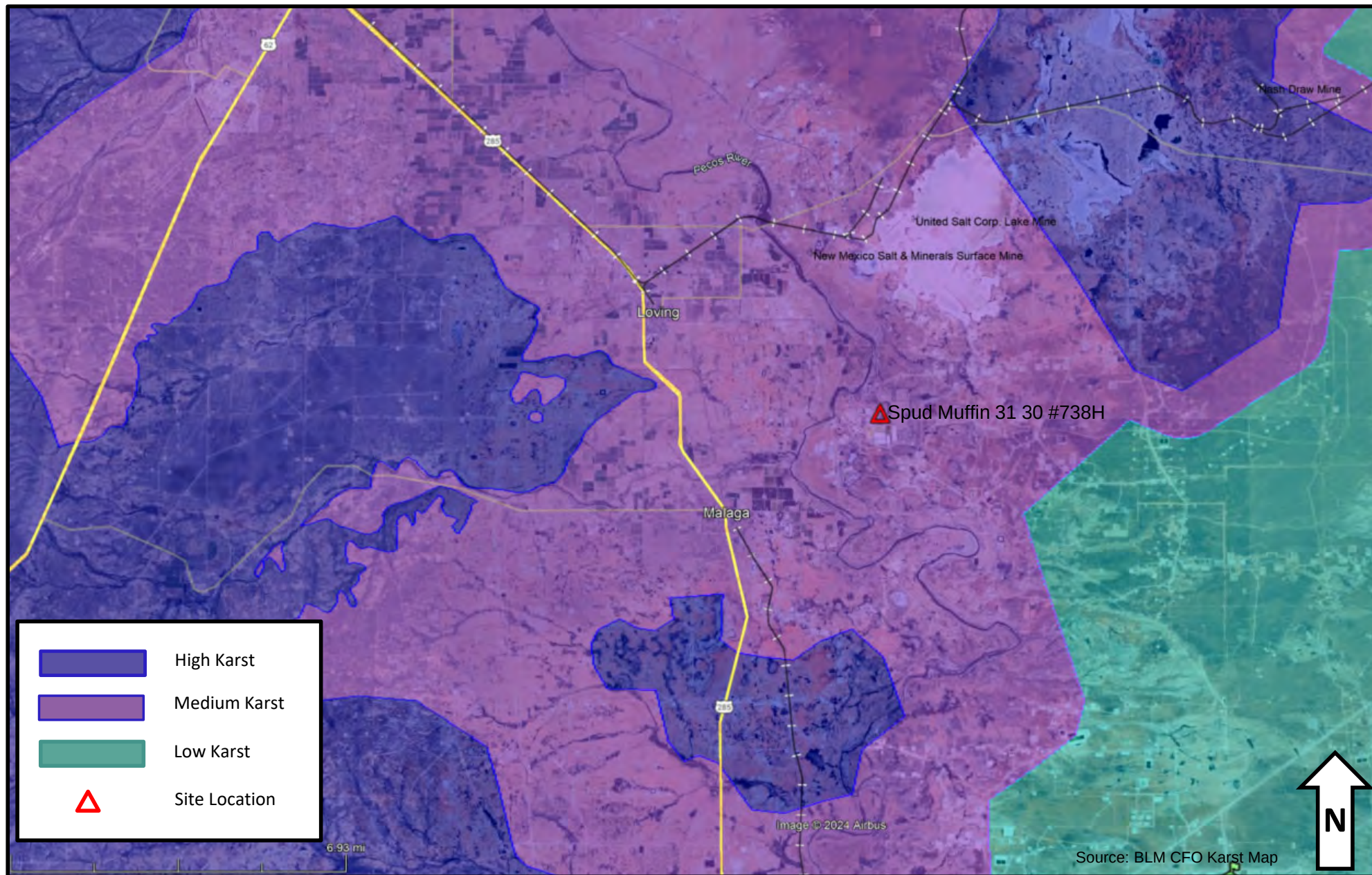


Figure 1B – Karst Potential

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

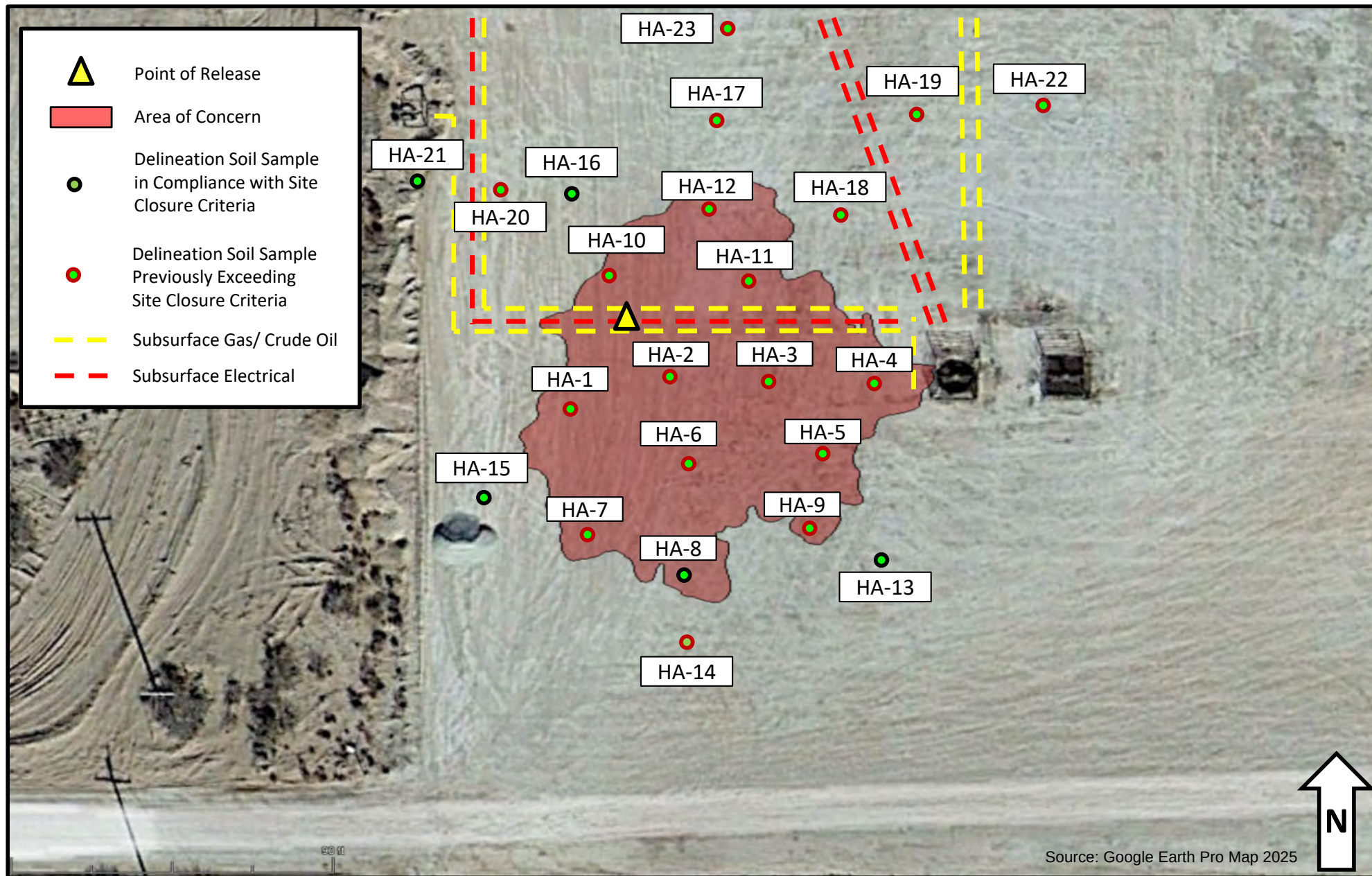


Figure 2 – Delineation Soil Sample Locations

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

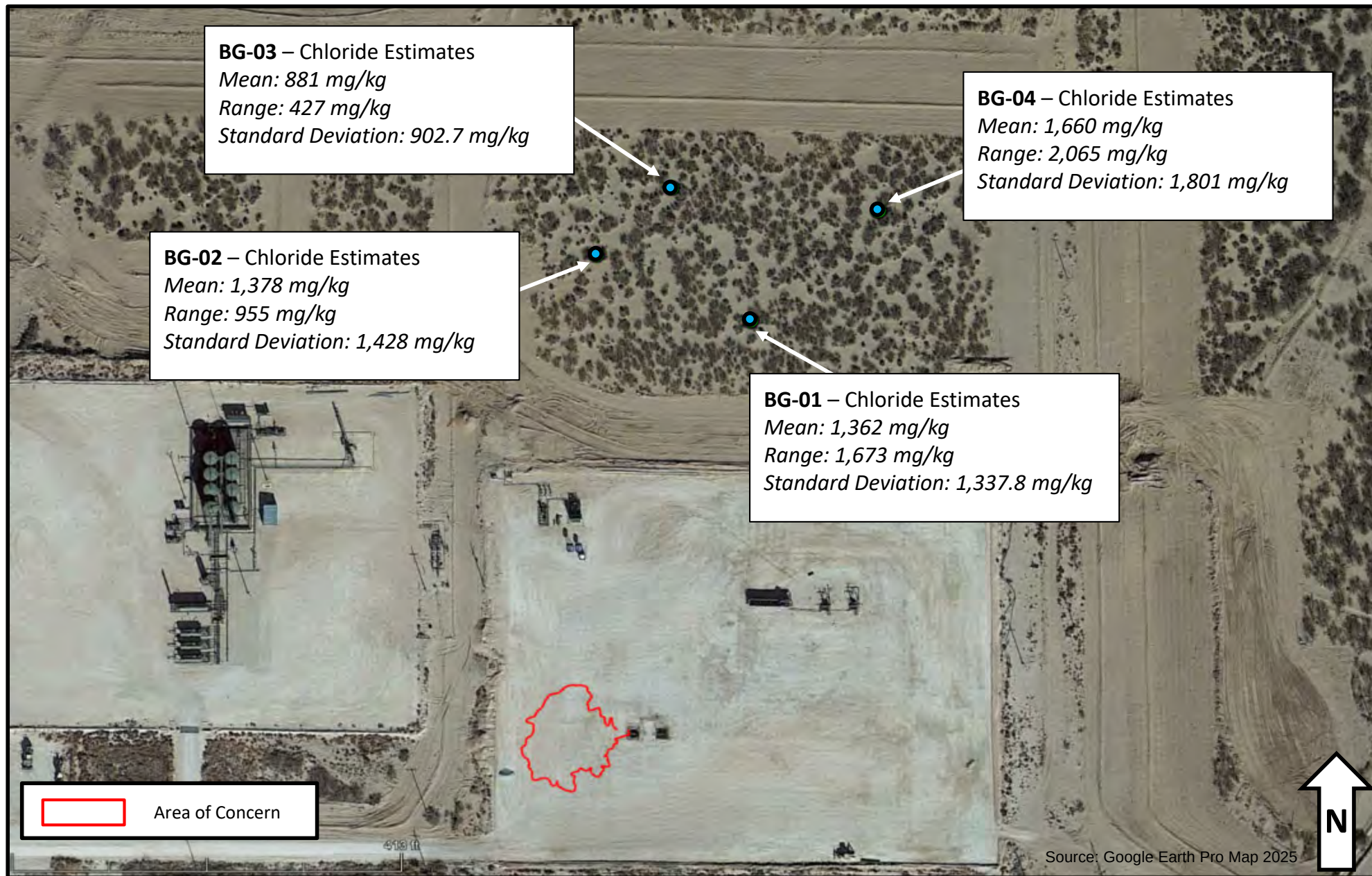
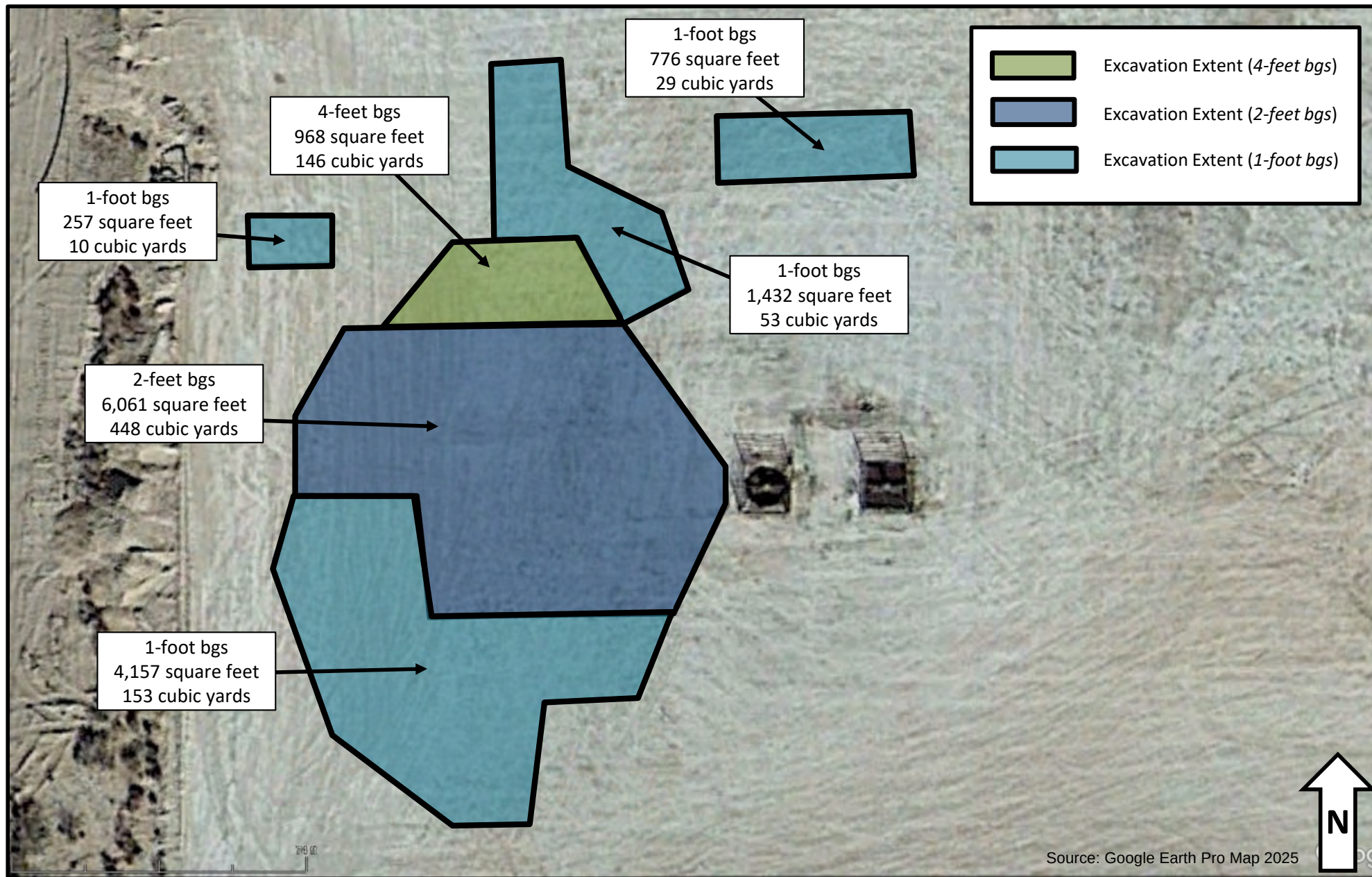


Figure 3 – Background Soil Sample Locations

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





WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION	OSE POD NO. (WELL NO.) POD 1 (TW-1)		WELL TAG ID NO. N/A		OSE FILE NO(S). C-4971		
	WELL OWNER NAME(S) Devon Energy				PHONE (OPTIONAL) 575-689-7597		
	WELL OWNER MAILING ADDRESS 5315 Buena Vista Dr				CITY Carlsbad	STATE NM	ZIP 88220
	WELL LOCATION (FROM GPS)	DEGREES LATITUDE 32	MINUTES 15	SECONDS 18.8	N	* ACCURACY REQUIRED: ONE TENTH OF A SECOND	
		LONGITUDE 104	1	16.0	W	* 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. 1249		NAME OF LICENSED DRILLER Jackie D. Atkins			NAME OF WELL DRILLING COMPANY Atkins Engineering Associates, Inc.	
	DRILLING STARTED 06/12/2025		DRILLING ENDED 06/12/2025		DEPTH OF COMPLETED WELL (FT) Temporary Well Material	BORE HOLE DEPTH (FT) ±40	DEPTH WATER FIRST ENCOUNTERED (FT) ±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 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)
	0 40		±6.25	Soil Boring	--	--	--
3. ANNULAR MATERIAL	DEPTH (feet bgl) FROM 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			

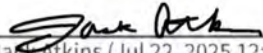
FOR OSE INTERNAL USE

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)		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)
	FROM	TO				
	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	
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					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.	
	OSE DII ROSWELL NM 25 JUL '25 AM 10:51	
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:	
	 Jackie D. 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 235. 29E. 31.434	WELL TAG ID NO.	PAGE 2 OF 2



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



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-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



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-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



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-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



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-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.



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



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.

Spud Muffin 31 30 #738H – Site Characterization & Remediation Plan
Incident Number: nAPP2431628896
32.2551108°, -104.016727°



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



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

Spud Muffin 31 30 #738H – Site Characterization & Remediation Plan
Incident Number: nAPP2431628896
32.2551108°, -104.016727°



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



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

Spud Muffin 31 30 #738H – Site Characterization & Remediation Plan
Incident Number: nAPP2431628896
32.2551108°, -104.016727°



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

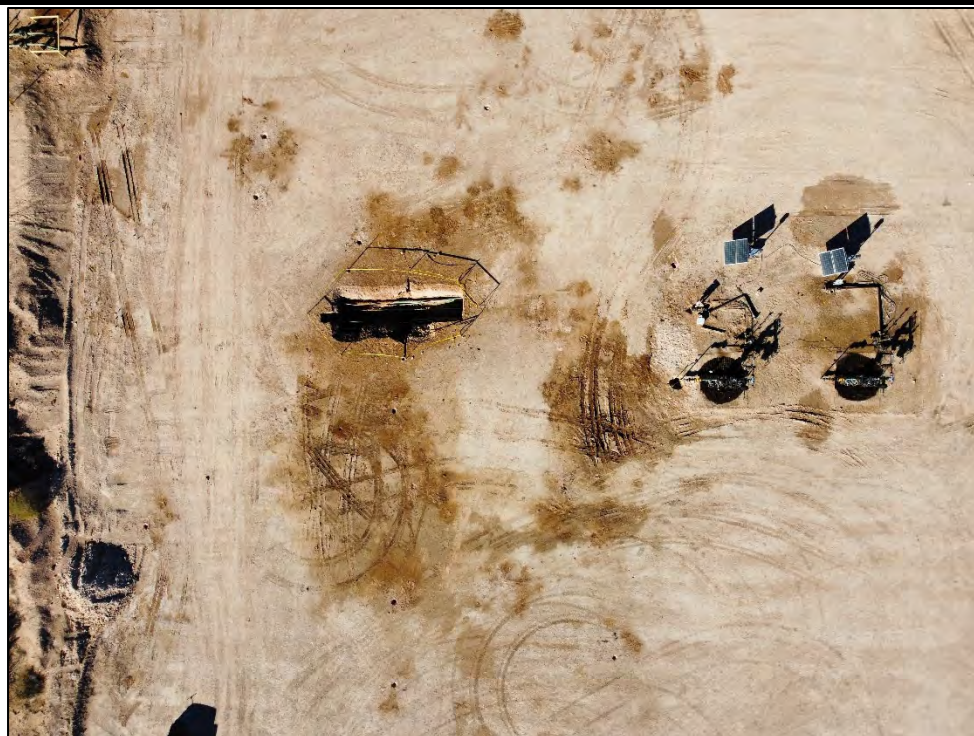


PHOTO 6: Aerial view following initial delineation activities. 11/21/2024

Spud Muffin 31 30 #738H – Site Characterization & Remediation Plan
Incident Number: nAPP2431628896
32.2551108°, -104.016727°



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



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

Spud Muffin 31 30 #738H – Site Characterization & Remediation Plan
Incident Number: nAPP2431628896
32.2551108°, -104.016727°



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

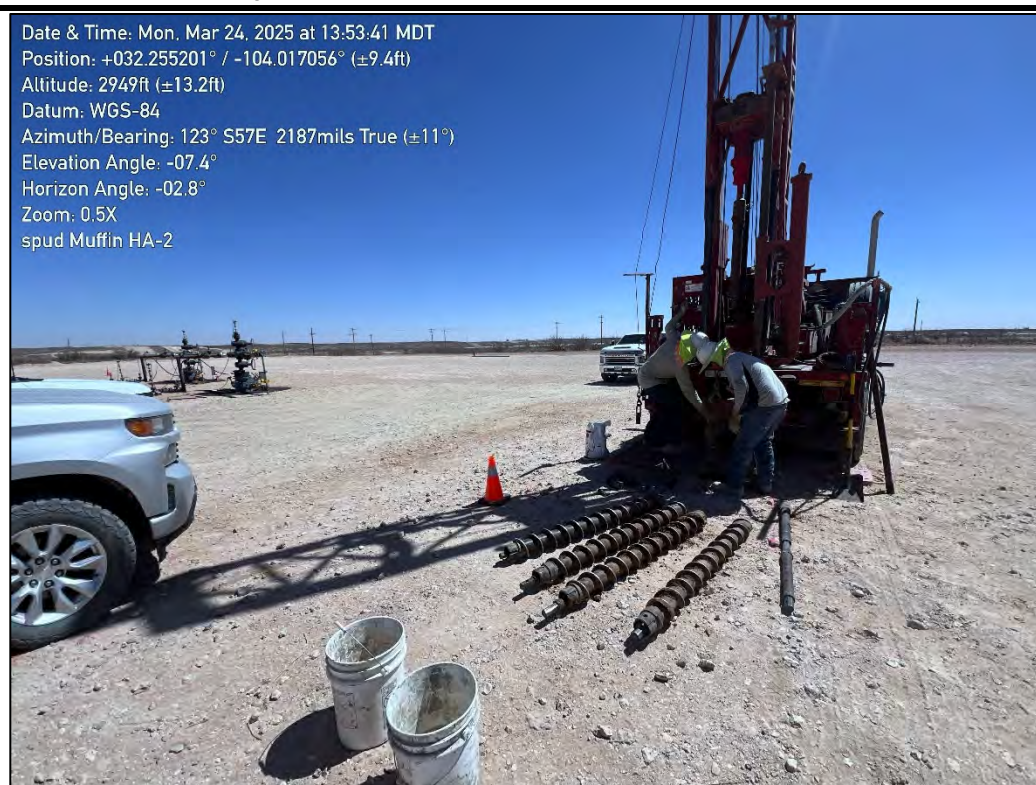


PHOTO 10: Southeastern view during additional delineation activities. 3/24/2025

Spud Muffin 31 30 #738H – Site Characterization & Remediation Plan
Incident Number: nAPP2431628896
32.2551108°, -104.016727°

