Chris Brand
Environmental Remediation/ Facility Decom Advisor

VIA ELECTRONIC MAIL

May 24, 2024

New Mexico Oil Conservation Division
District I
1625 N. French Drive
Hobbs, New Mexico 88240

Re: West Lovington Unit #047
Soil Remediation Work Plan
Incident No. nPAC0708526071
Case No. 1RP-1314

Dear Whom it May Concern:

Please find enclosed for your files, copies of the following:
West Lovington Unit #047 Soil Remediation Work Plan

The Work Plan was prepared by Arcadis U.S., Inc. (Arcadis) on behalf of Chevron Environmental Management Company (CEMC) for Chevron USA.

Please do not hesitate to call Scott Foord with Arcadis at 713.953.4853, or myself at 661.401.0359, should you have any questions.

Sincerely,

Chris Brand

Encl. West Lovington Unit #047 Work Plan

cc. Scott Foord – Arcadis
Morgan Jordan – Arcadis

Chris Brand
Environmental Remediation/ Facility Decom Advisor
6301 Deauville Blvd, Midland, TX 79706
Mobile 661 401 0359
chrisbrand@chevron.com

ARCADIS

Chevron Environmental Management Company

2024 Work Plan

West Lovington Unit #047

Lea County, New Mexico

Incident # nPAC0708526071

May 2024

2024 Work Plan

West Lovington Unit #047
Incident # nPAC0708526071
Lea County, New Mexico

May 2024

Prepared By:
Arcadis U.S., Inc.
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Houston
Texas 77042
Phone: 713 953 4800
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Prepared For:
Chris Brand
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CEMC
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Midland, TX 79706

Scott Foord, PG
Program Manager

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2024 Work Plan
West Lovington Unit #047

1 Introduction

Arcadis U.S., Inc. (Arcadis) has prepared this Work Plan, for Chevron Environmental Management Company (CEMC) on behalf of Chevron U.S.A. Inc., through its division Chevron North America Exploration and Production Company, for the release site known as the West Lovington Unit #047 (Site) located at 32.856327, -103.365962. Details of the release are summarized in the New Mexico Oil Conservation Division (NMOCD) Initial C-141 Form included as **Appendix A**.

2 Project Summary

The Site is located on private owned land approximately 6-miles southwest of the City of Lovington in Unit D, Section 9, Township 17 South, Range 36 East, Lea County, New Mexico. The site is located within a low karst area. A Site Location Map is included as **Figure 1** and a Topographic Map as **Figure 2**.

2.1 Incident # nPAC0708526071

According to the Initial C-141 Form, on January 14, 2007, a buried high pressure injection line leaked believed caused by corrosion and released approximately 5 barrels (bbls) of produced water at the Site. The well was shut in and isolated. The leak was approximately 600 feet north of West Lovington Unit #47 pad. The affected area was approximately 20 feet (ft) by 30 ft according to the Initial C-141 Form that was submitted on January 15, 2007. The Initial C-141 Form was approved on February 9, 2007, and assigned remediation permit number 1RP-1314 and incident number nPAC0708526071. The Initial C-141 Form is included as **Appendix A.**

3 Site Characterization

After a review of the New Mexico Office of State Engineers (NMOSE) and USGS databases there is no groundwater data with 0.50 miles available in the databases, but there are eight unregistered groundwater monitoring wells located approximately 0.20 miles south of the Site associated with the Chevron West Lovington Unit #63 Site (Case No. 1RP-1993). The Chevron West Lovington Unit #63 monitoring well located within the closest proximity to the West Lovington Unit #047 site is located at coordinates 32.853407, -103.364185. The monitoring well was gauged by Arcadis on May 20, 2024. Depth to groundwater was verified at 49.09 ft below ground surface (bgs), therefore the most stringent NMOCD closure criteria will be applied for the Site.

The following site characteristics were determined in accordance with 19.15.29 New Mexico Administrative Code (NMAC):

- Shallowest depth to groundwater beneath the area affected by the release in ft bgs: Between 26 and 50 feet;
- Method used to determine the depth to groundwater: direct measurement;
- Distance to continuously flowing watercourse or any other significant watercourse: >5 miles;
- Distance to lakebed, sinkhole, or playa lake: Between 0.50 and 1 mile;
- Distance to occupied permanent residence, school, hospital, institution, or church: Between 1 and 5 miles;
- Distance to spring or private domestic fresh water well used by less than five households for domestic or stock watering purposes: Between 1 and 5 miles ;

- Distance to other fresh water well or spring: Between 0.50 and 1 mile ;
- Distance to incorporated municipal boundaries or a defined municipal fresh water well field: Between 1 and 5 miles;
- Distance to wetland: Between 0.50 and 1 mile ;
- Distance to subsurface mine: >5 miles ;
- Distance to (non-karst) unstable area: >5 miles;
- Categorize the risk of this well/site being in a karst geology: Low;
- Distance to a 100-year floodplain: Between 1 and 5 miles; and
- Did the release impact areas not on an exploration, development, production, or storage site? Yes

4 NMAC Regulatory Criteria

Per Table I of NMAC part 19.15.29.12, the following closure criteria apply to the Site for reclamation activities within the first 4 feet of soil and within soil greater than 4 feet bgs due to depth to groundwater being verified less than 50 ft bgs.

Constituent	Limit (mg/kg)
Benzene	10 mg/kg
Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)	50 mg/kg
Total Petroleum Hydrocarbons (TPH) – Gasoline Range Organics (GRO), Diesel Range Organics (DRO), and Oil Range Organics (ORO)	100 mg/kg
Chloride	600 mg/kg

5 Site Assessment Activities

In March 2023, and subsequently in January, February, and April 2024, Arcadis performed site assessment activities to evaluate soil impacts stemming from the release. A total of twenty-four (24) sample points (SB-1 through SB-24) were advanced to depths ranging from the surface to 15 feet bgs inside and surrounding the release area to evaluate the vertical and horizontal extents of the release. Soil sample locations are shown on **Figure 3**. Soil samples were collected for chemical analyses, placed directly into laboratory-provided sample containers, stored on ice, and transported under the proper chain-of-custody protocol to Eurofins Laboratories in Midland, Texas.

The samples were analyzed for TPH by United States Environmental Protection Agency (EPA) Method 8015, modified BTEX by EPA Method 8021B, and chloride by EPA method 300.0. Soil samples analyzed for BTEX were reported with concentrations ranging from 0.00100 J mg/kg (S-15) to 0.00988 mg/kg (S-11). Soil samples analyzed for TPH were reported with concentrations ranging from 20.6 J mg/kg (S-1) to 182 mg/kg (S-11). Soil samples analyzed for chloride were reported with concentrations ranging from 3.84 J mg/kg (S-20) to 7,420 mg/kg (S-3).

Horizontal delineation was completed during assessment activities. Vertical assessment to depths of 15 feet bgs was conducted in the area of concern during recent assessment activities and will be continued during remediation activities. Analytical data collected to date and field screening during proposed remediation activities will be utilized to guide remediation activities. Soil sample analytical results from assessment activities are summarized in **Table 1**. Laboratory reports for soil samples collected during the initial site assessment, including analytical methods, results, and chain-of-custody documents, are attached in **Appendix B.** NMOCD correspondence is shown in **Appendix C.**

6 Proposed Work Plan

Based on the analytical data and the detected TPH and chloride concentrations in soil samples collected during site assessment activities, CEMC proposes to remediate the areas of concern via excavation illustrated in orange as shown in **Figure 3** and bolded in **Table 1**.

The proposed excavation area encompasses a surface area of approximately 33,500 square feet. An estimated 6,720 cubic yards of soil will be removed and transported to the R360 CRI Facility, which is listed as an NMOCD approved disposal facility.

In accordance with NMAC 19.15.29.12(D)(1)(b), CEMC proposes the following confirmation sampling plan to adhere with NMOCD requirements. Five-point composite confirmation soil samples will be collected from the excavation floor and sidewalls at 200 square foot intervals for analysis of BTEX by EPA Method 8260, TPH for GRO, DRO, and ORO by EPA Method 8015, and chloride by EPA Method 300.0. Lateral and vertical limits of the excavation will halt once confirmation sample analytical results are in accordance with NMAC 19.15.29.12(D)(1)(c).

Backfill material will be verified to be non-waste containing prior to backfilling the remediated area by obtaining analytical data from the backfill material supplier (R360) if available, or by collecting a five-point composite sample and analyzing for BTEX by EPA Method 8260, TPH for GRO, DRO, and ORO by EPA Method 8015, and chloride by EPA Method 300.0. Following completion of excavation activities and confirmation that the backfill material is non-waste containing, the areas will be backfilled with the clean material and graded to match the original surface conditions and drainage. Approximately 33,500 square feet of the area of concern located within the pasture area will be reclaimed to original condition and re-seeded following remediation activities.

The proposed remediation activities will be implemented within 90 days following approval of this work plan by the NMOCD. The anticipated schedule includes 30 days to prepare and schedule field work and confirm sub-contractors, 30 days to complete on-site remediation activities, and 30 days to prepare a soil remediation summary and closure request report.

7 Work Plan Approval Request

Upon completion of the above proposed soil remediation activities, a final closure request report describing the remediation activities and a separate reclamation report will be submitted to the NMOCD for review. If you have any questions regarding this work plan or need additional information, please do not hesitate to contact Scott Foord at 281-725-7447 or Morgan Jordan at 281-644-9437.

Tables

Table 1
Soil Analytical Results
Chevron Environmental Management Company
WLU 47

ARCADIS

Sample I.D.	Sample Depth (feet bgs)	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	TPH-GRO	TPH-DRO	TPH GRO + DRO	TPH MRO	Total TPH	Chloride
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NMAC Standards			10	--	--	--	50	--	--	--	--	100	600
Restoration Requirements			10	--	--	--	50	--	--	--	--	100	600
SB-1	0-0.5'	03/24/23	<0.000384	<0.000455	<0.000564	<0.000343	<0.000343	20.6 J *+	<15.0 *+	20.6 J *+	<15.0	20.6 J	56.9
	2'	03/24/23	<0.000387	<0.000459	<0.000568	<0.000346	<0.000346	25.9 J *+	<15.0 *+	25.9 J *+	<15.0	25.9 J	214
SB-2	0-0.5'	03/24/23	<0.000383	<0.000454	<0.000563	<0.000343	<0.000343	20.9 J *+	<15.0 *+	20.9 J *+	<15.0	20.9 J	***3470***
	2'	03/24/23	<0.000383	<0.000453	<0.000562	<0.000342	<0.000342	22.7 J *+	<15.0 *+	22.7 J *+	<15.0	22.7 J	***2040***
SB-3	0-0.5'	03/24/23	<0.000387	<0.000458	<0.000567	<0.000345	<0.000345	32.6 J *+	<15.0	32.6 J *+	<15.0	32.6 J	***7,420***
	2'	03/24/23	<0.000386	<0.000457	<0.000566	<0.000345	<0.000345	40.6 J *+	20.0 J B *+	60.6 J B *+	<15.0	60.6	**2,120 F1**
SB-4	1'	01/29/24	--	--	--	--	--	--	--	--	--	--	***1,970***
	2'	01/29/24	<0.000385	<0.000456	<0.000565	<0.00101	<0.00101	<24.8	<24.8	<24.8	<24.8	<24.8	***1,900 F1***
SB-5	1'	01/29/24	--	--	--	--	--	--	--	--	--	--	272
	2'	01/29/24	<0.000382	<0.000452	<0.000561	<0.00100	<0.00100	<25.3	<25.3	<25.3	<25.3	<25.3	***1,640***
SB-6	1'	01/29/24	--	--	--	--	--	--	--	--	--	--	290
	2'	01/29/24	<0.000389	<0.000461	<0.000571	<0.00102	<0.00102	<25.0	<25.0	<25.0	<25.0	<25.0	**1,670**
SB-7	1'	01/29/24	--	--	--	--	--	--	--	--	--	--	***625***
	2'	01/29/24	<0.000388	<0.000460	<0.000570	<0.00102	<0.00102	<24.8	24.8 J	24.8 J	<24.8	24.8 J	***1,460***
SB-8	1'	01/29/24	--	--	--	--	--	--	--	--	--	--	***2,530***
	2'	01/29/24	<0.000383	<0.000453	<0.000562	<0.00100	<0.00100	<24.8	25.5 J	25.5 J	<24.8	25.5 J	***2,520***
SB-9	1'	01/29/24	--	--	--	--	--	--	--	--	--	--	***2,670***
	2'	01/29/24	<0.000384	<0.000455	<0.000564	<0.00101	<0.00101	<25.0	<25.0	<25.0	<25.0	<25.0	***2,400***
SB-10	1'	01/29/24	--	--	--	--	--	--	--	--	--	--	***1,050***
	2'	01/29/24	<0.000381	<0.000451	<0.000559	<0.00100	<0.00100	<24.9	<24.9	<24.9	<24.9	<24.9	***1,860***
	3'	01/29/24	--	--	--	--	--	--	--	--	--	--	***1,930***
SB-11	1'	02/02/24	--	--	--	--	--	--	--	--	--	--	***3,100***
	2'	02/02/24	0.00119 J	0.00131 J	0.00150 J	0.00588	0.00988	16.0 J B	166 B	182 J B	<14.9	***182***	361
SB-12	1'	02/02/24	--	--	--	--	--	--	--	--	--	--	161
	2'	02/02/24	<0.000383	<0.000453	<0.000562	<0.00100	<0.00100	32.4 J B	16.0 J B	48.4 J B	<15.0	48.4 J	***2,570***
SB-13	1'	02/02/24	--	--	--	--	--	--	--	--	--	--	462
	2'	02/02/24	0.000410 J	<0.000455	<0.000564	0.00148 J	0.00189 J	47.6 J B	114 B	162.6 J B	<15.1	***162***	271
SB-14	1'	02/02/24	--	--	--	--	--	--	--	--	--	--	308
	2'	02/02/24	<0.000387	<0.000459	<0.000568	<0.00102	<0.00102	20.3 J B	21.6 J B	41.9 J B	<15.1	41.9 J	***2,240***
SB-15	1'	02/05/24	--	--	--	--	--	--	--	--	--	--	50.2
	2'	02/05/24	<0.000383	0.000565 J	<0.000562	<0.00100	0.00100 J	48.2 J B	35.4 J	83.6 J B	<15.1	83.6	120
SB-16	1'	02/05/24	--	--	--	--	--	--	--	--	--	--	73.2
	2'	02/05/24	<0.000381	<0.000451	<0.000559	<0.00100	<0.00100	47.2 J B	35.0 J	82.2 J B	<15.1	82.2	66.1
SB-17	1'	02/05/24	--	--	--	--	--	--	--	--	--	--	98.1
	2'	02/05/24	<0.000389	<0.000461	<0.000571	<0.00102	<0.00102	47.2 J B	32.9 J	80.1 J B	<15.0	80.1	64.7
SB-18	4-5'	04/03/24	--	--	--	--	--	--	--	--	--	--	**2,260**
	10-11'	04/03/24	--	--	--	--	--	--	--	--	--	--	**1,640**
	14-15'	04/03/24	--	--	--	--	--	--	--	--	--	--	**1,130**
SB-19	0-1'	04/03/24	--	--	--	--	--	--	--	--	--	--	4.76 J
	2-3'	04/03/24	<0.000383	<0.000454	<0.000563	<0.00101	<0.00101	41.4 J B	32.7 J	74.1 J B	<14.9	74.1	6.65
SB-20	0-1'	04/03/24	--	--	--	--	--	--	--	--	--	--	3.84 J
	2-3'	04/03/24	<0.000387	<0.000459	<0.000568	<0.00102	<0.00102	48.0 J B	32.7 J	80.7 J B	<15.0	80.7	414
SB-21	0-1'	04/03/24	--	--	--	--	--	--	--	--	--	--	4.05 J
	2-3'	04/03/24	<0.000388	<0.000460	<0.000570	<0.00102	<0.00102	40.2 J B	36.3 J	76.5 J B	<15.0	76.5	321

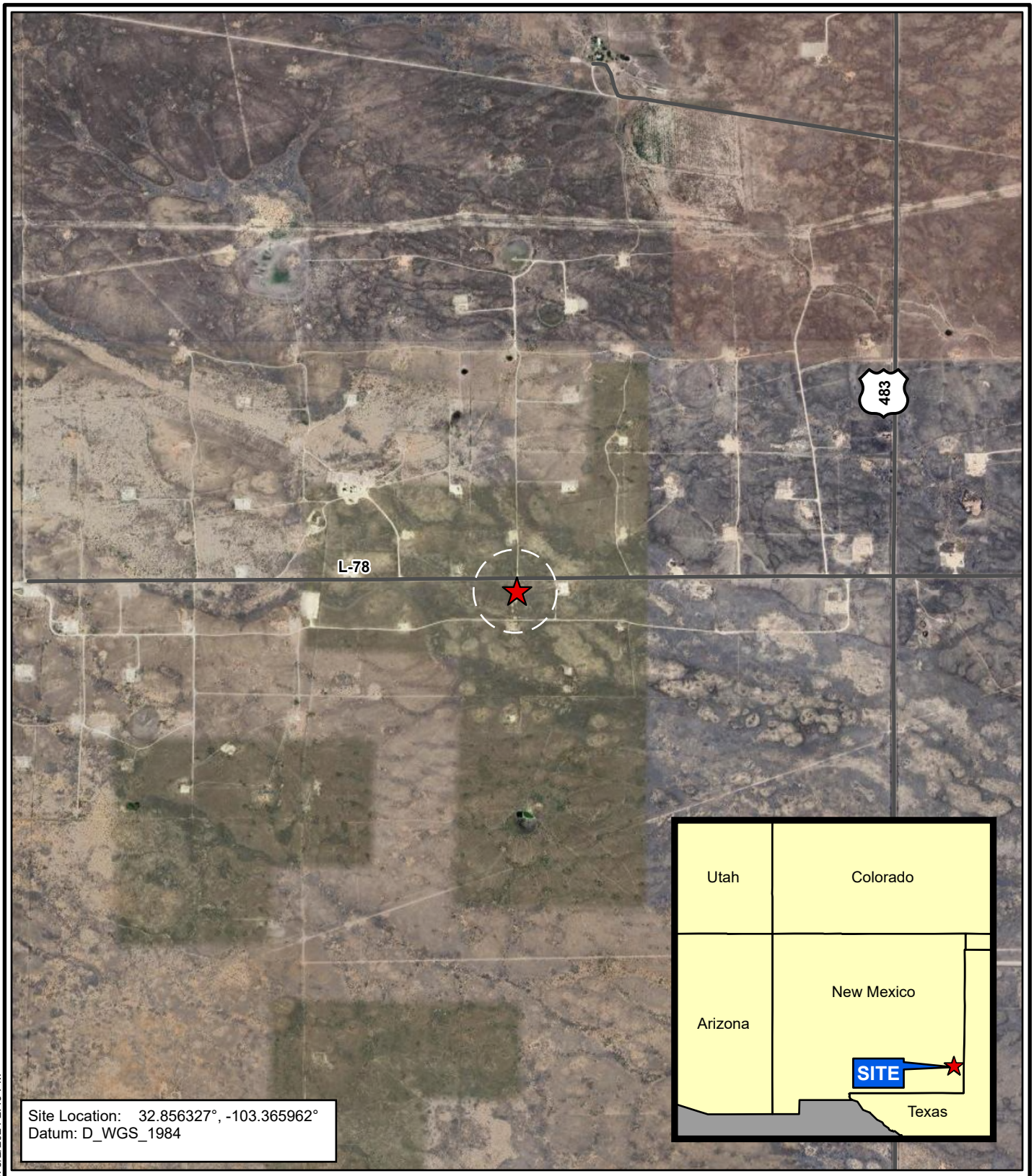
Table 1
Soil Analytical Results
Chevron Environmental Management Company
WLU 47

ARCADIS

Sample I.D.	Sample Depth (feet bgs)	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	TPH-GRO	TPH-DRO	TPH GRO + DRO	TPH MRO	Total TPH	Chloride
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NMAC Standards			10	--	--	--	50	--	--	--	--	100	600
Restoration Requirements			10	--	--	--	50	--	--	--	--	100	600
SB-22	2-3'	04/04/24	0.0107 J	<0.00453	<0.00562	<0.0100	<0.0100	46.5 J	<15.0	46.5 J	<15.0	46.5 J	***637***
	8-9'	04/04/24	<0.000381	<0.000382	<0.000383	<0.000384	<0.000385	<0.000386	<0.000387	<0.000388	<0.000389	<0.000390	**1,380**
	12-13'	04/04/24	--	--	--	--	--	--	--	--	--	--	**1,090**
SB-23	4-5'	04/04/24	--	--	--	--	--	--	--	--	--	--	178
	8-9'	04/04/24	--	--	--	--	--	--	--	--	--	--	292
	10-11'	04/04/24	--	--	--	--	--	--	--	--	--	--	66.8
SB-24	0-1'	04/04/24	--	--	--	--	--	--	--	--	--	--	10.1
	2-3'	04/04/24	--	--	--	--	--	--	--	--	--	--	5.53

Legend:
BOLD = Analytes exceeding Restoration Requirement
J: Result is less than the Reporting Limit but greater than or equal to the MDL and the concentration is an approximate value
B: Compound was found in the blank and sample.
*+: Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) is outside acceptace limits, high biased.
F1: Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) recovery exceeds control limits.
'<' indicates the analyte was not detected at or above the Method Detection Limit (MDL)
mg/kg: Milligram per Kilogram
BTEX : Benzene, Toluene, Ethylbenzene, and Total Xylenes
NMAC : New Mexico Administration Code. Criteria based off of depth to groundwater of 51-100 feet.
TPH GRO: Total Petroleum Hydrocarbons Gasoline Range Organics
TPH MRO: Total Petroluem Hydrocarbons Motor Oil Range Organics
TPH DRO: Total Petroleum Hydrocarbon Diesel Range Organics
Total TPH: GRO + DRO + MRO
*Revised screening limit and restoration criteria within the first 4 feet below ground surface per Rule 19.15.29 effective August 14, 2018
Notes:
1. Chloride analyzed by United States Environmental Protection Agency Method 300
2. TPH analyzed by TPH by SW8015 Mod DRO/ORO Method
3. BTEX analyzed by USEPA Method 8021B
4. Closure Criteria New Mexico Administrative Code 19.15.29.12.E(2)

Figures



Legend

Site Location

Credits: ESRI Online, Google Earth

0 2,000 4,000 Feet

GRAPHIC SCALE

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
WEST LOVINGTON UNIT #047
LEA COUNTY, NEW MEXICO