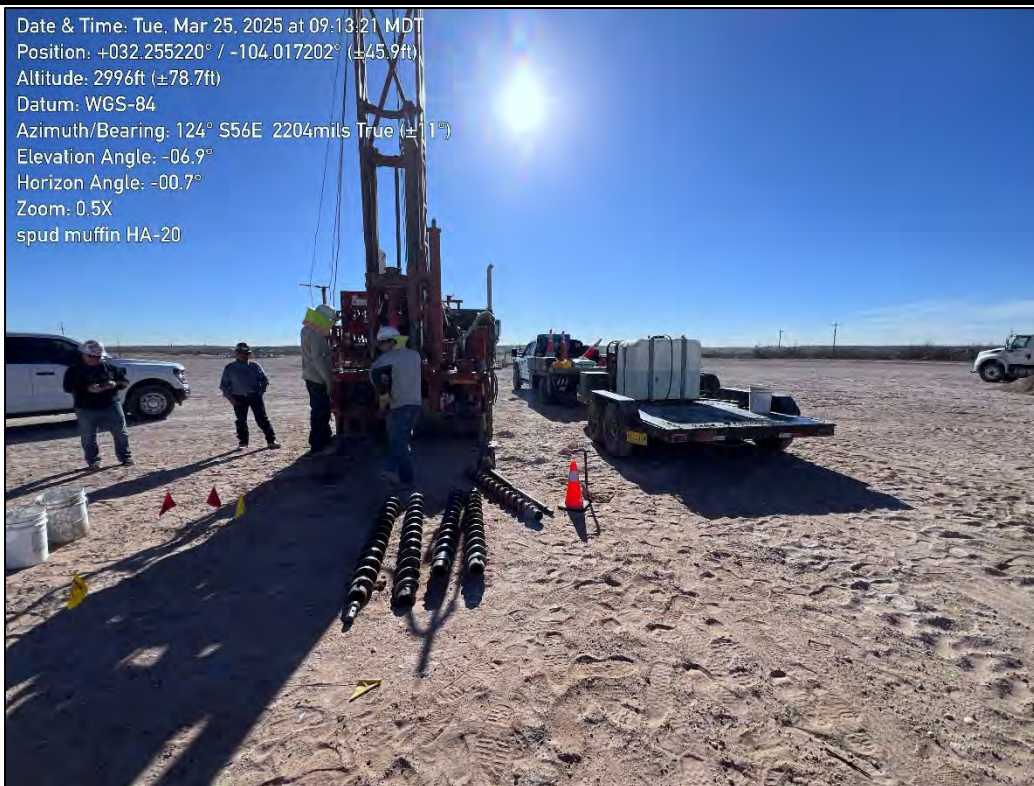


PHOTO 11: Southeastern view during additional delineation activities. 3/25/2025



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

Spud Muffin 31 30 #738H – Site Characterization & Remediation Plan
Incident Number: nAPP2431628896
32.2551108°, -104.016727°



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



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

Spud Muffin 31 30 #738H – Site Characterization & Remediation Plan
Incident Number: nAPP2431628896
32.2551108°, -104.016727°



Date & Time: Wed, Sep 10, 2025 at 12:44:49 MDT
Position: +032.255638° / -104.017270° (± 262.1 ft)
Altitude: 2962ft (± 98.4 ft)
Datum: WGS-84
Azimuth/Bearing: 018° N18E 0320mils True ($\pm 12^\circ$)
Elevation Angle: -00.7°
Horizon Angle: -01.2°
Zoom: 0.5X
spud muffin-BG03



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

Date & Time: Wed, Sep 10, 2025 at 13:15:30 MDT
Position: +032.255601° / -104.017350° (± 218.1 ft)
Altitude: 2962ft (± 106.9 ft)
Datum: WGS-84
Azimuth/Bearing: 195° S15W 3467mils True ($\pm 11^\circ$)
Elevation Angle: -12.9°
Horizon Angle: -01.4°
Zoom: 0.5X
spud muffin-BG04



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.ralej@dmn.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.ralej@dmn.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 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).

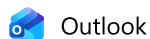
A produced water release was discovered on November 11, 2024, and was subsequently assigned Incident Number nAPP2431628896. The depth to groundwater well was drilled on June 6, 2025, confirming the closure criteria. Due to surface rights ownerships, Devon requires Oxy permission to access the NMOCD approved 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





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



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

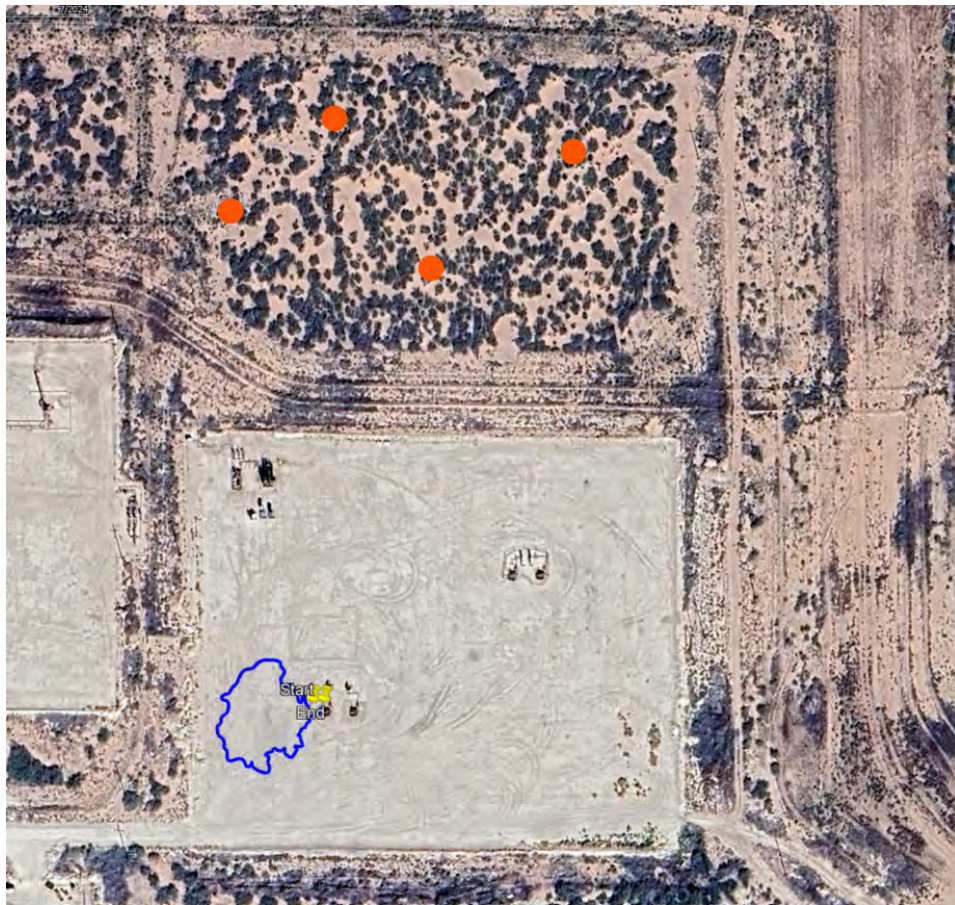
(505)469-7520 Shelly.Wells@emnrd.nm.gov
<http://www.emnrd.state.nm.us/OCD/>

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



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

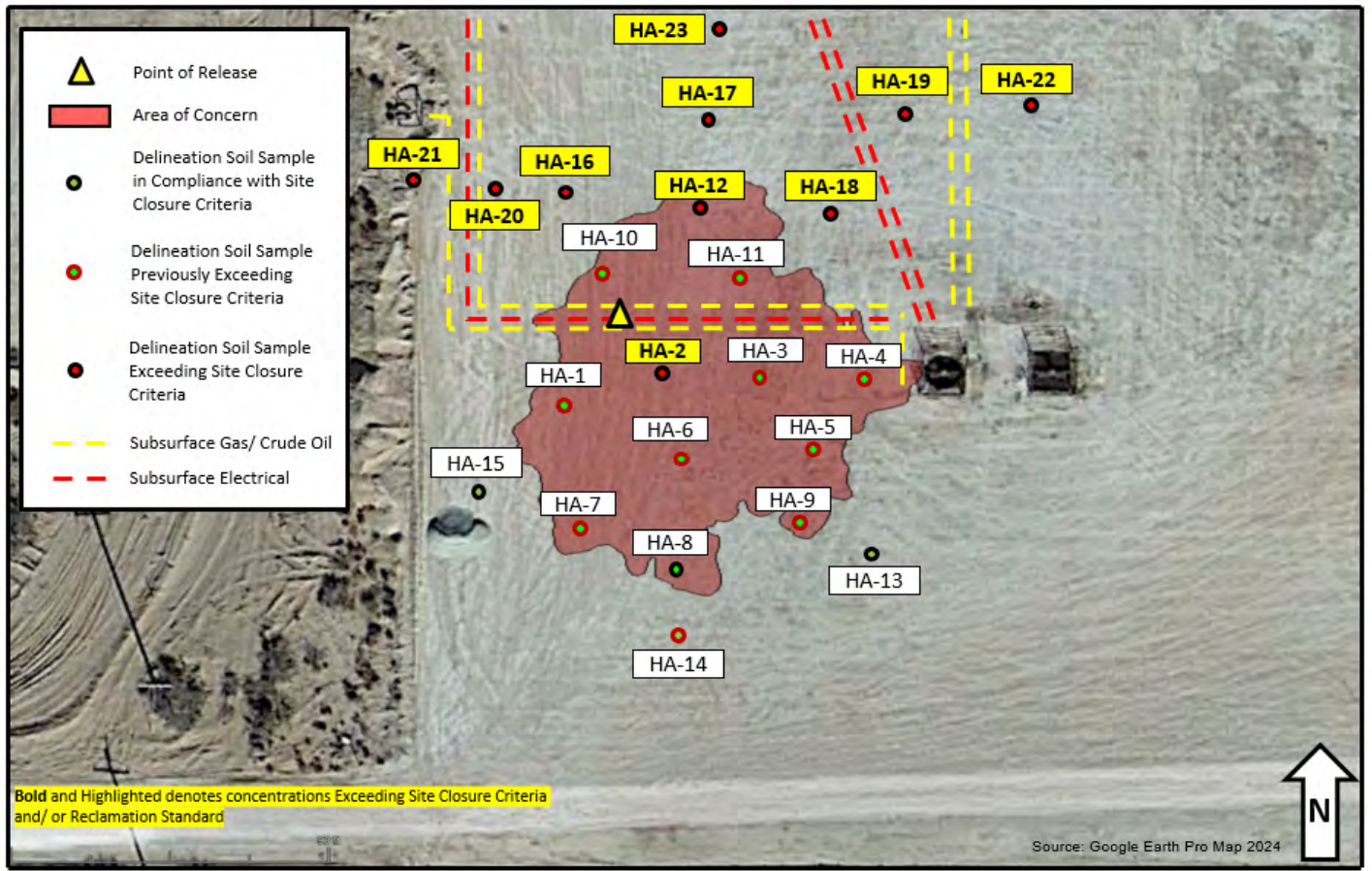
Kind regards,

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



Environment Testing

- 1
- 2
- 3
- 4
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- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

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



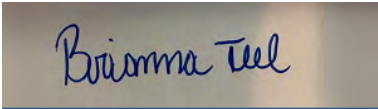
Eurofins Midland

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



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

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

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

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

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Definitions/Glossary

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

Job ID: 880-51418-1
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
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51418-1
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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Case Narrative

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

Job ID: 880-51418-1

Job ID: 880-51418-1

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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

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Case Narrative

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

Job ID: 880-51418-1

Job ID: 880-51418-1 (Continued)

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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

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Case Narrative

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

Job ID: 880-51418-1

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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.

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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

Lab Sample ID: 880-51418-1

Date Collected: 11/20/24 07:35

Matrix: Solid

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 16:09	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

Lab Sample ID: 880-51418-2

Date Collected: 11/20/24 07:40

Matrix: Solid

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	11/23/24 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

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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

Lab Sample ID: 880-51418-2

Date Collected: 11/20/24 07:40

Matrix: Solid

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)	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

Lab Sample ID: 880-51418-3

Date Collected: 11/20/24 07:45

Matrix: Solid

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	<0.00202	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

Lab Sample ID: 880-51418-3

Date Collected: 11/20/24 07:45

Matrix: Solid

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	<49.9	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

Lab Sample ID: 880-51418-4

Date Collected: 11/20/24 07:50

Matrix: Solid

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	<0.00199	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

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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 07:50
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

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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: 880-51418-6

Date Collected: 11/20/24 08:00

Matrix: Solid

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	<0.0504	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

Lab Sample ID: 880-51418-7

Date Collected: 11/20/24 08:05

Matrix: Solid

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	<0.00202	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

Lab Sample ID: 880-51418-7

Date Collected: 11/20/24 08:05

Matrix: Solid

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	11/23/24 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

Lab Sample ID: 880-51418-8

Date Collected: 11/20/24 08:10

Matrix: Solid

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 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

Date Collected: 11/20/24 08:10

Matrix: Solid

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

Date Collected: 11/20/24 08:15

Matrix: Solid

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

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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: 880-51418-9

Date Collected: 11/20/24 08:15

Matrix: Solid

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	34.4		9.94		mg/Kg			11/23/24 09:26	1

Client Sample ID: HA-2

Lab Sample ID: 880-51418-10

Date Collected: 11/20/24 08:20

Matrix: Solid

Date Received: 11/22/24 12:06

Sample Depth: 4

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

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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-3

Lab Sample ID: 880-51418-11

Date Collected: 11/20/24 08:25

Matrix: Solid

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	<0.0497	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

Lab Sample ID: 880-51418-12

Date Collected: 11/20/24 08:30

Matrix: Solid

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 16:09	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

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: 880-51418-12

Date Collected: 11/20/24 08:30

Matrix: Solid

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

Date Collected: 11/20/24 08:35

Matrix: Solid

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

Date Collected: 11/20/24 08:35

Matrix: Solid

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

Date Collected: 11/20/24 08:40

Matrix: Solid

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

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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-3

Lab Sample ID: 880-51418-14

Date Collected: 11/20/24 08:40

Matrix: Solid

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	26.2		10.1		mg/Kg			11/23/24 10:39	1

Client Sample ID: HA-3

Lab Sample ID: 880-51418-15

Date Collected: 11/20/24 08:45

Matrix: Solid

Date Received: 11/22/24 12:06

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		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

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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

Lab Sample ID: 880-51418-16

Date Collected: 11/20/24 08:50

Matrix: Solid

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

Date Collected: 11/20/24 08:55

Matrix: Solid

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

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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

Lab Sample ID: 880-51418-17

Date Collected: 11/20/24 08:55

Matrix: Solid

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)	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

Lab Sample ID: 880-51418-18

Date Collected: 11/20/24 09:00

Matrix: Solid

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	<0.00201	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

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

Lab Sample ID: 880-51418-18

Date Collected: 11/20/24 09:00

Matrix: Solid

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 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

Lab Sample ID: 880-51418-19

Date Collected: 11/20/24 09:05

Matrix: Solid

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	<0.00199	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

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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

Lab Sample ID: 880-51418-19

Date Collected: 11/20/24 09:05

Matrix: Solid

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	131		9.98		mg/Kg			11/23/24 11:20	1

Client Sample ID: HA-4

Lab Sample ID: 880-51418-20

Date Collected: 11/20/24 09:10

Matrix: Solid

Date Received: 11/22/24 12:06

Sample Depth: 4

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

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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 09:15
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

Lab Sample ID: 880-51418-22

Date Collected: 11/20/24 09:20

Matrix: Solid

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)	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

Lab Sample ID: 880-51418-23

Date Collected: 11/20/24 09:25

Matrix: Solid

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	<0.00202	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

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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

Lab Sample ID: 880-51418-23

Date Collected: 11/20/24 09:25

Matrix: Solid

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 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

Lab Sample ID: 880-51418-24

Date Collected: 11/20/24 09:30

Matrix: Solid

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	<0.00199	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

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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 09:30

Date Received: 11/22/24 12:06

Sample Depth: 3

Lab Sample ID: 880-51418-24

Matrix: Solid

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

Date Collected: 11/20/24 09:35

Date Received: 11/22/24 12:06

Sample Depth: 0.5

Lab Sample ID: 880-51418-25

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 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

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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-6

Lab Sample ID: 880-51418-26

Date Collected: 11/20/24 09:40

Matrix: Solid

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 16:15	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

Lab Sample ID: 880-51418-27

Date Collected: 11/20/24 09:45

Matrix: Solid

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	11/23/24 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

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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-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) (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

Date Collected: 11/20/24 09:50

Date Received: 11/22/24 12:06

Sample Depth: 3

Lab Sample ID: 880-51418-28

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 23:53	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

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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-6

Lab Sample ID: 880-51418-28

Date Collected: 11/20/24 09:50

Matrix: Solid

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

Date Collected: 11/20/24 09:55

Matrix: Solid

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

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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-7

Lab Sample ID: 880-51418-29

Date Collected: 11/20/24 09:55

Matrix: Solid

Date Received: 11/22/24 12:06

Sample Depth: 0.5

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

Lab Sample ID: 880-51418-30

Date Collected: 11/20/24 10:00

Matrix: Solid

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	<0.00202	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

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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-7

Lab Sample ID: 880-51418-31

Date Collected: 11/20/24 10:05

Matrix: Solid

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

Date Collected: 11/20/24 10:10

Matrix: Solid

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

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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-8

Lab Sample ID: 880-51418-32

Date Collected: 11/20/24 10:10

Matrix: Solid

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

Date Collected: 11/20/24 10:15

Matrix: Solid

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

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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-8

Lab Sample ID: 880-51418-33

Date Collected: 11/20/24 10:15

Matrix: Solid

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

Date Collected: 11/20/24 10:20

Matrix: Solid

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

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-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

Lab Sample ID: 880-51418-36

Date Collected: 11/20/24 10:30

Matrix: Solid

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	11/24/24 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

Lab Sample ID: 880-51418-37

Date Collected: 11/20/24 10:35

Matrix: Solid

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 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

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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

Lab Sample ID: 880-51418-37

Date Collected: 11/20/24 10:35

Matrix: Solid

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)	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

Lab Sample ID: 880-51418-38

Date Collected: 11/20/24 10:40

Matrix: Solid

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 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

Lab Sample ID: 880-51418-38

Date Collected: 11/20/24 10:40

Matrix: Solid

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 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

Lab Sample ID: 880-51418-39

Date Collected: 11/20/24 10:45

Matrix: Solid

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	<0.00199	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

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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 10:45

Date Received: 11/22/24 12:06

Sample Depth: 3

Lab Sample ID: 880-51418-39

Matrix: Solid

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

Date Collected: 11/20/24 10:50

Date Received: 11/22/24 12:06

Sample Depth: 0.5

Lab Sample ID: 880-51418-40

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 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

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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

Lab Sample ID: 880-51418-41

Date Collected: 11/20/24 10:55

Matrix: Solid

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 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

Lab Sample ID: 880-51418-42

Date Collected: 11/20/24 11:00

Matrix: Solid

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	<0.00202	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

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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

Lab Sample ID: 880-51418-42

Date Collected: 11/20/24 11:00

Matrix: Solid

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)	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

Lab Sample ID: 880-51418-43

Date Collected: 11/20/24 11:05

Matrix: Solid

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	<0.00202	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

Lab Sample ID: 880-51418-43

Date Collected: 11/20/24 11:05

Matrix: Solid

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	<49.9	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

Lab Sample ID: 880-51418-44

Date Collected: 11/20/24 11:10

Matrix: Solid

Date Received: 11/22/24 12:06

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		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

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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 11:10

Date Received: 11/22/24 12:06

Sample Depth: 4

Lab Sample ID: 880-51418-44

Matrix: Solid

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

Date Collected: 11/20/24 11:15

Date Received: 11/22/24 12:06

Sample Depth: 0.5

Lab Sample ID: 880-51418-45

Matrix: Solid

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

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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

Lab Sample ID: 880-51418-46

Date Collected: 11/20/24 11:20

Matrix: Solid

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	<0.00202	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

Lab Sample ID: 880-51418-47

Date Collected: 11/20/24 11:25

Matrix: Solid

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	<0.00201	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

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-11

Lab Sample ID: 880-51418-47

Date Collected: 11/20/24 11:25

Matrix: Solid

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)	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

Lab Sample ID: 880-51418-48

Date Collected: 11/20/24 11:30

Matrix: Solid

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 16:19	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

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-11

Lab Sample ID: 880-51418-48

Date Collected: 11/20/24 11:30

Matrix: Solid

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	<49.8	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

Lab Sample ID: 880-51418-49

Date Collected: 11/20/24 11:35

Matrix: Solid

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 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

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-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: 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

Date Collected: 11/20/24 11:40

Date Received: 11/22/24 12:06

Sample Depth: 0.5

Lab Sample ID: 880-51418-50

Matrix: Solid

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

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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: 880-51418-51

Date Collected: 11/20/24 11:45

Matrix: Solid

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	<0.00201	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

Lab Sample ID: 880-51418-52

Date Collected: 11/20/24 11:50

Matrix: Solid

Date Received: 11/22/24 12:06

Sample Depth: 4

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

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) (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

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 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

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-13

Lab Sample ID: 880-51418-53

Date Collected: 11/20/24 11:55

Matrix: Solid

Date Received: 11/22/24 12:06

Sample Depth: 0.5

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

Lab Sample ID: 880-51418-54

Date Collected: 11/20/24 12:00

Matrix: Solid

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	<0.00202	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

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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 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

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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-14

Lab Sample ID: 880-51418-56

Date Collected: 11/20/24 12:10

Matrix: Solid

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

Date Collected: 11/20/24 12:15

Matrix: Solid

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

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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-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

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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-15

Lab Sample ID: 880-51418-58

Date Collected: 11/20/24 12:12

Matrix: Solid

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 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	DFBZ1
		(70-130)	(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

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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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	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

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Surrogate Summary

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)

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

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Surrogate Summary

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)

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

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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

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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	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	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

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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

	MSD	MSD	
Surrogate	%Recovery	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	MB							
	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 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

	MB	MB							
Surrogate	%Recovery	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	LCS	LCS						
	Added	Result	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	

	LCS	LCS	
Surrogate	%Recovery	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	LCSD	LCSD							
	Added	Result	Qualifier	Unit	D	%Rec	%Rec	Limits	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

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene (Surr)	125		70 - 130

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QC Sample Results

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

Job ID: 880-51418-1
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

	LCSD	LCSD	
Surrogate	%Recovery	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

	MS	MS	
Surrogate	%Recovery	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	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

	MSD	MSD	
Surrogate	%Recovery	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

	MB	MB				
Surrogate	%Recovery	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

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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

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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	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

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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

	LCS	LCS	
Surrogate	%Recovery	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

	LCSD	LCSD	
Surrogate	%Recovery	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

	MS	MS	
Surrogate	%Recovery	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

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

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QC Sample Results

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

Job ID: 880-51418-1
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	%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	%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	%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	

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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

	MS	MS	
Surrogate	%Recovery	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

	MSD	MSD	
Surrogate	%Recovery	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

	MB	MB		Prepared	Analyzed	Dil Fac
Surrogate	%Recovery	Qualifier	Limits			
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

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	104		70 - 130
o-Terphenyl	103		70 - 130

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QC Sample Results

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

Job ID: 880-51418-1
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
	LCSD	LCSD							
Surrogate	%Recovery	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	RPD	RPD Limit
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		
	MS	MS									
Surrogate	%Recovery	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
	MSD	MSD									
Surrogate	%Recovery	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

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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

	MB	MB				
Surrogate	%Recovery	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							

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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

Matrix: Solid

Analysis Batch: 96451

Client Sample ID: HA-15

Prep Type: Total/NA

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

Matrix: Solid

Analysis Batch: 96493

Client Sample ID: Method Blank

Prep Type: Total/NA

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

Matrix: Solid

Analysis Batch: 96493

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

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

Matrix: Solid

Analysis Batch: 96493

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

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

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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

	LCSD	LCSD	
Surrogate	%Recovery	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	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec		
	Result	Qualifier	Added	Result	Qualifier			Limits	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	MS									
	%Recovery	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

Eurofins Midland

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

Matrix: Solid

Analysis Batch: 96408

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	248.4		mg/Kg		99	90 - 110	0	20

Lab Sample ID: 880-51418-1 MS

Matrix: Solid

Analysis Batch: 96408

Client Sample ID: HA-1

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	3870	F1	1260	5296	F1	mg/Kg		113	90 - 110		

Lab Sample ID: 880-51418-1 MSD

Matrix: Solid

Analysis Batch: 96408

Client Sample ID: HA-1

Prep Type: Soluble

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

Matrix: Solid

Analysis Batch: 96408

Client Sample ID: HA-3

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	8150	F1	2490	11250	F1	mg/Kg		125	90 - 110		

Lab Sample ID: 880-51418-11 MSD

Matrix: Solid

Analysis Batch: 96408

Client Sample ID: HA-3

Prep Type: Soluble

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

Matrix: Solid

Analysis Batch: 96428

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 01:21	1

Lab Sample ID: LCS 880-96392/2-A

Matrix: Solid

Analysis Batch: 96428

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	244.6		mg/Kg		98	90 - 110		

Lab Sample ID: LCSD 880-96392/3-A

Matrix: Solid

Analysis Batch: 96428

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	248.4		mg/Kg		99	90 - 110	2	20

Eurofins Midland

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		

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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	

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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

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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

Eurofins Midland

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	

Eurofins Midland

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	

Eurofins Midland

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	

Eurofins Midland

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

Eurofins Midland

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

Eurofins Midland

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	

Eurofins Midland

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	

Eurofins Midland

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	

Eurofins Midland

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

Eurofins Midland

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

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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**Lab Sample ID: 880-51418-1****Date Collected: 11/20/24 07:35****Matrix: Solid****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			5.02 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**Lab Sample ID: 880-51418-2****Date Collected: 11/20/24 07:40****Matrix: Solid****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			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**Lab Sample ID: 880-51418-3****Date Collected: 11/20/24 07:45****Matrix: Solid****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			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**Lab Sample ID: 880-51418-4****Date Collected: 11/20/24 07:50****Matrix: Solid****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	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

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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

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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**Lab Sample ID: 880-51418-7****Date Collected: 11/20/24 08:05****Matrix: Solid****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
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**Lab Sample ID: 880-51418-8****Date Collected: 11/20/24 08:10****Matrix: Solid****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			5.02 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**Lab Sample ID: 880-51418-9****Date Collected: 11/20/24 08:15****Matrix: Solid****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	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**Lab Sample ID: 880-51418-10****Date Collected: 11/20/24 08:20****Matrix: Solid****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			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

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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**Lab Sample ID: 880-51418-11****Date Collected: 11/20/24 08:25****Matrix: Solid****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	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**Lab Sample ID: 880-51418-12****Date Collected: 11/20/24 08:30****Matrix: Solid****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	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**Lab Sample ID: 880-51418-13****Date Collected: 11/20/24 08:35****Matrix: Solid****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			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**Lab Sample ID: 880-51418-14****Date Collected: 11/20/24 08:40****Matrix: Solid****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	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

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-3

Lab Sample ID: 880-51418-14

Date Collected: 11/20/24 08:40

Matrix: Solid

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	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

Lab Sample ID: 880-51418-15

Date Collected: 11/20/24 08:45

Matrix: Solid

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			5.00 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

Lab Sample ID: 880-51418-16

Date Collected: 11/20/24 08:50

Matrix: Solid

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			5.04 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

Lab Sample ID: 880-51418-17

Date Collected: 11/20/24 08:55

Matrix: Solid

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			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**Lab Sample ID: 880-51418-17****Date Collected: 11/20/24 08:55****Matrix: Solid****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
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**Lab Sample ID: 880-51418-18****Date Collected: 11/20/24 09:00****Matrix: Solid****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			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**Lab Sample ID: 880-51418-19****Date Collected: 11/20/24 09:05****Matrix: Solid****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	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**Lab Sample ID: 880-51418-20****Date Collected: 11/20/24 09:10****Matrix: Solid****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	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

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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**Lab Sample ID: 880-51418-21****Date Collected: 11/20/24 09:15****Matrix: Solid****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			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**Lab Sample ID: 880-51418-22****Date Collected: 11/20/24 09:20****Matrix: Solid****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			5.04 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**Lab Sample ID: 880-51418-23****Date Collected: 11/20/24 09:25****Matrix: Solid****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			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

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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**Lab Sample ID: 880-51418-24****Date Collected: 11/20/24 09:30****Matrix: Solid****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	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**Lab Sample ID: 880-51418-25****Date Collected: 11/20/24 09:35****Matrix: Solid****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			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**Lab Sample ID: 880-51418-26****Date Collected: 11/20/24 09:40****Matrix: Solid****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			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

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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**Lab Sample ID: 880-51418-27****Date Collected: 11/20/24 09:45****Matrix: Solid****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			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**Lab Sample ID: 880-51418-28****Date Collected: 11/20/24 09:50****Matrix: Solid****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	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**Lab Sample ID: 880-51418-29****Date Collected: 11/20/24 09:55****Matrix: Solid****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			5.02 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**Lab Sample ID: 880-51418-30****Date Collected: 11/20/24 10:00****Matrix: Solid****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			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

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-7

Lab Sample ID: 880-51418-30

Date Collected: 11/20/24 10:00

Matrix: Solid

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	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

Lab Sample ID: 880-51418-31

Date Collected: 11/20/24 10:05

Matrix: Solid

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			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

Lab Sample ID: 880-51418-32

Date Collected: 11/20/24 10:10

Matrix: Solid

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			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

Lab Sample ID: 880-51418-33

Date Collected: 11/20/24 10:15

Matrix: Solid

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	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

Lab Sample ID: 880-51418-33

Date Collected: 11/20/24 10:15

Matrix: Solid

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
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

Lab Sample ID: 880-51418-34

Date Collected: 11/20/24 10:20

Matrix: Solid

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	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

Lab Sample ID: 880-51418-35

Date Collected: 11/20/24 10:25

Matrix: Solid

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			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

Lab Sample ID: 880-51418-36

Date Collected: 11/20/24 10:30

Matrix: Solid

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	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

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-9**Lab Sample ID: 880-51418-37****Date Collected: 11/20/24 10:35****Matrix: Solid****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	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**Lab Sample ID: 880-51418-38****Date Collected: 11/20/24 10:40****Matrix: Solid****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			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**Lab Sample ID: 880-51418-39****Date Collected: 11/20/24 10:45****Matrix: Solid****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	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**Lab Sample ID: 880-51418-40****Date Collected: 11/20/24 10:50****Matrix: Solid****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			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

Lab Sample ID: 880-51418-40

Date Collected: 11/20/24 10:50

Matrix: Solid

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	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

Lab Sample ID: 880-51418-41

Date Collected: 11/20/24 10:55

Matrix: Solid

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			5.02 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

Lab Sample ID: 880-51418-42

Date Collected: 11/20/24 11:00

Matrix: Solid

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			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

Lab Sample ID: 880-51418-43

Date Collected: 11/20/24 11:05

Matrix: Solid

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			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

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**Lab Sample ID: 880-51418-43****Date Collected: 11/20/24 11:05****Matrix: Solid****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
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**Lab Sample ID: 880-51418-44****Date Collected: 11/20/24 11:10****Matrix: Solid****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	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**Lab Sample ID: 880-51418-45****Date Collected: 11/20/24 11:15****Matrix: Solid****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			5.04 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**Lab Sample ID: 880-51418-46****Date Collected: 11/20/24 11:20****Matrix: Solid****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			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

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-11**Lab Sample ID: 880-51418-47****Date Collected: 11/20/24 11:25****Matrix: Solid****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			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**Lab Sample ID: 880-51418-48****Date Collected: 11/20/24 11:30****Matrix: Solid****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			5.04 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**Lab Sample ID: 880-51418-49****Date Collected: 11/20/24 11:35****Matrix: Solid****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	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**Lab Sample ID: 880-51418-50****Date Collected: 11/20/24 11:40****Matrix: Solid****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			5.00 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

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-12

Lab Sample ID: 880-51418-50

Date Collected: 11/20/24 11:40

Matrix: Solid

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	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

Lab Sample ID: 880-51418-51

Date Collected: 11/20/24 11:45

Matrix: Solid

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			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

Lab Sample ID: 880-51418-52

Date Collected: 11/20/24 11:50

Matrix: Solid

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			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

Lab Sample ID: 880-51418-53

Date Collected: 11/20/24 11:55

Matrix: Solid

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	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

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-13**Lab Sample ID: 880-51418-53****Date Collected: 11/20/24 11:55****Matrix: Solid****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
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**Lab Sample ID: 880-51418-54****Date Collected: 11/20/24 12:00****Matrix: Solid****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			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**Lab Sample ID: 880-51418-55****Date Collected: 11/20/24 12:05****Matrix: Solid****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			5.02 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**Lab Sample ID: 880-51418-56****Date Collected: 11/20/24 12:10****Matrix: Solid****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			5.04 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

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-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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14



Environment Testing

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



880-51418 Chain of Custody

Page ____ of ____
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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	☐ PRF	☐ Brownfield	☐ RRD ☐ Superfund
State of Project:			
Reporting: Level II	☐ Level III	☐ PST/UST	☐ TRRF ☐ Level IV
Deliverables: EDD	☐ ADAPT	☐ Other:	

[illegible]

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 / 7474																												

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0 <i>[Signature]</i>	<i>[Signature]</i>	11/27/24 12:08			
1 <i>[Signature]</i>	<i>[Signature]</i>				
2		4			
3					
4					
5		6			



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Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Chain of Custody

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:	jgmoreno@earthsys.net

Program: UST/PST ☐ PRF ☐ Brownfield ☐ RRD ☐ 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	Pres. Code	ANALYSIS REQUEST										Preservative Codes				
Project Number:	2657	☒ Routine ☐ Rush														None: NO	DI Water: H ₂ O	
Project Location:	Eddy County	Due Date:														Cool: Cool	MeOH: Me	
Sampler's Name:	Joey Pinson	TAT starts the day received by the lab, if received by 4:30pm															HCL: HC	HNO ₃ : HN
PO #:																H ₂ SO ₄ : H ₂	NaOH: Na	
SAMPLE RECEIPT		Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐												H ₃ PO ₄ : HP	
Samples Received Intact:	Yes ☒ No ☐	Thermometer ID:															NaHSO ₄ : NABIS	
Cooler Custody Seals:	Yes ☒ No ☐	Correction Factor:															Na ₂ S ₂ O ₃ : NaSO ₃	
Sample Custody Seals:	Yes ☒ No ☐	Temperature Reading:															Zn Acetate+NaOH: Zn	
Total Containers:		Corrected Temperature:															NaOH+Ascorbic Acid: SACP	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Chloride	TPH NM	BTEX NM									Sample Comments
HA-2	S	11/20/2024	8:20	4	Grab	1	X	X	X									Incident Number nAPP2431628896
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 SiO₂ Na Sr Ti Sn U V Zn
Hg: 1631 / 245.1 / 7470 / 7471

Circle Method(s) and Metal(s) to be analyzed

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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 ☐ Brownfield ☐ RRD ☐ Superfund ☐	
State of Project:	
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level N ☐	
Deliverables: EDD ☐ ADAPT ☐ Other: _____	

Project Name:	Spud Muffin 31 30 #738H	Turn Around	Pres. Code	ANALYSIS REQUEST										Preservative Codes				
Project Number:	2657	☒ Routine ☐ Rush														None: NO	DI Water: H ₂ O	
Project Location:	Eddy County	Due Date:														Cool: Cool	MeOH: Me	
Sampler's Name:	Joey Pinson	TAT starts the day received by the lab, if received by 4:30pm															HCL: HC	HNO ₃ : HN
WFO #:		Temp Blank:	Yes	No	Wet Ice:	Yes	No									H ₂ SO ₄ : H ₂	NaOH: Na	
SAMPLE RECEIPT	Samples Received In tact:	Yes	No	Thermometer ID:												H ₃ PO ₄ : HP		
	Cooler Custody Seals:	Yes	No	Correction Factor:												NaHSO ₄ : NABIS		
	Sample Custody Seals:	Yes	No	Temperature Reading:												Na ₂ S ₂ O ₃ : NaSO ₃		
	Total Containers:			Corrected Temperature:												Zn Acetate+NaOH: Zn		

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

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 SiO₂ Na Sr Ti Sn U V Zn
Hg: 1631 / 245.1 / 7470 / 7471

Circle Method(s) and Metal(s) to be analyzed

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
	<i>Teddy Hurd</i>	11/21/24 12:06			
3		4			
5		6			



Chain of Custody

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Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No:

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Page 4 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

Program: UST/PST ☐ PRF ☐ Brownfield ☐ RRQ ☐ 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	Pres. Code	ANALYSIS REQUEST										Preservative Codes			
Project Number:	2657															None: NO	DI Water: H ₂ O	
Project Location:	Eddy County	Due Date:														Cool: Cool	MeOH: Me	
Sampler's Name:	Joey Pinson	TAT starts the day received by the lab, if received by 4:30pm														HCL: HC	HNO ₃ : HN	
PO #:																H ₂ SO ₄ : H ₂	NaOH: Na	
SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No											H ₃ PO ₄ : HP	
Samples Received Intact:	Yes	No	Thermometer ID:														NaHSO ₄ : NABIS	
Cooler Custody Seals:	Yes	No	Correction Factor:														Na ₂ S ₂ O ₃ : NaSO ₃	
Sample Custody Seals:	Yes	No	Temperature Reading:														Zn Acetate+NaOH: Zn	
Total Containers:			Corrected Temperature:														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-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 SiO₂ Na Sr Ti Sn U V Zn Hg: 1631 / 245.1 / 7470 / 7471

Circle Method(s) and Metal(s) to be analyzed

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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

Program: ☐ UST/PST ☐ PRF ☐ Brownfield ☐ RRD ☐ Superfund ☐	
State of Project:	
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level N ☐	
Deliverables: EDD ☐ ADAPT ☐ Other:	

Project Name:	Spud Murfin 31 30 #738H	☒ Routine ☐ Rush	Pre-Code	ANALYSIS REQUEST										Preservative Codes					
Project Number:	2657														None: NO	DI Water: H ₂ O			
Project Location:	Eddy County	Due Date:													Cool: Cool	MeOH: Me			
Sampler's Name:	Joey Pinson	TAT starts the day received by the lab, if received by 4:30pm												HCL: HC	HNO ₃ : HN				
PO #:		Temp Blank:	Yes	No	Wet Ice:	Yes	No											H ₂ SO ₄ : H ₂	NaOH: Na
SAMPLE RECEIPT		Samples Received Intact:	Yes	No	Thermometer ID:	5.8										H ₃ PO ₄ : HP			
Cooler Custody Seals:	Yes	No	N/A	Correction Factor:	5.8										NaHSO ₄ : NABIS				
Sample Custody Seals:	Yes	No	N/A	Temperature Reading:	5.7										Na ₂ S ₂ O ₃ : NaSO ₃				
Total Containers:		Corrected Temperature:	5.7										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 SiO₂ Na Sr Ti Sn U V Zn

Hg: 1631 / 245.1 / 7470 / 7471

Circle Method(s) and Metal(s) to be analyzed

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
mt	Joey Pinson	11/21/24 12:06			
3		4			
5		6			



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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

Program: UST/PST ☐ PRF ☐ Brownfield ☐ RRD ☐ Superfund ☐	
State of Project:	
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐	
Deliverables: EDD ☐ ADAPT ☐ Other:	

Project Name:	Spud Mufin 31 30 #738H	☒ Routine ☐ Rush	Turn Around	Pres. Code	ANALYSIS REQUEST										Preservative Codes			
Project Number:	2657															None: NO	DI Water: H ₂ O	
Project Location:	Eddy County	Due Date:														Cool: Cool	MeOH: Me	
Sampler's Name:	Joey Pinson	TAT starts the day received by the lab, if received by 4:30pm														HCL: HC	HNO ₃ : HN	
PO #:																H ₂ SO ₄ : H ₂	NaOH: Na	
SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No										H ₃ PO ₄ : HP		
Samples Received In tact:	Yes	No	Thermometer ID:													NaHSO ₄ : NABIS		
Cooler Custody Seals:	Yes	No	Correction Factor:													Na ₂ S ₂ O ₃ : NaSO ₃		
Sample Custody Seals:	Yes	No	Temperature Reading:													Zn Acetate+NaOH: Zn		
Total Containers:			Corrected Temperature:													NaOH+Ascorbic Acid: SAPC		
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Chloride 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 SiO₂ Na Sr Ti Sn U V Zn Hg: 1631 / 245.1 / 7470 / 7471

Circle Method(s) and Metal(s) to be analyzed

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Environment Testing

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Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No.:

Page ____ of ____
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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 ☐ PRR ☐ Brownfield ☐ RRD ☐ Superfund ☐	
State of Project:	
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐	
Deliverables: EDD ☐ ADAPT ☐ Other: _____	

[illegible]

Total		200.7 / 66010	200.8 / 66020	Circle Method(s) and Metal(s) to be analyzed																										
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	Ti	Sn	U	V	Zn
			Hg: 1631 / 245.1 / 7470 / 747																											

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0	<i>[Signature]</i>	11/27/24 12:06			
1	<i>[Signature]</i>				
2					
3					
4					
5					
6					

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	



Environment Testing

- 1
- 2
- 3
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- 13
- 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Kris Williams
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 County

JOB NUMBER

880-51432-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

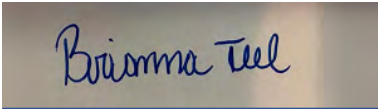
Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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Authorized for release by
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

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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
SQL	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: 880-51432-1

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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.