SITE LOCATION MAP

ARCADIS

FIGURE 1

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: avi00976 ; Client (Project #)
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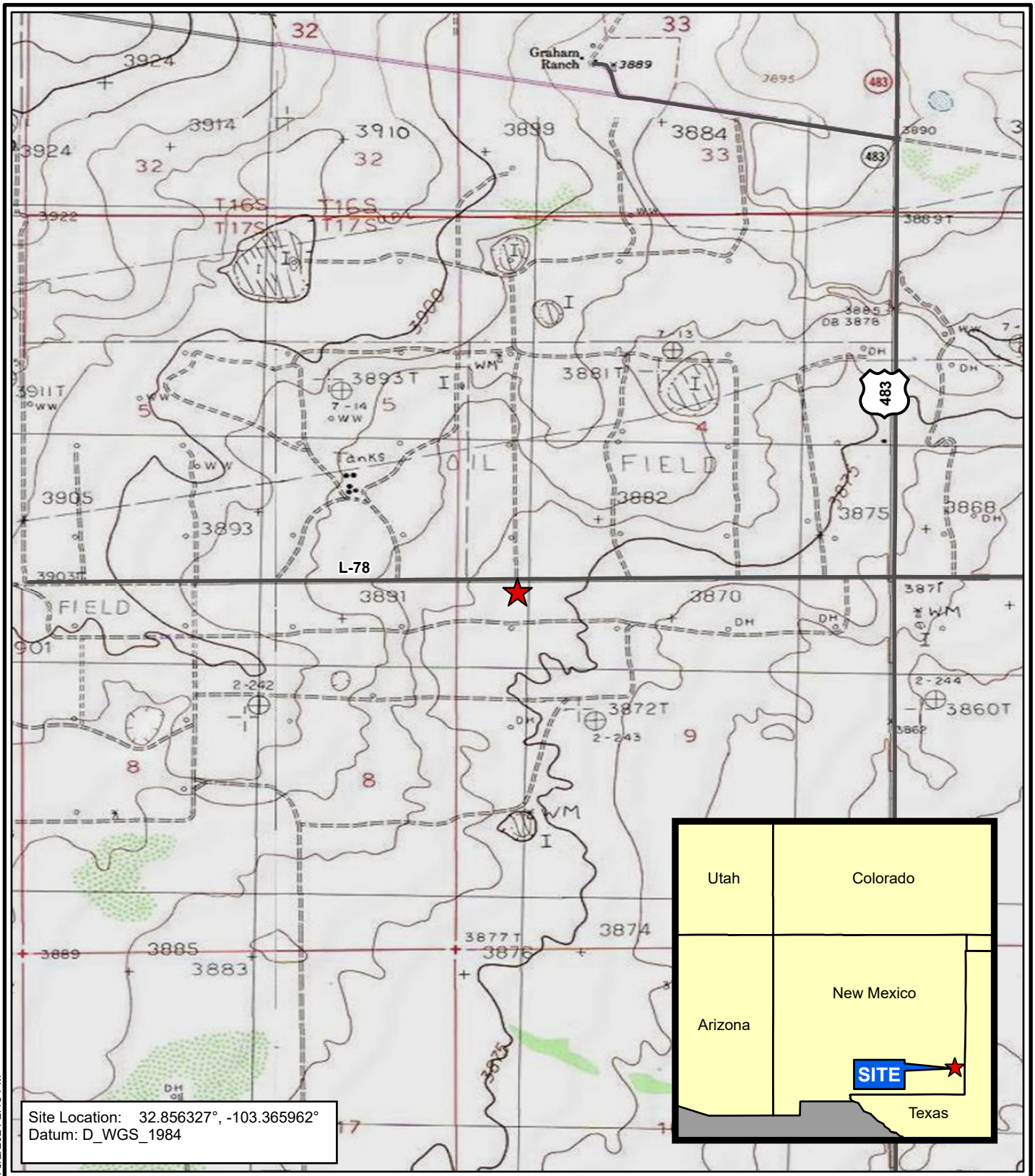

Legend

Site Location

Credits: ESRI Online, USGS 24,000 K Topo (Map Service)
Red Lake, New Mexico Quadrangle

0 2,000 4,000 Feet

GRAPHIC SCALE

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
WEST LOVINGTON UNIT #047
LEA COUNTY, NEW MEXICO

TOPOGRAPHIC MAP

ARCADIS

FIGURE 2

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: avi00976 ; Client (Project #)
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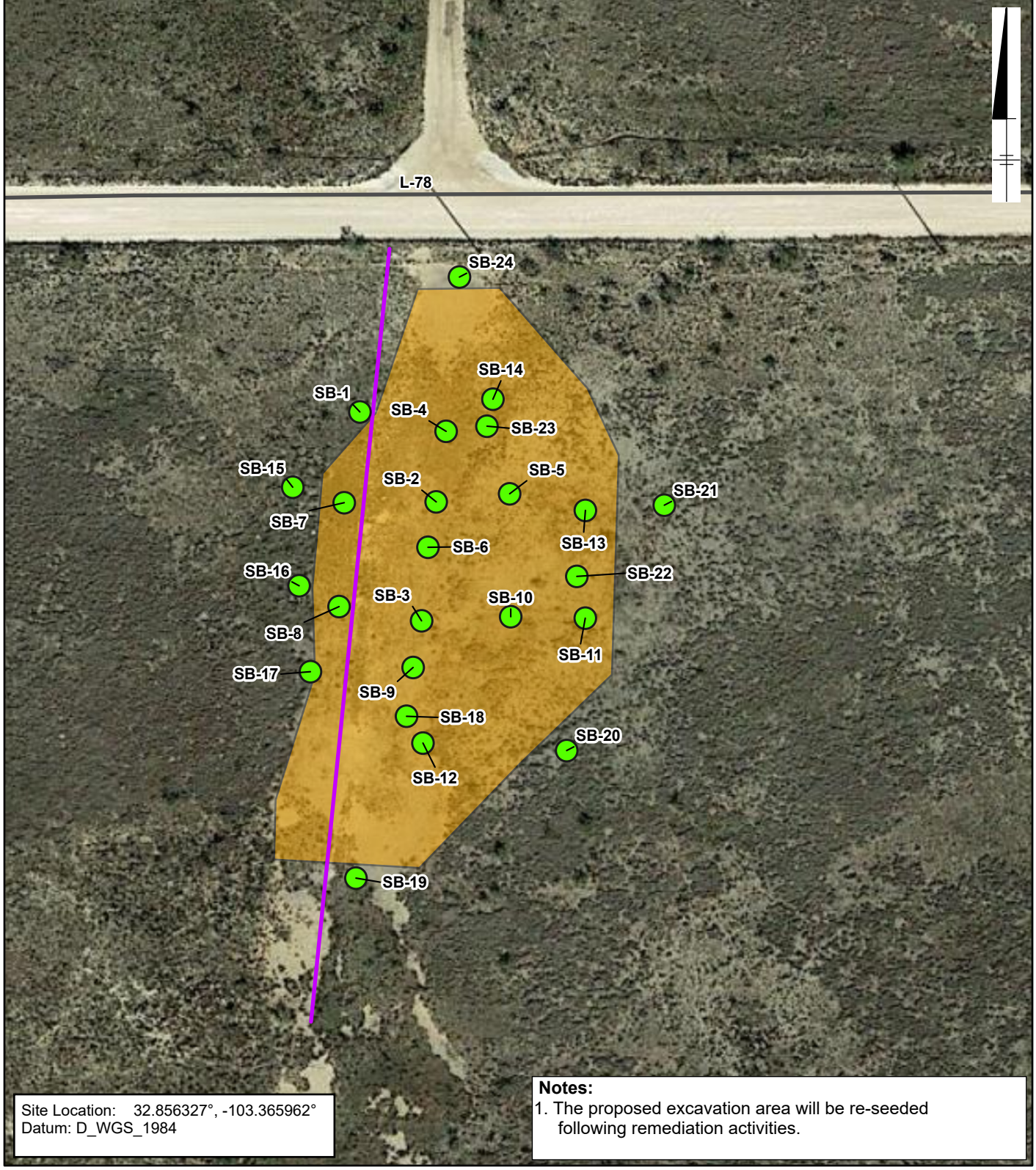

Site Location: 32.856327°, -103.365962°
Datum: D_WGS_1984

Notes:
1. The proposed excavation area will be re-seeded following remediation activities.

Legend

- Previous Assessment Sample Location
- Pipeline
- Proposed Excavation area

0 75 150 Feet
GRAPHIC SCALE

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
WEST LOVINGTON UNIT #047
LEA COUNTY, NEW MEXICO

PROPOSED EXCAVATION AND SAMPLE LOCATION MAP

ARCADIS

FIGURE
3

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: avi00976 ; Client (Project #)
T:_ENV\Upstream\WLU_47_Pro\WLU_47.aprx 5/24/2024 8:16 AM

Appendix A

Initial C-141 Form Incident # nPAC0708526071

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Chevron Midcontinent LP	Contact Larry Ridenour
Address HCR 60 Box 423 Lovington, NM 88260	Telephone No. 505-396-4414 x102
Facility Name West Lovington Unit #47	Facility Type injection line

Surface Owner Darr Angell	Mineral Owner State	Lease No. B-7016

LOCATION OF RELEASE API#3002503920000

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	9	17S	36E	660	N	660	West	Lea

Latitude 32 deg 51 min 24.2 sec **Longitude** 103 deg 21 min 58 sec

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 5 bbls	Volume Recovered 0
Source of Release injection line	Date and Hour of Occurrence 1/14/07 8:00 AM	Date and Hour of Discovery 1/14/07 8:45 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Pat Caperton	
By Whom? Larry Ridenour	Date and Hour 1/15/07 7:45AM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Buried high pressure injection line. Line and affected wells were shut in. At this time it has not been excavated. Probable cause is hole in line caused by corrosion. One call will be done, line excavated and contaminated soil removed.

Describe Area Affected and Cleanup Action Taken.*
Leak was approximately 600 ft north of WLU #47. Affected area approximately 20 ft x 30 ft.

Received Hobbs OCD

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

Signature: Larry D Ridenour

Printed Name: Larry D. Ridenour

Title: Operations Representative

E-mail Address: LRidenour@Chevron.com

Date: Phone: 505-396-4414 x102

OIL CONSERVATION DIVISION

Approved by District Supervisor: Environmental Engineer

Approval Date: 2-9-07 Expiration Date: 3-9-07

Conditions of Approval: (1) Attached ☐

* Attach Additional Sheets If Necessary

Incident nPAC0712954774
application - pPAC0712954911

RP# 1314

Appendix B

Laboratory Analytical Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Douglas Jordan
ARCADIS U.S. Inc
10205 Westheimer Rd
Suite 800
Houston, Texas 77042

Generated 4/11/2023 2:58:02 PM

JOB DESCRIPTION

WLU 47

JOB NUMBER

880-26343-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

my EOL

Eurofins Midland

Job Notes

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

Authorization

Generated
4/11/2023 2:58:02 PM

Authorized for release by
John Builes, Project Manager
John.Builes@et.eurofinsus.com
(561)558-4549

Client: ARCADIS U.S. Inc
Project/Site: WLU 47

Laboratory Job ID: 880-26343-1

Table of Contents

Definitions/Glossary

Client: ARCADIS U.S. Inc Job ID: 880-26343-1
Project/Site: WLU 47

Qualifiers

GC VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
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: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

Job ID: 880-26343-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-26343-1

Receipt
The samples were received on 3/24/2023 3:09 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.0°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: SB-3-S-0-.5'-20230324 (880-26343-1), SB-3-S-2'-20230324 (880-26343-2), SB-2-S-0-.5'-20230324 (880-26343-3), SB-2-S-2'-20230324 (880-26343-4), SB-1-S-0-.5'-20230324 (880-26343-5) and SB-1-S-2'-20230324 (880-26343-6).

GC VOA
Method 8021B: Reanalysis of the following sample(s) was performed outside of the analytical holding time due to failure of quality control parameters in the initial analysis. SB-3-S-0-.5'-20230324 (880-26343-1)

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

GC Semi VOA
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-49995/5), (LCS 880-49932/2-A) and (LCSD 880-49932/3-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SB-3-S-2'-20230324 (880-26343-2) and SB-2-S-2'-20230324 (880-26343-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The method blank for preparation batch 880-49932 and analytical batch 880-49995 contained Diesel Range Organics (Over C10-C28) above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8015MOD_NM: The laboratory control sample (LCS) associated with preparation batch 880-49932 and analytical batch 880-49995 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.

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-50169 and analytical batch 880-50389 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.SB-3-S-2'-20230324 (880-26343-2), SB-2-S-0-.5'-20230324 (880-26343-3), SB-2-S-2'-20230324 (880-26343-4), SB-1-S-0-.5'-20230324 (880-26343-5), SB-1-S-2'-20230324 (880-26343-6), (880-26343-A-2-C MS) and (880-26343-A-2-D MSD)

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-50170 and analytical batch 880-50390 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

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

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

Client Sample ID: SB-3-S-0-.5'-20230324

Lab Sample ID: 880-26343-1

Date Collected: 03/24/23 09:30
Matrix: Solid
Date Received: 03/24/23 15:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000387	U H	0.00201	0.000387	mg/Kg		04/10/23 16:18	04/11/23 14:55	1
Toluene	<0.000458	U H	0.00201	0.000458	mg/Kg		04/10/23 16:18	04/11/23 14:55	1
Ethylbenzene	<0.000567	U H	0.00201	0.000567	mg/Kg		04/10/23 16:18	04/11/23 14:55	1
m-Xylene & p-Xylene	<0.00101	U H	0.00402	0.00101	mg/Kg		04/10/23 16:18	04/11/23 14:55	1
o-Xylene	<0.000345	U H	0.00201	0.000345	mg/Kg		04/10/23 16:18	04/11/23 14:55	1
Xylenes, Total	<0.00101	U H	0.00402	0.00101	mg/Kg		04/10/23 16:18	04/11/23 14:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*04/10/23 16:18*	*04/11/23 14:55*	*1*
1,4-Difluorobenzene (Surr)	*117*		*70 - 130*	*04/10/23 16:18*	*04/11/23 14:55*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**32.6**	**J**	49.9	15.0	mg/Kg			04/03/23 14:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**32.6**	**J *+**	49.9	15.0	mg/Kg		03/30/23 12:21	03/31/23 16:01	1
Diesel Range Organics (Over C10-C28)	<15.0	U *+	49.9	15.0	mg/Kg		03/30/23 12:21	03/31/23 16:01	1
OII Range Organics (Over C28-C36)	<15.0	U	49.9	15.0	mg/Kg		03/30/23 12:21	03/31/23 16:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*102*		*70 - 130*	*03/30/23 12:21*	*03/31/23 16:01*	*1*
o-Terphenyl	*125*		*70 - 130*	*03/30/23 12:21*	*03/31/23 16:01*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7420**		24.9	1.97	mg/Kg			04/04/23 23:50	5

Client Sample ID: SB-3-S-2'-20230324

Lab Sample ID: 880-26343-2

Date Collected: 03/24/23 09:35
Matrix: Solid
Date Received: 03/24/23 15:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000386	U	0.00200	0.000386	mg/Kg		04/05/23 13:17	04/06/23 01:37	1
Toluene	<0.000457	U	0.00200	0.000457	mg/Kg		04/05/23 13:17	04/06/23 01:37	1
Ethylbenzene	<0.000566	U	0.00200	0.000566	mg/Kg		04/05/23 13:17	04/06/23 01:37	1
m-Xylene & p-Xylene	<0.00101	U	0.00401	0.00101	mg/Kg		04/05/23 13:17	04/06/23 01:37	1
o-Xylene	<0.000345	U	0.00200	0.000345	mg/Kg		04/05/23 13:17	04/06/23 01:37	1
Xylenes, Total	<0.00101	U	0.00401	0.00101	mg/Kg		04/05/23 13:17	04/06/23 01:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*	*04/05/23 13:17*	*04/06/23 01:37*	*1*
1,4-Difluorobenzene (Surr)	*75*		*70 - 130*	*04/05/23 13:17*	*04/06/23 01:37*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**60.6**		49.9	15.0	mg/Kg			04/03/23 14:09	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

Client Sample ID: SB-3-S-2'-20230324

Lab Sample ID: 880-26343-2
Matrix: Solid
Date Collected: 03/24/23 09:35
Date Received: 03/24/23 15:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	40.6	J *+	49.9	15.0	mg/Kg		03/30/23 12:21	03/31/23 16:59	1
Diesel Range Organics (Over C10-C28)	20.0	J B *+	49.9	15.0	mg/Kg		03/30/23 12:21	03/31/23 16:59	1
OII Range Organics (Over C28-C36)	<15.0	U	49.9	15.0	mg/Kg		03/30/23 12:21	03/31/23 16:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*113*		*70 - 130*	*03/30/23 12:21*	*03/31/23 16:59*	*1*
o-Terphenyl	*135*	*S1+*	*70 - 130*	*03/30/23 12:21*	*03/31/23 16:59*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2120	F1	25.1	1.98	mg/Kg			04/04/23 19:06	5

Client Sample ID: SB-2-S-0-.5'-20230324

Lab Sample ID: 880-26343-3
Matrix: Solid
Date Collected: 03/24/23 09:40
Date Received: 03/24/23 15:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000383	U	0.00199	0.000383	mg/Kg		04/05/23 13:17	04/06/23 01:58	1
Toluene	<0.000454	U	0.00199	0.000454	mg/Kg		04/05/23 13:17	04/06/23 01:58	1
Ethylbenzene	<0.000563	U	0.00199	0.000563	mg/Kg		04/05/23 13:17	04/06/23 01:58	1
m-Xylene & p-Xylene	<0.00101	U	0.00398	0.00101	mg/Kg		04/05/23 13:17	04/06/23 01:58	1
o-Xylene	<0.000343	U	0.00199	0.000343	mg/Kg		04/05/23 13:17	04/06/23 01:58	1
Xylenes, Total	<0.00101	U	0.00398	0.00101	mg/Kg		04/05/23 13:17	04/06/23 01:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*	*04/05/23 13:17*	*04/06/23 01:58*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*04/05/23 13:17*	*04/06/23 01:58*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	20.9	J	50.0	15.0	mg/Kg			04/03/23 14:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	20.9	J *+	50.0	15.0	mg/Kg		03/30/23 12:21	03/31/23 17:20	1
Diesel Range Organics (Over C10-C28)	<15.0	U *+	50.0	15.0	mg/Kg		03/30/23 12:21	03/31/23 17:20	1
OII Range Organics (Over C28-C36)	<15.0	U	50.0	15.0	mg/Kg		03/30/23 12:21	03/31/23 17:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*104*		*70 - 130*	*03/30/23 12:21*	*03/31/23 17:20*	*1*
o-Terphenyl	*127*		*70 - 130*	*03/30/23 12:21*	*03/31/23 17:20*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3470		49.6	3.92	mg/Kg			04/04/23 19:20	10

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

Client Sample ID: SB-2-S-2'-20230324

Lab Sample ID: 880-26343-4

Date Collected: 03/24/23 09:45
Matrix: Solid
Date Received: 03/24/23 15:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000383	U	0.00199	0.000383	mg/Kg		04/05/23 13:17	04/06/23 02:18	1
Toluene	<0.000453	U	0.00199	0.000453	mg/Kg		04/05/23 13:17	04/06/23 02:18	1
Ethylbenzene	<0.000562	U	0.00199	0.000562	mg/Kg		04/05/23 13:17	04/06/23 02:18	1
m-Xylene & p-Xylene	<0.00100	U	0.00398	0.00100	mg/Kg		04/05/23 13:17	04/06/23 02:18	1
o-Xylene	<0.000342	U	0.00199	0.000342	mg/Kg		04/05/23 13:17	04/06/23 02:18	1
Xylenes, Total	<0.00100	U	0.00398	0.00100	mg/Kg		04/05/23 13:17	04/06/23 02:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*	*04/05/23 13:17*	*04/06/23 02:18*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*04/05/23 13:17*	*04/06/23 02:18*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**22.7**	**J**	50.0	15.0	mg/Kg			04/03/23 14:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**22.7**	**J *+**	50.0	15.0	mg/Kg		03/30/23 12:21	03/31/23 17:42	1
Diesel Range Organics (Over C10-C28)	<15.0	U *+	50.0	15.0	mg/Kg		03/30/23 12:21	03/31/23 17:42	1
OII Range Organics (Over C28-C36)	<15.0	U	50.0	15.0	mg/Kg		03/30/23 12:21	03/31/23 17:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*106*		*70 - 130*	*03/30/23 12:21*	*03/31/23 17:42*	*1*
o-Terphenyl	*131*	*S1+*	*70 - 130*	*03/30/23 12:21*	*03/31/23 17:42*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2040**		24.9	1.97	mg/Kg			04/04/23 19:25	5

Client Sample ID: SB-1-S-0-.5'-20230324

Lab Sample ID: 880-26343-5

Date Collected: 03/24/23 09:50
Matrix: Solid
Date Received: 03/24/23 15:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000384	U	0.00200	0.000384	mg/Kg		04/05/23 13:17	04/06/23 02:39	1
Toluene	<0.000455	U	0.00200	0.000455	mg/Kg		04/05/23 13:17	04/06/23 02:39	1
Ethylbenzene	<0.000564	U	0.00200	0.000564	mg/Kg		04/05/23 13:17	04/06/23 02:39	1
m-Xylene & p-Xylene	<0.00101	U	0.00399	0.00101	mg/Kg		04/05/23 13:17	04/06/23 02:39	1
o-Xylene	<0.000343	U	0.00200	0.000343	mg/Kg		04/05/23 13:17	04/06/23 02:39	1
Xylenes, Total	<0.00101	U	0.00399	0.00101	mg/Kg		04/05/23 13:17	04/06/23 02:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*	*04/05/23 13:17*	*04/06/23 02:39*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*04/05/23 13:17*	*04/06/23 02:39*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**20.6**	**J**	49.9	15.0	mg/Kg			04/03/23 14:09	1

Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

Client Sample ID: SB-1-S-0-.5'-20230324

Lab Sample ID: 880-26343-5

Date Collected: 03/24/23 09:50
Matrix: Solid
Date Received: 03/24/23 15:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	20.6	J *+	49.9	15.0	mg/Kg		03/30/23 12:21	03/31/23 18:04	1
Diesel Range Organics (Over C10-C28)	<15.0	U *+	49.9	15.0	mg/Kg		03/30/23 12:21	03/31/23 18:04	1
OII Range Organics (Over C28-C36)	<15.0	U	49.9	15.0	mg/Kg		03/30/23 12:21	03/31/23 18:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*102*		*70 - 130*	*03/30/23 12:21*	*03/31/23 18:04*	*1*
o-Terphenyl	*126*		*70 - 130*	*03/30/23 12:21*	*03/31/23 18:04*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	56.9		4.98	0.393	mg/Kg			04/04/23 19:29	1