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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: 880-51432-1

Date Collected: 11/21/24 08:00

Matrix: Solid

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

Date Collected: 11/21/24 08:05

Matrix: Solid

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

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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: 880-51432-2

Date Collected: 11/21/24 08:05

Matrix: Solid

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)	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

Lab Sample ID: 880-51432-3

Date Collected: 11/21/24 08:10

Matrix: Solid

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	<0.00198	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
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 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)

Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (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)

Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (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	%Recovery	MS Qualifier	MS 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	%Recovery	MSD Qualifier	MSD 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	%Recovery	MB Qualifier	MB 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

	LCS	LCS	
Surrogate	%Recovery	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	%Recovery	LCSD	LCSD						
1-Chlorooctane	105								
o-Terphenyl	102								

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	RPD	RPD Limit
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	%Recovery	MS	MS								
1-Chlorooctane	106										
o-Terphenyl	101										

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	%Recovery	MSD	MSD								
1-Chlorooctane	94										
o-Terphenyl	90										

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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: 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

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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

Lab Sample ID: 880-51432-1

Date Collected: 11/21/24 08:00

Matrix: Solid

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			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

Lab Sample ID: 880-51432-2

Date Collected: 11/21/24 08:05

Matrix: Solid

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			5.02 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

Lab Sample ID: 880-51432-3

Date Collected: 11/21/24 08:10

Matrix: Solid

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 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

Eurofins Midland

Accreditation/Certification Summary

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

Job ID: 880-51432-1
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: 880-51432-1
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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Enviro
Xenco

880-51432 Chain of Custody



in 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
5) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No:

52

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 ☐ PRR ☐ Brownfield ☐ RRD ☐ Superfund ☐	
State of Project:	
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐	
Deliverables: EDD ☐ ADAPT ☐ Other: _____	

[illegible]

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 SiO₂ Na Sr Ti 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 Xeno, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xeno 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 Xeno. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xeno, 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 <i>h/c</i>	<i>Toby Penick</i>	<i>11/22/08 12:18</i>			
3			4		
5			6		

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 880-51432-1

SDG Number: Eddy County

Login Number: 51432

List Source: Eurofins Midland

List Number: 1

Creator: Vasquez, Julisa

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	



Environment Testing

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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



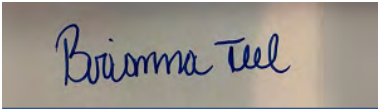
Eurofins Midland

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

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

Laboratory Job ID: 880-51433-1
SDG: Eddy County

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Definitions/Glossary

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

Job ID: 880-51433-1
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

Project: Spud Muffin 31 30 #738H

Job ID: 880-51433-1

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.

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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: 880-51433-1

Date Collected: 11/21/24 09:15

Matrix: Solid

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

Date Collected: 11/21/24 09:20

Matrix: Solid

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

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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: 880-51433-2

Date Collected: 11/21/24 09:20

Matrix: Solid

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)	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

Lab Sample ID: 880-51433-3

Date Collected: 11/21/24 09:25

Matrix: Solid

Date Received: 11/22/24 12:06

Sample Depth: 4

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

Date Collected: 11/21/24 09:25

Matrix: Solid

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

Date Collected: 11/21/24 08:30

Matrix: Solid

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

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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
Date Collected: 11/21/24 08:30
Date Received: 11/22/24 12:06
Sample Depth: 6

Lab Sample ID: 880-51433-4
Matrix: Solid

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

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			

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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

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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

Eurofins Midland

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

Eurofins Midland

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

	MB	MB							
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil	Fac		
<i>o</i> -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						
<i>o</i> -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	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						
<i>o</i> -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	
<i>o</i> -Terphenyl	91		70 - 130				11/25/24 08:25	11/26/24 08:02	1	

Eurofins Midland

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

Matrix: Solid

Analysis Batch: 96624

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

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

Lab Sample ID: LCSD 880-96467/3-A

Matrix: Solid

Analysis Batch: 96624

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 96467

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	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	%Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	92		70 - 130						
o-Terphenyl	82		70 - 130						

Lab Sample ID: 880-51433-4 MS

Matrix: Solid

Analysis Batch: 96624

Client Sample ID: HA-16

Prep Type: Total/NA

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	%Recovery	MS Qualifier	Limits						
1-Chlorooctane	102		70 - 130						
o-Terphenyl	84		70 - 130						

Lab Sample ID: 880-51433-4 MSD

Matrix: Solid

Analysis Batch: 96624

Client Sample ID: HA-16

Prep Type: Total/NA

Prep Batch: 96467

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	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	%Recovery	MSD Qualifier	Limits								
1-Chlorooctane	84		70 - 130								

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QC Sample Results

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

Job ID: 880-51433-1
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

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
<i>o</i> -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	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier								
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	LCS	LCS				%Rec	
		Added	Result	Qualifier	Unit	D	%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	LCSD	LCSD				%Rec		RPD
		Added	Result	Qualifier	Unit	D	%Rec	Limits	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	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier								
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	LCS	LCS				%Rec	
		Added	Result	Qualifier	Unit	D	%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	LCSD	LCSD				%Rec		RPD
		Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride		250	254.7		mg/Kg		102	90 - 110	0	20

Eurofins Midland

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
LCSD 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	
LCSD 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	

Eurofins Midland

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	

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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

Lab Sample ID: 880-51433-1

Date Collected: 11/21/24 09:15

Matrix: Solid

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			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

Lab Sample ID: 880-51433-2

Date Collected: 11/21/24 09:20

Matrix: Solid

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	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

Lab Sample ID: 880-51433-3

Date Collected: 11/21/24 09:25

Matrix: Solid

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			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

Lab Sample ID: 880-51433-4

Date Collected: 11/21/24 08:30

Matrix: Solid

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			5.00 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

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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
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51433-1
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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
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- 9
- 10
- 11
- 12
- 13
- 14

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

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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	



Environment Testing

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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



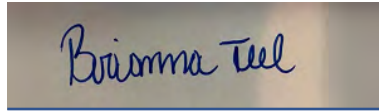
Eurofins Midland

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: 880-51423-1
SDG: Eddy County

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Definitions/Glossary

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

Job ID: 880-51423-1
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
Project: Spud Muffin 31 30 #738H

Job ID: 880-51423-1

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.

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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

Lab Sample ID: 880-51423-1

Date Collected: 11/21/24 08:35

Matrix: Solid

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 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

Eurofins Midland

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)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (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)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (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

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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

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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

	LCS	LCS	
Surrogate	%Recovery	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

	LCSD	LCSD	
Surrogate	%Recovery	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

	MS	MS	
Surrogate	%Recovery	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

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

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QC Sample Results

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

Job ID: 880-51423-1
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	

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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
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51423-1
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: 880-51423-1
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
- 12
- 13
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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

880-51423 Chain of Custody



Page _____ of _____

Work Order Comments			
Program:	UST/PST ☐	PRA ☐	Brownfield ☐ RRD ☐ Superfund ☐
State of Project:			
Reporting:	Level II ☐	Level III ☐	PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables:	EDD ☐	Adapt ☐	Other:

[illegible][illegible]

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
		11/22/24 12:46			

Revised Date: 02/07/2020 D. 2000-0

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	



Environment Testing

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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



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

Brianna Teel

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
Project: Spud Muffin 31 30 #738H

Job ID: 880-51426-1

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.

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

Lab Sample ID: 880-51426-1

Date Collected: 11/21/24 08:35

Matrix: Solid

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

Date Collected: 11/21/24 08:40

Matrix: Solid

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

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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: 880-51426-2

Date Collected: 11/21/24 08:40

Matrix: Solid

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)	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

Lab Sample ID: 880-51426-3

Date Collected: 11/21/24 08:45

Matrix: Solid

Date Received: 11/22/24 12:06

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		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

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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 08:45
Date Received: 11/22/24 12:06
Sample Depth: 4

Lab Sample ID: 880-51426-3
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 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)

Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (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)

Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (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	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

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	%Recovery	MS Qualifier	MS 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	%Recovery	MSD Qualifier	MSD 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	%Recovery	MB Qualifier	MB 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

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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

	LCS	LCS	
Surrogate	%Recovery	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	LCSD								
	%Recovery	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	MS								
	%Recovery	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	MSD								
	%Recovery	Qualifier	Limits								
1-Chlorooctane	82		70 - 130								
o-Terphenyl	70		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: 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

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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

Lab Sample ID: 880-51426-1

Date Collected: 11/21/24 08:35

Matrix: Solid

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			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

Lab Sample ID: 880-51426-2

Date Collected: 11/21/24 08:40

Matrix: Solid

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			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

Lab Sample ID: 880-51426-3

Date Collected: 11/21/24 08:45

Matrix: Solid

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 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

Eurofins Midland

Accreditation/Certification Summary

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

Job ID: 880-51426-1
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: 880-51426-1
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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Environment Testing
Xenco

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

Chain of Custody



880-51426 Chain of Custody

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 ☐ PRF ☐ Brownfield ☐ RRD ☐ Superfund ☐	
State of Project:	
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level I ☐	
Deliverables: EDD ☐ ADAPT ☐ Other:	

Project Name:	Spud Muffin 31 30 #736H	Turn Around	☒ Routine ☐ Rush	Pres. Code		ANALYSIS REQUEST																Preservative Codes																			
Project Number:	2657	Due Date:																				None: NO DI Water: H ₂ O Cool: Cool MeOH: Me HCL: HC HNO ₃ : HN H ₂ SO ₄ : H ₂ NaOH: Na H ₃ PO ₄ : HP NaHSO ₄ : NABIS Na ₂ S ₂ O ₃ : NaSO ₃ Zn Acetate+NaOH: Zn NaOH+Ascorbic Acid: SAPC																			
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 Inact:	Yes	No	Thermometer ID:																																						
Cooler Custody Seals:	Yes	No	Correction Factor:																																						
Sample Custody Seals:	Yes	No	Temperature Reading:																																						
Total Containers:		Corrected Temperature:																																							
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	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 SiO₂ Na Sr Ti Sn U V Zn Hg: 1631 / 245.1 / 7470 / 7471

Circle Method(s) and Metal(s) to be analyzed

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

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 880-51426-1

SDG Number: Eddy County

Login Number: 51426

List Source: Eurofins Midland

List Number: 1

Creator: Vasquez, Julisa

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	



Environment Testing

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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



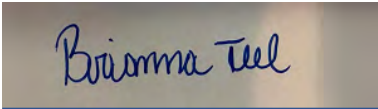
Eurofins Midland

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



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

Generated
11/25/2024 4:48:35 PM

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

Laboratory Job ID: 880-51424-1
SDG: Eddy County

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Definitions/Glossary

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

Job ID: 880-51424-1
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
Project: Spud Muffin 31 30 #738H

Job ID: 880-51424-1

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.

Eurofins Midland

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

Date Collected: 11/21/24 08:45

Matrix: Solid

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

Date Collected: 11/21/24 08:50

Matrix: Solid

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

Eurofins Midland

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: 880-51424-2

Date Collected: 11/21/24 08:50

Matrix: Solid

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)	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

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: 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

	LCS	LCS	
Surrogate	%Recovery	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

	LCSD	LCSD	
Surrogate	%Recovery	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

	MS	MS	
Surrogate	%Recovery	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

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	87		70 - 130
o-Terphenyl	74		70 - 130

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QC Sample Results

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

Job ID: 880-51424-1
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	

Eurofins Midland

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
Project/Site: Spud Muffin 31 30 #738H

Job ID: 880-51424-1
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: 880-51424-1
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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14



X E



880-51424 Chain of Custody

Chain of Custody

in, TX (281) 240-4200, Dallas, TX (214) 902-0300
TX (432) 704-5440, San Antonio, TX (210) 509-3333
, TX (915) 585-3443, Lubbock, TX (806) 794-1296
NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No:

55

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 ☐	PRR ☐	Brownfields ☐ RRD ☐ Superfund ☐
State of Project:			
Reporting:	Level II ☐	Level III ☐	PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables:	EDD ☐	Adapt ☐	Other:

[illegible]

Total 200.7 / 6010 200.8 / 6020:

Circle Method(s) and Metal(s) to be analyzed

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn

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 Xencro, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xencro 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 Xencro. A minimum charge of \$85.00 will be applied to each project and a charge of \$8 for each sample submitted to Eurofins Xencro, 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	<i>[Signature]</i>	11/27/24 12:46			
1	<i>[Signature]</i>				
2					
3					
4					
5					
6					

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 880-51424-1

SDG Number: Eddy County

Login Number: 51424

List Source: Eurofins Midland

List Number: 1

Creator: Vasquez, Julisa

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	



Environment Testing

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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

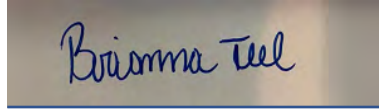
Eurofins Midland

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

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

Laboratory Job ID: 880-51431-1
SDG: Eddy County

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Definitions/Glossary

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

Job ID: 880-51431-1
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
Project: Spud Muffin 31 30 #738H

Job ID: 880-51431-1

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.

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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

Date Collected: 11/21/24 08:55

Matrix: Solid

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

Date Collected: 11/21/24 09:00

Matrix: Solid

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

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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: 880-51431-2

Date Collected: 11/21/24 09:00

Matrix: Solid

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)	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

Lab Sample ID: 880-51431-3

Date Collected: 11/21/24 09:05

Matrix: Solid

Date Received: 11/22/24 12:06

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		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

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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)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (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)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (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

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: 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

	LCS	LCS	
Surrogate	%Recovery	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

	LCSD	LCSD	
Surrogate	%Recovery	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	RPD	RPD Limit
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		

	MS	MS	
Surrogate	%Recovery	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

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	92		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: 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
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: 880-51431-2 MS

Matrix: Solid

Analysis Batch: 96451

Client Sample ID: HA-18

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

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: 880-51431-2 MS

Matrix: Solid

Analysis Batch: 96451

Client Sample ID: HA-18

Prep Type: Total/NA

Prep Batch: 96447

	MS	MS	
Surrogate	%Recovery	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

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	<50.3	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
	MSD	MSD									
Surrogate	%Recovery	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

	MB	MB								
Analyte	Result	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

	Spike	LCS	LCS					%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%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

	Spike	LCSD	LCSD					%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	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

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	941	F1	1260	2490	F1	mg/Kg		123	90 - 110	

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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							Client Sample ID: HA-18					
Matrix: Solid							Prep Type: Soluble					
Analysis Batch: 96389												
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	

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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

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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

Date Collected: 11/21/24 08:55

Matrix: Solid

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

Date Collected: 11/21/24 09:00

Matrix: Solid

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

Date Collected: 11/21/24 09:05

Matrix: Solid

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

Eurofins Midland

Accreditation/Certification Summary

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

Job ID: 880-51431-1
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: 880-51431-1
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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Environ
Xenco



Transfer of Custody

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-5440, San Antonio, TX (210) 509-3333
35-3443, Lubbock, TX (806) 794-1296
2-7550, Carlsbad, NM (575) 988-3199

Work Order No

531

Page _____ of _____
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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 ☐	PRF ☐	Brownfield ☐	RRC ☐ Superfund ☐
State of Project:				
Reporting:	Level II ☐	Level III ☐	PST/UST ☐	TRRP ☐ Level IV ☐
Deliverables:	EDD ☐	Adapt ☐	Other:	

[illegible][illegible]

Notice: Signature of this document without the return of a signed copy of this document to Eurofins Xencro 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 Xencro. A minimum charge of \$35.00 will be applied to each project and a charge of \$3 for each sample submitted to Eurofins Xencro, but not analyzed. These terms will be enforced unless previously negotiated with Eurofins Xencro. A minimum charge of \$35.00 will be applied to each project and a charge of \$3 for each sample submitted to Eurofins Xencro, but not analyzed. These terms will be enforced unless previously negotiated with Eurofins Xencro. A minimum charge of \$35.00 will be applied to each project and a charge of \$3 for each sample submitted to Eurofins Xencro, but not analyzed. These terms will be enforced unless previously negotiated with Eurofins Xencro.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time

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	



Environment Testing

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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

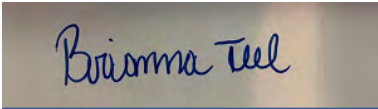
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Job Notes

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



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

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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
SQL	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: 880-51430-1

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.

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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

Date Collected: 11/21/24 09:05

Matrix: Solid

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

Date Collected: 11/21/24 09:10

Matrix: Solid

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

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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: 880-51430-2

Date Collected: 11/21/24 09:10

Matrix: Solid

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)	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

Lab Sample ID: 880-51430-3

Date Collected: 11/21/24 09:15

Matrix: Solid

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	0.00206		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)

Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (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)

Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (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

Eurofins Midland

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

Eurofins Midland

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

	LCS	LCS	
Surrogate	%Recovery	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

	LCSD	LCSD	
Surrogate	%Recovery	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

	MS	MS	
Surrogate	%Recovery	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

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	92		70 - 130

Eurofins Midland

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

Eurofins Midland

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

Eurofins Midland

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

Lab Sample ID: 880-51430-1

Date Collected: 11/21/24 09:05

Matrix: Solid

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			5.00 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

Lab Sample ID: 880-51430-2

Date Collected: 11/21/24 09:10

Matrix: Solid

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			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

Lab Sample ID: 880-51430-3

Date Collected: 11/21/24 09:15

Matrix: Solid

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			5.02 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

Eurofins Midland

Accreditation/Certification Summary

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

Job ID: 880-51430-1
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: 880-51430-1
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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14



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

Environment Testing
Xenco



Wol

880-51 430 Chain of Custody

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www.xenco.com

Work Order Comments									
Program: ☐ PST ☐ PRF ☐ Brownfields ☐ RRD ☐ Superfund ☐ State of Project: _____ Reporting: Level I ☐ Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level N ☐ Deliverables: EDD ☐ ADaPT ☐ Other: _____									

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: amoreno@earthsys.net		

[illegible]

	Total	200.7 / 6010	200.8 / 6020:	8RCRA	13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO ₂	Na	Sr	Tl	Sn	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 Eurofina Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofina Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofina Xenco. A minimum charge of \$45.00 will be applied to each contract and a charge of \$5.00 for each sample submitted to Eurofina Xenco, but not analyzed. These terms will be enforced unless previously negotiated in writing with Eurofina Xenco.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
[Signature]	[Signature]	11/22/24 12:06			
		4			
		6			

Received 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 Source: Eurofins Midland

List Number: 1

Creator: Vasquez, Julisa

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	



Environment Testing

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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

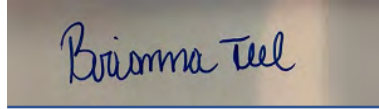
Eurofins Midland

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.

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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

Lab Sample ID: 880-51429-1

Date Collected: 11/21/24 09:20

Matrix: Solid

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

Date Collected: 11/21/24 09:25

Matrix: Solid

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

Eurofins Midland

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: 880-51429-2

Date Collected: 11/21/24 09:25

Matrix: Solid

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)	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

Lab Sample ID: 880-51429-3

Date Collected: 11/21/24 09:30

Matrix: Solid

Date Received: 11/22/24 12:06

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		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

Eurofins Midland

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)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (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)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (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

Eurofins Midland

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

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	%Recovery	MS Qualifier	MS 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	%Recovery	MSD Qualifier	MSD 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	%Recovery	MB Qualifier	MB 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: 880-51429-1
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

	LCS	LCS	
Surrogate	%Recovery	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

	LCSD	LCSD	
Surrogate	%Recovery	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

	MS	MS	
Surrogate	%Recovery	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

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	92		70 - 130

Eurofins Midland

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

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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

Lab Sample ID: 880-51429-1

Date Collected: 11/21/24 09:20

Matrix: Solid

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			5.02 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

Lab Sample ID: 880-51429-2

Date Collected: 11/21/24 09:25

Matrix: Solid

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 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

Lab Sample ID: 880-51429-3

Date Collected: 11/21/24 09:30

Matrix: Solid

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			5.00 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

Eurofins Midland

Accreditation/Certification Summary

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

Job ID: 880-51429-1
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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

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

- 1
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- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14



Enviro
Xenco



880-51429 Chain of Custody

Chain of Custody

(817) 240-4200, Dallas, TX (214) 902-0300
(704) 544-0, 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:	gmorano@earthsys.net

Work Order Comments	
Program: UST/PST ☐ PRF ☐ Brownfields ☐ RRD ☐ Superfund ☐	
State of Project:	
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level I ☐	
Deliverables: EDD ☐ ADAPT ☐ Other:	

Project Name:	Spud Muffin 31 30 #738H	Turn Around	☒ Routine ☐ Rush	Pres. Code	ANALYSIS REQUEST																Preservative Codes		
Project Number:	2657																			None: NO	DI Water: H ₂ O		
Project Location:	Eddy County	Due Date:																		Cool: Cool	MeOH: Me		
Sampler's Name:	Joey Pinson	TAT starts the day received by the lab, if received by 4:30pm																		HCL: HC	HNO ₃ : HN		
PO #:																				H ₂ SO ₄ : H ₂	NaOH: Na		
SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No														H ₃ PO ₄ : HP			
Samples Received Intact:	Yes	No	Thermometer ID:																	NaHSO ₄ : NABIS			
Cooler Custody Seals:	Yes	No	Correction Factor:																	Na ₂ S ₂ O ₃ : NaSO ₃			
Sample Custody Seals:	Yes	No	Temperature Reading:																	Zn Acetate+NaOH: Zn			
Total Containers:			Corrected Temperature:																	NaOH+Ascorbic Acid: S-APC			
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters																Sample Comments
HA-19	S	11/21/2024	9:20	0.5	Grab	1	Chloride NM														Incident Number		
HA-19	S	11/21/2024	9:25	2	Grab	1	TPH NM														nAPP2431628896		
HA-19	S	11/21/2024	9:30	4	Grab	1	BTEX NM														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 SiO₂ Na Sr Ti Sn U V Zn Hg: 1631 / 245.1 / 7470 / 7471

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

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 880-51429-1

SDG Number: Eddy County

Login Number: 51429

List Source: Eurofins Midland

List Number: 1

Creator: Vasquez, Julisa

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	



Environment Testing

- 1
- 2
- 3
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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



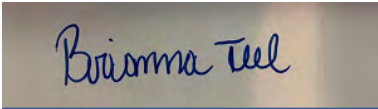
Eurofins Midland

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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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: 880-51428-1
SDG: Eddy County

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Definitions/Glossary

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

Job ID: 880-51428-1
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
SQL	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: 880-51428-1

Job ID: 880-51428-1

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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.