Client Sample ID: SB-1-S-2'-20230324

Lab Sample ID: 880-26343-6

Date Collected: 03/24/23 09:55
Matrix: Solid
Date Received: 03/24/23 15:09

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000387	U	0.00201	0.000387	mg/Kg		04/05/23 13:17	04/06/23 02:59	1
Toluene	<0.000459	U	0.00201	0.000459	mg/Kg		04/05/23 13:17	04/06/23 02:59	1
Ethylbenzene	<0.000568	U	0.00201	0.000568	mg/Kg		04/05/23 13:17	04/06/23 02:59	1
m-Xylene & p-Xylene	<0.00102	U	0.00402	0.00102	mg/Kg		04/05/23 13:17	04/06/23 02:59	1
o-Xylene	<0.000346	U	0.00201	0.000346	mg/Kg		04/05/23 13:17	04/06/23 02:59	1
Xylenes, Total	<0.00102	U	0.00402	0.00102	mg/Kg		04/05/23 13:17	04/06/23 02:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*	*04/05/23 13:17*	*04/06/23 02:59*	*1*
1,4-Difluorobenzene (Surr)	*74*		*70 - 130*	*04/05/23 13:17*	*04/06/23 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	25.9	J	49.9	15.0	mg/Kg			04/03/23 14:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	25.9	J *+	49.9	15.0	mg/Kg		03/30/23 12:21	03/31/23 18:25	1
Diesel Range Organics (Over C10-C28)	<15.0	U *+	49.9	15.0	mg/Kg		03/30/23 12:21	03/31/23 18:25	1
OII Range Organics (Over C28-C36)	<15.0	U	49.9	15.0	mg/Kg		03/30/23 12:21	03/31/23 18:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*92*		*70 - 130*	*03/30/23 12:21*	*03/31/23 18:25*	*1*
o-Terphenyl	*114*		*70 - 130*	*03/30/23 12:21*	*03/31/23 18:25*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	214		5.00	0.395	mg/Kg			04/04/23 19:34	1

Surrogate Summary

Client: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

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)										
880-26343-1	SB-3-S-0-.5'-20230324	109	117										
880-26343-2	SB-3-S-2'-20230324	107	75										
880-26343-3	SB-2-S-0-.5'-20230324	92	90										
880-26343-4	SB-2-S-2'-20230324	87	94										
880-26343-5	SB-1-S-0-.5'-20230324	92	89										
880-26343-6	SB-1-S-2'-20230324	84	74										
LCS 880-50409/1-A	Lab Control Sample	91	116										
LCS 880-50846/1-A	Lab Control Sample	102	100										
LCSD 880-50409/2-A	Lab Control Sample Dup	115	111										
LCSD 880-50846/2-A	Lab Control Sample Dup	93	99										
MB 880-50409/5-A	Method Blank	77	71										
MB 880-50846/5-A	Method Blank	97	90										

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)										
880-26343-1	SB-3-S-0-.5'-20230324	102	125										
880-26343-2	SB-3-S-2'-20230324	113	135 S1+										
880-26343-3	SB-2-S-0-.5'-20230324	104	127										
880-26343-4	SB-2-S-2'-20230324	106	131 S1+										
880-26343-5	SB-1-S-0-.5'-20230324	102	126										
880-26343-6	SB-1-S-2'-20230324	92	114										
LCS 880-49932/2-A	Lab Control Sample	139 S1+	159 S1+										
LCSD 880-49932/3-A	Lab Control Sample Dup	167 S1+	187 S1+										
MB 880-49932/1-A	Method Blank	104	130										

Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-50409/5-A
Matrix: Solid
Analysis Batch: 50422

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 50409

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		04/05/23 13:17	04/05/23 19:28	1
Toluene	<0.000456	U	0.00200	0.000456	mg/Kg		04/05/23 13:17	04/05/23 19:28	1
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		04/05/23 13:17	04/05/23 19:28	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		04/05/23 13:17	04/05/23 19:28	1
o-Xylene	<0.000344	U	0.00200	0.000344	mg/Kg		04/05/23 13:17	04/05/23 19:28	1
Xylenes, Total	<0.00101	U	0.00400	0.00101	mg/Kg		04/05/23 13:17	04/05/23 19:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*77*		*70 - 130*	*04/05/23 13:17*	*04/05/23 19:28*	*1*
1,4-Difluorobenzene (Surr)	*71*		*70 - 130*	*04/05/23 13:17*	*04/05/23 19:28*	*1*

Lab Sample ID: LCS 880-50409/1-A
Matrix: Solid
Analysis Batch: 50422

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50409

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1189		mg/Kg		119	70 - 130
Toluene	0.100	0.09996		mg/Kg		100	70 - 130
Ethylbenzene	0.100	0.09542		mg/Kg		95	70 - 130
m-Xylene & p-Xylene	0.200	0.1888		mg/Kg		94	70 - 130
o-Xylene	0.100	0.09519		mg/Kg		95	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*
1,4-Difluorobenzene (Surr)	*116*		*70 - 130*

Lab Sample ID: LCSD 880-50409/2-A
Matrix: Solid
Analysis Batch: 50422

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 50409

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1024		mg/Kg		102	70 - 130	15	35
Toluene	0.100	0.09449		mg/Kg		94	70 - 130	6	35
Ethylbenzene	0.100	0.09981		mg/Kg		100	70 - 130	5	35
m-Xylene & p-Xylene	0.200	0.2109		mg/Kg		105	70 - 130	11	35
o-Xylene	0.100	0.1075		mg/Kg		107	70 - 130	12	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*

Lab Sample ID: MB 880-50846/5-A
Matrix: Solid
Analysis Batch: 50870

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 50846

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		04/10/23 16:18	04/11/23 11:26	1
Toluene	<0.000456	U	0.00200	0.000456	mg/Kg		04/10/23 16:18	04/11/23 11:26	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

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

Lab Sample ID: MB 880-50846/5-A
Matrix: Solid
Analysis Batch: 50870

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 50846

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		04/10/23 16:18	04/11/23 11:26	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		04/10/23 16:18	04/11/23 11:26	1
o-Xylene	<0.000344	U	0.00200	0.000344	mg/Kg		04/10/23 16:18	04/11/23 11:26	1
Xylenes, Total	<0.00101	U	0.00400	0.00101	mg/Kg		04/10/23 16:18	04/11/23 11:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*04/10/23 16:18*	*04/11/23 11:26*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*04/10/23 16:18*	*04/11/23 11:26*	*1*

Lab Sample ID: LCS 880-50846/1-A
Matrix: Solid
Analysis Batch: 50870

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 50846

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1109		mg/Kg		111	70 - 130
Toluene	0.100	0.1119		mg/Kg		112	70 - 130
Ethylbenzene	0.100	0.1151		mg/Kg		115	70 - 130
m-Xylene & p-Xylene	0.200	0.2327		mg/Kg		116	70 - 130
o-Xylene	0.100	0.1020		mg/Kg		102	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 880-50846/2-A
Matrix: Solid
Analysis Batch: 50870

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 50846

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1092		mg/Kg		109	70 - 130	2	35
Toluene	0.100	0.1073		mg/Kg		107	70 - 130	4	35
Ethylbenzene	0.100	0.1060		mg/Kg		106	70 - 130	8	35
m-Xylene & p-Xylene	0.200	0.2107		mg/Kg		105	70 - 130	10	35
o-Xylene	0.100	0.09201		mg/Kg		92	70 - 130	10	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

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

Lab Sample ID: MB 880-49932/1-A
Matrix: Solid
Analysis Batch: 49995

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49932

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<15.0	U	50.0	15.0	mg/Kg		03/30/23 12:21	03/31/23 09:25	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

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

Lab Sample ID: MB 880-49932/1-A
Matrix: Solid
Analysis Batch: 49995

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 49932

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	19.53	J	50.0	15.0	mg/Kg		03/30/23 12:21	03/31/23 09:25	1
OII Range Organics (Over C28-C36)	<15.0	U	50.0	15.0	mg/Kg		03/30/23 12:21	03/31/23 09:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*104*		*70 - 130*	*03/30/23 12:21*	*03/31/23 09:25*	*1*
o-Terphenyl	*130*		*70 - 130*	*03/30/23 12:21*	*03/31/23 09:25*	*1*

Lab Sample ID: LCS 880-49932/2-A
Matrix: Solid
Analysis Batch: 49995

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 49932

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1204		mg/Kg		120	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1703	*+	mg/Kg		170	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*139*	*S1+*	*70 - 130*
o-Terphenyl	*159*	*S1+*	*70 - 130*

Lab Sample ID: LCSD 880-49932/3-A
Matrix: Solid
Analysis Batch: 49995

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 49932

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1476	*+	mg/Kg		148	70 - 130	20	20
Diesel Range Organics (Over C10-C28)			1000	2050	*+	mg/Kg		205	70 - 130	18	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*167*	*S1+*	*70 - 130*
o-Terphenyl	*187*	*S1+*	*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-50169/1-A
Matrix: Solid
Analysis Batch: 50389

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.395	U	5.00	0.395	mg/Kg			04/04/23 18:53	1

QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-50169/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 50389

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	252.0		mg/Kg		101	90 - 110		

Lab Sample ID: LCSD 880-50169/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 50389

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	246.6		mg/Kg		99	90 - 110	2	20

Lab Sample ID: 880-26343-2 MS — **Client Sample ID: SB-3-S-2'-20230324**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 50389

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	2120	F1	1260	3038	F1	mg/Kg		73	90 - 110		

Lab Sample ID: 880-26343-2 MSD — **Client Sample ID: SB-3-S-2'-20230324**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 50389

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	2120	F1	1260	2831	F1	mg/Kg		56	90 - 110	7	20

Lab Sample ID: MB 880-50170/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 50390

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.395	U	5.00	0.395	mg/Kg			04/04/23 21:32	1

Lab Sample ID: LCS 880-50170/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 50390

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	248.0		mg/Kg		99	90 - 110		

Lab Sample ID: LCSD 880-50170/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 50390

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			250	246.1		mg/Kg		98	90 - 110	1	20

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

GC VOA

Prep Batch: 50409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-26343-2	SB-3-S-2'-20230324	Total/NA	Solid	5030B	
880-26343-3	SB-2-S-0-.5'-20230324	Total/NA	Solid	5030B	
880-26343-4	SB-2-S-2'-20230324	Total/NA	Solid	5030B	
880-26343-5	SB-1-S-0-.5'-20230324	Total/NA	Solid	5030B	
880-26343-6	SB-1-S-2'-20230324	Total/NA	Solid	5030B	
MB 880-50409/5-A	Method Blank	Total/NA	Solid	5030B	
LCS 880-50409/1-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 880-50409/2-A	Lab Control Sample Dup	Total/NA	Solid	5030B	

Analysis Batch: 50422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-26343-2	SB-3-S-2'-20230324	Total/NA	Solid	8021B	50409
880-26343-3	SB-2-S-0-.5'-20230324	Total/NA	Solid	8021B	50409
880-26343-4	SB-2-S-2'-20230324	Total/NA	Solid	8021B	50409
880-26343-5	SB-1-S-0-.5'-20230324	Total/NA	Solid	8021B	50409
880-26343-6	SB-1-S-2'-20230324	Total/NA	Solid	8021B	50409
MB 880-50409/5-A	Method Blank	Total/NA	Solid	8021B	50409
LCS 880-50409/1-A	Lab Control Sample	Total/NA	Solid	8021B	50409
LCSD 880-50409/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	50409

Prep Batch: 50846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-26343-1	SB-3-S-0-.5'-20230324	Total/NA	Solid	5030B	
MB 880-50846/5-A	Method Blank	Total/NA	Solid	5030B	
LCS 880-50846/1-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 880-50846/2-A	Lab Control Sample Dup	Total/NA	Solid	5030B	

Analysis Batch: 50870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-26343-1	SB-3-S-0-.5'-20230324	Total/NA	Solid	8021B	50846
MB 880-50846/5-A	Method Blank	Total/NA	Solid	8021B	50846
LCS 880-50846/1-A	Lab Control Sample	Total/NA	Solid	8021B	50846
LCSD 880-50846/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	50846

GC Semi VOA

Prep Batch: 49932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-26343-1	SB-3-S-0-.5'-20230324	Total/NA	Solid	8015NM Prep	
880-26343-2	SB-3-S-2'-20230324	Total/NA	Solid	8015NM Prep	
880-26343-3	SB-2-S-0-.5'-20230324	Total/NA	Solid	8015NM Prep	
880-26343-4	SB-2-S-2'-20230324	Total/NA	Solid	8015NM Prep	
880-26343-5	SB-1-S-0-.5'-20230324	Total/NA	Solid	8015NM Prep	
880-26343-6	SB-1-S-2'-20230324	Total/NA	Solid	8015NM Prep	
MB 880-49932/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-49932/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-49932/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 49995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-26343-1	SB-3-S-0-.5'-20230324	Total/NA	Solid	8015B NM	49932

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

GC Semi VOA (Continued)

Analysis Batch: 49995 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-26343-2	SB-3-S-2'-20230324	Total/NA	Solid	8015B NM	49932
880-26343-3	SB-2-S-0-.5'-20230324	Total/NA	Solid	8015B NM	49932
880-26343-4	SB-2-S-2'-20230324	Total/NA	Solid	8015B NM	49932
880-26343-5	SB-1-S-0-.5'-20230324	Total/NA	Solid	8015B NM	49932
880-26343-6	SB-1-S-2'-20230324	Total/NA	Solid	8015B NM	49932
MB 880-49932/1-A	Method Blank	Total/NA	Solid	8015B NM	49932
LCS 880-49932/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	49932
LCSD 880-49932/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	49932

Analysis Batch: 50203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-26343-1	SB-3-S-0-.5'-20230324	Total/NA	Solid	8015 NM	
880-26343-2	SB-3-S-2'-20230324	Total/NA	Solid	8015 NM	
880-26343-3	SB-2-S-0-.5'-20230324	Total/NA	Solid	8015 NM	
880-26343-4	SB-2-S-2'-20230324	Total/NA	Solid	8015 NM	
880-26343-5	SB-1-S-0-.5'-20230324	Total/NA	Solid	8015 NM	
880-26343-6	SB-1-S-2'-20230324	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 50169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-26343-2	SB-3-S-2'-20230324	Soluble	Solid	DI Leach	
880-26343-3	SB-2-S-0-.5'-20230324	Soluble	Solid	DI Leach	
880-26343-4	SB-2-S-2'-20230324	Soluble	Solid	DI Leach	
880-26343-5	SB-1-S-0-.5'-20230324	Soluble	Solid	DI Leach	
880-26343-6	SB-1-S-2'-20230324	Soluble	Solid	DI Leach	
MB 880-50169/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-50169/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-50169/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-26343-2 MS	SB-3-S-2'-20230324	Soluble	Solid	DI Leach	
880-26343-2 MSD	SB-3-S-2'-20230324	Soluble	Solid	DI Leach	

Leach Batch: 50170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-26343-1	SB-3-S-0-.5'-20230324	Soluble	Solid	DI Leach	
MB 880-50170/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-50170/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-50170/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 50389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-26343-2	SB-3-S-2'-20230324	Soluble	Solid	300.0	50169
880-26343-3	SB-2-S-0-.5'-20230324	Soluble	Solid	300.0	50169
880-26343-4	SB-2-S-2'-20230324	Soluble	Solid	300.0	50169
880-26343-5	SB-1-S-0-.5'-20230324	Soluble	Solid	300.0	50169
880-26343-6	SB-1-S-2'-20230324	Soluble	Solid	300.0	50169
MB 880-50169/1-A	Method Blank	Soluble	Solid	300.0	50169
LCS 880-50169/2-A	Lab Control Sample	Soluble	Solid	300.0	50169
LCSD 880-50169/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	50169
880-26343-2 MS	SB-3-S-2'-20230324	Soluble	Solid	300.0	50169

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

HPLC/IC (Continued)

Analysis Batch: 50389 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-26343-2 MSD	SB-3-S-2'-20230324	Soluble	Solid	300.0	50169

Analysis Batch: 50390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-26343-1	SB-3-S-0-.5'-20230324	Soluble	Solid	300.0	50170
MB 880-50170/1-A	Method Blank	Soluble	Solid	300.0	50170
LCS 880-50170/2-A	Lab Control Sample	Soluble	Solid	300.0	50170
LCSD 880-50170/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	50170

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

Client Sample ID: SB-3-S-0-.5'-20230324

Lab Sample ID: 880-26343-1

Date Collected: 03/24/23 09:30
Matrix: Solid
Date Received: 03/24/23 15:09

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.98 g	5 mL	50846	04/10/23 16:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	50870	04/11/23 14:55	MNR	EET MID
Total/NA	Analysis	8015 NM		1			50203	04/03/23 14:09	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	49932	03/30/23 12:21	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	49995	03/31/23 16:01	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	50170	04/03/23 11:16	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	50390	04/04/23 23:50	SMC	EET MID

Client Sample ID: SB-3-S-2'-20230324

Lab Sample ID: 880-26343-2

Date Collected: 03/24/23 09:35
Matrix: Solid
Date Received: 03/24/23 15:09

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.99 g	5 mL	50409	04/05/23 13:17	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	50422	04/06/23 01:37	MNR	EET MID
Total/NA	Analysis	8015 NM		1			50203	04/03/23 14:09	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	49932	03/30/23 12:21	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	49995	03/31/23 16:59	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	50169	04/03/23 11:15	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	50389	04/04/23 19:06	SMC	EET MID

Client Sample ID: SB-2-S-0-.5'-20230324

Lab Sample ID: 880-26343-3

Date Collected: 03/24/23 09:40
Matrix: Solid
Date Received: 03/24/23 15:09

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.02 g	5 mL	50409	04/05/23 13:17	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	50422	04/06/23 01:58	MNR	EET MID
Total/NA	Analysis	8015 NM		1			50203	04/03/23 14:09	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	49932	03/30/23 12:21	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	49995	03/31/23 17:20	SM	EET MID
Soluble	Leach	DI Leach			5.04 g	50 mL	50169	04/03/23 11:15	KS	EET MID
Soluble	Analysis	300.0		10	50 mL	50 mL	50389	04/04/23 19:20	SMC	EET MID

Client Sample ID: SB-2-S-2'-20230324

Lab Sample ID: 880-26343-4

Date Collected: 03/24/23 09:45
Matrix: Solid
Date Received: 03/24/23 15:09

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.03 g	5 mL	50409	04/05/23 13:17	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	50422	04/06/23 02:18	MNR	EET MID
Total/NA	Analysis	8015 NM		1			50203	04/03/23 14:09	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	49932	03/30/23 12:21	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	49995	03/31/23 17:42	SM	EET MID

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

Client Sample ID: SB-2-S-2'-20230324

Lab Sample ID: 880-26343-4
Matrix: Solid
Date Collected: 03/24/23 09:45
Date Received: 03/24/23 15:09

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	50169	04/03/23 11:15	KS	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	50389	04/04/23 19:25	SMC	EET MID

Client Sample ID: SB-1-S-0-.5'-20230324

Lab Sample ID: 880-26343-5
Matrix: Solid
Date Collected: 03/24/23 09:50
Date Received: 03/24/23 15:09

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.01 g	5 mL	50409	04/05/23 13:17	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	50422	04/06/23 02:39	MNR	EET MID
Total/NA	Analysis	8015 NM		1			50203	04/03/23 14:09	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	49932	03/30/23 12:21	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	49995	03/31/23 18:04	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	50169	04/03/23 11:15	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	50389	04/04/23 19:29	SMC	EET MID

Client Sample ID: SB-1-S-2'-20230324

Lab Sample ID: 880-26343-6
Matrix: Solid
Date Collected: 03/24/23 09:55
Date Received: 03/24/23 15:09

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.97 g	5 mL	50409	04/05/23 13:17	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	50422	04/06/23 02:59	MNR	EET MID
Total/NA	Analysis	8015 NM		1			50203	04/03/23 14:09	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	49932	03/30/23 12:21	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	49995	03/31/23 18:25	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	50169	04/03/23 11:15	KS	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	50389	04/04/23 19:34	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

Laboratory: Eurofins Midland

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

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

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH

Method Summary

Client: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

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
5030B	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: ARCADIS U.S. Inc
Project/Site: WLU 47

Job ID: 880-26343-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-26343-1	SB-3-S-0-.5'-20230324	Solid	03/24/23 09:30	03/24/23 15:09
880-26343-2	SB-3-S-2'-20230324	Solid	03/24/23 09:35	03/24/23 15:09
880-26343-3	SB-2-S-0-.5'-20230324	Solid	03/24/23 09:40	03/24/23 15:09
880-26343-4	SB-2-S-2'-20230324	Solid	03/24/23 09:45	03/24/23 15:09
880-26343-5	SB-1-S-0-.5'-20230324	Solid	03/24/23 09:50	03/24/23 15:09
880-26343-6	SB-1-S-2'-20230324	Solid	03/24/23 09:55	03/24/23 15:09

Eurofins Midland
1211 W Florida Ave
Midland TX 79701
Phone (432) 704-5440

Chain of Custody Record

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240343

Client Information	Sampler: Daniel McRae	Lab PM: Builes John	Carrier Tracking No(s):	COC No: 880-5487-720 2
Client Contact: Douglas Jordan	Phone: 432-999-2280	E-Mail: John Builes@et eurofinsus com	State of Origin: NM	Page: Page ~~2 of 2~~ 1 of 1
Company: ARCADIS U S Inc	PWSID:	Analysis Requested		Job #:
Address: 10205 Westheimer Rd Suite 800	Due Date Requested:			
City: Houston	TAT Requested (days): Standard			
State Zip: TX 77042	Compliance Project: Δ Yes Δ No			
Phone: 713-953-4739(Tel)	PO #: PN 30172230 - 0002C			
Email: douglas jordan@arcadis com	WO #:			
Project Name: ~~Lovington~~ WLU 47	Project #: 88001697			
Site:	SSOW#:			

Preservation Codes

A HCL, B NaOH, C Zn Acetate, D - Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H - Ascorbic Acid, I Ice, J DI Water, K - EDTA, L EDA, M - Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R - Na2S2O3, S H2SO4, T TSP Dodecahydrate, U - Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_ORGFM_28D, 8015MOD_NM, 8021B	Total Number of containers	Special Instructions/Note.
			Preservation Code:				N		
SB-3-S-0-.5'-20230324	3-24-23	0930	G	Solid			X	1	402
SB-3-S-2'-20230324		0935		Solid			X	1	
SB-2-S-0-.5'-20230324		0940		Solid			X	1	
SB-2-S-2'-20230324		0945		Solid			X	1	
SB-1-S-0-.5'-20230324	3-24-23	0950	G	Solid			X	1	
SB-1-S-2'-20230324	3-24-23	0955	G	Solid			X	1	
				Solid					
				Solid					
				Solid					
				Rec 3-24-23					

880-26343 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☑ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		3-24-23 1500	Arcadis		3/24/23	
2					1509	
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks: 1.3 | 1.0

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc Job Number: 880-26343-1

Login Number: 26343 **List Source: Eurofins Midland**
List Number: 1
Creator: Rodriguez, Leticia

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Morgan Jordan
ARCADIS US Inc
1004 North Big Spring
Suite 300
Midland, Texas 79701

Generated 2/12/2024 12:18:30 PM

JOB DESCRIPTION

WLU 47
Lovington, NM

JOB NUMBER

880-38720-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

my EOL

Eurofins Midland

Job Notes

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

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

Authorization

Generated
2/12/2024 12:18:30 PM

Authorized for release by
John Builes, Project Manager
John.Builes@et.eurofinsus.com
(561)558-4549

Client: ARCADIS US Inc
Project/Site: WLU 47

Laboratory Job ID: 880-38720-1
SDG: Lovington, NM

Table of Contents

Definitions/Glossary

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

Qualifiers

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
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: ARCADIS US Inc
Project: WLU 47

Job ID: 880-38720-1

Job ID: 880-38720-1 Eurofins Midland

Job Narrative
880-38720-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

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

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

Receipt
The samples were received on 1/31/2024 1:17 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.0°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: SB-5-S-1'-240129 (880-38720-1), SB-5-S-2'-240129 (880-38720-2), SB-6-S-1'-240129 (880-38720-3), SB-6-S-2'-240129 (880-38720-4), SB-7-S-1'-240129 (880-38720-5), SB-7-S-2'-240129 (880-38720-6), SB-8-S-1'-240129 (880-38720-7), SB-8-S-2'-240129 (880-38720-8), SB-4-S-1'-240129 (880-38720-9), SB-4-S-2'-240129 (880-38720-10), SB-9-S-1'-240129 (880-38720-11), SB-9-S-2'-240129 (880-38720-12), SB-10-S-1'-240129 (880-38720-13), SB-10-S-2'-240129 (880-38720-14) and SB-10-S-3'-240129 (880-38720-15).

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

GC Semi VOA
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SB-5-S-2'-240129 (880-38720-2), (880-38702-A-1-I MS) and (880-38702-A-1-H MSD). 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
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-72065 and analytical batch 880-72068 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

Client Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

Client Sample ID: SB-5-S-1'-240129

Lab Sample ID: 880-38720-1
Matrix: Solid
Date Collected: 01/29/24 09:30
Date Received: 01/31/24 13:17

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	272		4.99	0.394	mg/Kg			02/01/24 00:36	1

Client Sample ID: SB-5-S-2'-240129

Lab Sample ID: 880-38720-2
Matrix: Solid
Date Collected: 01/29/24 09:40
Date Received: 01/31/24 13:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000382	U	0.00198	0.000382	mg/Kg		02/06/24 13:45	02/09/24 23:03	1
Toluene	<0.000452	U	0.00198	0.000452	mg/Kg		02/06/24 13:45	02/09/24 23:03	1
Ethylbenzene	<0.000561	U	0.00198	0.000561	mg/Kg		02/06/24 13:45	02/09/24 23:03	1
m-Xylene & p-Xylene	<0.00100	U	0.00397	0.00100	mg/Kg		02/06/24 13:45	02/09/24 23:03	1
o-Xylene	<0.000341	U	0.00198	0.000341	mg/Kg		02/06/24 13:45	02/09/24 23:03	1
Xylenes, Total	<0.00100	U	0.00397	0.00100	mg/Kg		02/06/24 13:45	02/09/24 23:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*02/06/24 13:45*	*02/09/24 23:03*	*1*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*	*02/06/24 13:45*	*02/09/24 23:03*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00100	U	0.00397	0.00100	mg/Kg			02/09/24 23:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<25.3	U	50.5	25.3	mg/Kg			02/05/24 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	<25.3	U	50.5	25.3	mg/Kg		02/01/24 14:15	02/05/24 04:03	1
Diesel Range Organics (Over C10-C28)	<25.3	U	50.5	25.3	mg/Kg		02/01/24 14:15	02/05/24 04:03	1
OII Range Organics (Over C28-C36)	<25.3	U	50.5	25.3	mg/Kg		02/01/24 14:15	02/05/24 04:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*116*		*70 - 130*	*02/01/24 14:15*	*02/05/24 04:03*	*1*
o-Terphenyl	*133*	*S1+*	*70 - 130*	*02/01/24 14:15*	*02/05/24 04:03*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1640		25.1	1.98	mg/Kg			02/01/24 00:43	5

Client Sample ID: SB-6-S-1'-240129

Lab Sample ID: 880-38720-3
Matrix: Solid
Date Collected: 01/29/24 10:10
Date Received: 01/31/24 13:17

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	290		4.98	0.393	mg/Kg			02/01/24 00:50	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

Client Sample ID: SB-6-S-2'-240129

Lab Sample ID: 880-38720-4
Matrix: Solid
Date Collected: 01/29/24 10:20
Date Received: 01/31/24 13:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000389	U	0.00202	0.000389	mg/Kg		02/06/24 13:45	02/09/24 23:24	1
Toluene	<0.000461	U	0.00202	0.000461	mg/Kg		02/06/24 13:45	02/09/24 23:24	1
Ethylbenzene	<0.000571	U	0.00202	0.000571	mg/Kg		02/06/24 13:45	02/09/24 23:24	1
m-Xylene & p-Xylene	<0.00102	U	0.00404	0.00102	mg/Kg		02/06/24 13:45	02/09/24 23:24	1
o-Xylene	<0.000347	U	0.00202	0.000347	mg/Kg		02/06/24 13:45	02/09/24 23:24	1
Xylenes, Total	<0.00102	U	0.00404	0.00102	mg/Kg		02/06/24 13:45	02/09/24 23:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*	*02/06/24 13:45*	*02/09/24 23:24*	*1*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*	*02/06/24 13:45*	*02/09/24 23:24*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00102	U	0.00404	0.00102	mg/Kg			02/09/24 23:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<25.0	U	49.9	25.0	mg/Kg			02/05/24 04:24	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	<25.0	U	49.9	25.0	mg/Kg		02/01/24 14:15	02/05/24 04:24	1
Diesel Range Organics (Over C10-C28)	<25.0	U	49.9	25.0	mg/Kg		02/01/24 14:15	02/05/24 04:24	1
OII Range Organics (Over C28-C36)	<25.0	U	49.9	25.0	mg/Kg		02/01/24 14:15	02/05/24 04:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*94*		*70 - 130*	*02/01/24 14:15*	*02/05/24 04:24*	*1*
o-Terphenyl	*108*		*70 - 130*	*02/01/24 14:15*	*02/05/24 04:24*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1670**		24.9	1.96	mg/Kg			02/01/24 00:57	5

Client Sample ID: SB-7-S-1'-240129

Lab Sample ID: 880-38720-5
Matrix: Solid
Date Collected: 01/29/24 11:00
Date Received: 01/31/24 13:17

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**625**		5.05	0.399	mg/Kg			02/01/24 01:18	1

Client Sample ID: SB-7-S-2'-240129

Lab Sample ID: 880-38720-6
Matrix: Solid
Date Collected: 01/29/24 11:10
Date Received: 01/31/24 13:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000388	U	0.00202	0.000388	mg/Kg		02/06/24 13:45	02/09/24 23:44	1
Toluene	<0.000460	U	0.00202	0.000460	mg/Kg		02/06/24 13:45	02/09/24 23:44	1
Ethylbenzene	<0.000570	U	0.00202	0.000570	mg/Kg		02/06/24 13:45	02/09/24 23:44	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

Client Sample ID: SB-7-S-2'-240129

Lab Sample ID: 880-38720-6
Matrix: Solid
Date Collected: 01/29/24 11:10
Date Received: 01/31/24 13:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	<0.00102	U	0.00403	0.00102	mg/Kg		02/06/24 13:45	02/09/24 23:44	1
o-Xylene	<0.000347	U	0.00202	0.000347	mg/Kg		02/06/24 13:45	02/09/24 23:44	1
Xylenes, Total	<0.00102	U	0.00403	0.00102	mg/Kg		02/06/24 13:45	02/09/24 23:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*02/06/24 13:45*	*02/09/24 23:44*	*1*
1,4-Difluorobenzene (Surr)	*115*		*70 - 130*	*02/06/24 13:45*	*02/09/24 23:44*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00102	U	0.00403	0.00102	mg/Kg			02/09/24 23:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**24.8**	**J**	49.5	24.8	mg/Kg			02/05/24 04:44	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	<24.8	U	49.5	24.8	mg/Kg		02/01/24 14:15	02/05/24 04:44	1
Diesel Range Organics (Over C10-C28)	**24.8**	**J**	49.5	24.8	mg/Kg		02/01/24 14:15	02/05/24 04:44	1
OII Range Organics (Over C28-C36)	<24.8	U	49.5	24.8	mg/Kg		02/01/24 14:15	02/05/24 04:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*02/01/24 14:15*	*02/05/24 04:44*	*1*
o-Terphenyl	*127*		*70 - 130*	*02/01/24 14:15*	*02/05/24 04:44*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1460**		25.2	1.99	mg/Kg			02/01/24 01:24	5

Client Sample ID: SB-8-S-1'-240129

Lab Sample ID: 880-38720-7
Matrix: Solid
Date Collected: 01/29/24 11:40
Date Received: 01/31/24 13:17

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2530**		25.2	1.99	mg/Kg			02/01/24 01:31	5

Client Sample ID: SB-8-S-2'-240129

Lab Sample ID: 880-38720-8
Matrix: Solid
Date Collected: 01/29/24 11:50
Date Received: 01/31/24 13:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000383	U	0.00199	0.000383	mg/Kg		02/06/24 13:45	02/10/24 00:05	1
Toluene	<0.000453	U	0.00199	0.000453	mg/Kg		02/06/24 13:45	02/10/24 00:05	1
Ethylbenzene	<0.000562	U	0.00199	0.000562	mg/Kg		02/06/24 13:45	02/10/24 00:05	1
m-Xylene & p-Xylene	<0.00100	U	0.00398	0.00100	mg/Kg		02/06/24 13:45	02/10/24 00:05	1
o-Xylene	<0.000342	U	0.00199	0.000342	mg/Kg		02/06/24 13:45	02/10/24 00:05	1
Xylenes, Total	<0.00100	U	0.00398	0.00100	mg/Kg		02/06/24 13:45	02/10/24 00:05	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

Client Sample ID: SB-8-S-2'-240129

Lab Sample ID: 880-38720-8
Matrix: Solid
Date Collected: 01/29/24 11:50
Date Received: 01/31/24 13:17

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*	*02/06/24 13:45*	*02/10/24 00:05*	*1*
1,4-Difluorobenzene (Surr)	*110*		*70 - 130*	*02/06/24 13:45*	*02/10/24 00:05*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00100	U	0.00398	0.00100	mg/Kg			02/10/24 00:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**25.5**	**J**	49.6	24.8	mg/Kg			02/05/24 05:05	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	<24.8	U	49.6	24.8	mg/Kg		02/01/24 14:15	02/05/24 05:05	1
Diesel Range Organics (Over C10-C28)	**25.5**	**J**	49.6	24.8	mg/Kg		02/01/24 14:15	02/05/24 05:05	1
OII Range Organics (Over C28-C36)	<24.8	U	49.6	24.8	mg/Kg		02/01/24 14:15	02/05/24 05:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*109*		*70 - 130*	*02/01/24 14:15*	*02/05/24 05:05*	*1*
o-Terphenyl	*126*		*70 - 130*	*02/01/24 14:15*	*02/05/24 05:05*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2520**		24.9	1.97	mg/Kg			02/01/24 01:38	5

Client Sample ID: SB-4-S-1'-240129

Lab Sample ID: 880-38720-9
Matrix: Solid
Date Collected: 01/29/24 09:00
Date Received: 01/31/24 13:17

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1970**		25.0	1.98	mg/Kg			02/01/24 01:45	5

Client Sample ID: SB-4-S-2'-240129

Lab Sample ID: 880-38720-10
Matrix: Solid
Date Collected: 01/29/24 09:10
Date Received: 01/31/24 13:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		02/06/24 13:45	02/10/24 00:25	1
Toluene	<0.000456	U	0.00200	0.000456	mg/Kg		02/06/24 13:45	02/10/24 00:25	1
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		02/06/24 13:45	02/10/24 00:25	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		02/06/24 13:45	02/10/24 00:25	1
o-Xylene	**0.000457**	**J**	0.00200	0.000344	mg/Kg		02/06/24 13:45	02/10/24 00:25	1
Xylenes, Total	<0.00101	U	0.00400	0.00101	mg/Kg		02/06/24 13:45	02/10/24 00:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*	*02/06/24 13:45*	*02/10/24 00:25*	*1*
1,4-Difluorobenzene (Surr)	*120*		*70 - 130*	*02/06/24 13:45*	*02/10/24 00:25*	*1*

Client Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

Client Sample ID: SB-4-S-2'-240129

Lab Sample ID: 880-38720-10
Matrix: Solid
Date Collected: 01/29/24 09:10
Date Received: 01/31/24 13:17

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00101	U	0.00400	0.00101	mg/Kg			02/10/24 00:25	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<24.8	U	49.5	24.8	mg/Kg			02/05/24 05:26	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	<24.8	U	49.5	24.8	mg/Kg		02/01/24 14:15	02/05/24 05:26	1
Diesel Range Organics (Over C10-C28)	<24.8	U	49.5	24.8	mg/Kg		02/01/24 14:15	02/05/24 05:26	1
OII Range Organics (Over C28-C36)	<24.8	U	49.5	24.8	mg/Kg		02/01/24 14:15	02/05/24 05:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*101*		*70 - 130*	*02/01/24 14:15*	*02/05/24 05:26*	*1*
o-Terphenyl	*116*		*70 - 130*	*02/01/24 14:15*	*02/05/24 05:26*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1900**	**F1**	24.9	1.96	mg/Kg			02/01/24 01:52	5

Client Sample ID: SB-9-S-1'-240129

Lab Sample ID: 880-38720-11
Matrix: Solid
Date Collected: 01/29/24 13:00
Date Received: 01/31/24 13:17

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2670**		25.1	1.98	mg/Kg			02/01/24 02:13	5

Client Sample ID: SB-9-S-2'-240129

Lab Sample ID: 880-38720-12
Matrix: Solid
Date Collected: 01/29/24 13:10
Date Received: 01/31/24 13:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000384	U	0.00200	0.000384	mg/Kg		02/06/24 13:45	02/10/24 00:46	1
Toluene	<0.000455	U	0.00200	0.000455	mg/Kg		02/06/24 13:45	02/10/24 00:46	1
Ethylbenzene	<0.000564	U	0.00200	0.000564	mg/Kg		02/06/24 13:45	02/10/24 00:46	1
m-Xylene & p-Xylene	<0.00101	U	0.00399	0.00101	mg/Kg		02/06/24 13:45	02/10/24 00:46	1
o-Xylene	**0.000468**	**J**	0.00200	0.000343	mg/Kg		02/06/24 13:45	02/10/24 00:46	1
Xylenes, Total	<0.00101	U	0.00399	0.00101	mg/Kg		02/06/24 13:45	02/10/24 00:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*02/06/24 13:45*	*02/10/24 00:46*	*1*
1,4-Difluorobenzene (Surr)	*116*		*70 - 130*	*02/06/24 13:45*	*02/10/24 00:46*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00101	U	0.00399	0.00101	mg/Kg			02/10/24 00:46	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

Client Sample ID: SB-9-S-2'-240129

Lab Sample ID: 880-38720-12
Matrix: Solid
Date Collected: 01/29/24 13:10
Date Received: 01/31/24 13:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<25.0	U	50.0	25.0	mg/Kg			02/05/24 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	<25.0	U	50.0	25.0	mg/Kg		02/01/24 14:15	02/05/24 05:46	1
Diesel Range Organics (Over C10-C28)	<25.0	U	50.0	25.0	mg/Kg		02/01/24 14:15	02/05/24 05:46	1
Oil Range Organics (Over C28-C36)	<25.0	U	50.0	25.0	mg/Kg		02/01/24 14:15	02/05/24 05:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*99*		*70 - 130*	*02/01/24 14:15*	*02/05/24 05:46*	*1*
o-Terphenyl	*114*		*70 - 130*	*02/01/24 14:15*	*02/05/24 05:46*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2400**		25.1	1.98	mg/Kg			02/01/24 02:19	5

Client Sample ID: SB-10-S-1'-240129

Lab Sample ID: 880-38720-13
Matrix: Solid
Date Collected: 01/29/24 13:50
Date Received: 01/31/24 13:17

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1050**		24.9	1.97	mg/Kg			02/01/24 02:40	5

Client Sample ID: SB-10-S-2'-240129

Lab Sample ID: 880-38720-14
Matrix: Solid
Date Collected: 01/29/24 14:00
Date Received: 01/31/24 13:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000381	U	0.00198	0.000381	mg/Kg		02/06/24 13:45	02/10/24 01:06	1
Toluene	<0.000451	U	0.00198	0.000451	mg/Kg		02/06/24 13:45	02/10/24 01:06	1
Ethylbenzene	<0.000559	U	0.00198	0.000559	mg/Kg		02/06/24 13:45	02/10/24 01:06	1
m-Xylene & p-Xylene	<0.00100	U	0.00396	0.00100	mg/Kg		02/06/24 13:45	02/10/24 01:06	1
o-Xylene	<0.000341	U	0.00198	0.000341	mg/Kg		02/06/24 13:45	02/10/24 01:06	1
Xylenes, Total	<0.00100	U	0.00396	0.00100	mg/Kg		02/06/24 13:45	02/10/24 01:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*118*		*70 - 130*	*02/06/24 13:45*	*02/10/24 01:06*	*1*
1,4-Difluorobenzene (Surr)	*116*		*70 - 130*	*02/06/24 13:45*	*02/10/24 01:06*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00100	U	0.00396	0.00100	mg/Kg			02/10/24 01:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<24.9	U	49.7	24.9	mg/Kg			02/05/24 06:07	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

Client Sample ID: SB-10-S-2'-240129

Lab Sample ID: 880-38720-14
Matrix: Solid
Date Collected: 01/29/24 14:00
Date Received: 01/31/24 13:17

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<24.9	U	49.7	24.9	mg/Kg		02/01/24 14:15	02/05/24 06:07	1
Diesel Range Organics (Over C10-C28)	<24.9	U	49.7	24.9	mg/Kg		02/01/24 14:15	02/05/24 06:07	1
OII Range Organics (Over C28-C36)	<24.9	U	49.7	24.9	mg/Kg		02/01/24 14:15	02/05/24 06:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*110*		*70 - 130*	*02/01/24 14:15*	*02/05/24 06:07*	*1*
o-Terphenyl	*126*		*70 - 130*	*02/01/24 14:15*	*02/05/24 06:07*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1860**		24.8	1.96	mg/Kg			02/01/24 02:47	5

Client Sample ID: SB-10-S-3'-240129

Lab Sample ID: 880-38720-15
Matrix: Solid
Date Collected: 01/29/24 14:10
Date Received: 01/31/24 13:17

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1930**		25.0	1.98	mg/Kg			02/01/24 02:54	5

Surrogate Summary

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

Method: 8021B - Volatile Organic Compounds (GC)

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits) BFB1 (70-130)	DFBZ1 (70-130)
880-38720-2	SB-5-S-2'-240129	109	113
880-38720-4	SB-6-S-2'-240129	114	113
880-38720-6	SB-7-S-2'-240129	108	115
880-38720-8	SB-8-S-2'-240129	109	110
880-38720-10	SB-4-S-2'-240129	113	120
880-38720-12	SB-9-S-2'-240129	108	116
880-38720-14	SB-10-S-2'-240129	118	116
LCS 880-72504/1-A	Lab Control Sample	103	108
LCSD 880-72504/2-A	Lab Control Sample Dup	95	105
MB 880-72504/5-A	Method Blank	119	127

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

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

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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits) 1CO1 (70-130)	OTPH1 (70-130)
880-38720-2	SB-5-S-2'-240129	116	133 S1+
880-38720-4	SB-6-S-2'-240129	94	108
880-38720-6	SB-7-S-2'-240129	112	127
880-38720-8	SB-8-S-2'-240129	109	126
880-38720-10	SB-4-S-2'-240129	101	116
880-38720-12	SB-9-S-2'-240129	99	114
880-38720-14	SB-10-S-2'-240129	110	126
LCS 870-17963/1-A	Lab Control Sample	120	116
LCSD 870-17963/2-A	Lab Control Sample Dup	122	117
MB 870-17963/3-A	Method Blank	112	117

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-72504/5-A
Matrix: Solid
Analysis Batch: 72754

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 72504

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		02/06/24 13:45	02/09/24 16:39	1
Toluene	<0.000456	U	0.00200	0.000456	mg/Kg		02/06/24 13:45	02/09/24 16:39	1
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		02/06/24 13:45	02/09/24 16:39	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		02/06/24 13:45	02/09/24 16:39	1
o-Xylene	<0.000344	U	0.00200	0.000344	mg/Kg		02/06/24 13:45	02/09/24 16:39	1
Xylenes, Total	<0.00101	U	0.00400	0.00101	mg/Kg		02/06/24 13:45	02/09/24 16:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*119*		*70 - 130*	*02/06/24 13:45*	*02/09/24 16:39*	*1*
1,4-Difluorobenzene (Surr)	*127*		*70 - 130*	*02/06/24 13:45*	*02/09/24 16:39*	*1*

Lab Sample ID: LCS 880-72504/1-A
Matrix: Solid
Analysis Batch: 72754

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 72504

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1096		mg/Kg		110	70 - 130		
Toluene			0.100	0.09393		mg/Kg		94	70 - 130		
Ethylbenzene			0.100	0.09541		mg/Kg		95	70 - 130		
m-Xylene & p-Xylene			0.200	0.2141		mg/Kg		107	70 - 130		
o-Xylene			0.100	0.09277		mg/Kg		93	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*

Lab Sample ID: LCSD 880-72504/2-A
Matrix: Solid
Analysis Batch: 72754

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 72504

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1034		mg/Kg		103	70 - 130	6	35
Toluene			0.100	0.09777		mg/Kg		98	70 - 130	4	35
Ethylbenzene			0.100	0.09367		mg/Kg		94	70 - 130	2	35
m-Xylene & p-Xylene			0.200	0.1975		mg/Kg		99	70 - 130	8	35
o-Xylene			0.100	0.08515		mg/Kg		85	70 - 130	9	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*

QC Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

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

Lab Sample ID: MB 870-17963/3-A
Matrix: Solid
Analysis Batch: 17706

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 17963

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<25.0	U	50.0	25.0	mg/Kg		02/01/24 14:15	02/04/24 22:33	1
Diesel Range Organics (Over C10-C28)	<25.0	U	50.0	25.0	mg/Kg		02/01/24 14:15	02/04/24 22:33	1
Oil Range Organics (Over C28-C36)	<25.0	U	50.0	25.0	mg/Kg		02/01/24 14:15	02/04/24 22:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*02/01/24 14:15*	*02/04/24 22:33*	*1*
o-Terphenyl	*117*		*70 - 130*	*02/01/24 14:15*	*02/04/24 22:33*	*1*

Lab Sample ID: LCS 870-17963/1-A
Matrix: Solid
Analysis Batch: 17706

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 17963

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1020	874.5		mg/Kg		86	70 - 130		
Diesel Range Organics (Over C10-C28)			1010	1046		mg/Kg		104	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*120*		*70 - 130*
o-Terphenyl	*116*		*70 - 130*

Lab Sample ID: LCSD 870-17963/2-A
Matrix: Solid
Analysis Batch: 17706

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 17963

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1020	1011		mg/Kg		99	70 - 130	14	20
Diesel Range Organics (Over C10-C28)			1010	1027		mg/Kg		102	70 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*122*		*70 - 130*
o-Terphenyl	*117*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-72065/1-A
Matrix: Solid
Analysis Batch: 72068

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.395	U	5.00	0.395	mg/Kg			01/31/24 23:55	1

QC Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-72065/2-A
Matrix: Solid
Analysis Batch: 72068