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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

Date Collected: 11/21/24 09:35

Matrix: Solid

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

Date Collected: 11/21/24 09:40

Matrix: Solid

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

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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

Date Collected: 11/21/24 09:40

Matrix: Solid

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

Date Collected: 11/21/24 09:45

Matrix: Solid

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

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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
Date Collected: 11/21/24 09:45
Date Received: 11/22/24 12:06
Sample Depth: 10

Lab Sample ID: 880-51428-3
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 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)

Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (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)

Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (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

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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

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: 880-51428-1
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

	LCS	LCS	
Surrogate	%Recovery	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

	LCSD	LCSD	
Surrogate	%Recovery	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

	MS	MS	
Surrogate	%Recovery	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

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	96		70 - 130
o-Terphenyl	92		70 - 130

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QC Sample Results

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

Job ID: 880-51428-1
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

Eurofins Midland

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

Eurofins Midland

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

Lab Sample ID: 880-51428-1

Date Collected: 11/21/24 09:35

Matrix: Solid

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			5.00 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

Lab Sample ID: 880-51428-2

Date Collected: 11/21/24 09:40

Matrix: Solid

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			5.00 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

Lab Sample ID: 880-51428-3

Date Collected: 11/21/24 09:45

Matrix: Solid

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 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

Eurofins Midland

Accreditation/Certification Summary

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

Job ID: 880-51428-1
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: 880-51428-1
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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Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 503-3334
El Paso, TX (915) 565-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7650, Carlsbad, NM (575) 988-3199

888-51428 Chain of Custody



Page ____ of ____

Work Order Comments			
Program:	UST/PST ☐	PRF ☐	Brownfields ☐ RRD ☐ Superfund ☐
State of Project:			
Reporting:	Level II ☐	Level III ☐	PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables:	EDD ☐	ADAPT ☐	Other: ☐

Circle Method(s) and Metal(s) to be analyzed	
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 Ti Sn U V Zn
Hg: 1631 / 245, 1 / 7470 1 / 7471	

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xeno, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xeno 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 Xeno. A minimum charge of \$55.00 will be applied to each sample submitted to Eurofins Xeno, 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
<i>[Signature]</i>	<i>[Signature]</i>	11/27/24 12:00			

DATE-TIME: 11/27/24 12:00

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	



Environment Testing

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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



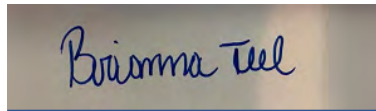
Eurofins Carlsbad

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

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

Laboratory Job ID: 890-7850-1
SDG: Eddy, NM

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Definitions/Glossary

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

Job ID: 890-7850-1
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
Project: Spud Muffin 31 30 #738H

Job ID: 890-7850-1

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.

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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: 890-7850-1

Date Collected: 03/24/25 14:00

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	<0.00202	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

Lab Sample ID: 890-7850-2

Date Collected: 03/24/25 14:05

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	<0.00201	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

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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

Date Collected: 03/24/25 14:05

Matrix: Solid

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

Date Collected: 03/24/25 14:10

Matrix: Solid

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

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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

Date Collected: 03/24/25 14:10

Matrix: Solid

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

Date Collected: 03/24/25 14:15

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	<0.00200	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

Date Collected: 03/24/25 14:20

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	<0.00198	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

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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

Date Collected: 03/24/25 14:20

Matrix: Solid

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

Date Collected: 03/24/25 14:25

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	<0.00199	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

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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 14:25
Date Received: 03/25/25 15:26
Sample Depth: 26

Lab Sample ID: 890-7850-6
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		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)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (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)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (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

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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

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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	

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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

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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

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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 14:15

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
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

Date Collected: 03/24/25 14:20

Date Received: 03/25/25 15:26

Lab Sample ID: 890-7850-5

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	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

Date Collected: 03/24/25 14:25

Date Received: 03/25/25 15:26

Lab Sample ID: 890-7850-6

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	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
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7850-1
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: 890-7850-1
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

- 1
- 2
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- 10
- 11
- 12
- 13
- 14

Revised Date: 08/25/2020 Rev. 2020.1

Eurofins Carlsbad

1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)										Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:																										
Client Contact:		Shipping/Receiving		Company:		Eurofins Environment Testing South Cent		Address:		1211 W. Florida Ave.	Due Date Requested:	3/31/2025	City:	Midland	State, Zip:	TX, 79701	Phone:	N/A	E-Mail:	Brianna.Tee@et.eurofinsus.com	Accreditations Required (See note):	NELAP - Texas	Page:	Page 1 of 1	Job #:	890-7850-1	Preservation Codes:												
Project Name:										spud mufin 31 30 #738H		Project #:		88001228		SSOW#:		N/A		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:					
Sample Identification - Client ID (Lab ID)										Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=overstabil, BT=tissue, AA=)		HA-2 (890-7850-1)		3/24/25		14:00		G		Solid		X		X		X		X		1			
HA-2 (890-7850-2)										3/24/25		14:05		G		Solid		X		X		X		X		X		X		X		1							
HA-2 (890-7850-3)										3/24/25		14:10		G		Solid		X		X		X		X		X		X		X		1							
HA-2 (890-7850-4)										3/24/25		14:15		G		Solid		X		X		X		X		X		X		X		1							

Login Sample Receipt Checklist

Client: Earth Systems Response and Restoration

Job Number: 890-7850-1

SDG Number: Eddy, NM

Login Number: 7850

List Source: Eurofins Carlsbad

List Number: 1

Creator: Lopez, Abraham

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



Environment Testing

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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 1:14:58 PM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy, NM

JOB NUMBER

890-7845-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220



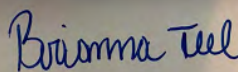
Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

Authorization



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3/31/2025 1:14:58 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: 890-7845-1
SDG: Eddy, NM

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Definitions/Glossary

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

Job ID: 890-7845-1
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
Project: Spud Muffin 31 30 #738H

Job ID: 890-7845-1

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.

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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

Date Collected: 03/24/25 10:30

Matrix: Solid

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

Date Collected: 03/24/25 10:35

Matrix: Solid

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

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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

Date Collected: 03/24/25 10:35

Matrix: Solid

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

Date Collected: 03/24/25 10:40

Matrix: Solid

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

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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: 890-7845-3

Date Collected: 03/24/25 10:40

Matrix: Solid

Date Received: 03/25/25 15:59

Sample Depth: 21

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

Lab Sample ID: 890-7845-4

Date Collected: 03/24/25 10:45

Matrix: Solid

Date Received: 03/25/25 15:59

Sample Depth: 26

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

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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

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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

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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

	MB	MB				
Surrogate	%Recovery	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

			Spike	LCS	LCS				%Rec		
Analyte			Added	Result	Qualifier	Unit	D	%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	LCS								
	%Recovery	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

			Spike	LCSD	LCSD				%Rec		RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	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	LCSD									
	%Recovery	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

	Sample	Sample	Spike	MS	MS				%Rec		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%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	MS								
	%Recovery	Qualifier	Limits								
1-Chlorooctane	112		70 - 130								
o-Terphenyl	125		70 - 130								

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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

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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				Client Sample ID: Lab Control Sample Dup							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 106199											
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	

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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

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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**Lab Sample ID: 890-7845-1****Date Collected: 03/24/25 10:30****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
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**Lab Sample ID: 890-7845-2****Date Collected: 03/24/25 10:35****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
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**Lab Sample ID: 890-7845-3****Date Collected: 03/24/25 10:40****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
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**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
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

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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 10:45
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
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

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Accreditation/Certification Summary

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

Job ID: 890-7845-1
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: 890-7845-1
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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Eurofins Carlsbad

1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record



Environment Testing

[illegible]

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	



Environment Testing

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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



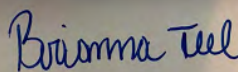
Eurofins Carlsbad

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: 890-7846-1
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
Project: Spud Muffin 31 30 #738H

Job ID: 890-7846-1

Job ID: 890-7846-1

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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.

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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

Date Collected: 03/25/25 10:30

Matrix: Solid

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

Date Collected: 03/25/25 10:35

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	<0.00201	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

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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

Date Collected: 03/25/25 10:35

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	<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

Date Collected: 03/25/25 10:40

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		03/26/25 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

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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

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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)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (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)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (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

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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

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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

	LCS	LCS	
Surrogate	%Recovery	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

	LCSD	LCSD	
Surrogate	%Recovery	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

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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	

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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**Lab Sample ID: 890-7846-1****Date Collected: 03/25/25 10:30****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			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**Lab Sample ID: 890-7846-2****Date Collected: 03/25/25 10:35****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			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**Lab Sample ID: 890-7846-3****Date Collected: 03/25/25 10:40****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	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**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
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

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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 10:45

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
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

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Accreditation/Certification Summary

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

Job ID: 890-7846-1
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: 890-7846-1
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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Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3344
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Chain of Custody



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:	gimoreno@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:	

[illegible]

Total	200.7 / 6010	200.8 / 6020:
Circle Method(s) and Metal(s) to be analyzed		

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Tl Sn U V Zn
Hg: 1631 / 245.1 / 7470 / 7471

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 <i>[Signature]</i>	<i>alpha</i>	15-26 3/08			
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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



Environment Testing

Client Information (Sub Contract Lab)		Sampler:	N/A	Lab PM:	Teel, Brianna	Carrier Tracking No(s):	COC No:						
Client Contact:	N/A	Phone:	N/A	E-Mail:	Brianna.Teel@et.eurofins.com	State of Origin:	890-4774.1						
Shipping/Receiving	N/A			Accreditations Required (See note)	TEXAS	Page 1 of 1	Page 1 of 1						
Company:	Eurofins Environment Testing South Centre			NE LAP - Texas		Job #:	890-7846-1						
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	PO #:	N/A										
Phone:	432-704-5440(Tel)	WO #:	N/A										
Email:	N/A	Project #:	88001228										
Project Name:	spud muffin 31 30 #738H	SSOW#:	N/A										
Site:	N/A												
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Residue, Spill, Over-sat, BTR-Tissue, A&P)	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:
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 Centre, 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/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Centre, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Centre, 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 Centre, LLC.													
Possible Hazard Identification													
Unconfirmed													
Deliverable Requested: I, II, III, IV, Other (Specify) Primary Deliverable Rank: 2													
Special Instructions/QC Requirements:													
☐ Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)													
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months													
Empty Kit Relinquished by:													
Relinquished by:  Date/Time: 3/25/25 16:34 Company: _____													
Relinquished by: _____ Date/Time: _____ Company: _____													
Relinquished by: _____ Date/Time: _____ Company: _____													
Custody Seals Intact: _____ Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks: _____													

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	



Environment Testing

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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



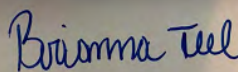
Eurofins Carlsbad

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 1:19:36 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: 890-7848-1
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
Project: Spud Muffin 31 30 #738H

Job ID: 890-7848-1

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.

Eurofins Carlsbad

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

Date Collected: 03/24/25 12:30

Matrix: Solid

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

Date Collected: 03/24/25 12:35

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	<0.00202	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

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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

Eurofins Carlsbad

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

Date Collected: 03/24/25 12:40

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	3120		50.4		mg/Kg			03/28/25 15:59	5

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

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

Eurofins Carlsbad

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)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (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)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (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

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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	%Recovery	MS Qualifier	MS 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	%Recovery	MSD Qualifier	MSD 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	%Recovery	MB Qualifier	MB 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

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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

	LCS	LCS	
Surrogate	%Recovery	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

	LCSD	LCSD	
Surrogate	%Recovery	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		

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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					Client Sample ID: HA-18							
Matrix: Solid					Prep Type: Soluble							
Analysis Batch: 106228												
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	

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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**Lab Sample ID: 890-7848-1****Date Collected: 03/24/25 12:30****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	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**Lab Sample ID: 890-7848-2****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			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**Lab Sample ID: 890-7848-3****Date Collected: 03/24/25 12:40****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 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**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
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

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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 12:45
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
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

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Accreditation/Certification Summary

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

Job ID: 890-7848-1
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: 890-7848-1
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

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- 10
- 11
- 12
- 13
- 14

Environment Testing
Xenco

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

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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

Project Name:		Spud Muffin 31 30 #738H		Turn Around		ANALYSIS REQUEST													Preservative Codes					
Project Number:		15995		☒ Routine ☐ Rush															None: NO DI Water: H ₂ O					
Project Location:		Eddy, NIM		Due Date:															Cool: Cool MeOH: Me					
Sampler's Name:		Gilbert Moreno		TAT starts the day received by the lab, if received by 4:30pm															HCL: HC HNO ₃ : HN					
POMWO #:																			H ₂ SO ₄ : H ₂ NaOH: Na					
SAMPLE RECEIPT				Temp Blank:	☒ Yes	☐ No	Wet Ice:	☒ Yes	☐ No														H ₃ PO ₄ : HP	
Samples Received Intact:				☒ Yes	☐ No	Thermometer ID:		TNR007													NaHSO ₄ : NABIS			
Cooler Custody Seals:				Yes	☒ No	Correction Factor:		0.2													Na ₂ S ₂ O ₃ : NaSO ₃			
Sample Custody Seals:				Yes	☒ No	Temperature Reading:		0.2													Zn Acetate+NaOH: Zn			
Total Containers:						Corrected Temperature:		6.0													NaOH+Ascorbic Acid: SAPC			

[illegible]

Total	200.7 / 6010	200.8 / 6020:	8RCRA	13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	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, amended or waived in writing by Eurofins Xenco.

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
0	<i>Caporin</i>	<i>ald</i>	15:26	<i>325</i>		
3				4		
6				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



Environment Testing

[illegible]

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	



Environment Testing

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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



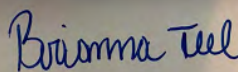
Eurofins Carlsbad

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
Project: Spud Muffin 31 30 #738H

Job ID: 890-7847-1

Job ID: 890-7847-1

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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.

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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

Date Collected: 03/24/25 15:00

Matrix: Solid

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

Date Collected: 03/24/25 15:05

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	<0.00200	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

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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

Date Collected: 03/24/25 15:05

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	<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

Date Collected: 03/24/25 15:10

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	<0.00202	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

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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

Date Collected: 03/24/25 15:10

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	791		49.6		mg/Kg			03/28/25 00:14	5

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

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

Eurofins Carlsbad

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)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (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)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (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

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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

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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	

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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

Lab Sample ID: 890-7847-1

Date Collected: 03/24/25 15:00

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	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

Lab Sample ID: 890-7847-2

Date Collected: 03/24/25 15:05

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			4.99 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

Lab Sample ID: 890-7847-3

Date Collected: 03/24/25 15:10

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	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

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
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

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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 15:15

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
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

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Accreditation/Certification Summary

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

Job ID: 890-7847-1
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: 890-7847-1
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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Eurofins Carlsbad

1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)					
Sampler:	N/A	E-Mail:	Tael, Brianna	COC No.	890-7847-1
Shipping/Receiving	N/A	E-Mail:	Brianna.Teel@eurofins.com	Page:	Page 1 of 1
			Accreditations Required (See note) NELAP - Texas	Job #:	890-7847-1
Eurofins Environment Testing South Cent'r Address: City: State, Zip: TX, 79701			Due Date Requested: 3/31/2025 TAT Requested (days): N/A		
Midland Phone: 432-704-5440(Tel) Email: Project Name: spud mufin 31 30 #73BH Site: SSOW#:			PO #: N/A WO #: N/A Project #: 88001228 Matrix (Water, Solid, Overstool, Bacteria, Acid) Preservation Code:		
Sample Identification - Client ID (Lab ID)			Field Filtered Sample (Yes or No)		
H-A-19 (890-7847-1)	Sample Date	Sample Time	G=comp, G=grab	Perform MS/MSD (Yes or No)	Total Number of containers
	X	X	X	X	1
H-A-19 (890-7847-2)	X	X	X	X	1
H-A-19 (890-7847-3)	X	X	X	X	1
H-A-19 (890-7847-4)	X	X	X	X	1
Special Instructions/Note:					
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/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 Deliverable Requested: I, II, III, IV, Other (Specify) Primary Deliverable Rank: 2 Empty Kit Relinquished by: [Signature] Relinquished by: [Signature] Date/Time: 3/25/25 Company: [Blank] Relinquished by: [Blank] Date/Time: [Blank] Company: [Blank]					
Cooler Temperature(s) °C and Other Remarks:					

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	



Environment Testing

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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

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1089 N Canal St.
Carlsbad NM 88220



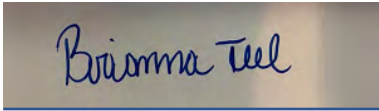
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Job Notes

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: 890-7852-1
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
Project: Spud Muffin 31 30 #738H

Job ID: 890-7852-1

Job ID: 890-7852-1

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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.

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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

Date Collected: 03/24/25 12:50

Matrix: Solid

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

Date Collected: 03/24/25 12:55

Matrix: Solid

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

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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

Date Collected: 03/24/25 12:55

Matrix: Solid

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

Date Collected: 03/24/25 13:00

Matrix: Solid

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

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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

Date Collected: 03/24/25 13:00

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	66.8		9.90		mg/Kg			03/28/25 04:42	1

Client Sample ID: HA-20

Lab Sample ID: 890-7852-4

Date Collected: 03/24/25 13:05

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 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

Date Collected: 03/24/25 13:10

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	<0.00198	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

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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

Date Collected: 03/24/25 13:10

Matrix: Solid

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

Date Collected: 03/25/25 09:15

Matrix: Solid

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

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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

Date Collected: 03/25/25 09:15

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	<49.7	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

Date Collected: 03/25/25 09:20

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	<0.00200	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

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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

Date Collected: 03/25/25 09:25

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	<0.00200	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

Date Collected: 03/25/25 09:30

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		03/27/25 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

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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			

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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

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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

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						

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

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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

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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

Matrix: Solid

Analysis Batch: 106488

Client Sample ID: HA-20

Prep Type: Total/NA

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

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

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: 890-7852-7 MS

Matrix: Solid

Analysis Batch: 106229

Client Sample ID: HA-20

Prep Type: Soluble

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

Matrix: Solid

Analysis Batch: 106229

Client Sample ID: HA-20

Prep Type: Soluble

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

Eurofins Carlsbad

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	

Eurofins Carlsbad

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	

Eurofins Carlsbad

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

Lab Sample ID: 890-7852-1

Date Collected: 03/24/25 12:50

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 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

Lab Sample ID: 890-7852-2

Date Collected: 03/24/25 12:55

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			4.97 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

Lab Sample ID: 890-7852-3

Date Collected: 03/24/25 13:00

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			4.99 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

Lab Sample ID: 890-7852-4

Date Collected: 03/24/25 13:05

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 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

Eurofins Carlsbad

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**Lab Sample ID: 890-7852-4****Date Collected: 03/24/25 13:05****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	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**Lab Sample ID: 890-7852-5****Date Collected: 03/24/25 13:10****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	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**Lab Sample ID: 890-7852-6****Date Collected: 03/25/25 09:15****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
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**Lab Sample ID: 890-7852-7****Date Collected: 03/25/25 09:20****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			5.01 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

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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

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
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7852-1
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: 890-7852-1
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



Environment Testing
Xenco

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) 794-1286
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Chain of Custody



890-7852 Chain of Custody

www.xenco.com

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: _____	
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Project Name:	Spud Muffin 31 30 #738H	☒ Routine ☐ Rush	Pres. Code	
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	Temp Blank:	Yes No	
POWV #:		Thermometer ID:	Thermal	
SAMPLE RECEIPT	Temp Blank:	Wet Ice:	Yes No	
Samples Received Intact:	Yes No	Correction Factor:	0.2	
Cooler Custody Seals:	Yes No	Temperature Reading:	5.2	
Sample Custody Seals:	Yes No	Corrected Temperature:	0.2	
Total Containers:				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/Comp	# of Cont	TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush	ANALYSIS REQUEST	Preservative Codes	Sample Comments
HA-20	S	3.24.25	12:50	0.5	Grab/	1	X	X	X				None: NO DI Water: H ₂ O	Incident Number nAPP2431628896
HA-20	S	3.24.25	12:55	2	Grab/	1	X	X	X					
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 Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn
Hg: 1631 / 245.1 / 7470 / 7471

Circle Method(s) and Metal(s) to be analyzed

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
<i>Gilbert Moreno</i>	<i>Jim Raley</i>	15:26 3/25			

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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



Environment Testing

Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:
Client Contact: N/A		Phone: N/A	Teel, Brianna	N/A	890-4780-1
Shipping/Receiving: N/A		E-Mail: Brianna.Teel@eurofins.com	State of Origin: Texas	Page: Page 1 of 1	
Company: Eurofins Environment Testing South Cent		Accreditations Required (See note): NEAP - Texas		Job #: 890-7852-1	Preservation Codes:
Address: 1211 W. Florida Ave.		Due Date Requested: 3/31/2025	Analysis Requested		
City: Midland		TAT Requested (days): N/A			
State, Zip: TX, 79701		PO #: N/A			
Phone: 432-704-5440(Tel)		WO #: N/A			
Email: N/A		Project #: 88001228			
Project Name: Spud Muffin 31 30 #738H		SSOW#: N/A			
Site: N/A		Preservation Code:	Other: N/A		
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wet, Solid, Overstabil, B=Trace, A=Al)
HA-20 (890-7852-1)		3/24/25	12:50	G	Solid
HA-20 (890-7852-2)		3/24/25	12:55	G	Solid
HA-20 (890-7852-3)		3/24/25	13:00	G	Solid
HA-20 (890-7852-4)		3/24/25	13:05	G	Solid
HA-20 (890-7852-5)		3/24/25	13:10	G	Solid
HA-20 (890-7852-6)		3/25/25	09:15	G	Solid
HA-20 (890-7852-7)		3/25/25	09:20	G	Solid
HA-20 (890-7852-8)		3/25/25	09:25	G	Solid
HA-20 (890-7852-9)		3/25/25	09:30	G	Solid
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/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:
Relinquished by:		Date/Time:	Company:	Received by:	Date/Time:
Relinquished by:		Date/Time:	Company:	Received by:	Date/Time:
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	

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	



Environment Testing

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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 1:20:13 PM

JOB DESCRIPTION

Spud Muffin 31 30 #738H
Eddy, NM

JOB NUMBER

890-7849-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220



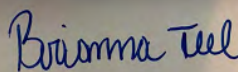
Eurofins Carlsbad

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
Project: Spud Muffin 31 30 #738H

Job ID: 890-7849-1

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.