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	260.7		mg/Kg		104	90 - 110		

Lab Sample ID: LCSD 880-72065/3-A
Matrix: Solid
Analysis Batch: 72068

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	258.2		mg/Kg		103	90 - 110	1	20

Lab Sample ID: 880-38720-10 MS
Matrix: Solid
Analysis Batch: 72068

Client Sample ID: SB-4-S-2'-240129
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	1900	F1	1240	3053		mg/Kg		92	90 - 110		

Lab Sample ID: 880-38720-10 MSD
Matrix: Solid
Analysis Batch: 72068

Client Sample ID: SB-4-S-2'-240129
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1900	F1	1240	3000	F1	mg/Kg		88	90 - 110	2	20

QC Association Summary

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

GC VOA

Prep Batch: 72504

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38720-2	SB-5-S-2'-240129	Total/NA	Solid	5030B	
880-38720-4	SB-6-S-2'-240129	Total/NA	Solid	5030B	
880-38720-6	SB-7-S-2'-240129	Total/NA	Solid	5030B	
880-38720-8	SB-8-S-2'-240129	Total/NA	Solid	5030B	
880-38720-10	SB-4-S-2'-240129	Total/NA	Solid	5030B	
880-38720-12	SB-9-S-2'-240129	Total/NA	Solid	5030B	
880-38720-14	SB-10-S-2'-240129	Total/NA	Solid	5030B	
MB 880-72504/5-A	Method Blank	Total/NA	Solid	5030B	
LCS 880-72504/1-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 880-72504/2-A	Lab Control Sample Dup	Total/NA	Solid	5030B	

Analysis Batch: 72754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38720-2	SB-5-S-2'-240129	Total/NA	Solid	8021B	72504
880-38720-4	SB-6-S-2'-240129	Total/NA	Solid	8021B	72504
880-38720-6	SB-7-S-2'-240129	Total/NA	Solid	8021B	72504
880-38720-8	SB-8-S-2'-240129	Total/NA	Solid	8021B	72504
880-38720-10	SB-4-S-2'-240129	Total/NA	Solid	8021B	72504
880-38720-12	SB-9-S-2'-240129	Total/NA	Solid	8021B	72504
880-38720-14	SB-10-S-2'-240129	Total/NA	Solid	8021B	72504
MB 880-72504/5-A	Method Blank	Total/NA	Solid	8021B	72504
LCS 880-72504/1-A	Lab Control Sample	Total/NA	Solid	8021B	72504
LCSD 880-72504/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	72504

Analysis Batch: 72853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38720-2	SB-5-S-2'-240129	Total/NA	Solid	Total BTEX	
880-38720-4	SB-6-S-2'-240129	Total/NA	Solid	Total BTEX	
880-38720-6	SB-7-S-2'-240129	Total/NA	Solid	Total BTEX	
880-38720-8	SB-8-S-2'-240129	Total/NA	Solid	Total BTEX	
880-38720-10	SB-4-S-2'-240129	Total/NA	Solid	Total BTEX	
880-38720-12	SB-9-S-2'-240129	Total/NA	Solid	Total BTEX	
880-38720-14	SB-10-S-2'-240129	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 17706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38720-2	SB-5-S-2'-240129	Total/NA	Solid	8015B NM	17963
880-38720-4	SB-6-S-2'-240129	Total/NA	Solid	8015B NM	17963
880-38720-6	SB-7-S-2'-240129	Total/NA	Solid	8015B NM	17963
880-38720-8	SB-8-S-2'-240129	Total/NA	Solid	8015B NM	17963
880-38720-10	SB-4-S-2'-240129	Total/NA	Solid	8015B NM	17963
880-38720-12	SB-9-S-2'-240129	Total/NA	Solid	8015B NM	17963
880-38720-14	SB-10-S-2'-240129	Total/NA	Solid	8015B NM	17963
MB 870-17963/3-A	Method Blank	Total/NA	Solid	8015B NM	17963
LCS 870-17963/1-A	Lab Control Sample	Total/NA	Solid	8015B NM	17963
LCSD 870-17963/2-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	17963

QC Association Summary

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

GC Semi VOA

Prep Batch: 17963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38720-2	SB-5-S-2'-240129	Total/NA	Solid	8015NM Prep	
880-38720-4	SB-6-S-2'-240129	Total/NA	Solid	8015NM Prep	
880-38720-6	SB-7-S-2'-240129	Total/NA	Solid	8015NM Prep	
880-38720-8	SB-8-S-2'-240129	Total/NA	Solid	8015NM Prep	
880-38720-10	SB-4-S-2'-240129	Total/NA	Solid	8015NM Prep	
880-38720-12	SB-9-S-2'-240129	Total/NA	Solid	8015NM Prep	
880-38720-14	SB-10-S-2'-240129	Total/NA	Solid	8015NM Prep	
MB 870-17963/3-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 870-17963/1-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 870-17963/2-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 17993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38720-2	SB-5-S-2'-240129	Total/NA	Solid	8015 NM	
880-38720-4	SB-6-S-2'-240129	Total/NA	Solid	8015 NM	
880-38720-6	SB-7-S-2'-240129	Total/NA	Solid	8015 NM	
880-38720-8	SB-8-S-2'-240129	Total/NA	Solid	8015 NM	
880-38720-10	SB-4-S-2'-240129	Total/NA	Solid	8015 NM	
880-38720-12	SB-9-S-2'-240129	Total/NA	Solid	8015 NM	
880-38720-14	SB-10-S-2'-240129	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 72065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38720-1	SB-5-S-1'-240129	Soluble	Solid	DI Leach	
880-38720-2	SB-5-S-2'-240129	Soluble	Solid	DI Leach	
880-38720-3	SB-6-S-1'-240129	Soluble	Solid	DI Leach	
880-38720-4	SB-6-S-2'-240129	Soluble	Solid	DI Leach	
880-38720-5	SB-7-S-1'-240129	Soluble	Solid	DI Leach	
880-38720-6	SB-7-S-2'-240129	Soluble	Solid	DI Leach	
880-38720-7	SB-8-S-1'-240129	Soluble	Solid	DI Leach	
880-38720-8	SB-8-S-2'-240129	Soluble	Solid	DI Leach	
880-38720-9	SB-4-S-1'-240129	Soluble	Solid	DI Leach	
880-38720-10	SB-4-S-2'-240129	Soluble	Solid	DI Leach	
880-38720-11	SB-9-S-1'-240129	Soluble	Solid	DI Leach	
880-38720-12	SB-9-S-2'-240129	Soluble	Solid	DI Leach	
880-38720-13	SB-10-S-1'-240129	Soluble	Solid	DI Leach	
880-38720-14	SB-10-S-2'-240129	Soluble	Solid	DI Leach	
880-38720-15	SB-10-S-3'-240129	Soluble	Solid	DI Leach	
MB 880-72065/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-72065/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-72065/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-38720-10 MS	SB-4-S-2'-240129	Soluble	Solid	DI Leach	
880-38720-10 MSD	SB-4-S-2'-240129	Soluble	Solid	DI Leach	

Analysis Batch: 72068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38720-1	SB-5-S-1'-240129	Soluble	Solid	300.0	72065
880-38720-2	SB-5-S-2'-240129	Soluble	Solid	300.0	72065
880-38720-3	SB-6-S-1'-240129	Soluble	Solid	300.0	72065

QC Association Summary

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

HPLC/IC (Continued)

Analysis Batch: 72068 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38720-4	SB-6-S-2'-240129	Soluble	Solid	300.0	72065
880-38720-5	SB-7-S-1'-240129	Soluble	Solid	300.0	72065
880-38720-6	SB-7-S-2'-240129	Soluble	Solid	300.0	72065
880-38720-7	SB-8-S-1'-240129	Soluble	Solid	300.0	72065
880-38720-8	SB-8-S-2'-240129	Soluble	Solid	300.0	72065
880-38720-9	SB-4-S-1'-240129	Soluble	Solid	300.0	72065
880-38720-10	SB-4-S-2'-240129	Soluble	Solid	300.0	72065
880-38720-11	SB-9-S-1'-240129	Soluble	Solid	300.0	72065
880-38720-12	SB-9-S-2'-240129	Soluble	Solid	300.0	72065
880-38720-13	SB-10-S-1'-240129	Soluble	Solid	300.0	72065
880-38720-14	SB-10-S-2'-240129	Soluble	Solid	300.0	72065
880-38720-15	SB-10-S-3'-240129	Soluble	Solid	300.0	72065
MB 880-72065/1-A	Method Blank	Soluble	Solid	300.0	72065
LCS 880-72065/2-A	Lab Control Sample	Soluble	Solid	300.0	72065
LCSD 880-72065/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	72065
880-38720-10 MS	SB-4-S-2'-240129	Soluble	Solid	300.0	72065
880-38720-10 MSD	SB-4-S-2'-240129	Soluble	Solid	300.0	72065

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

Client Sample ID: SB-5-S-1'-240129
Lab Sample ID: 880-38720-1
Date Collected: 01/29/24 09:30
Matrix: Solid
Date Received: 01/31/24 13:17

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	72065	01/31/24 15:13	SMC	EET MID
Soluble	Analysis	300.0		1			72068	02/01/24 00:36	CH	EET MID

Client Sample ID: SB-5-S-2'-240129
Lab Sample ID: 880-38720-2
Date Collected: 01/29/24 09:40
Matrix: Solid
Date Received: 01/31/24 13:17

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.04 g	5 mL	72504	02/06/24 13:45	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72754	02/09/24 23:03	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72853	02/09/24 23:03	SM	EET MID
Total/NA	Analysis	8015 NM		1			17993	02/05/24 04:03	CC	EET DAL
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	17963	02/01/24 14:15	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17706	02/05/24 04:03	WP	EET DAL
Soluble	Leach	DI Leach			4.98 g	50 mL	72065	01/31/24 15:13	SMC	EET MID
Soluble	Analysis	300.0		5			72068	02/01/24 00:43	CH	EET MID

Client Sample ID: SB-6-S-1'-240129
Lab Sample ID: 880-38720-3
Date Collected: 01/29/24 10:10
Matrix: Solid
Date Received: 01/31/24 13:17

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	72065	01/31/24 15:13	SMC	EET MID
Soluble	Analysis	300.0		1			72068	02/01/24 00:50	CH	EET MID

Client Sample ID: SB-6-S-2'-240129
Lab Sample ID: 880-38720-4
Date Collected: 01/29/24 10:20
Matrix: Solid
Date Received: 01/31/24 13:17

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.95 g	5 mL	72504	02/06/24 13:45	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72754	02/09/24 23:24	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72853	02/09/24 23:24	SM	EET MID
Total/NA	Analysis	8015 NM		1			17993	02/05/24 04:24	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	17963	02/01/24 14:15	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17706	02/05/24 04:24	WP	EET DAL
Soluble	Leach	DI Leach			5.03 g	50 mL	72065	01/31/24 15:13	SMC	EET MID
Soluble	Analysis	300.0		5			72068	02/01/24 00:57	CH	EET MID

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

Client Sample ID: SB-7-S-1'-240129

Lab Sample ID: 880-38720-5
Matrix: Solid
Date Collected: 01/29/24 11:00
Date Received: 01/31/24 13:17

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	72065	01/31/24 15:13	SMC	EET MID
Soluble	Analysis	300.0		1			72068	02/01/24 01:18	CH	EET MID

Client Sample ID: SB-7-S-2'-240129

Lab Sample ID: 880-38720-6
Matrix: Solid
Date Collected: 01/29/24 11:10
Date Received: 01/31/24 13:17

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.96 g	5 mL	72504	02/06/24 13:45	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72754	02/09/24 23:44	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72853	02/09/24 23:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			17993	02/05/24 04:44	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.10 g	10 mL	17963	02/01/24 14:15	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17706	02/05/24 04:44	WP	EET DAL
Soluble	Leach	DI Leach			4.97 g	50 mL	72065	01/31/24 15:13	SMC	EET MID
Soluble	Analysis	300.0		5			72068	02/01/24 01:24	CH	EET MID

Client Sample ID: SB-8-S-1'-240129

Lab Sample ID: 880-38720-7
Matrix: Solid
Date Collected: 01/29/24 11:40
Date Received: 01/31/24 13:17

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.96 g	50 mL	72065	01/31/24 15:13	SMC	EET MID
Soluble	Analysis	300.0		5			72068	02/01/24 01:31	CH	EET MID

Client Sample ID: SB-8-S-2'-240129

Lab Sample ID: 880-38720-8
Matrix: Solid
Date Collected: 01/29/24 11:50
Date Received: 01/31/24 13:17

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.03 g	5 mL	72504	02/06/24 13:45	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72754	02/10/24 00:05	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72853	02/10/24 00:05	SM	EET MID
Total/NA	Analysis	8015 NM		1			17993	02/05/24 05:05	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	17963	02/01/24 14:15	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17706	02/05/24 05:05	WP	EET DAL
Soluble	Leach	DI Leach			5.02 g	50 mL	72065	01/31/24 15:13	SMC	EET MID
Soluble	Analysis	300.0		5			72068	02/01/24 01:38	CH	EET MID

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

Client Sample ID: SB-4-S-1'-240129

Lab Sample ID: 880-38720-9
Matrix: Solid
Date Collected: 01/29/24 09:00
Date Received: 01/31/24 13:17

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	72065	01/31/24 15:13	SMC	EET MID
Soluble	Analysis	300.0		5			72068	02/01/24 01:45	CH	EET MID

Client Sample ID: SB-4-S-2'-240129

Lab Sample ID: 880-38720-10
Matrix: Solid
Date Collected: 01/29/24 09:10
Date Received: 01/31/24 13:17

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.00 g	5 mL	72504	02/06/24 13:45	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72754	02/10/24 00:25	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72853	02/10/24 00:25	SM	EET MID
Total/NA	Analysis	8015 NM		1			17993	02/05/24 05:26	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.10 g	10 mL	17963	02/01/24 14:15	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17706	02/05/24 05:26	WP	EET DAL
Soluble	Leach	DI Leach			5.03 g	50 mL	72065	01/31/24 15:13	SMC	EET MID
Soluble	Analysis	300.0		5			72068	02/01/24 01:52	CH	EET MID

Client Sample ID: SB-9-S-1'-240129

Lab Sample ID: 880-38720-11
Matrix: Solid
Date Collected: 01/29/24 13:00
Date Received: 01/31/24 13:17

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	72065	01/31/24 15:13	SMC	EET MID
Soluble	Analysis	300.0		5			72068	02/01/24 02:13	CH	EET MID

Client Sample ID: SB-9-S-2'-240129

Lab Sample ID: 880-38720-12
Matrix: Solid
Date Collected: 01/29/24 13:10
Date Received: 01/31/24 13:17

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.01 g	5 mL	72504	02/06/24 13:45	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72754	02/10/24 00:46	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72853	02/10/24 00:46	SM	EET MID
Total/NA	Analysis	8015 NM		1			17993	02/05/24 05:46	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	17963	02/01/24 14:15	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17706	02/05/24 05:46	WP	EET DAL
Soluble	Leach	DI Leach			4.99 g	50 mL	72065	01/31/24 15:13	SMC	EET MID
Soluble	Analysis	300.0		5			72068	02/01/24 02:19	CH	EET MID

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

Client Sample ID: SB-10-S-1'-240129

Lab Sample ID: 880-38720-13
Matrix: Solid
Date Collected: 01/29/24 13:50
Date Received: 01/31/24 13:17

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	72065	01/31/24 15:13	SMC	EET MID
Soluble	Analysis	300.0		5			72068	02/01/24 02:40	CH	EET MID

Client Sample ID: SB-10-S-2'-240129

Lab Sample ID: 880-38720-14
Matrix: Solid
Date Collected: 01/29/24 14:00
Date Received: 01/31/24 13:17

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.05 g	5 mL	72504	02/06/24 13:45	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	72754	02/10/24 01:06	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			72853	02/10/24 01:06	SM	EET MID
Total/NA	Analysis	8015 NM		1			17993	02/05/24 06:07	CC	EET DAL
Total/NA	Prep	8015NM Prep			10.06 g	10 mL	17963	02/01/24 14:15	WP	EET DAL
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	17706	02/05/24 06:07	WP	EET DAL
Soluble	Leach	DI Leach			5.04 g	50 mL	72065	01/31/24 15:13	SMC	EET MID
Soluble	Analysis	300.0		5			72068	02/01/24 02:47	CH	EET MID

Client Sample ID: SB-10-S-3'-240129

Lab Sample ID: 880-38720-15
Matrix: Solid
Date Collected: 01/29/24 14:10
Date Received: 01/31/24 13:17

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	72065	01/31/24 15:13	SMC	EET MID
Soluble	Analysis	300.0		5			72068	02/01/24 02:54	CH	EET MID

Laboratory References:

EET DAL = Eurofins Dallas, 9701 Harry Hines Blvd, Dallas, TX 75220, TEL (214)902-0300

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

Accreditation/Certification Summary

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, 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	T104704400-23-26	06-30-24

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
Total BTEX		Solid	Total BTEX

Laboratory: Eurofins Dallas

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704295-23-34	06-30-24

Method Summary

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, 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 DAL
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET DAL
300.0	Anions, Ion Chromatography	EPA	EET MID
5030B	Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET DAL
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 DAL = Eurofins Dallas, 9701 Harry Hines Blvd, Dallas, TX 75220, TEL (214)902-0300

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

Sample Summary

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-38720-1
SDG: Lovington, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-38720-1	SB-5-S-1'-240129	Solid	01/29/24 09:30	01/31/24 13:17
880-38720-2	SB-5-S-2'-240129	Solid	01/29/24 09:40	01/31/24 13:17
880-38720-3	SB-6-S-1'-240129	Solid	01/29/24 10:10	01/31/24 13:17
880-38720-4	SB-6-S-2'-240129	Solid	01/29/24 10:20	01/31/24 13:17
880-38720-5	SB-7-S-1'-240129	Solid	01/29/24 11:00	01/31/24 13:17
880-38720-6	SB-7-S-2'-240129	Solid	01/29/24 11:10	01/31/24 13:17
880-38720-7	SB-8-S-1'-240129	Solid	01/29/24 11:40	01/31/24 13:17
880-38720-8	SB-8-S-2'-240129	Solid	01/29/24 11:50	01/31/24 13:17
880-38720-9	SB-4-S-1'-240129	Solid	01/29/24 09:00	01/31/24 13:17
880-38720-10	SB-4-S-2'-240129	Solid	01/29/24 09:10	01/31/24 13:17
880-38720-11	SB-9-S-1'-240129	Solid	01/29/24 13:00	01/31/24 13:17
880-38720-12	SB-9-S-2'-240129	Solid	01/29/24 13:10	01/31/24 13:17
880-38720-13	SB-10-S-1'-240129	Solid	01/29/24 13:50	01/31/24 13:17
880-38720-14	SB-10-S-2'-240129	Solid	01/29/24 14:00	01/31/24 13:17
880-38720-15	SB-10-S-3'-240129	Solid	01/29/24 14:10	01/31/24 13:17

Eurofins Midland
1211 W Florida Ave
Midland TX 79701
Phone (432) 704-5440

Chain of Custody Record

eurofins | Environment Testing

720

Client Information	Sampler: Heath Boyd	Lab PM: Builes, John	Carrier Tracking No(s):	COC No.: 880-8032-1136 6
Client Contact: Mr Morgan Jordan	Phone: 575-390-4618	E-Mail: John Builes@et.eurofinsus com	State of Origin: NM	Page: ~~Page 8 of 14~~ Page 1 of 2
Company: ARCADIS US Inc	PWSID:			Job #:
Address: 1004 North Big Spring Suite 300	Due Date Requested:			
City: Midland	TAT Requested (days): Standard			
State, Zip: TX, 79701	Compliance Project: Δ Yes Δ No			
Phone: 281-644-9437(Tel)	PO #: Purchase Order Requested			
Email: douglas jordan@arcadis com	WO #:			
Project Name: WLU 47	Project #: ~~88002020~~ 30209661			
Site: Lovington, NM	SSOW#:			

Analysis Requested

Preservation Codes

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	~~300_ORGFM_28D~~ 8015MOD_NM, 8021B	300_ORGFM_28D	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N			
SB-5-S-1'-240129	1/29/24	930	G	Solid				X		
SB-5-S-2'-240129		940		Solid			X	X		
SB-6-S-1'-240129		1010		Solid				X		
SB-6-S-2'-240129		1020		Solid			X	X		
SB-7-S-1'-240129		1100		Solid				X		
SB-7-S-2'-240129		1110		Solid			X	X		
SB 8-S-1'-240129		1140		Solid				X		
SB-8-S-2'-240129		1150		Solid			X	X		
SB-4-S-1'-240129		900		Solid				X		
SB-4-S-2'-240129	X	910	X	Solid			X	X		
	X			Solid				X		

880-38720 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements.

Empty Kit Relinquished by	Date	Time	Method of Shipment:
Relinquished by:	Date/Time: 1/29/24 1625	Company: Arcadis	Received by: 46 Date/Time: 4·27 Company
Relinquished by: Madira Gonzalez	Date/Time:	Company	Received by: Date/Time: 1/31/24 Company
Relinquished by:	Date/Time	Company	Received by: Date/Time: 1317 Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No

Cooler Temperature(s) °C and Other Remarks: 2.8/3.0

Ver: 01/16/2019

Eurofins Midland
1211 W Florida Ave
Midland TX 79701
Phone (432) 704-5440

Chain of Custody Record

eurofins Environment Testing

720

Client Information	Sampler: Heath Boyd	Lab PM: Builes John	Carrier Tracking No(s):	COC No: 880-8032-1136 6
Client Contact: Mr Morgan Jordan	Phone: 575-390-4618	E-Mail: John.Builes@et.eurofinsus.com	State of Origin: NM	Page: ~~Page 6 of 14~~ Page 2 of 2
Company: ARCADIS US Inc	PWSID:			Job #:
Address: 1004 North Big Spring Suite 300	Due Date Requested:			
City: Midland	TAT Requested (days): Standard			
State, Zip: TX, 79701	Compliance Project: Δ Yes Δ No			
Phone: 281-644-9437(Tel)	PO #: Purchase Order Requested			
Email: douglas.jordan@arcadis.com	WO #:			
Project Name: WLU 47	Project #: ~~88002020~~ 30209661			
Site: Lovington, NM	SSOW#:			

Analysis Requested

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_ORGFM_28D, 8015MOD_NM, 8021B	300-ORGFM_28D	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N			
SB-9-S-1'-240129	1/29/24	1300	G	Solid				X		
SB-9-S-2'-240129		1310		Solid			X	X		
SB-10-S-1'-240129		1350		Solid				X		
SB-10-S-2'-240129		1400		Solid			X	X		
SB-10-S-3'-240129		1410		Solid				X		
				Solid						
				Solid						
				Solid						
				Solid						
				Solid						

Preservation Codes

A	HCL	M	Hexane
B	NaOH	N	None
C	Zn Acetate	O	AsNaO2
D	Nitric Acid	P	Na2O4S
E	NaHSO4	Q	Na2SO3
F	MeOH	R	Na2S2O3
G	Amchlor	S	H2SO4
H	Ascorbic Acid	T	TSP Dodecahydrate
I	Ice	U	Acetone
J	DI Water	V	MCAA
K	EDTA	W	pH 4-5
L	EDA	Y	Trizma
		Z	other (specify)

Other:

Loc: 880
38720

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III IV, Other (specify)

Special Instructions/QC Requirements

Empty Kit Relinquished by	Date	Time	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		1/29/24 1625	Arcadis		4.27	
2	Yadira Gonzalez				1/31/24	
3					1317	

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

Eurofins Midland
1211 W. Florida Ave
Midland, TX 79701
Phone: 432-704-5440

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Builes, John	Carrier Tracking No(s):	COC No: 880-9104.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: John.Builes@et.eurofinsus.com	State of Origin: Texas	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 880-38720-1
Address: 9701 Harry Hines Blvd, ,	Due Date Requested: 2/6/2024			
City: Dallas	TAT Requested (days):			
State, Zip: TX, 75220				
Phone: 214-902-0300(Tel)	PO #:			
Email:	WO #:			
Project Name: WLU 47	Project #: 88002020			
Site:	SSOW#:			

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep Full TPH	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
SB-5-S-2'-240129 (880-38720-2)	1/29/24	09:40 Central		Solid			X	X	1	
SB-6-S-2'-240129 (880-38720-4)	1/29/24	10:20 Central		Solid			X	X	1	
SB-7-S-2'-240129 (880-38720-6)	1/29/24	11:10 Central		Solid			X	X	1	
SB-8-S-2'-240129 (880-38720-8)	1/29/24	11:50 Central		Solid			X	X	1	
SB-4-S-2'-240129 (880-38720-10)	1/29/24	09:10 Central		Solid			X	X	1	
SB-9-S-2'-240129 (880-38720-12)	1/29/24	13:10 Central		Solid			X	X	1	
SB-10-S-2'-240129 (880-38720-14)	1/29/24	14:00 Central		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/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by: FedEx	Date/Time:	Company
Relinquished by: FedEx	Date/Time: 2/3/24 1125	Company	Received by: MS	Date/Time: 2/3/24 1125	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 06/08/2021

Eurofins Midland
1211 W. Florida Ave
Midland, TX 79701
Phone: 432-704-5440

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Builes, John	Carrier Tracking No(s):	COC No: 880-9104.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: John.Builes@et.eurofinsus.com	State of Origin: Texas	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP - Texas		Job #: 880-38720-1
Address: 9701 Harry Hines Blvd, ,	Due Date Requested: 2/6/2024			
City: Dallas	TAT Requested (days):			
State, Zip: TX, 75220				
Phone: 214-902-0300(Tel)	PO #:			
Email:	WO #:			
Project Name: WLU 47	Project #: 88002020			
Site:	SSOW#:			

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015MOD_Calc	8015MOD_NM/8015NM_S_Prep Full TPH	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
SB-5-S-2'-240129 (880-38720-2)	1/29/24	09:40 Central		Solid			X	X	1	
SB-6-S-2'-240129 (880-38720-4)	1/29/24	10:20 Central		Solid			X	X	1	
SB-7-S-2'-240129 (880-38720-6)	1/29/24	11:10 Central		Solid			X	X	1	
SB-8-S-2'-240129 (880-38720-8)	1/29/24	11:50 Central		Solid			X	X	1	
SB-4-S-2'-240129 (880-38720-10)	1/29/24	09:10 Central		Solid			X	X	1	
SB-9-S-2'-240129 (880-38720-12)	1/29/24	13:10 Central		Solid			X	X	1	
SB-10-S-2'-240129 (880-38720-14)	1/29/24	14:00 Central		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/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:		
Relinquished by: AJ FedEx	Date/Time: 2/2/24 11:00	Company	Received by: FedEx	Date/Time:	Company	
Relinquished by: FedEx	Date/Time: 2/3/24 1125	Company	Received by: MS	Date/Time: 2/3/24 1125	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:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: ARCADIS US Inc

Job Number: 880-38720-1
SDG Number: Lovington, NM

Login Number: 38720
List Number: 1
Creator: Rodriguez, Leticia

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	

Login Sample Receipt Checklist

Client: ARCADIS US Inc

Job Number: 880-38720-1
SDG Number: Lovington, NM

Login Number: 38720
List Number: 2
Creator: Thompson, Christopher

List Source: Eurofins Dallas
List Creation: 02/03/24 01:45 PM

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?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Morgan Jordan
Arcadis U.S., Inc.
1004 North Big Spring
Suite 300
Midland, Texas 79701

Generated 3/6/2024 12:38:22 PM

JOB DESCRIPTION

WLU 47
Lovington, NM

JOB NUMBER

880-38875-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

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
3/6/2024 12:38:22 PM

Authorized for release by
John Builes, Project Manager
John.Builes@et.eurofinsus.com
(561)558-4549

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Laboratory Job ID: 880-38875-1
SDG: Lovington, NM

Table of Contents

Eurofins Midland
3/6/2024

Definitions/Glossary

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-38875-1
SDG: Lovington, NM

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
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: Arcadis U.S., Inc.
Project: WLU 47

Job ID: 880-38875-1

Job ID: 880-38875-1 Eurofins Midland

Job Narrative
880-38875-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

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

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

Receipt
The samples were received on 2/5/2024 8:42 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.5°C.

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: SB-11-S-1'-240202 (880-38875-1), SB-11-S-2'-240202 (880-38875-2), SB-12-S-1'-240202 (880-38875-3), SB-12-S-2'-240202 (880-38875-4), SB-13-S-1'-240202 (880-38875-5), SB-13-S-2'-240202 (880-38875-6), SB-14-S-1'-240202 (880-38875-7) and SB-14-S-2'-240202 (880-38875-8).

GC VOA
Method 8021B: Surrogate recovery for the following sample was outside control limits: SB-11-S-2'-240202 (880-38875-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-72461 and analytical batch 880-72692 was outside the upper control limits.

Method 8015MOD_NM: The method blank for preparation batch 880-72461 and analytical batch 880-72692 contained Gasoline Range Organics (GRO)-C6-C10 and 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.

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

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

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-38875-1
SDG: Lovington, NM

Client Sample ID: SB-11-S-1'-240202

Lab Sample ID: 880-38875-1
Matrix: Solid
Date Collected: 02/02/24 10:20
Date Received: 02/05/24 08:42

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3100		24.9	1.97	mg/Kg			02/05/24 20:53	5

Client Sample ID: SB-11-S-2'-240202

Lab Sample ID: 880-38875-2
Matrix: Solid
Date Collected: 02/02/24 10:30
Date Received: 02/05/24 08:42

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.00119	J	0.00199	0.000383	mg/Kg		02/15/24 08:59	02/15/24 16:06	1
Toluene	0.00131	J	0.00199	0.000454	mg/Kg		02/15/24 08:59	02/15/24 16:06	1
Ethylbenzene	0.00150	J	0.00199	0.000563	mg/Kg		02/15/24 08:59	02/15/24 16:06	1
m-Xylene & p-Xylene	0.00416		0.00398	0.00101	mg/Kg		02/15/24 08:59	02/15/24 16:06	1
o-Xylene	0.00172	J	0.00199	0.000343	mg/Kg		02/15/24 08:59	02/15/24 16:06	1
Xylenes, Total	0.00588		0.00398	0.00101	mg/Kg		02/15/24 08:59	02/15/24 16:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*56*	*S1-*	*70 - 130*	*02/15/24 08:59*	*02/15/24 16:06*	*1*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*02/15/24 08:59*	*02/15/24 16:06*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.00988		0.00398	0.00101	mg/Kg			02/15/24 16:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	182		49.6	14.9	mg/Kg			02/10/24 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	16.0	J B	49.6	14.9	mg/Kg		02/06/24 10:38	02/10/24 04:08	1
Diesel Range Organics (Over C10-C28)	166	B	49.6	14.9	mg/Kg		02/06/24 10:38	02/10/24 04:08	1
Oil Range Organics (Over C28-C36)	<14.9	U	49.6	14.9	mg/Kg		02/06/24 10:38	02/10/24 04:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*123*		*70 - 130*	*02/06/24 10:38*	*02/10/24 04:08*	*1*
o-Terphenyl	*103*		*70 - 130*	*02/06/24 10:38*	*02/10/24 04:08*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	361		5.04	0.398	mg/Kg			02/05/24 21:08	1

Client Sample ID: SB-12-S-1'-240202

Lab Sample ID: 880-38875-3
Matrix: Solid
Date Collected: 02/02/24 10:50
Date Received: 02/05/24 08:42

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	161		5.02	0.397	mg/Kg			02/05/24 21:12	1

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-38875-1
SDG: Lovington, NM

Client Sample ID: SB-12-S-2'-240202

Lab Sample ID: 880-38875-4
Matrix: Solid
Date Collected: 02/02/24 11:00
Date Received: 02/05/24 08:42

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000383	U	0.00199	0.000383	mg/Kg		02/15/24 08:59	02/15/24 16:27	1
Toluene	<0.000453	U	0.00199	0.000453	mg/Kg		02/15/24 08:59	02/15/24 16:27	1
Ethylbenzene	<0.000562	U	0.00199	0.000562	mg/Kg		02/15/24 08:59	02/15/24 16:27	1
m-Xylene & p-Xylene	<0.00100	U	0.00398	0.00100	mg/Kg		02/15/24 08:59	02/15/24 16:27	1
o-Xylene	**0.000460**	**J**	0.00199	0.000342	mg/Kg		02/15/24 08:59	02/15/24 16:27	1
Xylenes, Total	<0.00100	U	0.00398	0.00100	mg/Kg		02/15/24 08:59	02/15/24 16:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*	*02/15/24 08:59*	*02/15/24 16:27*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*02/15/24 08:59*	*02/15/24 16:27*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00100	U	0.00398	0.00100	mg/Kg			02/15/24 16:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**48.4**	**J**	50.2	15.0	mg/Kg			02/10/24 01:55	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	**32.4**	**J B**	50.2	15.0	mg/Kg		02/06/24 10:38	02/10/24 01:55	1
Diesel Range Organics (Over C10-C28)	**16.0**	**J B**	50.2	15.0	mg/Kg		02/06/24 10:38	02/10/24 01:55	1
OII Range Organics (Over C28-C36)	<15.0	U	50.2	15.0	mg/Kg		02/06/24 10:38	02/10/24 01:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*103*		*70 - 130*	*02/06/24 10:38*	*02/10/24 01:55*	*1*
o-Terphenyl	*88*		*70 - 130*	*02/06/24 10:38*	*02/10/24 01:55*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2570**		24.9	1.96	mg/Kg			02/05/24 21:27	5

Client Sample ID: SB-13-S-1'-240202

Lab Sample ID: 880-38875-5
Matrix: Solid
Date Collected: 02/02/24 11:20
Date Received: 02/05/24 08:42

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**462**		4.96	0.392	mg/Kg			02/05/24 21:32	1

Client Sample ID: SB-13-S-2'-240202

Lab Sample ID: 880-38875-6
Matrix: Solid
Date Collected: 02/02/24 11:30
Date Received: 02/05/24 08:42

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.000410**	**J**	0.00200	0.000384	mg/Kg		02/15/24 08:59	02/15/24 16:47	1
Toluene	<0.000455	U	0.00200	0.000455	mg/Kg		02/15/24 08:59	02/15/24 16:47	1
Ethylbenzene	<0.000564	U	0.00200	0.000564	mg/Kg		02/15/24 08:59	02/15/24 16:47	1

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-38875-1
SDG: Lovington, NM

Client Sample ID: SB-13-S-2'-240202

Lab Sample ID: 880-38875-6
Matrix: Solid
Date Collected: 02/02/24 11:30
Date Received: 02/05/24 08:42

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	0.00107	J	0.00399	0.00101	mg/Kg		02/15/24 08:59	02/15/24 16:47	1
o-Xylene	0.000411	J	0.00200	0.000343	mg/Kg		02/15/24 08:59	02/15/24 16:47	1
Xylenes, Total	0.00148	J	0.00399	0.00101	mg/Kg		02/15/24 08:59	02/15/24 16:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*02/15/24 08:59*	*02/15/24 16:47*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*02/15/24 08:59*	*02/15/24 16:47*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.00189	J	0.00399	0.00101	mg/Kg			02/15/24 16:47	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	162		50.3	15.1	mg/Kg			02/10/24 03:46	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	47.6	J B	50.3	15.1	mg/Kg		02/06/24 10:38	02/10/24 03:46	1
Diesel Range Organics (Over C10-C28)	114	B	50.3	15.1	mg/Kg		02/06/24 10:38	02/10/24 03:46	1
OII Range Organics (Over C28-C36)	<15.1	U	50.3	15.1	mg/Kg		02/06/24 10:38	02/10/24 03:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*116*		*70 - 130*	*02/06/24 10:38*	*02/10/24 03:46*	*1*
o-Terphenyl	*93*		*70 - 130*	*02/06/24 10:38*	*02/10/24 03:46*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	271		4.99	0.394	mg/Kg			02/05/24 21:37	1

Client Sample ID: SB-14-S-1'-240202

Lab Sample ID: 880-38875-7
Matrix: Solid
Date Collected: 02/02/24 11:40
Date Received: 02/05/24 08:42

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	308		5.00	0.395	mg/Kg			02/05/24 21:42	1

Client Sample ID: SB-14-S-2'-240202

Lab Sample ID: 880-38875-8
Matrix: Solid
Date Collected: 02/02/24 11:50
Date Received: 02/05/24 08:42

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000387	U	0.00201	0.000387	mg/Kg		02/15/24 08:59	02/15/24 17:08	1
Toluene	<0.000459	U	0.00201	0.000459	mg/Kg		02/15/24 08:59	02/15/24 17:08	1
Ethylbenzene	<0.000568	U	0.00201	0.000568	mg/Kg		02/15/24 08:59	02/15/24 17:08	1
m-Xylene & p-Xylene	<0.00102	U	0.00402	0.00102	mg/Kg		02/15/24 08:59	02/15/24 17:08	1
o-Xylene	0.000347	J	0.00201	0.000346	mg/Kg		02/15/24 08:59	02/15/24 17:08	1
Xylenes, Total	<0.00102	U	0.00402	0.00102	mg/Kg		02/15/24 08:59	02/15/24 17:08	1

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-38875-1
SDG: Lovington, NM

Client Sample ID: SB-14-S-2'-240202

Date Collected: 02/02/24 11:50
Date Received: 02/05/24 08:42

Lab Sample ID: 880-38875-8

Matrix: Solid

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*	*02/15/24 08:59*	*02/15/24 17:08*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*02/15/24 08:59*	*02/15/24 17:08*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00102	U	0.00402	0.00102	mg/Kg			02/15/24 17:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**41.9**	**J**	50.5	15.1	mg/Kg			02/10/24 02:17	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	**20.3**	**J B**	50.5	15.1	mg/Kg		02/06/24 10:38	02/10/24 02:17	1
Diesel Range Organics (Over C10-C28)	**21.6**	**J B**	50.5	15.1	mg/Kg		02/06/24 10:38	02/10/24 02:17	1
OII Range Organics (Over C28-C36)	<15.1	U	50.5	15.1	mg/Kg		02/06/24 10:38	02/10/24 02:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*124*		*70 - 130*	*02/06/24 10:38*	*02/10/24 02:17*	*1*
o-Terphenyl	*106*		*70 - 130*	*02/06/24 10:38*	*02/10/24 02:17*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2240**		25.2	1.99	mg/Kg			02/05/24 21:47	5

Surrogate Summary

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-38875-1
SDG: Lovington, NM

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-38875-2	SB-11-S-2'-240202	56 S1-	86
880-38875-4	SB-12-S-2'-240202	110	98
880-38875-6	SB-13-S-2'-240202	97	88
880-38875-8	SB-14-S-2'-240202	101	89
LCS 880-73222/1-A	Lab Control Sample	120	84
LCSD 880-73222/2-A	Lab Control Sample Dup	114	94
MB 880-73222/5-A	Method Blank	82	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)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-38875-2	SB-11-S-2'-240202	123	103
880-38875-4	SB-12-S-2'-240202	103	88
880-38875-6	SB-13-S-2'-240202	116	93
880-38875-8	SB-14-S-2'-240202	124	106
LCS 880-72461/2-A	Lab Control Sample	96	97
LCSD 880-72461/3-A	Lab Control Sample Dup	100	100
MB 880-72461/1-A	Method Blank	176 S1+	161 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-38875-1
SDG: Lovington, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-73222/5-A
Matrix: Solid
Analysis Batch: 73209

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 73222

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		02/15/24 08:59	02/15/24 11:17	1
Toluene	<0.000456	U	0.00200	0.000456	mg/Kg		02/15/24 08:59	02/15/24 11:17	1
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		02/15/24 08:59	02/15/24 11:17	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		02/15/24 08:59	02/15/24 11:17	1
o-Xylene	<0.000344	U	0.00200	0.000344	mg/Kg		02/15/24 08:59	02/15/24 11:17	1
Xylenes, Total	<0.00101	U	0.00400	0.00101	mg/Kg		02/15/24 08:59	02/15/24 11:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*82*		*70 - 130*	*02/15/24 08:59*	*02/15/24 11:17*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*02/15/24 08:59*	*02/15/24 11:17*	*1*

Lab Sample ID: LCS 880-73222/1-A
Matrix: Solid
Analysis Batch: 73209

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 73222

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09819		mg/Kg		98	70 - 130		
Toluene			0.100	0.1209		mg/Kg		121	70 - 130		
Ethylbenzene			0.100	0.1149		mg/Kg		115	70 - 130		
m-Xylene & p-Xylene			0.200	0.2350		mg/Kg		117	70 - 130		
o-Xylene			0.100	0.1174		mg/Kg		117	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*120*		*70 - 130*
1,4-Difluorobenzene (Surr)	*84*		*70 - 130*

Lab Sample ID: LCSD 880-73222/2-A
Matrix: Solid
Analysis Batch: 73209

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 73222

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1042		mg/Kg		104	70 - 130	6	35
Toluene			0.100	0.1198		mg/Kg		120	70 - 130	1	35
Ethylbenzene			0.100	0.1131		mg/Kg		113	70 - 130	2	35
m-Xylene & p-Xylene			0.200	0.2284		mg/Kg		114	70 - 130	3	35
o-Xylene			0.100	0.1137		mg/Kg		114	70 - 130	3	35

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

QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-38875-1
SDG: Lovington, NM

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

Lab Sample ID: MB 880-72461/1-A
Matrix: Solid
Analysis Batch: 72692

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 72461

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	18.54	J	50.0	15.0	mg/Kg		02/06/24 10:38	02/09/24 19:17	1
Diesel Range Organics (Over C10-C28)	18.24	J	50.0	15.0	mg/Kg		02/06/24 10:38	02/09/24 19:17	1
Oil Range Organics (Over C28-C36)	<15.0	U	50.0	15.0	mg/Kg		02/06/24 10:38	02/09/24 19:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*176*	*S1+*	*70 - 130*	*02/06/24 10:38*	*02/09/24 19:17*	*1*
o-Terphenyl	*161*	*S1+*	*70 - 130*	*02/06/24 10:38*	*02/09/24 19:17*	*1*

Lab Sample ID: LCS 880-72461/2-A
Matrix: Solid
Analysis Batch: 72692

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 72461

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	902.7		mg/Kg		90	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*96*		*70 - 130*
o-Terphenyl	*97*		*70 - 130*

Lab Sample ID: LCSD 880-72461/3-A
Matrix: Solid
Analysis Batch: 72692

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 72461

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1068		mg/Kg		107	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	1000	966.8		mg/Kg		97	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*100*		*70 - 130*
o-Terphenyl	*100*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-72356/1-A
Matrix: Solid
Analysis Batch: 72369

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.395	U	5.00	0.395	mg/Kg			02/05/24 19:29	1

QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-38875-1
SDG: Lovington, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-72356/2-A
Matrix: Solid
Analysis Batch: 72369

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	237.5		mg/Kg		95	90 - 110		

Lab Sample ID: LCSD 880-72356/3-A
Matrix: Solid
Analysis Batch: 72369

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	239.6		mg/Kg		96	90 - 110	1	20

Lab Sample ID: 880-38875-1 MS
Matrix: Solid
Analysis Batch: 72369

Client Sample ID: SB-11-S-1'-240202
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	3100		1250	4271		mg/Kg		94	90 - 110		

Lab Sample ID: 880-38875-1 MSD
Matrix: Solid
Analysis Batch: 72369

Client Sample ID: SB-11-S-1'-240202
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	3100		1250	4255		mg/Kg		93	90 - 110	0	20

QC Association Summary

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-38875-1
SDG: Lovington, NM

GC VOA

Analysis Batch: 73209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38875-2	SB-11-S-2'-240202	Total/NA	Solid	8021B	73222
880-38875-4	SB-12-S-2'-240202	Total/NA	Solid	8021B	73222
880-38875-6	SB-13-S-2'-240202	Total/NA	Solid	8021B	73222
880-38875-8	SB-14-S-2'-240202	Total/NA	Solid	8021B	73222
MB 880-73222/5-A	Method Blank	Total/NA	Solid	8021B	73222
LCS 880-73222/1-A	Lab Control Sample	Total/NA	Solid	8021B	73222
LCSD 880-73222/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	73222

Prep Batch: 73222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38875-2	SB-11-S-2'-240202	Total/NA	Solid	5030B	
880-38875-4	SB-12-S-2'-240202	Total/NA	Solid	5030B	
880-38875-6	SB-13-S-2'-240202	Total/NA	Solid	5030B	
880-38875-8	SB-14-S-2'-240202	Total/NA	Solid	5030B	
MB 880-73222/5-A	Method Blank	Total/NA	Solid	5030B	
LCS 880-73222/1-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 880-73222/2-A	Lab Control Sample Dup	Total/NA	Solid	5030B	

Analysis Batch: 73310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38875-2	SB-11-S-2'-240202	Total/NA	Solid	Total BTEX	
880-38875-4	SB-12-S-2'-240202	Total/NA	Solid	Total BTEX	
880-38875-6	SB-13-S-2'-240202	Total/NA	Solid	Total BTEX	
880-38875-8	SB-14-S-2'-240202	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 72461

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38875-2	SB-11-S-2'-240202	Total/NA	Solid	8015NM Prep	
880-38875-4	SB-12-S-2'-240202	Total/NA	Solid	8015NM Prep	
880-38875-6	SB-13-S-2'-240202	Total/NA	Solid	8015NM Prep	
880-38875-8	SB-14-S-2'-240202	Total/NA	Solid	8015NM Prep	
MB 880-72461/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-72461/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-72461/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 72692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38875-2	SB-11-S-2'-240202	Total/NA	Solid	8015B NM	72461
880-38875-4	SB-12-S-2'-240202	Total/NA	Solid	8015B NM	72461
880-38875-6	SB-13-S-2'-240202	Total/NA	Solid	8015B NM	72461
880-38875-8	SB-14-S-2'-240202	Total/NA	Solid	8015B NM	72461
MB 880-72461/1-A	Method Blank	Total/NA	Solid	8015B NM	72461
LCS 880-72461/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	72461
LCSD 880-72461/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	72461