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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

Date Collected: 03/24/25 13:15

Matrix: Solid

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

Date Collected: 03/24/25 13:20

Matrix: Solid

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

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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

Date Collected: 03/24/25 13:20

Matrix: Solid

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

Date Collected: 03/24/25 13:25

Matrix: Solid

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

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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

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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

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) (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

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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)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (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)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (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	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	Limits	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

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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: 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

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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: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-106191/2-A					Client Sample ID: Lab Control Sample				
Matrix: Solid					Prep Type: Soluble				
Analysis Batch: 106228									
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					Client Sample ID: Lab Control Sample Dup				
Matrix: Solid					Prep Type: Soluble				
Analysis Batch: 106228									
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

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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

Eurofins Carlsbad

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

Eurofins Carlsbad

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 13:30
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
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
Date Collected: 03/24/25 12:35
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7849-5
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	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

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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



Environment Testing
 Xenco



890-7849 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

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:		
Cooler Custody Seals:		Yes	No			Correction Factor:		
Sample Custody Seals:		Yes	No			Temperature Reading:		
Total Containers:						Corrected Temperature:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/Comp	TPH -NM	Chloride -NM	BTEX -NM	Hold	24 Hr Rush
HA-21	S	3-24-25	13:15	0.5	Grab/	1	X	X		
HA-21	S	3-24-25	13:20	2	Grab/	1	X	X		
HA-21	S	3-24-25	13:25	4	Grab/	1	X	X		
HA-21	S	3-24-25	13:30	6	Grab/	1	X	X		
HA-21	S	3-24-25	13:35	8	Grab/	1	X	X		

Sample Comments	Incident Number
	nAPP2431628896

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>Cifuentes</i>	<i>adrian</i>	15-26 3:25
		4
		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



Environment Testing

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@eurofins.com	Sale of Origin: Texas	Page: Page 1 of 1	
Company: Eurofins Environment Testing South Cent		Accreditations Required (See note): NELAP - Texas		Job #: 890-7849-1	
Address: 1211 W. Florida Ave.		Due Date Requested: 3/31/2025	Analysis Requested		
City: Midland	State, Zip: TX, 79701	TAT Requested (days): N/A			
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	SSOWN#: 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/test/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:
Relinquished by:		Date/Time:	Company:	Received by:	Date/Time:
Relinquished by:		Date/Time:	Company:	Received by:	Date/Time:
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	

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	



Environment Testing

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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



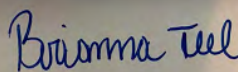
Eurofins Carlsbad

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

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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
Project: Spud Muffin 31 30 #738H

Job ID: 890-7851-1

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.

Eurofins Carlsbad

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

Date Collected: 03/25/25 07:45

Matrix: Solid

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

Date Collected: 03/25/25 07:50

Matrix: Solid

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

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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

Date Collected: 03/25/25 07:50

Matrix: Solid

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

Date Collected: 03/25/25 07:55

Matrix: Solid

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

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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

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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

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) (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

Date Collected: 03/25/25 08:10

Matrix: Solid

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

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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

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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

Date Collected: 03/25/25 08:20

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	<0.00201	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

Date Collected: 03/25/25 08:25

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	<0.00202	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

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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
Date Collected: 03/25/25 08:25
Date Received: 03/25/25 15:26
Sample Depth: 26

Lab Sample ID: 890-7851-9
Matrix: Solid

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	DFBZ1				
		(70-130)	(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	OTPH1				
		(70-130)	(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							

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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

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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

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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

	LCS	LCS	
Surrogate	%Recovery	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

	Spike	LCSD	LCSD				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD
Gasoline Range Organics (GRO)-C6-C10	1000	1070		mg/Kg		107	70 - 130	1
Diesel Range Organics (Over C10-C28)	1000	1116		mg/Kg		112	70 - 130	7

	LCSD	LCSD	
Surrogate	%Recovery	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

	MB	MB							
Analyte	Result	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

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%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

	Spike	LCSD	LCSD				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD
Chloride	250	259.8		mg/Kg		104	90 - 110	2

Lab Sample ID: MB 880-106192/1-A

Matrix: Solid

Analysis Batch: 106229

Client Sample ID: Method Blank

Prep Type: Soluble

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<10.0	U	10.0		mg/Kg			03/28/25 02:42	1

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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	

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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	

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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

Lab Sample ID: 890-7851-1

Date Collected: 03/25/25 07:45

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
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

Lab Sample ID: 890-7851-2

Date Collected: 03/25/25 07:50

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 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

Lab Sample ID: 890-7851-3

Date Collected: 03/25/25 07:55

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	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

Lab Sample ID: 890-7851-4

Date Collected: 03/25/25 08:00

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 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

Eurofins Carlsbad

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**Lab Sample ID: 890-7851-4****Date Collected: 03/25/25 08:00****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 18:05	CH	EET MID

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**

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**Lab Sample ID: 890-7851-6****Date Collected: 03/25/25 08:10****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			5.00 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**Lab Sample ID: 890-7851-7****Date Collected: 03/25/25 08:15****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
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

Eurofins Carlsbad

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

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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Environment Testing
Xenco

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

Chain of Custody

Wo

890-7851 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

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	Pres. Code		ANALYSIS REQUEST												Preservative Codes	
Project Number:	15995	Due Date:	5 Day TAT															None: NO	DI Water: H ₂ O
Project Location:	Eddy, NM	TAT starts the day received by the lab, if received by 4:30pm														Cool: Cool	MeOH: Me		
Sampler's Name:	Gilbert Moreno															HCL: HC	HNO ₃ : HN		
POMO #:																H ₂ SO ₄ : H ₂	NaOH: Na		
SAMPLE RECEIPT	Temp Blank: ☒ No ☒ Yes	Wet Ice: ☒ No ☒ Yes															H ₃ PO ₄ : HP		
Samples Received Intact:	☒ Yes ☒ No	Thermometer ID:	TMS07														NaHSO ₄ : NABIS		
Cooler Custody Seals:	☒ Yes ☒ No	Correction Factor:	-0.2														Na ₂ S ₂ O ₃ : NaSO ₃		
Sample Custody Seals:	☒ Yes ☒ No	Temperature Reading:	0.2														Zn Acetate+NaOH: Zn		
Total Containers:	Corrected Temperature:	0.0														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-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 SiO₂ Na Sr Ti Sn U V Zn Hg: 1631 / 245.1 / 7470 / 7471

Circle Method(s) and Metal(s) to be analyzed

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
<i>C. Davis</i>	<i>Colin</i>	3.26.2025			

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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



Environment Testing

Client Information (Sub Contract Lab)		Sampler:	Lab PM:		Carrier Tracking No(s):	COC No:					
Client Contact:		N/A	Teel, Brianna		N/A	890-4779-1					
Shipping/Receiving:		Phone:	E-Mail:		State of Origin:	Page:					
Eurofins Environment Testing South Cent		N/A	Brianna.Teel@eurofinsus.com		Texas	Page 1 of 1					
Address:		Due Date Requested:	Accreditations Required (See note):		Job #:	Preservation Codes:					
1211 W. Florida Ave.		3/31/2025	NELAP - Texas		890-7851-1						
City:	Midland	TAT Requested (days):	Analysis Requested								
State Zip:	TX, 79701	N/A									
Phone:	432-704-5440(Tel)	PO #:									
Email:	N/A	W/O #:									
N/A	N/A	N/A									
Project Name:	Spud Muffin 31 30 #738H	Project #:									
Site:	N/A	88001228									
SSOW#:	N/A	N/A									
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=solid, O=overseal, B=brause, A=ash)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers		Special Instructions/Note:	
HA-22 (890-7851-1)		3/25/25	07:45 Central	G	Solid			X	X	1	
HA-22 (890-7851-2)		3/25/25	07:50 Central	G	Solid			X	X	1	
HA-22 (890-7851-3)		3/25/25	07:55 Central	G	Solid			X	X	1	
HA-22 (890-7851-4)		3/25/25	08:00 Central	G	Solid			X	X	1	
HA-22 (890-7851-5)		3/25/25	08:05 Central	G	Solid			X	X	1	
HA-22 (890-7851-6)		3/25/25	08:10 Central	G	Solid			X	X	1	
HA-22 (890-7851-7)		3/25/25	08:15 Central	G	Solid			X	X	1	
HA-22 (890-7851-8)		3/25/25	08:20 Central	G	Solid			X	X	1	
HA-22 (890-7851-9)		3/25/25	08:25 Central	G	Solid			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/test/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: <i>TKP</i> Date/Time: <i>3/27/25</i> 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: ☐ Yes ☐ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:							

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	



Environment Testing

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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



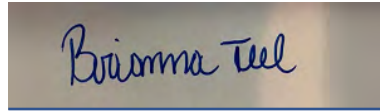
Eurofins Carlsbad

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: 890-7853-1
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
Project: Spud Muffin 31 30 #738H

Job ID: 890-7853-1

Job ID: 890-7853-1

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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.

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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

Date Collected: 03/25/25 11:45

Matrix: Solid

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

Date Collected: 03/25/25 11:50

Matrix: Solid

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

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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

Date Collected: 03/25/25 11:50

Matrix: Solid

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

Date Collected: 03/25/25 11:55

Matrix: Solid

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

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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: 890-7853-3

Date Collected: 03/25/25 11:55

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	623		10.1		mg/Kg			03/28/25 06:41	1

Client Sample ID: HA-23

Lab Sample ID: 890-7853-4

Date Collected: 03/25/25 12:00

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	<0.00198	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

Lab Sample ID: 890-7853-5

Date Collected: 03/25/25 12:05

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	<0.00199	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

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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

Date Collected: 03/25/25 12:05

Matrix: Solid

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

Date Collected: 03/25/25 12:10

Matrix: Solid

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

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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

Date Collected: 03/25/25 12:10

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	<49.8	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

Date Collected: 03/25/25 12:15

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	<0.00200	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

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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

Date Collected: 03/25/25 12:20

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	<0.00198	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

Date Collected: 03/25/25 12:25

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	<0.00199	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

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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 12:25
Date Received: 03/25/25 15:26
Sample Depth: 26

Lab Sample ID: 890-7853-9
Matrix: Solid

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)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (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)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (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			

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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

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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

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
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: MB 880-106290/1-A

Matrix: Solid

Analysis Batch: 106360

Client Sample ID: Method Blank

Prep Type: Total/NA

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

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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

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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	

Eurofins Carlsbad

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	

Eurofins Carlsbad

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**Lab Sample ID: 890-7853-1****Date Collected: 03/25/25 11:45****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
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**Lab Sample ID: 890-7853-2****Date Collected: 03/25/25 11:50****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			4.99 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**Lab Sample ID: 890-7853-3****Date Collected: 03/25/25 11:55****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	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**Lab Sample ID: 890-7853-4****Date Collected: 03/25/25 12:00****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	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

Eurofins Carlsbad

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**Lab Sample ID: 890-7853-4****Date Collected: 03/25/25 12:00****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			5.03 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**Lab Sample ID: 890-7853-5****Date Collected: 03/25/25 12:05****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	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**Lab Sample ID: 890-7853-6****Date Collected: 03/25/25 12:10****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	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**Lab Sample ID: 890-7853-7****Date Collected: 03/25/25 12:15****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
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

Eurofins Carlsbad

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 12:20
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7853-8
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			5.04 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
Date Collected: 03/25/25 12:25
Date Received: 03/25/25 15:26

Lab Sample ID: 890-7853-9
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			5.02 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
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-7853-1
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: 890-7853-1
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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Environment Testing
Xenco

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

Chain of Custody

Wor



890-7853 Chain of Custody

Project Manager:	Gilbert Moreno	Bill to: (if different)	Jim Riley
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:	gmorreno@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:	
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Project Name:		Spud Muffin 31 30 #738H		Turn Around		Pres. Code		ANALYSIS REQUEST												Preservative Codes	
Project Number:		15995		☒ Routine ☐ Rush																None: NO DI Water: H ₂ O	
Project Location:		Eddy, NM		Due Date:		5 Day TAT														Cool: COOL MeOH: Me	
Sampler's Name:		Gilbert Moreno		TAT starts the day received by the lab, if received by 4:30pm																HCL: HC HNO ₃ : HN	
POWTO #:																				H ₂ SO ₄ : H ₂ NaOH: Na	
SAMPLE RECEIPT		Temp Blank: ☒ No ☐ Yes		Wet Ice: ☒ No ☐ Yes		Thermometer ID: ☒ No ☐ Yes														H ₃ PO ₄ : HP	
Samples Received Intact:		☒ Yes ☐ No		Correction Factor: ☒ No ☐ Yes		Temperature Reading: ☒ No ☐ Yes														NaHSO ₄ : NABIS	
Cooler Custody Seals:		☒ Yes ☐ No		Temperature Reading: ☒ No ☐ Yes		Corrected Temperature: ☒ No ☐ Yes														Na ₂ S ₂ O ₃ : NaSO ₃	
Sample Custody Seals:		☒ Yes ☐ No		Temperature Reading: ☒ No ☐ Yes		Corrected Temperature: ☒ No ☐ Yes														Zn Acetate+NaOH: Zn	
Total Containers:																				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	1	X	X	X															Incident Number
HA-23	S	3.25.25	11:50	2	Grab/1	1	X	X	X															nAPP2431628896
HA-23	S	3.25.25	11:55	4	Grab/1	1	X	X	X															
HA-23	S	3.25.25	12:00	6	Grab/1	1	X	X	X															
HA-23	S	3.25.25	12:05	8	Grab/1	1	X	X	X															
HA-23	S	3.25.25	12:10	11	Grab/1	1	X	X	X															
HA-23	S	3.25.25	12:15	16	Grab/1	1	X	X	X															
HA-23	S	3.25.25	12:20	21	Grab/1	1	X	X	X															
HA-23	S	3.25.25	12:25	26	Grab/1	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 Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed

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
<i>Cafritz</i>	<i>cdh</i>	15:26 3/25			

Eurofins Carlsbad

1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)			Sampler:		Lab PM:		CDC No:																					
Client Contact:			M/A		Teel, Brianna		Carrier Tracking No(s):																					
Shipping/Receiving:			M/A		E-Mail: Brianna.Teel@et.eurofinsus.com		Page: Page 1 of 1																					
Company: Eurofins Environment Testing South Cent			Due Date Requested: 3/31/2025		Accreditations Required (See note): NELAP - Texas		Job #: 890-7853-1																					
Address: 1211 W. Florida Ave.			TAT Requested (days): N/A		Analysis Requested		Preservation Codes:																					
City: Midland			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 (Weaver, Sealed, Overstich, Br-Tissue, A&H)		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:			
HA-23 (890-7853-1)			3/25/25		11:45		Central		G		Solid		X		X		X		X		X		X		1			
HA-23 (890-7853-2)			3/25/25		11:50		Central		G		Solid		X		X		X		X		X		X		1			
HA-23 (890-7853-3)			3/25/25		11:55		Central		G		Solid		X		X		X		X		X		X		1			
HA-23 (890-7853-4)			3/25/25		12:00		Central		G		Solid		X		X		X		X		X		X		1			
HA-23 (890-7853-5)			3/25/25		12:05		Central		G		Solid		X		X		X		X		X		X		1			
HA-23 (890-7853-6)			3/25/25		12:10		Central		G		Solid		X		X		X		X		X		X		1			
HA-23 (890-7853-7)			3/25/25		12:15		Central		G		Solid		X		X		X		X		X		X		1			
HA-23 (890-7853-8)			3/25/25		12:20		Central		G		Solid		X		X		X		X		X		X		1			
HA-23 (890-7853-9)			3/25/25		12:25		Central		G		Solid		X		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/test/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														
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:														

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	



Environment Testing

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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



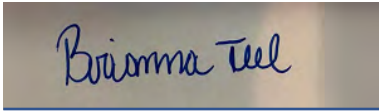
Eurofins Carlsbad

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
9/15/2025 7:02:59 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: 890-8786-1
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
Project: Spud Muffin 31 30 #738H

Job ID: 890-8786-1

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.

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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: 890-8786-1

Date Collected: 09/10/25 09:00

Matrix: Solid

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

Date Collected: 09/10/25 09:02

Matrix: Solid

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

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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: 890-8786-2

Date Collected: 09/10/25 09:02

Matrix: Solid

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

Date Collected: 09/10/25 09:04

Matrix: Solid

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

Eurofins Carlsbad

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

Date Collected: 09/10/25 09:04

Matrix: Solid

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

Date Collected: 09/10/25 09:06

Matrix: Solid

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

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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: 890-8786-4

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

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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: 890-8786-6

Date Collected: 09/10/25 09:10

Matrix: Solid

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

Date Collected: 09/10/25 09:12

Matrix: Solid

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

Date Collected: 09/10/25 09:12

Matrix: Solid

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

Date Collected: 09/10/25 09:14

Matrix: Solid

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

Date Collected: 09/10/25 09:14

Matrix: Solid

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

Date Collected: 09/10/25 09:16

Matrix: Solid

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

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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: 890-8786-9

Date Collected: 09/10/25 09:16

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		49.6		mg/Kg			09/12/25 19:22	5

Client Sample ID: BG-01

Lab Sample ID: 890-8786-10

Date Collected: 09/10/25 09:18

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	<0.00198	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

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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: 890-8786-11

Date Collected: 09/10/25 09:20

Matrix: Solid

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

Date Collected: 09/10/25 09:22

Matrix: Solid

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

Date Collected: 09/10/25 09:22

Matrix: Solid

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

Date Collected: 09/10/25 09:24

Matrix: Solid

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

Lab Sample ID: 890-8786-13

Date Collected: 09/10/25 09:24

Matrix: Solid

Date Received: 09/11/25 14:10

Sample Depth: 28

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

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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: 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)				
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

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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

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
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

Matrix: Solid

Analysis Batch: 118666

Client Sample ID: BG-01

Prep Type: Total/NA

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

Matrix: Solid

Analysis Batch: 118666

Client Sample ID: BG-01

Prep Type: Total/NA

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

Matrix: Solid

Analysis Batch: 118836

Client Sample ID: Method Blank

Prep Type: Total/NA

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

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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

Matrix: Solid

Analysis Batch: 118836

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 118761

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
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	MB	Limits				Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
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	LCS	Limits						
	%Recovery	Qualifier							
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	LCSD	Limits						
	%Recovery	Qualifier							
1-Chlorooctane	116		70 - 130						
o-Terphenyl	110		70 - 130						

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
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	MB	Limits				Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
1-Chlorooctane	90		70 - 130				09/12/25 10:30	09/13/25 07:59	1

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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
<i>o</i> -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	LCS	LCS	%Rec			
			Added	Result	Qualifier	Unit	D	%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

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	LCSD	LCSD				%Rec		RPD
				Added	Result	Qualifier	Unit	D	%Rec	Limits	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

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

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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

Matrix: Solid

Analysis Batch: 118839

Client Sample ID: BG-01

Prep Type: Total/NA

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

Matrix: Solid

Analysis Batch: 118760

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 14:15	1

Lab Sample ID: LCS 880-118733/2-A

Matrix: Solid

Analysis Batch: 118760

Client Sample ID: Lab Control Sample

Prep Type: Soluble

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

Matrix: Solid

Analysis Batch: 118760

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	259.7		mg/Kg		104	90 - 110	0	20

Lab Sample ID: MB 880-118806/1-A

Matrix: Solid

Analysis Batch: 118823

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 17:29	1

Lab Sample ID: LCS 880-118806/2-A

Matrix: Solid

Analysis Batch: 118823

Client Sample ID: Lab Control Sample

Prep Type: Soluble

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

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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				Client Sample ID: Lab Control Sample Dup							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 118823											
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	

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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

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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

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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**Lab Sample ID: 890-8786-1****Date Collected: 09/10/25 09:00****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 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**Lab Sample ID: 890-8786-2****Date Collected: 09/10/25 09:02****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 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**Lab Sample ID: 890-8786-3****Date Collected: 09/10/25 09:04****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 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**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	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

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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

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

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
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

Lab Sample ID: 890-8786-8

Date Collected: 09/10/25 09:14

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			4.96 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

Lab Sample ID: 890-8786-9

Date Collected: 09/10/25 09:16

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			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

Lab Sample ID: 890-8786-10

Date Collected: 09/10/25 09:18

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			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

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

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

Eurofins Carlsbad

Accreditation/Certification Summary

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

Job ID: 890-8786-1
SDG: Eddy County, NM

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400	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



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



890-8786 Chain of Custody

Page www.xenco.com

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:	jimoreno@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: _____