Analysis Batch: 72951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38875-2	SB-11-S-2'-240202	Total/NA	Solid	8015 NM	
880-38875-4	SB-12-S-2'-240202	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-38875-1
SDG: Lovington, NM

GC Semi VOA (Continued)

Analysis Batch: 72951 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38875-6	SB-13-S-2'-240202	Total/NA	Solid	8015 NM	
880-38875-8	SB-14-S-2'-240202	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 72356

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38875-1	SB-11-S-1'-240202	Soluble	Solid	DI Leach	
880-38875-2	SB-11-S-2'-240202	Soluble	Solid	DI Leach	
880-38875-3	SB-12-S-1'-240202	Soluble	Solid	DI Leach	
880-38875-4	SB-12-S-2'-240202	Soluble	Solid	DI Leach	
880-38875-5	SB-13-S-1'-240202	Soluble	Solid	DI Leach	
880-38875-6	SB-13-S-2'-240202	Soluble	Solid	DI Leach	
880-38875-7	SB-14-S-1'-240202	Soluble	Solid	DI Leach	
880-38875-8	SB-14-S-2'-240202	Soluble	Solid	DI Leach	
MB 880-72356/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-72356/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-72356/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-38875-1 MS	SB-11-S-1'-240202	Soluble	Solid	DI Leach	
880-38875-1 MSD	SB-11-S-1'-240202	Soluble	Solid	DI Leach	

Analysis Batch: 72369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-38875-1	SB-11-S-1'-240202	Soluble	Solid	300.0	72356
880-38875-2	SB-11-S-2'-240202	Soluble	Solid	300.0	72356
880-38875-3	SB-12-S-1'-240202	Soluble	Solid	300.0	72356
880-38875-4	SB-12-S-2'-240202	Soluble	Solid	300.0	72356
880-38875-5	SB-13-S-1'-240202	Soluble	Solid	300.0	72356
880-38875-6	SB-13-S-2'-240202	Soluble	Solid	300.0	72356
880-38875-7	SB-14-S-1'-240202	Soluble	Solid	300.0	72356
880-38875-8	SB-14-S-2'-240202	Soluble	Solid	300.0	72356
MB 880-72356/1-A	Method Blank	Soluble	Solid	300.0	72356
LCS 880-72356/2-A	Lab Control Sample	Soluble	Solid	300.0	72356
LCSD 880-72356/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	72356
880-38875-1 MS	SB-11-S-1'-240202	Soluble	Solid	300.0	72356
880-38875-1 MSD	SB-11-S-1'-240202	Soluble	Solid	300.0	72356

Lab Chronicle

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-38875-1
SDG: Lovington, NM

Client Sample ID: SB-11-S-1'-240202

Lab Sample ID: 880-38875-1
Matrix: Solid
Date Collected: 02/02/24 10:20
Date Received: 02/05/24 08:42

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	72356	02/05/24 10:33	SMC	EET MID
Soluble	Analysis	300.0		5			72369	02/05/24 20:53	CH	EET MID

Client Sample ID: SB-11-S-2'-240202

Lab Sample ID: 880-38875-2
Matrix: Solid
Date Collected: 02/02/24 10:30
Date Received: 02/05/24 08:42

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.02 g	5 mL	73222	02/15/24 08:59	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73209	02/15/24 16:06	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			73310	02/15/24 16:06	SM	EET MID
Total/NA	Analysis	8015 NM		1			72951	02/10/24 04:08	SM	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	72461	02/06/24 10:38	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72692	02/10/24 04:08	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	72356	02/05/24 10:33	SMC	EET MID
Soluble	Analysis	300.0		1			72369	02/05/24 21:08	CH	EET MID

Client Sample ID: SB-12-S-1'-240202

Lab Sample ID: 880-38875-3
Matrix: Solid
Date Collected: 02/02/24 10:50
Date Received: 02/05/24 08:42

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	72356	02/05/24 10:33	SMC	EET MID
Soluble	Analysis	300.0		1			72369	02/05/24 21:12	CH	EET MID

Client Sample ID: SB-12-S-2'-240202

Lab Sample ID: 880-38875-4
Matrix: Solid
Date Collected: 02/02/24 11:00
Date Received: 02/05/24 08:42

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.03 g	5 mL	73222	02/15/24 08:59	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73209	02/15/24 16:27	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			73310	02/15/24 16:27	SM	EET MID
Total/NA	Analysis	8015 NM		1			72951	02/10/24 01:55	SM	EET MID
Total/NA	Prep	8015NM Prep			9.97 g	10 mL	72461	02/06/24 10:38	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72692	02/10/24 01:55	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	72356	02/05/24 10:33	SMC	EET MID
Soluble	Analysis	300.0		5			72369	02/05/24 21:27	CH	EET MID

Lab Chronicle

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-38875-1
SDG: Lovington, NM

Client Sample ID: SB-13-S-1'-240202

Lab Sample ID: 880-38875-5
Matrix: Solid
Date Collected: 02/02/24 11:20
Date Received: 02/05/24 08:42

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	72356	02/05/24 10:33	SMC	EET MID
Soluble	Analysis	300.0		1			72369	02/05/24 21:32	CH	EET MID

Client Sample ID: SB-13-S-2'-240202

Lab Sample ID: 880-38875-6
Matrix: Solid
Date Collected: 02/02/24 11:30
Date Received: 02/05/24 08:42

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.01 g	5 mL	73222	02/15/24 08:59	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73209	02/15/24 16:47	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			73310	02/15/24 16:47	SM	EET MID
Total/NA	Analysis	8015 NM		1			72951	02/10/24 03:46	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	72461	02/06/24 10:38	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72692	02/10/24 03:46	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	72356	02/05/24 10:33	SMC	EET MID
Soluble	Analysis	300.0		1			72369	02/05/24 21:37	CH	EET MID

Client Sample ID: SB-14-S-1'-240202

Lab Sample ID: 880-38875-7
Matrix: Solid
Date Collected: 02/02/24 11:40
Date Received: 02/05/24 08:42

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	72356	02/05/24 10:33	SMC	EET MID
Soluble	Analysis	300.0		1			72369	02/05/24 21:42	CH	EET MID

Client Sample ID: SB-14-S-2'-240202

Lab Sample ID: 880-38875-8
Matrix: Solid
Date Collected: 02/02/24 11:50
Date Received: 02/05/24 08:42

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.97 g	5 mL	73222	02/15/24 08:59	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73209	02/15/24 17:08	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			73310	02/15/24 17:08	SM	EET MID
Total/NA	Analysis	8015 NM		1			72951	02/10/24 02:17	SM	EET MID
Total/NA	Prep	8015NM Prep			9.91 g	10 mL	72461	02/06/24 10:38	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72692	02/10/24 02:17	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	72356	02/05/24 10:33	SMC	EET MID
Soluble	Analysis	300.0		5			72369	02/05/24 21:47	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-38875-1
SDG: Lovington, 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	T104704400-23-26	06-30-24

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: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-38875-1
SDG: Lovington, 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
5030B	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: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-38875-1
SDG: Lovington, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-38875-1	SB-11-S-1'-240202	Solid	02/02/24 10:20	02/05/24 08:42
880-38875-2	SB-11-S-2'-240202	Solid	02/02/24 10:30	02/05/24 08:42
880-38875-3	SB-12-S-1'-240202	Solid	02/02/24 10:50	02/05/24 08:42
880-38875-4	SB-12-S-2'-240202	Solid	02/02/24 11:00	02/05/24 08:42
880-38875-5	SB-13-S-1'-240202	Solid	02/02/24 11:20	02/05/24 08:42
880-38875-6	SB-13-S-2'-240202	Solid	02/02/24 11:30	02/05/24 08:42
880-38875-7	SB-14-S-1'-240202	Solid	02/02/24 11:40	02/05/24 08:42
880-38875-8	SB-14-S-2'-240202	Solid	02/02/24 11:50	02/05/24 08:42

Eurofins Midland
1211 W Florida Ave
Midland TX 79701
Phone (432) 704-5440

Chain of Custody Record

eurofins Environment Testing

875

Client Information	Sampler: Heath Boyd	Lab PM: Builes, John	Carrier Tracking No(s):	COC No: 880-8032-1136 11
Client Contact: Mr Morgan Jordan	Phone: 575-390-4618	E-Mail: John.Builes@et.eurofinsus.com	State of Origin: NM	Page: Page 13 ~~14 of 14~~ 1 of 1
Company: ARCADIS US Inc	PWSID:			Job #:
Address: 1004 North Big Spring Suite 300	Due Date Requested:			
City: Midland	TAT Requested (days): Standard			
State, Zip: TX 79701	Compliance Project: Δ Yes Δ No			
Phone: 281-644-9437(Tel)	PO #: Purchase Order Requested			
Email: douglas.jordan@arcadis.com	WO #:			
Project Name: WLH 47	Project #: ~~88002020~~ 30209661			
Site: Lovington, NM	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_ORGEM_28B, 8015MOD_NM, 8021B (FB)	300-0265FM-7B2D	Total Number of containers	Special Instructions/Note
			Preservation Code:				N			
SB-11-S-1'-240202	2/2/24	1020	G	Solid				X		
SB-11-S-2'-240202		1030		Solid			X	X		
SB-12-S-1'-240202		1050		Solid				X		
SB-12-S-2'-240202		1100		Solid			X	X		
SB-13-S-1'-240202		1120		Solid				X		
SB-13-S-2'-240202		1130		Solid			X	X		
SB-14-S-1'-240202		1140		Solid				X		
SB-14-S-2'-240202	X	1150	X	Solid			X	X		
				Solid						
				Solid						
				Solid						

880-38875 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements

Empty Kit Relinquished by	Date	Time	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		2/2/24 1500	Arcadis	EC	2-2-24 2154	
2					2/5/24 842	
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks: 1.3 | 1.5

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Arcadis U.S., Inc.

Job Number: 880-38875-1
SDG Number: Lovington, NM

Login Number: 38875
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Morgan Jordan
ARCADIS US Inc
1004 North Big Spring
Suite 300
Midland, Texas 79701

Generated 2/19/2024 5:45:06 PM

JOB DESCRIPTION

WLU 47
Lovington NM

JOB NUMBER

880-39033-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

my EOL

Eurofins Midland

Job Notes

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

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

Authorization

Generated
2/19/2024 5:45:06 PM

Authorized for release by
John Builes, Project Manager
John.Builes@et.eurofinsus.com
(561)558-4549

Client: ARCADIS US Inc
Project/Site: WLU 47

Laboratory Job ID: 880-39033-1
SDG: Lovington NM

Table of Contents

Definitions/Glossary

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-39033-1
SDG: Lovington NM

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
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: ARCADIS US Inc
Project: WLU 47

Job ID: 880-39033-1

Job ID: 880-39033-1 Eurofins Midland

Job Narrative
880-39033-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

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

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

Receipt
The samples were received on 2/7/2024 12:54 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: SB-15-S-1-240205 (880-39033-1), SB-15-S-2-240205 (880-39033-2), SB-16-S-1-240205 (880-39033-3), SB-16-S-2-240205 (880-39033-4), SB-17-S-1-240205 (880-39033-5) and SB-17-S-2-240205 (880-39033-6).

GC VOA
Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-73192 and analytical batch 880-73320 was outside the control limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: SB-15-S-2-240205 (880-39033-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-72531 and analytical batch 880-72814 was outside the upper control limits.

Method 8015MOD_NM: The method blank for preparation batch 880-72531 and analytical batch 880-72814 contained Gasoline Range Organics (GRO)-C6-C10 above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

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

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

Client Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-39033-1
SDG: Lovington NM

Client Sample ID: SB-15-S-1-240205

Lab Sample ID: 880-39033-1
Matrix: Solid
Date Collected: 02/05/24 09:00
Date Received: 02/07/24 12:54

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	50.2		4.99	0.394	mg/Kg			02/09/24 23:35	1

Client Sample ID: SB-15-S-2-240205

Lab Sample ID: 880-39033-2
Matrix: Solid
Date Collected: 02/05/24 09:10
Date Received: 02/07/24 12:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000383	U	0.00199	0.000383	mg/Kg		02/14/24 16:48	02/16/24 11:28	1
Toluene	0.000565	J	0.00199	0.000453	mg/Kg		02/14/24 16:48	02/16/24 11:28	1
Ethylbenzene	<0.000562	U	0.00199	0.000562	mg/Kg		02/14/24 16:48	02/16/24 11:28	1
m-Xylene & p-Xylene	<0.00100	U	0.00398	0.00100	mg/Kg		02/14/24 16:48	02/16/24 11:28	1
o-Xylene	0.000437	J	0.00199	0.000342	mg/Kg		02/14/24 16:48	02/16/24 11:28	1
Xylenes, Total	<0.00100	U	0.00398	0.00100	mg/Kg		02/14/24 16:48	02/16/24 11:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*56*	*S1-*	*70 - 130*	*02/14/24 16:48*	*02/16/24 11:28*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*02/14/24 16:48*	*02/16/24 11:28*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.00100	J	0.00398	0.00100	mg/Kg			02/16/24 11:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	83.6		50.4	15.1	mg/Kg			02/12/24 03:47	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	48.2	J B	50.4	15.1	mg/Kg		02/07/24 13:35	02/12/24 03:47	1
Diesel Range Organics (Over C10-C28)	35.4	J	50.4	15.1	mg/Kg		02/07/24 13:35	02/12/24 03:47	1
OII Range Organics (Over C28-C36)	<15.1	U	50.4	15.1	mg/Kg		02/07/24 13:35	02/12/24 03:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*118*		*70 - 130*	*02/07/24 13:35*	*02/12/24 03:47*	*1*
o-Terphenyl	*123*		*70 - 130*	*02/07/24 13:35*	*02/12/24 03:47*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	120		4.98	0.393	mg/Kg			02/09/24 23:40	1

Client Sample ID: SB-16-S-1-240205

Lab Sample ID: 880-39033-3
Matrix: Solid
Date Collected: 02/05/24 09:20
Date Received: 02/07/24 12:54

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	73.2		5.00	0.395	mg/Kg			02/09/24 23:45	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-39033-1
SDG: Lovington NM

Client Sample ID: SB-16-S-2-240205

Lab Sample ID: 880-39033-4
Matrix: Solid
Date Collected: 02/05/24 09:30
Date Received: 02/07/24 12:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000381	U	0.00198	0.000381	mg/Kg		02/14/24 16:48	02/16/24 11:49	1
Toluene	<0.000451	U	0.00198	0.000451	mg/Kg		02/14/24 16:48	02/16/24 11:49	1
Ethylbenzene	<0.000559	U	0.00198	0.000559	mg/Kg		02/14/24 16:48	02/16/24 11:49	1
m-Xylene & p-Xylene	<0.00100	U	0.00396	0.00100	mg/Kg		02/14/24 16:48	02/16/24 11:49	1
o-Xylene	<0.000341	U	0.00198	0.000341	mg/Kg		02/14/24 16:48	02/16/24 11:49	1
Xylenes, Total	<0.00100	U	0.00396	0.00100	mg/Kg		02/14/24 16:48	02/16/24 11:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*76*		*70 - 130*	*02/14/24 16:48*	*02/16/24 11:49*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*	*02/14/24 16:48*	*02/16/24 11:49*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00100	U	0.00396	0.00100	mg/Kg			02/16/24 11:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**82.2**		50.3	15.1	mg/Kg			02/12/24 04:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**47.2**	**J B**	50.3	15.1	mg/Kg		02/07/24 13:35	02/12/24 04:09	1
Diesel Range Organics (Over C10-C28)	**35.0**	**J**	50.3	15.1	mg/Kg		02/07/24 13:35	02/12/24 04:09	1
OII Range Organics (Over C28-C36)	<15.1	U	50.3	15.1	mg/Kg		02/07/24 13:35	02/12/24 04:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*112*		*70 - 130*	*02/07/24 13:35*	*02/12/24 04:09*	*1*
o-Terphenyl	*119*		*70 - 130*	*02/07/24 13:35*	*02/12/24 04:09*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**66.1**		5.02	0.397	mg/Kg			02/09/24 23:59	1

Client Sample ID: SB-17-S-1-240205

Lab Sample ID: 880-39033-5
Matrix: Solid
Date Collected: 02/05/24 09:40
Date Received: 02/07/24 12:54

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**98.1**		5.03	0.397	mg/Kg			02/10/24 00:03	1

Client Sample ID: SB-17-S-2-240205

Lab Sample ID: 880-39033-6
Matrix: Solid
Date Collected: 02/05/24 09:50
Date Received: 02/07/24 12:54

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000389	U	0.00202	0.000389	mg/Kg		02/14/24 16:48	02/16/24 12:09	1
Toluene	<0.000461	U	0.00202	0.000461	mg/Kg		02/14/24 16:48	02/16/24 12:09	1
Ethylbenzene	<0.000571	U	0.00202	0.000571	mg/Kg		02/14/24 16:48	02/16/24 12:09	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-39033-1
SDG: Lovington NM

Client Sample ID: SB-17-S-2-240205
Date Collected: 02/05/24 09:50
Date Received: 02/07/24 12:54

Lab Sample ID: 880-39033-6
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	<0.00102	U	0.00404	0.00102	mg/Kg		02/14/24 16:48	02/16/24 12:09	1
o-Xylene	<0.000347	U	0.00202	0.000347	mg/Kg		02/14/24 16:48	02/16/24 12:09	1
Xylenes, Total	<0.00102	U	0.00404	0.00102	mg/Kg		02/14/24 16:48	02/16/24 12:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*75*		*70 - 130*	*02/14/24 16:48*	*02/16/24 12:09*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*	*02/14/24 16:48*	*02/16/24 12:09*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00102	U	0.00404	0.00102	mg/Kg			02/16/24 12:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**80.1**		50.2	15.0	mg/Kg			02/12/24 04:30	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	**47.2**	**J B**	50.2	15.0	mg/Kg		02/07/24 13:35	02/12/24 04:30	1
Diesel Range Organics (Over C10-C28)	**32.9**	**J**	50.2	15.0	mg/Kg		02/07/24 13:35	02/12/24 04:30	1
OII Range Organics (Over C28-C36)	<15.0	U	50.2	15.0	mg/Kg		02/07/24 13:35	02/12/24 04:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*120*		*70 - 130*	*02/07/24 13:35*	*02/12/24 04:30*	*1*
o-Terphenyl	*125*		*70 - 130*	*02/07/24 13:35*	*02/12/24 04:30*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**64.7**		4.99	0.394	mg/Kg			02/10/24 00:17	1

Surrogate Summary

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-39033-1
SDG: Lovington NM

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-39033-2	SB-15-S-2-240205	56 S1-	97
880-39033-2 MS	SB-15-S-2-240205	116	122
880-39033-2 MSD	SB-15-S-2-240205	113	121
880-39033-4	SB-16-S-2-240205	76	94
880-39033-6	SB-17-S-2-240205	75	97
LCS 880-73192/1-A	Lab Control Sample	112	120
LCSD 880-73192/2-A	Lab Control Sample Dup	112	120
MB 880-73192/5-A	Method Blank	66 S1-	98

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-39033-2	SB-15-S-2-240205	118	123
880-39033-4	SB-16-S-2-240205	112	119
880-39033-6	SB-17-S-2-240205	120	125
LCS 880-72531/2-A	Lab Control Sample	120	115
LCSD 880-72531/3-A	Lab Control Sample Dup	105	101
MB 880-72531/1-A	Method Blank	204 S1+	221 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-39033-1
SDG: Lovington NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-73192/5-A
Matrix: Solid
Analysis Batch: 73320

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 73192

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		02/14/24 16:48	02/16/24 11:06	1
Toluene	<0.000456	U	0.00200	0.000456	mg/Kg		02/14/24 16:48	02/16/24 11:06	1
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		02/14/24 16:48	02/16/24 11:06	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		02/14/24 16:48	02/16/24 11:06	1
o-Xylene	<0.000344	U	0.00200	0.000344	mg/Kg		02/14/24 16:48	02/16/24 11:06	1
Xylenes, Total	<0.00101	U	0.00400	0.00101	mg/Kg		02/14/24 16:48	02/16/24 11:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*66*	*S1-*	*70 - 130*	*02/14/24 16:48*	*02/16/24 11:06*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*02/14/24 16:48*	*02/16/24 11:06*	*1*

Lab Sample ID: LCS 880-73192/1-A
Matrix: Solid
Analysis Batch: 73320

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 73192

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.09329		mg/Kg		93	70 - 130		
Toluene			0.100	0.08754		mg/Kg		88	70 - 130		
Ethylbenzene			0.100	0.09520		mg/Kg		95	70 - 130		
m-Xylene & p-Xylene			0.200	0.2018		mg/Kg		101	70 - 130		
o-Xylene			0.100	0.09753		mg/Kg		98	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*
1,4-Difluorobenzene (Surr)	*120*		*70 - 130*

Lab Sample ID: LCSD 880-73192/2-A
Matrix: Solid
Analysis Batch: 73320

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 73192

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09399		mg/Kg		94	70 - 130	1	35
Toluene			0.100	0.08640		mg/Kg		86	70 - 130	1	35
Ethylbenzene			0.100	0.09818		mg/Kg		98	70 - 130	3	35
m-Xylene & p-Xylene			0.200	0.2054		mg/Kg		103	70 - 130	2	35
o-Xylene			0.100	0.09884		mg/Kg		99	70 - 130	1	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*
1,4-Difluorobenzene (Surr)	*120*		*70 - 130*

Lab Sample ID: 880-39033-2 MS
Matrix: Solid
Analysis Batch: 73320

Client Sample ID: SB-15-S-2-240205
Prep Type: Total/NA
Prep Batch: 73192

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.000383	U	0.100	0.09558		mg/Kg		95	70 - 130		
Toluene	0.000565	J	0.100	0.09032		mg/Kg		90	70 - 130		

Eurofins Midland

QC Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-39033-1
SDG: Lovington NM

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

Lab Sample ID: 880-39033-2 MS
Matrix: Solid
Analysis Batch: 73320

Client Sample ID: SB-15-S-2-240205
Prep Type: Total/NA
Prep Batch: 73192

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Ethylbenzene	<0.000562	U	0.100	0.1022		mg/Kg		102	70 - 130		
m-Xylene & p-Xylene	<0.00100	U	0.200	0.2133		mg/Kg		106	70 - 130		
o-Xylene	0.000437	J	0.100	0.1035		mg/Kg		103	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*
1,4-Difluorobenzene (Surr)	*122*		*70 - 130*

Lab Sample ID: 880-39033-2 MSD
Matrix: Solid
Analysis Batch: 73320

Client Sample ID: SB-15-S-2-240205
Prep Type: Total/NA
Prep Batch: 73192

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.000383	U	0.101	0.1046		mg/Kg		104	70 - 130	9	35
Toluene	0.000565	J	0.101	0.09485		mg/Kg		94	70 - 130	5	35
Ethylbenzene	<0.000562	U	0.101	0.1090		mg/Kg		108	70 - 130	6	35
m-Xylene & p-Xylene	<0.00100	U	0.201	0.2261		mg/Kg		112	70 - 130	6	35
o-Xylene	0.000437	J	0.101	0.1101		mg/Kg		109	70 - 130	6	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*
1,4-Difluorobenzene (Surr)	*121*		*70 - 130*