ANALYSIS REQUEST						Preservative Codes											
Project Name:		Spud Muffin 31 30 #738H		Turn Around													
Project Number:		15995		☒ Routine ☐ Rush													
Project Location:		Eddy County, NM		Due Date:													
Sampler's Name:		Gilbert Moreno, Santiago Giron		TAT starts the day received by the lab, if received by 4:30pm													
CCWO #:		21441869															
SAMPLE RECEIPT																	
Samples Received Intact:		☒ Yes	☒ No	Thermometer ID:		<u>T-10005</u>											
Cooler Custody Seals:		☒ Yes	☒ No	Correction Factor:		<u>-0.2</u>											
Sample Custody Seals:		☒ Yes	☒ No	Temperature Reading:		<u>4.2</u>											
Total Containers:				Corrected Temperature:		<u>4.0</u>											
Sample Identification				Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/Comp	# of Cont	Parameters							
BG-01	S	9.10.25	9:00	0.5	Grab/	1	X	X	X	TPH -NM							
BG-01	S	9.10.25	9:02	1	Grab/	1	X	X	X	Chloride-NM							
BG-01	S	9.10.25	9:04	2	Grab/	1	X	X	X	BTEX-NM							
BG-01	S	9.10.25	9:06	3	Grab/	1	X	X	X	Hold							
BG-01	S	9.10.25	9:08	4	Grab/	1	X	X	X	24 Hr Rush							
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								
Incident Number NAPP2431628896											None: NO			DI Water: H ₂ O			
											Cool: Cool			MeOH: Me			
											HCL: HC			HNO ₃ : HN			
											H ₂ SO ₄ : H ₂			NaOH: Na			
											H ₃ PO ₄ : HP						
											NaHSO ₄ : NABIS						
											Na ₂ S ₂ O ₃ : NaSO ₃						
											Zn Acetate+NaOH: Zn						
											NaOH+Ascorbic Acid: SAPC						
Sample Comments																	

Total 200.7 / 6010 200.8 / 6020:
Circle Method(s) and Metal(s) to be analyzed

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn

Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and requirement 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 \$65.00 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
		9/11/14			

Revised Date: 08/25/2020 Rev 2020



Environment Testing
Xenco

Chain of Custody

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

Work Order No:

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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:	gimoreno@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: _____

[illegible]

Total 200.7 / 6010 200.8 / 6020:
Circle Method(s) and Meta(l)s to be analyzed

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn

Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and fulfillment of samples constitutes a valid purchase order from client company to Eurofins Xeno, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xeno 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 Xeno. A minimum charge of \$60.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xeno, 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
		9/11/16			

Excluded Date: 08/25/2020 Rev: 2020

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	Lab PM:	Carrier Tracking No(s):	COC No:									
Client Contact				N/A	Teel, Brianna	N/A	890-5860.1									
Shipping/Receiving				Phone:	E-Mail:	State of Origin:	Page:									
Company:				N/A	Brianna.Teel@et.eurofins.com	New Mexico	Page 1 of 2									
Eurofins Environment Testing South Cent				Accreditations Required (See note)		Job #										
Address:				NELAP - Texas		890-8786-1										
City:				Due Date Requested:		Preservation Codes:										
1211 W. Florida Ave.				9/17/2025												
Midland				TAT Requested (days):		Analysis Requested										
State, Zip:				N/A												
TX, 79701																
Phone:				PO #												
432-704-5440(Tel)				N/A												
Email:				WO #												
N/A				N/A												
Project Name:				Project #												
spud muffin 31 30 #736H				88001228												
Site:				SSOW#												
N/A				N/A												
Sample Identification - Client ID (Lab ID)				Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=other, B=other, 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:
BG-01 (890-8786-1)				9/10/25	09:00	G	Solid		X	X	X	X	X	X	1	
BG-01 (890-8786-2)				9/10/25	09:02	G	Solid		X	X	X	X	X		1	
BG-01 (890-8786-3)				9/10/25	09:04	G	Solid		X	X	X	X	X		1	
BG-01 (890-8786-4)				9/10/25	09:06	G	Solid		X	X	X	X	X		1	
BG-01 (890-8786-5)				9/10/25	09:08	G	Solid		X	X	X	X	X		1	
BG-01 (890-8786-6)				9/10/25	09:10	G	Solid		X	X	X	X	X		1	
BG-01 (890-8786-7)				9/10/25	09:12	G	Solid		X	X	X	X	X		1	
BG-01 (890-8786-8)				9/10/25	09:14	G	Solid		X	X	X	X	X		1	
BG-01 (890-8786-9)				9/10/25	09:16	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/test/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

Deliverable Requested: I, II, III, IV, Other (specify) _____ Primary Deliverable Rank: 2

Empty Kit Requiring by: _____ Date: _____ Time: _____ Method of Shipment: _____ Months

Reinquired by: _____ Date/Time: 9/11/1630 Company: _____ Received by: _____ Date/Time: 9/12/25-805 Company: _____

Reinquired by: _____ Date/Time: _____ Company: _____ Received by: _____ Date/Time: _____ Company: _____

Custody Seals Intact: _____ Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks: 8.4/12.5

Eurofins Carlsbad

1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)		Sampler	Lab PM:	Carrier Tracking Note(s):	COC No.
Client Contact:	N/A	Phone:	Teel, Brianna	N/A	890-5860-2
Shipping/Receiving	N/A	E-Mail:	Brianna.Teel@et.eurofinsus.com	State of Origin:	Page
Company:	N/A	Accreditations Required (See note)	NE/LAP - Texas	New Mexico	Page 2 of 2
Eurofins Environment Testing South Cent		Accreditations Required (See note)		Job #	890-8786-1
Address:		Due Date Requested:		Preservation Codes:	
1211 W. Florida Ave,		9/17/2025			
City:	Midland	TAT Requested (days):		Analysis Requested	
State, Zip:	TX, 79701	N/A			
Phone:	432-704-5440(Tel)	PO #:	N/A		
Email:	N/A	MO #:	N/A		
Project Name:	spud muffin 31 30 #738H	Project #:	88001228		
Site:	N/A	SSOW#:	N/A		
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wet, Solid, B-Tissue, A-MU)
BG-01 (890-8786-10)	9/10/25	09:18	G	Solid	
BG-01 (890-8786-11)	9/10/25	09:20	G	Solid	
BG-01 (890-8786-12)	9/10/25	09:22	G	Solid	
BG-01 (890-8786-13)	9/10/25	09:24	G	Solid	
Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers	
Total_BTEx_GCV		8021B/5035FP_CalcBTEx		8015MOD_Mod	
300_ORGFM_28D/DI_LEACHChloride		8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM	
8015MOD_Mod		8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM	
8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Mod		8015MOD_Calc	
8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Mod	
8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc		8015MOD_Mod	
8015MOD_Mod		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc	
8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Mod	
8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc		8015MOD_Mod	
8015MOD_Mod		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc	
8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Mod	
8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc		8015MOD_Mod	
8015MOD_Mod		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc	
8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Mod	
8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc		8015MOD_Mod	
8015MOD_Mod		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc	
8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Mod	
8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc		8015MOD_Mod	
8015MOD_Mod		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc	
8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Mod	
8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc		8015MOD_Mod	
8015MOD_Mod		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc	
8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Mod	
8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc		8015MOD_Mod	
8015MOD_Mod		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc	
8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Mod	
8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc		8015MOD_Mod	
8015MOD_Mod		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc	
8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Mod	
8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc		8015MOD_Mod	
8015MOD_Mod		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc	
8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Mod	
8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc		8015MOD_Mod	
8015MOD_Mod		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc	
8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Mod	
8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc		8015MOD_Mod	
8015MOD_Mod		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc	
8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Mod	
8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc		8015MOD_Mod	
8015MOD_Mod		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc	
8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Mod	
8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc		8015MOD_Mod	
8015MOD_Mod		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc	
8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Mod	
8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc		8015MOD_Mod	
8015MOD_Mod		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc	
8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Mod	
8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc		8015MOD_Mod	
8015MOD_Mod		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc	
8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Mod	
8015MOD_NM/8015NM_S_Prep8015 NM		8015MOD_Calc		8015MOD	

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	



Environment Testing

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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



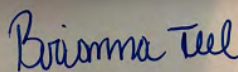
Eurofins Carlsbad

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
Project: Spud Muffin 31 30 #738H

Job ID: 890-8784-1

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.

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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: 890-8784-1

Date Collected: 09/10/25 10:00

Matrix: Solid

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

Date Collected: 09/10/25 10:02

Matrix: Solid

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

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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: 890-8784-2

Date Collected: 09/10/25 10:02

Matrix: Solid

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

Date Collected: 09/10/25 10:04

Matrix: Solid

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

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: 890-8784-3

Date Collected: 09/10/25 10:04

Matrix: Solid

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 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

Lab Sample ID: 890-8784-4

Date Collected: 09/10/25 10:06

Matrix: Solid

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 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

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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: 890-8784-4

Date Collected: 09/10/25 10:06

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	30.2		10.1		mg/Kg			09/12/25 12:28	1

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

Sample Depth: 4

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

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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: 890-8784-6

Date Collected: 09/10/25 10:10

Matrix: Solid

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

Date Collected: 09/10/25 10:12

Matrix: Solid

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

Date Collected: 09/10/25 10:12

Matrix: Solid

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

Date Collected: 09/10/25 10:14

Matrix: Solid

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

Lab Sample ID: 890-8784-8

Date Collected: 09/10/25 10:14

Matrix: Solid

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	<50.0	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

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: 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

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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: 890-8784-9

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

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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: 890-8784-11

Date Collected: 09/10/25 10:20

Matrix: Solid

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

Date Collected: 09/10/25 10:22

Matrix: Solid

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

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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: 890-8784-12

Date Collected: 09/10/25 10:22

Matrix: Solid

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

Date Collected: 09/10/25 10:24

Matrix: Solid

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

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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 10:24
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	DFBZ1						
		(70-130)	(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	OTPH1				
		(70-130)	(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				

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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: 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)
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

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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

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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

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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

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

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

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

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

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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

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
		LCS	LCS				
		%Recovery	Qualifier				
Surrogate			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
		LCSD	LCSD						
		%Recovery	Qualifier						
Surrogate			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

Matrix: Solid

Analysis Batch: 118753

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 10:55	1

Lab Sample ID: LCS 880-118730/2-A

Matrix: Solid

Analysis Batch: 118753

Client Sample ID: Lab Control Sample

Prep Type: Soluble

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

Matrix: Solid

Analysis Batch: 118753

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	256.6		mg/Kg		103	90 - 110	1	20

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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										Client Sample ID: BG - 02		
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	103		252	365.2		mg/Kg		104	90 - 110			

Lab Sample ID: 890-8784-5 MSD										Client Sample ID: BG - 02		
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	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	

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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	

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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	

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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

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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

Lab Sample ID: 890-8784-1

Date Collected: 09/10/25 10:00

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	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

Lab Sample ID: 890-8784-2

Date Collected: 09/10/25 10:02

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	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

Lab Sample ID: 890-8784-3

Date Collected: 09/10/25 10:04

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	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

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	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
Project/Site: Spud Muffin 31 30 #738H

Job ID: 890-8784-1
SDG: Eddy County, NM

Client Sample ID: BG - 02

Lab Sample ID: 890-8784-4

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

Eurofins Carlsbad

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

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

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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

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

Eurofins Carlsbad

Accreditation/Certification Summary

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

Job ID: 890-8784-1
SDG: Eddy County, NM

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400	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

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

Environment Testing

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Work Order No: _____

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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 Manager: Gilbert Moreno
Company Name: Earth Systems R&R
Address: 1910 Resource Ct.
City, State ZIP: Carlsbad, NM, 88220
Phone: 832-541-7719 Email: gmoreno@earthsys.net

Bill to: (if different) Jim Raley
Company Name: Devon Energy
Address: _____
City, State ZIP: _____

Project Name: Spud Muffin 31 30 #738H		Turn Around		Parameters		ANALYSIS REQUEST		Preservative Codes	
Project Number:	15995	☒ Routine	☐ Rush	Pres. Code					
Project Location:	Eddy County, NM <th>Due Date:</th> <td>Routine TAT <th colspan="6"></th> </td>	Due Date:	Routine TAT <th colspan="6"></th>						
Sampler's Name:	Gilbert Moreno, Santiago Giron <th colspan="8">TAT starts the day received by the lab, if received by 4:30pm</th>	TAT starts the day received by the lab, if received by 4:30pm							
CCAWO #:	21441869 <th colspan="8"></th>								
SAMPLE RECEIPT		Temp Blank:	Yes No	Wet Ice:	Yes No				
Samples Received Intact:	Yes No	Thermometer ID:	T-0007						
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						

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/Comp	Grav/Comp	Hold	24 Hr Rush	Chloride-NM	BTEX-NM	Incident Number	Sample Comments
BG-02	S	9.10.25	10:00	0.5	Grab/	1	X	X	X	X	nAPP2431628896	
BG-02	S	9.10.25	10:02	1	Grab/	1	X	X	X	X		
BG-02	S	9.10.25	10:04	2	Grab/	1	X	X	X	X		
BG-02	S	9.10.25	10:06	3	Grab/	1	X	X	X	X		
BG-02	S	9.10.25	10:08	4	Grab/	1	X	X	X	X		
BG-02	S	9.10.25	10:10	5	Grab/	1	X	X	X	X		
BG-02	S	9.10.25	10:12	6	Grab/	1	X	X	X	X		
BG-02	S	9.10.25	10:14	8	Grab/	1	X	X	X	X		
BG-02	S	9.10.25	10:16	12	Grab/	1	X	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 SiO₂ Na Sr Ti 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 \$65.00 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
<i>[Signature]</i>	<i>[Signature]</i>	9/11 14:14			

Revised Date: 08/25/2020 Rev. 2020.2

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



Environment Testing
 Xenco

Work Order No:

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Page

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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			

Project Name: Spud Muffin 31 30 #738H	Turn Around	Pres. Code	ANALYSIS REQUEST													Preservative Codes	
Project Number: 15995	☒ Routine ☐ Rush															None: NO	DI Water: H ₂ O
Project Location: Eddy County, NM	Due Date: Routine TAT															Cool: Cool	MeOH: Me
Sampler's Name: Gilbert Moreno, Santiago Giron	TAT starts the day received by the lab, if received by 4:30pm															HCL: HC	HNO ₃ : HN
CC/WO #: 21441869																H ₂ SO ₄ : H ₂	NaOH: Na

SAMPLE RECEIPT		Temp Blank: Yes No	Wet Ice: Yes No	Parameters	
Samples Received Intact: Yes No	Thermometer ID: T-0.2				
Cooler Custody Seals: Yes No	Correction Factor: 4.2				
Sample Custody Seals: Yes No	Temperature Reading: 4.0				
Total Containers:	Corrected Temperature:				

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/Comp	TPH - NM	Chloride - NM	BTEX - NM	24 Hr Rush	Sample Comments	Incident Number
BG-02	S	9.10.25	10:18	16	Grab/	X	X	X			nAPP2431628896
BG-02	S	9.10.25	10:20	20	Grab/	X	X	X			
BG-02	S	9.10.25	10:22	24	Grab/	X	X	X			
BG-02	S	9.10.25	10:24	28	Grab/	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 Ti 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 for 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 \$55.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	9/11/14 10:2			
		4			
		6			

Revised Date: 09/25/2020 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



Environment Testing

Client Information (Sub Contract Lab)		Sampler:	Lab PM:	Carrier Tracking Not(s)	COCC No:
Client Contact:	N/A	Teel, Brianna	N/A		890-5658-1
Shipping/Receiving	N/A	E-Mail:	Brianna.Teel@eurofins.com	State of Origin:	Page: 1 of 2
Company:	Eurofins Environment Testing South Cent	Accreditations Required (See note):		New Mexico	Job #:
Address:	1211 W. Florida Ave.	NELAP - Texas			890-8784-1
City:	Midland	Due Date Requested:	Analysis Requested		
State, Zip:	TX, 79701	TAT Requested (days):	Preservation Codes:		
Phone:	432-704-5440(Tel)	PO #:			
Email:	N/A	WO #:			
Project Name:	SPUD MUEFIN 31 30 #738 H	Project #:			
Site:	N/A	SSOW#:			
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Weaver, Solid, Overhead, BT=Trasue, A=Al)
BG - 02 (890-8784-1)	9/10/25	10:00	G	Solid	
BG - 02 (890-8784-2)	9/10/25	10:02	G	Solid	
BG - 02 (890-8784-3)	9/10/25	10:04	G	Solid	
BG - 02 (890-8784-4)	9/10/25	10:06	G	Solid	
BG - 02 (890-8784-5)	9/10/25	10:08	G	Solid	
BG - 02 (890-8784-6)	9/10/25	10:10	G	Solid	
BG - 02 (890-8784-7)	9/10/25	10:12	G	Solid	
BG - 02 (890-8784-8)	9/10/25	10:14	G	Solid	
BG - 02 (890-8784-9)	9/10/25	10:16	G	Solid	
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/test/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					
Deliverable Requested: I, II, III, IV, Other (specify)		Primary Deliverable Rank: 2		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Empty/Relinquished by:		Date:		Return To Client ☐ Disposal By Lab ☐ Archive For ☐ Months	
Relinquished by:		Date/Time:	Company:	Received by:	
Relinquished by:		Date/Time:	Company:	Received by:	
Relinquished by:		Date/Time:	Company:	Received by:	
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	

Eurofins Carlsbad

1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)				Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:									
Client Contact:	Shipping/Receiving	Phone:	N/A	E-Mail:	TeeL, Brianna	N/A	890-5856 2									
Company:	Eurofins Environment Testing South Cent	Address:	1211 W. Florida Ave.	Accreditations Required (See note)	NEAP - Texas	State of Origin:	Page 2 of 2									
City:	Midland	State, Zip:	TX, 79701	Project Name:	SPUD MUFFIN 31 30 #738 H	Job #:	890-8784-1									
Phone:	432-704-5440(Tel)	PO #:	N/A	Project #:	88001228	Preservation Codes:										
Email:	N/A	WO #:	N/A	SSOW#	N/A	Other:	N/A									
Project Name:	SPUD MUFFIN 31 30 #738 H	Project #:	88001228	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total BTX GCV	8021B/5035FP_CalcBTX									
Site:	N/A	SSOW#	N/A	300_ORGFM_28D/DI_LEACHChloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep8015 NM										
Sample Identification - Client ID (Lab ID)				Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=Soil, O=Organic, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total BTX GCV	8021B/5035FP_CalcBTX	300_ORGFM_28D/DI_LEACHChloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep8015 NM	Total Number of containers	Special Instructions/Note:
BG - 02 (890-8784-10)		9/10/25	10:18	G	Solid			X	X	X	X	X	X	1		
BG - 02 (890-8784-11)		9/10/25	10:20	G	Solid			X	X	X	X	X	X	1		
BG - 02 (890-8784-12)		9/10/25	10:22	G	Solid			X	X	X	X	X	X	1		
BG - 02 (890-8784-13)		9/10/25	10:24	G	Solid			X	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/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

Deliverable Requested: I, II, III, IV, Other (specify) _____ Primary Deliverable Rank: 2 _____

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: _____

Custody Seals Intact: _____ Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks: _____

Δ Yes Δ No

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	



Environment Testing

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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



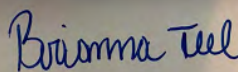
Eurofins Carlsbad

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

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

Laboratory Job ID: 890-8782-1
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: 890-8782-1
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
Project: Spud Muffin 31 30 #738H

Job ID: 890-8782-1

Job ID: 890-8782-1

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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.

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: 890-8782-1

Date Collected: 09/10/25 11:00

Matrix: Solid

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

Date Collected: 09/10/25 11:02

Matrix: Solid

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

Date Collected: 09/10/25 11:02

Matrix: Solid

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

Date Collected: 09/10/25 11:04

Matrix: Solid

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

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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: 890-8782-3

Date Collected: 09/10/25 11:04

Matrix: Solid

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

Date Collected: 09/10/25 11:06

Matrix: Solid

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

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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: 890-8782-4

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

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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: 890-8782-6

Date Collected: 09/10/25 11:10

Matrix: Solid

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

Date Collected: 09/10/25 11:12

Matrix: Solid

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

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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: 890-8782-7

Date Collected: 09/10/25 11:12

Matrix: Solid

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

Date Collected: 09/10/25 11:14

Matrix: Solid

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

Date Collected: 09/10/25 11:14

Matrix: Solid

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

Date Collected: 09/10/25 11:16

Matrix: Solid

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

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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: 890-8782-11

Date Collected: 09/10/25 11:20

Matrix: Solid

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

Date Collected: 09/10/25 11:22

Matrix: Solid

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

Date Collected: 09/10/25 11:22

Matrix: Solid

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

Date Collected: 09/10/25 11:24

Matrix: Solid

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

Lab Sample ID: 890-8782-13

Date Collected: 09/10/25 11:24

Matrix: Solid

Date Received: 09/11/25 14:10

Sample Depth: 28

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

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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: 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)
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

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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: 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	%Recovery	MS Qualifier	MS 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	%Recovery	MSD Qualifier	MSD 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	%Recovery	MB Qualifier	MB 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

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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: 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

	LCS	LCS	
Surrogate	%Recovery	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

	MB	MB								
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 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	
	MB	MB								
Surrogate	%Recovery	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

		Spike	LCS	LCS				%Rec		
Analyte		Added	Result	Qualifier	Unit	D	%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		
	LCS	LCS								
Surrogate	%Recovery	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

		Spike	LCSD	LCSD				%Rec		RPD	
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	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	
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
1-Chlorooctane	112		70 - 130								
o-Terphenyl	126		70 - 130								

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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: 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

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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: 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	

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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

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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	

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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

Lab Sample ID: 890-8782-1

Date Collected: 09/10/25 11:00

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	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

Lab Sample ID: 890-8782-2

Date Collected: 09/10/25 11:02

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 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

Lab Sample ID: 890-8782-3

Date Collected: 09/10/25 11:04

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	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

Lab Sample ID: 890-8782-4

Date Collected: 09/10/25 11:06

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	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

Lab Sample ID: 890-8782-4

Date Collected: 09/10/25 11:06

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			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

Lab Sample ID: 890-8782-5

Date Collected: 09/10/25 11:08

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			5.00 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

Lab Sample ID: 890-8782-6

Date Collected: 09/10/25 11:10

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			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

Lab Sample ID: 890-8782-7

Date Collected: 09/10/25 11:12

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			4.97 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

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

Lab Sample ID: 890-8782-7

Date Collected: 09/10/25 11:12

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			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

Lab Sample ID: 890-8782-8

Date Collected: 09/10/25 11:14

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			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

Lab Sample ID: 890-8782-9

Date Collected: 09/10/25 11:16

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			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

Lab Sample ID: 890-8782-10

Date Collected: 09/10/25 11:18

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			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

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**Lab Sample ID: 890-8782-11****Date Collected: 09/10/25 11:20****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			5.04 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**Lab Sample ID: 890-8782-12****Date Collected: 09/10/25 11:22****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	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**Lab Sample ID: 890-8782-13****Date Collected: 09/10/25 11:24****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	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

Eurofins Carlsbad

Accreditation/Certification Summary

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

Job ID: 890-8782-1
SDG: Eddy County, NM

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400	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

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



Environment Testing
 Xenco



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

Project Name:	Spud Muffin 31 30 #738H
Project Number:	15995
Project Location:	Eddy County, NM
Sampler's Name:	Gilbert Moreno, Santiago Giron
CC/NO #:	21441869

Turn Around	
☒ Routine	☐ Rush
Due Date:	Routine TAT
TAT starts the day received by the lab, if received by 4:30pm	

SAMPLE RECEIPT	
Temp Blank:	Yes No
Samples Received Intact:	Yes No
Cooler Custody Seals:	Yes No
Sample Custody Seals:	Yes No
Total Containers:	

Thermometer ID:	10000
Correction Factor:	-0.2
Temperature Reading:	4.2
Corrected Temperature:	4.0

ANALYSIS REQUEST		PRESERVATIVE CODES	
Sample Identification	Matrix	Date Sampled	Time Sampled
BG-03	S	9.10.25	11:00
BG-03	S	9.10.25	11:02
BG-02	S	9.10.25	11:04
BG-02	S	9.10.25	11:06
BG-02	S	9.10.25	11:08
BG-02	S	9.10.25	11:10
BG-02	S	9.10.25	11:12
BG-02	S	9.10.25	11:14
BG-02	S	9.10.25	11:16

Depth (feet)	Grab/Comp	Parameters	Pres. Code
0.5	Grab/	TFH - NM	
1	Grab/	Chloride - NM	
2	Grab/	BTEX - NM	
3	Grab/		
4	Grab/		
5	Grab/		
6	Grab/		
8	Grab/		
12	Grab/		

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 Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed			

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
		9/14 14:10			

Revised Date: 06/25/2020 Rev. 2020.2

- 1
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- 12
- 13
- 14

Eurofins Carlsbad

1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record



Environment Testing

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:	Phone: N/A	E-Mail:	Brianna.Teel@eurofins.com	State of Origin:	New Mexico	Page:	Page 1 of 2	Job #:	890-8782-1												
Shipping/Receiving:	N/A	Accreditations Required (See note):	NE LAP - Texas	Preservation Codes:																	
Company:	Eurofins Environment Testing South Cent	Due Date Requested:	9/17/2025	Analysis Requested																	
Address:	1211 W. Florida Ave.	TAT Requested (days):	N/A																		
City:	Midland	PO #:	N/A																		
State, Zip:	TX, 79701	WO #:	N/A																		
Phone:	432-704-5440(Tel)	Project #:	88001228																		
Email:	N/A	SSOW#:	N/A																		
Project Name:	spud mufin 31 30 #738H																				
Site:	N/A																				
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Weater, Solid, Over-sat, Br-Tissue, A=Ali)	Field Filtered Sample (Yes or No)				Perform MS/MSD (Yes or No)				Total Number of containers				Special Instructions/Note:			
BG-03 (890-8782-1)		9/10/25	11:00	G	Solid																
BG-03 (890-8782-2)		9/10/25	11:02	G	Solid																
BG-03 (890-8782-3)		9/10/25	11:04	G	Solid																
BG-03 (890-8782-4)		9/10/25	11:06	G	Solid																
BG-03 (890-8782-5)		9/10/25	11:08	G	Solid																
BG-03 (890-8782-6)		9/10/25	11:10	G	Solid																
BG-03 (890-8782-7)		9/10/25	11:12	G	Solid																
BG-03 (890-8782-8)		9/10/25	11:14	G	Solid																
BG-03 (890-8782-9)		9/10/25	11:16	G	Solid																
Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Cent, 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/test/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Cent, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Cent, 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 Cent, LLC.																					
Possible Hazard Identification																					
Unconfirmed																					
Deliverable Requested: I, II, III, IV, Other (specify)		Primary Deliverable Rank: 2		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		☐ Return To Client		☐ Disposal By Lab		☐ Archive For		Months									
Empty Kit Relinquished by:		Date:	Date:	Time:		Method of Shipment:															
Relinquished by: <i>Brown</i>		Date/Time: 9/11/1630	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: ☐ Yes ☐ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:																	

Eurofins Carlsbad

1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record



Environment testing

Client Information (Sub Contract Lab)						Sampler	Lab PM:	COC No.										
Client Contact:						N/A	Teel, Brianna	890-5856.2										
Shipping/Receiving						Phone:	E-Mail:	Page										
Eurofins Environment Testing South Cent						N/A	Brianna.Teel@eurofins.com	Page 2 of 2										
Address:						Accreditations Required (See note)		Job #										
1211 W. Florida Ave.						NE/LAP - Texas		890-8782-1										
City:						Analysis Requested		Preservation Codes:										
Midland																		
State, Zip:																		
TX, 79701																		
Phone:																		
432-704-5440(Tel)																		
Email:																		
N/A																		
Project Name:																		
spud muffin 31 30 #738H																		
Site:																		
SSOW#:																		
N/A																		
Sample Identification - Client ID (Lab ID)						Sample Date	Sample Time	Sample Type (G=comp, G-grab)	Matrix (Hydrocarbons, Semivolatiles, Organics, PCB's, PAH's)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total_BT_X_GCV	8021B/5035FP_CalcBTX	300_ORGM_28D/DI_LEACHChloride	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep8015 NM	Total Number of containers	Special Instructions/Note:
BG-03 (890-8782-10)						9/10/25	11:18	G	Solid	X	X	X	X	X	X	X	1	
BG-03 (890-8782-11)						9/10/25	11:20	G	Solid	X	X	X	X	X	X	1		
BG-03 (890-8782-12)						9/10/25	11:22	G	Solid	X	X	X	X	X	X	1		
BG-03 (890-8782-13)						9/10/25	11:24	G	Solid	X	X	X	X	X	X	1		

Note: Since laboratory accreditation is 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/test/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
Deliverable Requested: I, II, III, IV, Other (Specify) Primary Deliverable Rank: 2
Empty Kit Relinquished by: Date: Time:
Relinquished by: Date/Time: Company:
Relinquished by: Date/Time: Company:
Custody Seals Intact: Custody Seal No.:

A Yes A No

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☐ Disposal By Lab ☐ Archive For Months

Special Instructions/QC Requirements:

Method of Shipment: Date/Time: Received by: Date/Time: Received by: Date/Time: Company: Cooler Temperature(s) °C and Other Remarks:

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	



Environment Testing

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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



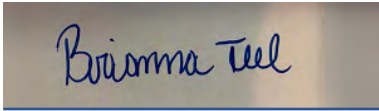
Eurofins Carlsbad

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
9/15/2025 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
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
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
SQL	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 #738 H

Job ID: 890-8783-1

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.

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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

Lab Sample ID: 890-8783-1

Date Collected: 09/10/25 13:30

Matrix: Solid

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

Date Collected: 09/10/25 13:32

Matrix: Solid

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

Date Collected: 09/10/25 13:32

Matrix: Solid

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

Date Collected: 09/10/25 13:34

Matrix: Solid

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

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: 890-8783-3

Date Collected: 09/10/25 13:34

Matrix: Solid

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

Date Collected: 09/10/25 13:36

Matrix: Solid

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

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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

Lab Sample ID: 890-8783-4

Date Collected: 09/10/25 13:36

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	<9.96	U	9.96		mg/Kg			09/15/25 09:42	1

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

Sample Depth: 4

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

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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

Lab Sample ID: 890-8783-6

Date Collected: 09/10/25 13:40

Matrix: Solid

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

Date Collected: 09/10/25 13:42

Matrix: Solid

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

Lab Sample ID: 890-8783-7

Date Collected: 09/10/25 13:42

Matrix: Solid

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)	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

Lab Sample ID: 890-8783-8

Date Collected: 09/10/25 13:44

Matrix: Solid

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 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

Lab Sample ID: 890-8783-8

Date Collected: 09/10/25 13:44

Matrix: Solid

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	<50.0	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

Lab Sample ID: 890-8783-9

Date Collected: 09/10/25 13:46

Matrix: Solid

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	<0.00201	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

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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

Lab Sample ID: 890-8783-9

Date Collected: 09/10/25 13:46

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	2040		49.5		mg/Kg			09/12/25 11:30	5

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

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

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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

Lab Sample ID: 890-8783-11

Date Collected: 09/10/25 13:50

Matrix: Solid

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

Date Collected: 09/10/25 13:52

Matrix: Solid

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

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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

Lab Sample ID: 890-8783-12

Date Collected: 09/10/25 13:52

Matrix: Solid

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

Date Collected: 09/10/25 13:54

Matrix: Solid

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			

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Surrogate Summary

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H
OTPH = o-Terphenyl

Job ID: 890-8783-1
SDG: 15995

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

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

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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

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						

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

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

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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

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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

Matrix: Solid

Analysis Batch: 118836

Client Sample ID: BG - 04

Prep Type: Total/NA

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

Matrix: Solid

Analysis Batch: 118753

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 10:55	1

Lab Sample ID: LCS 880-118730/2-A

Matrix: Solid

Analysis Batch: 118753

Client Sample ID: Lab Control Sample

Prep Type: Soluble

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

Matrix: Solid

Analysis Batch: 118753

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	256.6		mg/Kg		103	90 - 110	1	20

Lab Sample ID: 890-8783-8 MS

Matrix: Solid

Analysis Batch: 118753

Client Sample ID: BG - 04

Prep Type: Soluble

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

Matrix: Solid

Analysis Batch: 118753

Client Sample ID: BG - 04

Prep Type: Soluble

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

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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	

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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

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

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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

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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

Lab Sample ID: 890-8783-1

Date Collected: 09/10/25 13:30

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 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

Lab Sample ID: 890-8783-2

Date Collected: 09/10/25 13:32

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 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

Lab Sample ID: 890-8783-3

Date Collected: 09/10/25 13:34

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 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

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	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

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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

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

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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

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

Lab Sample ID: 890-8783-11

Date Collected: 09/10/25 13:50

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	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

Lab Sample ID: 890-8783-12

Date Collected: 09/10/25 13:52

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 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

Lab Sample ID: 890-8783-13

Date Collected: 09/10/25 13:54

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 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

Eurofins Carlsbad

Accreditation/Certification Summary

Client: Earth Systems Response and Restoration
Project/Site: SPUD MUFFIN 31 30 #738 H

Job ID: 890-8783-1
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

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

Environment Testing
Xenco



Work Order No:

www.xenco.com Page 1 of 2

Work Order Comments

Program: ☐ US/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

State of Project: ☐ Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐

Reporting: ☐ Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐

Deliverables: ☐ EDD ☐ ADaPT ☐ Other:

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

ANALYSIS REQUEST

Project Name: Spud Muffin 31 30 #738H

Project Number: 15995

Project Location: Eddy County, NM

Sampler's Name: Gilbert Moreno, Santiago Giron

CCWO #: 21441869

SAMPLE RECEIPT

Samples Received Intact: ☒ Yes ☐ No Thermometer ID: 12000

Cooler Custody Seals: ☒ Yes ☐ No Correction Factor: -0.2

Sample Custody Seals: ☒ Yes ☐ No Temperature Reading: 4.3

Total Containers: 4.0

Temp Blank: ☒ Yes ☐ No Wet Ice: ☒ Yes ☐ No

Due Date: TAT

TAT starts the day received by the lab, if received by 4:30pm

Parameters

Pres. Code

Depth (feet)

Time Sampled

Date Sampled

Matrix

Sample Identification

Grab/Comp

Count

TPH-NM

Chloride-NM

BTEX-NM

Hold

24 Hr Rush

Preservative Codes

None: NO

DI Water: H₂O

Cool: Cool

MeOH: Me

HCL: HC

HNO₃: HN

H₂SO₄: H₂

NaOH: Na

H₃PO₄: HP

NaHSO₄: NABIS

Na₂S₂O₃: NaSO₃

Zn Acetate+NaOH: Zn

NaOH+Ascorbic Acid: SAPC

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 SiO₂ Na Sr Ti 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) [Signature] Received by: (Signature) [Signature] Date/Time 9/11/14/10

3 4 6

Revised Date: 08/25/2020 Rev. 2020.2



Environment Testing
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Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Chain of Custody

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:	jimoreno@earthsys.net

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

Project Name:	Spud Muffin 31 30 #738H	Turn Around	☒ Routine ☐ Rush	Pres. Code	
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				
CCWO #:	21441869				
SAMPLE RECEIPT	Temp Blank: ☒ Yes ☒ No	Wet Ice: ☒ Yes ☒ No			
Samples Received In:	☒ Yes ☒ No	Thermometer ID:	Turned -0.2		
Cooler Custody Seals:	☒ Yes ☒ No	Correction Factor:	4.2		
Sample Custody Seals:	☒ Yes ☒ No	Temperature Reading:	4.0		
Total Containers:		Corrected Temperature:			



890-8783 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/Comp	Parameters										Sample Comments
						# of Cont	TPH -NM	Chloride-NM	BTEX-NM	Hold	24 Hr Rush					
BG-04	S	9.10.25	13.30	0.5	Grab/	1	X	X	X							Incident Number nAPP2431628896
BG-04	S	9.10.25	13.32	1	Grab/	1	X	X	X							
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 / 6620: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO₂ Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed

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Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	9/11/14 10:2			
		4			
		6			



Environment Testing
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Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Chain of Custody

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

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	Pres. Code	
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				
CCWO #:	21441869				



890-8763 Chain of Custody

SAMPLE RECEIPT	Temp Blank: ☒ Yes ☒ No	Wet Ice: ☒ Yes ☒ No	Parameters	
Samples Received In/Out:	☒ Yes ☒ No	Thermometer ID:		
Cooler Custody Seals:	☒ Yes ☒ No	Correction Factor:		
Sample Custody Seals:	☒ Yes ☒ No	Temperature Reading:		
Total Containers:		Corrected Temperature:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth (feet)	Grab/Comp	# of Cont	TPH -NM	Chloride -NM	BTEX -NM	Hold	24 Hr Rush	Preservative Codes
BG-04	S	9.10.25	13.30	0.5	Grab/	1	X	X	X			None: NO DI Water: H ₂ O
BG-04	S	9.10.25	13.32	1	Grab/	1	X	X	X			Cool: Cool MeOH: Me
BG-04	S	9.10.25	13.34	2	Grab/	1	X	X	X			HCL: HC HNO ₃ : HN
BG-04	S	9.10.25	13.36	3	Grab/	1	X	X	X			H ₂ SO ₄ : H ₂ NaOH: Na
BG-04	S	9.10.25	13.38	4	Grab/	1	X	X	X			H ₃ PO ₄ : HP
BG-04	S	9.10.25	13.40	5	Grab/	1	X	X	X			NaHSO ₄ : NABIS
BG-04	S	9.10.25	13.42	6	Grab/	1	X	X	X			Na ₂ S ₂ O ₃ : NaSO ₃
BG-04	S	9.10.25	13.44	8	Grab/	1	X	X	X			Zn Acetate+NaOH: Zn
BG-04	S	9.10.25	13.46	12	Grab/	1	X	X	X			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	Ti	Sn	U	V	Zn
Circle Method(s) and Metal(s) to be analyzed		Hg: 1631 / 245.1 / 7470 / 7471																														

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		9/11/14			



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Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Page 2 of 2

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:	

[illegible]

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		9/11/14			

Eurofins Carlsbad

1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record



Environment Testing

Client Information (Sub Contract Lab)				Sampler:	Lab PM:	Carrier Tracking No(s):	COC No:		
Client Contact:	N/A	Phone:	N/A	Teel, Brianna	N/A		890-6857.1		
Shipping/Receiving	N/A	E-Mail:	Brianna.Teel@et.eurofins.com	Accreditations Required (See note)	State of Origin:	New Mexico	Page 1 of 2		
Company:	Eurofins Environment Testing South Cent	Address:	1211 W. Florida Ave.	NEAP - Texas	Job #:	890-6783-1	Preservation Codes:		
City:	Midland	State, Zip:	TX, 79701	PO #:	N/A				
Phone:	432-704-5440(Tel)	MO #:	N/A	Project #:	88001228				
Email:	N/A	SSOW#:	N/A	Field Filtered Sample (Yes or No)					
Project Name:	SPUD MUFFIN 31 30 #738 H			Perform MS/MSD (Yes or No)					
Site:	N/A			Total_BTEx_GCV	8021B/5035FP_CalcBTEx	300_ORGFM_28D/DI_LEACHChloride	8015MOD_Calc		
							8015MOD_NM/8015NM_S_Prep8015 NM		
Sample Identification - Client ID (Lab ID)				Analysis Requested				Total Number of containers	
Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Inert, Sealed, Overhead, Air, Air)					Special Instructions/Note:	
BG - 04 (890-8783-1)	9/10/25	13:30 Mountain	G	Solid	X	X	X	1	
BG - 04 (890-8783-2)	9/10/25	13:32 Mountain	G	Solid	X	X	X	1	
BG - 04 (890-8783-3)	9/10/25	13:34 Mountain	G	Solid	X	X	X	1	
BG - 04 (890-8783-4)	9/10/25	13:36 Mountain	G	Solid	X	X	X	1	
BG - 04 (890-8783-5)	9/10/25	13:38 Mountain	G	Solid	X	X	X	1	
BG - 04 (890-8783-6)	9/10/25	13:40 Mountain	G	Solid	X	X	X	1	
BG - 04 (890-8783-7)	9/10/25	13:42 Mountain	G	Solid	X	X	X	1	
BG - 04 (890-8783-8)	9/10/25	13:44 Mountain	G	Solid	X	X	X	1	
BG - 04 (890-8783-9)	9/10/25	13:46 Mountain	G	Solid	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/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

Deliverable Requested: I, II, III, IV, Other (specify) _____ Primary Deliverable Rank: 2 _____

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: _____

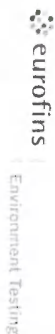
Custody Seals Intact: _____ Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks: _____

Δ Yes Δ No

Eurofins Carlsbad

1089 N Canal St.
Carlsbad, NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record



Client Information (Sub Contract Lab)						Sampler:	N/A	Lab PM:	Teel, Brianna	COC No:	890-5857-2																				
Client Contact:						Phone:	N/A	E-Mail:	Brianna.Teel@eurofins.com	State of Origin:	New Mexico																				
Shipping/Receiving						Eurofins Environment Testing South Center		Accreditations Required (See note)		Page 2 of 2																					
Address:						Due Date Requested:		NE LAP - Texas		Job #:	890-6783-1																				
City:						9/17/2025				Preservation Codes:																					
Midland						TAT Requested (days):		Analysis Requested																							
State, Zip:						N/A																									
TX, 79701																															
Phone:						PO #																									
432-704-5440(Tel)						N/A																									
Email:						WO #																									
N/A						Project #:																									
SPUD MUJFIN 31 30 #738 H						88001228																									
Site:						SSOW#:																									
N/A						N/A																									
Sample Identification - Client ID (Lab ID)						Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (M=Metal, S=Solid, O=Organic, A=Air)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total_BT_X_GCV		8021B/5035FP_CalcBTX		300_ORGFM_28D/DI_LEACHChloride		8015MOD_Calc		8015MOD_NM/8015NM_S_Prep8015 NM		Total Number of containers		Special Instructions/Note:	
BG - 04 (890-8783-10)						9/10/25		13:48		Mountain		G		Solid		X		X		X		X		X		X		1			
BG - 04 (890-8783-11)						9/10/25		13:50		Mountain		G		Solid		X		X		X		X		X		X		1			
BG - 04 (890-8783-12)						9/10/25		13:52		Mountain		G		Solid		X		X		X		X		X		X		1			
BG - 04 (890-8783-13)						9/10/25		13:54		Mountain		G		Solid		X		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/test/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: _____														Method of Shipment: _____																	
Relinquished by: _____ Date/Time: _____														Received by: _____ Date/Time: _____																	
Relinquished by: _____ Date/Time: _____														Received by: _____ Date/Time: _____																	
Relinquished by: _____ Date/Time: _____														Received by: _____ Date/Time: _____																	
Custody Seals Intact: _____ Custody Seal No.: _____														Cooler Temperature(s) °C and Other Remarks: _____																	

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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Oil Conservation Division
1220 S. St Francis Dr.
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, Page 2

Action 522744

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.ralej@dm.com Date: 11/04/2025
--	---

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Phone: (505) 476-3441

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QUESTIONS, Page 3

Action 522744

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
<i>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.</i>	
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, Page 4

Action 522744

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

Remediation Plan (continued)	
<i>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.</i>	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
<i>(Select all answers below that apply.)</i>	
(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.
<i>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>	
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@dmv.com Date: 11/04/2025
<i>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.</i>	

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QUESTIONS, Page 5

Action 522744

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

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS, Page 6

Action 522744

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

Action 522744

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