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

Lab Sample ID: MB 880-72531/1-A
Matrix: Solid
Analysis Batch: 72814

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 72531

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	23.70	J	50.0	15.0	mg/Kg		02/06/24 16:51	02/11/24 19:18	1
Diesel Range Organics (Over C10-C28)	<15.0	U	50.0	15.0	mg/Kg		02/06/24 16:51	02/11/24 19:18	1
OII Range Organics (Over C28-C36)	<15.0	U	50.0	15.0	mg/Kg		02/06/24 16:51	02/11/24 19:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*204*	*S1+*	*70 - 130*	*02/06/24 16:51*	*02/11/24 19:18*	*1*
o-Terphenyl	*221*	*S1+*	*70 - 130*	*02/06/24 16:51*	*02/11/24 19:18*	*1*

Lab Sample ID: LCS 880-72531/2-A
Matrix: Solid
Analysis Batch: 72814

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 72531

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1019		mg/Kg		102	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	1033		mg/Kg		103	70 - 130		

QC Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-39033-1
SDG: Lovington NM

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

Lab Sample ID: LCS 880-72531/2-A
Matrix: Solid
Analysis Batch: 72814

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 72531

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	120		70 - 130
o-Terphenyl	115		70 - 130

Lab Sample ID: LCSD 880-72531/3-A
Matrix: Solid
Analysis Batch: 72814

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 72531

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	903.6		mg/Kg		90	70 - 130	12	20
Diesel Range Organics (Over C10-C28)			1000	932.7		mg/Kg		93	70 - 130	10	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	105		70 - 130
o-Terphenyl	101		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-72595/1-A
Matrix: Solid
Analysis Batch: 72647

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.395	U	5.00	0.395	mg/Kg			02/09/24 22:26	1

Lab Sample ID: LCS 880-72595/2-A
Matrix: Solid
Analysis Batch: 72647

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride			250	245.9		mg/Kg		98	90 - 110

Lab Sample ID: LCSD 880-72595/3-A
Matrix: Solid
Analysis Batch: 72647

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	248.2		mg/Kg		99	90 - 110	1	20

Lab Sample ID: 880-39033-3 MS
Matrix: Solid
Analysis Batch: 72647

Client Sample ID: SB-16-S-1-240205
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	73.2		250	307.8		mg/Kg		94	90 - 110

QC Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-39033-1
SDG: Lovington NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-39033-3 MSD
Matrix: Solid
Analysis Batch: 72647

Client Sample ID: SB-16-S-1-240205
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	73.2		250	310.5		mg/Kg		95	90 - 110	1	20

QC Association Summary

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-39033-1
SDG: Lovington NM

GC VOA

Prep Batch: 73192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-39033-2	SB-15-S-2-240205	Total/NA	Solid	5030B	
880-39033-4	SB-16-S-2-240205	Total/NA	Solid	5030B	
880-39033-6	SB-17-S-2-240205	Total/NA	Solid	5030B	
MB 880-73192/5-A	Method Blank	Total/NA	Solid	5030B	
LCS 880-73192/1-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 880-73192/2-A	Lab Control Sample Dup	Total/NA	Solid	5030B	
880-39033-2 MS	SB-15-S-2-240205	Total/NA	Solid	5030B	
880-39033-2 MSD	SB-15-S-2-240205	Total/NA	Solid	5030B	

Analysis Batch: 73320

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-39033-2	SB-15-S-2-240205	Total/NA	Solid	8021B	73192
880-39033-4	SB-16-S-2-240205	Total/NA	Solid	8021B	73192
880-39033-6	SB-17-S-2-240205	Total/NA	Solid	8021B	73192
MB 880-73192/5-A	Method Blank	Total/NA	Solid	8021B	73192
LCS 880-73192/1-A	Lab Control Sample	Total/NA	Solid	8021B	73192
LCSD 880-73192/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	73192
880-39033-2 MS	SB-15-S-2-240205	Total/NA	Solid	8021B	73192
880-39033-2 MSD	SB-15-S-2-240205	Total/NA	Solid	8021B	73192

Analysis Batch: 73583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-39033-2	SB-15-S-2-240205	Total/NA	Solid	Total BTEX	
880-39033-4	SB-16-S-2-240205	Total/NA	Solid	Total BTEX	
880-39033-6	SB-17-S-2-240205	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 72531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-39033-2	SB-15-S-2-240205	Total/NA	Solid	8015NM Prep	
880-39033-4	SB-16-S-2-240205	Total/NA	Solid	8015NM Prep	
880-39033-6	SB-17-S-2-240205	Total/NA	Solid	8015NM Prep	
MB 880-72531/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-72531/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-72531/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 72814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-39033-2	SB-15-S-2-240205	Total/NA	Solid	8015B NM	72531
880-39033-4	SB-16-S-2-240205	Total/NA	Solid	8015B NM	72531
880-39033-6	SB-17-S-2-240205	Total/NA	Solid	8015B NM	72531
MB 880-72531/1-A	Method Blank	Total/NA	Solid	8015B NM	72531
LCS 880-72531/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	72531
LCSD 880-72531/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	72531

Analysis Batch: 72977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-39033-2	SB-15-S-2-240205	Total/NA	Solid	8015 NM	
880-39033-4	SB-16-S-2-240205	Total/NA	Solid	8015 NM	
880-39033-6	SB-17-S-2-240205	Total/NA	Solid	8015 NM	

QC Association Summary

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-39033-1
SDG: Lovington NM

HPLC/IC

Leach Batch: 72595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-39033-1	SB-15-S-1-240205	Soluble	Solid	DI Leach	
880-39033-2	SB-15-S-2-240205	Soluble	Solid	DI Leach	
880-39033-3	SB-16-S-1-240205	Soluble	Solid	DI Leach	
880-39033-4	SB-16-S-2-240205	Soluble	Solid	DI Leach	
880-39033-5	SB-17-S-1-240205	Soluble	Solid	DI Leach	
880-39033-6	SB-17-S-2-240205	Soluble	Solid	DI Leach	
MB 880-72595/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-72595/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-72595/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-39033-3 MS	SB-16-S-1-240205	Soluble	Solid	DI Leach	
880-39033-3 MSD	SB-16-S-1-240205	Soluble	Solid	DI Leach	

Analysis Batch: 72647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-39033-1	SB-15-S-1-240205	Soluble	Solid	300.0	72595
880-39033-2	SB-15-S-2-240205	Soluble	Solid	300.0	72595
880-39033-3	SB-16-S-1-240205	Soluble	Solid	300.0	72595
880-39033-4	SB-16-S-2-240205	Soluble	Solid	300.0	72595
880-39033-5	SB-17-S-1-240205	Soluble	Solid	300.0	72595
880-39033-6	SB-17-S-2-240205	Soluble	Solid	300.0	72595
MB 880-72595/1-A	Method Blank	Soluble	Solid	300.0	72595
LCS 880-72595/2-A	Lab Control Sample	Soluble	Solid	300.0	72595
LCSD 880-72595/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	72595
880-39033-3 MS	SB-16-S-1-240205	Soluble	Solid	300.0	72595
880-39033-3 MSD	SB-16-S-1-240205	Soluble	Solid	300.0	72595

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-39033-1
SDG: Lovington NM

Client Sample ID: SB-15-S-1-240205
Lab Sample ID: 880-39033-1
Date Collected: 02/05/24 09:00
Matrix: Solid
Date Received: 02/07/24 12:54

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	72595	02/07/24 15:07	SA	EET MID
Soluble	Analysis	300.0		1			72647	02/09/24 23:35	CH	EET MID

Client Sample ID: SB-15-S-2-240205
Lab Sample ID: 880-39033-2
Date Collected: 02/05/24 09:10
Matrix: Solid
Date Received: 02/07/24 12:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.03 g	5 mL	73192	02/14/24 16:48	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73320	02/16/24 11:28	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73583	02/16/24 11:28	SM	EET MID
Total/NA	Analysis	8015 NM		1			72977	02/12/24 03:47	SM	EET MID
Total/NA	Prep	8015NM Prep			9.92 g	10 mL	72531	02/07/24 13:35	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72814	02/12/24 03:47	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	72595	02/07/24 15:07	SA	EET MID
Soluble	Analysis	300.0		1			72647	02/09/24 23:40	CH	EET MID

Client Sample ID: SB-16-S-1-240205
Lab Sample ID: 880-39033-3
Date Collected: 02/05/24 09:20
Matrix: Solid
Date Received: 02/07/24 12:54

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	72595	02/07/24 15:07	SA	EET MID
Soluble	Analysis	300.0		1			72647	02/09/24 23:45	CH	EET MID

Client Sample ID: SB-16-S-2-240205
Lab Sample ID: 880-39033-4
Date Collected: 02/05/24 09:30
Matrix: Solid
Date Received: 02/07/24 12:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.05 g	5 mL	73192	02/14/24 16:48	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73320	02/16/24 11:49	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73583	02/16/24 11:49	SM	EET MID
Total/NA	Analysis	8015 NM		1			72977	02/12/24 04:09	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	72531	02/07/24 13:35	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72814	02/12/24 04:09	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	72595	02/07/24 15:07	SA	EET MID
Soluble	Analysis	300.0		1			72647	02/09/24 23:59	CH	EET MID

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-39033-1
SDG: Lovington NM

Client Sample ID: SB-17-S-1-240205

Lab Sample ID: 880-39033-5
Matrix: Solid
Date Collected: 02/05/24 09:40
Date Received: 02/07/24 12:54

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	72595	02/07/24 15:07	SA	EET MID
Soluble	Analysis	300.0		1			72647	02/10/24 00:03	CH	EET MID

Client Sample ID: SB-17-S-2-240205

Lab Sample ID: 880-39033-6
Matrix: Solid
Date Collected: 02/05/24 09:50
Date Received: 02/07/24 12:54

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.95 g	5 mL	73192	02/14/24 16:48	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	73320	02/16/24 12:09	SM	EET MID
Total/NA	Analysis	Total BTEX		1			73583	02/16/24 12:09	SM	EET MID
Total/NA	Analysis	8015 NM		1			72977	02/12/24 04:30	SM	EET MID
Total/NA	Prep	8015NM Prep			9.97 g	10 mL	72531	02/07/24 13:35	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	72814	02/12/24 04:30	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	72595	02/07/24 15:07	SA	EET MID
Soluble	Analysis	300.0		1			72647	02/10/24 00:17	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-39033-1
SDG: Lovington 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	T104704400-23-26	06-30-24

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: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-39033-1
SDG: Lovington 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
5030B	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: ARCADIS US Inc
Project/Site: WLU 47

Job ID: 880-39033-1
SDG: Lovington NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-39033-1	SB-15-S-1-240205	Solid	02/05/24 09:00	02/07/24 12:54
880-39033-2	SB-15-S-2-240205	Solid	02/05/24 09:10	02/07/24 12:54
880-39033-3	SB-16-S-1-240205	Solid	02/05/24 09:20	02/07/24 12:54
880-39033-4	SB-16-S-2-240205	Solid	02/05/24 09:30	02/07/24 12:54
880-39033-5	SB-17-S-1-240205	Solid	02/05/24 09:40	02/07/24 12:54
880-39033-6	SB-17-S-2-240205	Solid	02/05/24 09:50	02/07/24 12:54

Eurofins Midland
1211 W Florida Ave
Midland TX 79701
Phone (432) 704-5440

Chain of Custody Record

eurofins Environment Testing

9033

Client Information	Sampler: Heath Boyd	Lab PM: Builes John	Carrier Tracking No(s):	COC No: 880-8032-1136 12
Client Contact: Mr Morgan Jordan	Phone: 575-390-4618	E-Mail: John.Builes@et.eurofinsus.com	State of Origin: NM	Page: Page ~~12 of 14~~ 1 of 1
Company: ARCADIS US Inc	PWSID:			Job #:
Address: 1004 North Big Spring Suite 300	Due Date Requested: Standard			
City: Midland	TAT Requested (days): Standard			
State Zip: TX 79701	Compliance Project: Δ Yes Δ No			
Phone: 281-644-9437(Tel)	PO #: Purchase Order Requested			
Email: douglas.jordan@arcadis.com	WO #:			
Project Name: WLU 47	Project #: ~~88002020~~ 30209661			
Site: Lovington NM	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P - Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_ORGFM_28D	Total Number of containers	Special Instructions/Note
			Preservation Code:			N			
SB-15-S-1-240205	02/05/24	0900	G	Solid			X		
SB-15-S-2-240205		0910		Solid		X	X		
SB-16-S-1-240205		0920		Solid			X		
SB-16-S-2-240205		0930		Solid		X	X		
SB-17-S-1-240205		0940		Solid			X		
SB-17-S-2-240205	X	0950	X	Solid		X	X		
				Solid					
				Solid					
				Solid					
				Solid					
				Solid					

880-39033 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements

Empty Kit Relinquished by	Date	Time	Method of Shipment

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Luis Esparza	02/05/24	Arcadis	Dathne Gonzalez	2/5/24	
DATHNE Gonzales	Date/Time:	Company	Received by:	Date/Time: 2/7/24	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time: 1254	Company

Custody Seals Intact. Δ Yes Δ No | Custody Seal No

Cooler Temperature(s) °C and Other Remarks: 1.3/1.2

V. 01.16.2019

Login Sample Receipt Checklist

Client: ARCADIS US Inc

Job Number: 880-39033-1
SDG Number: Lovington NM

Login Number: 39033
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Morgan Jordan
Arcadis U.S., Inc.
1004 North Big Spring
Suite 300
Midland, Texas 79701

Generated 4/10/2024 5:14:20 PM

JOB DESCRIPTION

WLU 47
Lovington, NM

JOB NUMBER

880-41890-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

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
4/10/2024 5:14:20 PM

Authorized for release by
John Builes, Project Manager
John.Builes@et.eurofinsus.com
(561)558-4549

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Laboratory Job ID: 880-41890-1
SDG: Lovington, NM

Table of Contents

Definitions/Glossary

Client: Arcadis U.S., Inc. Job ID: 880-41890-1
Project/Site: WLU 47 SDG: Lovington, NM

Qualifiers

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
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: Arcadis U.S., Inc.
Project: WLU 47

Job ID: 880-41890-1

Job ID: 880-41890-1 Eurofins Midland

Job Narrative
880-41890-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

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

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

Receipt
The samples were received on 4/5/2024 11:04 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.2°C.

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: SB-18-4'-5' (880-41890-1), SB-18-10'-11' (880-41890-2), SB-18-14'-15' (880-41890-3), SB-19-0'-1' (880-41890-4), SB-19-2'-3' (880-41890-5), SB-20-0'-1' (880-41890-6), SB-20-2'-3' (880-41890-7), SB-21-0'-1' (880-41890-8) and SB-21-2'-3' (880-41890-9).

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

GC Semi VOA
Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SB-19-2'-3' (880-41890-5), SB-20-2'-3' (880-41890-7), SB-21-2'-3' (880-41890-9), (880-41880-A-1-G) and (880-41880-A-1-H MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The method blank for preparation batch 880-77497 and analytical batch 880-77422 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: The continuing calibration verification (CCV) associated with batch 880-77422 recovered below the lower 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 880-77422/31).

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

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

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41890-1
SDG: Lovington, NM

Client Sample ID: SB-18-4'-5'
Lab Sample ID: 880-41890-1
Date Collected: 04/03/24 10:50
Matrix: Solid
Date Received: 04/05/24 11:04
Sample Depth: 4-5

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2260		24.8	1.96	mg/Kg			04/09/24 20:57	5

Client Sample ID: SB-18-10'-11'
Lab Sample ID: 880-41890-2
Date Collected: 04/03/24 11:40
Matrix: Solid
Date Received: 04/05/24 11:04
Sample Depth: 10-11

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1640		25.2	1.99	mg/Kg			04/09/24 21:03	5

Client Sample ID: SB-18-14'-15'
Lab Sample ID: 880-41890-3
Date Collected: 04/03/24 12:15
Matrix: Solid
Date Received: 04/05/24 11:04
Sample Depth: 14-15

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1130		5.03	0.397	mg/Kg			04/09/24 21:22	1

Client Sample ID: SB-19-0'-1'
Lab Sample ID: 880-41890-4
Date Collected: 04/03/24 13:30
Matrix: Solid
Date Received: 04/05/24 11:04
Sample Depth: 0-1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.76	J	4.96	0.392	mg/Kg			04/09/24 21:28	1

Client Sample ID: SB-19-2'-3'
Lab Sample ID: 880-41890-5
Date Collected: 04/03/24 13:35
Matrix: Solid
Date Received: 04/05/24 11:04
Sample Depth: 2-3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000383	U	0.00199	0.000383	mg/Kg		04/08/24 09:22	04/08/24 12:58	1
Toluene	<0.000454	U	0.00199	0.000454	mg/Kg		04/08/24 09:22	04/08/24 12:58	1
Ethylbenzene	<0.000563	U	0.00199	0.000563	mg/Kg		04/08/24 09:22	04/08/24 12:58	1
m-Xylene & p-Xylene	<0.00101	U	0.00398	0.00101	mg/Kg		04/08/24 09:22	04/08/24 12:58	1
o-Xylene	<0.000343	U	0.00199	0.000343	mg/Kg		04/08/24 09:22	04/08/24 12:58	1
Xylenes, Total	<0.00101	U	0.00398	0.00101	mg/Kg		04/08/24 09:22	04/08/24 12:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*	*04/08/24 09:22*	*04/08/24 12:58*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*04/08/24 09:22*	*04/08/24 12:58*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00101	U	0.00398	0.00101	mg/Kg			04/08/24 12:58	1

Eurofins Midland

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41890-1
SDG: Lovington, NM

Client Sample ID: SB-19-2'-3'

Lab Sample ID: 880-41890-5
Matrix: Solid
Date Collected: 04/03/24 13:35
Date Received: 04/05/24 11:04
Sample Depth: 2-3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	74.1		49.8	14.9	mg/Kg			04/06/24 04:10	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	41.4	J B	49.8	14.9	mg/Kg		04/05/24 14:44	04/06/24 04:10	1
Diesel Range Organics (Over C10-C28)	32.7	J	49.8	14.9	mg/Kg		04/05/24 14:44	04/06/24 04:10	1
OII Range Organics (Over C28-C36)	<14.9	U	49.8	14.9	mg/Kg		04/05/24 14:44	04/06/24 04:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*122*		*70 - 130*	*04/05/24 14:44*	*04/06/24 04:10*	*1*
o-Terphenyl	*138*	*S1+*	*70 - 130*	*04/05/24 14:44*	*04/06/24 04:10*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.65		5.04	0.398	mg/Kg			04/09/24 21:35	1

Client Sample ID: SB-20-0'-1'

Lab Sample ID: 880-41890-6
Matrix: Solid
Date Collected: 04/03/24 14:00
Date Received: 04/05/24 11:04
Sample Depth: 0-1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.84	J	5.00	0.395	mg/Kg			04/09/24 21:41	1

Client Sample ID: SB-20-2'-3'

Lab Sample ID: 880-41890-7
Matrix: Solid
Date Collected: 04/03/24 14:05
Date Received: 04/05/24 11:04
Sample Depth: 2-3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000387	U	0.00201	0.000387	mg/Kg		04/08/24 09:22	04/08/24 13:19	1
Toluene	<0.000459	U	0.00201	0.000459	mg/Kg		04/08/24 09:22	04/08/24 13:19	1
Ethylbenzene	<0.000568	U	0.00201	0.000568	mg/Kg		04/08/24 09:22	04/08/24 13:19	1
m-Xylene & p-Xylene	<0.00102	U	0.00402	0.00102	mg/Kg		04/08/24 09:22	04/08/24 13:19	1
o-Xylene	0.000780	J	0.00201	0.000346	mg/Kg		04/08/24 09:22	04/08/24 13:19	1
Xylenes, Total	<0.00102	U	0.00402	0.00102	mg/Kg		04/08/24 09:22	04/08/24 13:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*70 - 130*	*04/08/24 09:22*	*04/08/24 13:19*	*1*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*04/08/24 09:22*	*04/08/24 13:19*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00102	U	0.00402	0.00102	mg/Kg			04/08/24 13:19	1

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41890-1
SDG: Lovington, NM

Client Sample ID: SB-20-2'-3'

Lab Sample ID: 880-41890-7
Matrix: Solid
Date Collected: 04/03/24 14:05
Date Received: 04/05/24 11:04
Sample Depth: 2-3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	80.7		50.0	15.0	mg/Kg			04/06/24 04:31	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	48.0	J B	50.0	15.0	mg/Kg		04/05/24 14:44	04/06/24 04:31	1
Diesel Range Organics (Over C10-C28)	32.7	J	50.0	15.0	mg/Kg		04/05/24 14:44	04/06/24 04:31	1
Oil Range Organics (Over C28-C36)	<15.0	U	50.0	15.0	mg/Kg		04/05/24 14:44	04/06/24 04:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*129*		*70 - 130*	*04/05/24 14:44*	*04/06/24 04:31*	*1*
o-Terphenyl	*145*	*S1+*	*70 - 130*	*04/05/24 14:44*	*04/06/24 04:31*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	414		5.03	0.397	mg/Kg			04/09/24 21:47	1

Client Sample ID: SB-21-0'-1'

Lab Sample ID: 880-41890-8
Matrix: Solid
Date Collected: 04/03/24 14:35
Date Received: 04/05/24 11:04
Sample Depth: 0-1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.05	J	5.00	0.395	mg/Kg			04/09/24 21:54	1

Client Sample ID: SB-21-2'-3'

Lab Sample ID: 880-41890-9
Matrix: Solid
Date Collected: 04/03/24 14:40
Date Received: 04/05/24 11:04
Sample Depth: 2-3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000388	U	0.00202	0.000388	mg/Kg		04/08/24 09:22	04/08/24 13:39	1
Toluene	<0.000460	U	0.00202	0.000460	mg/Kg		04/08/24 09:22	04/08/24 13:39	1
Ethylbenzene	<0.000570	U	0.00202	0.000570	mg/Kg		04/08/24 09:22	04/08/24 13:39	1
m-Xylene & p-Xylene	<0.00102	U	0.00403	0.00102	mg/Kg		04/08/24 09:22	04/08/24 13:39	1
o-Xylene	<0.000347	U	0.00202	0.000347	mg/Kg		04/08/24 09:22	04/08/24 13:39	1
Xylenes, Total	<0.00102	U	0.00403	0.00102	mg/Kg		04/08/24 09:22	04/08/24 13:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*80*		*70 - 130*	*04/08/24 09:22*	*04/08/24 13:39*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*	*04/08/24 09:22*	*04/08/24 13:39*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00102	U	0.00403	0.00102	mg/Kg			04/08/24 13:39	1

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41890-1
SDG: Lovington, NM

Client Sample ID: SB-21-2'-3'
Date Collected: 04/03/24 14:40
Date Received: 04/05/24 11:04
Sample Depth: 2-3

Lab Sample ID: 880-41890-9
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	76.5		49.9	15.0	mg/Kg			04/06/24 04:52	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	40.2	J B	49.9	15.0	mg/Kg		04/05/24 14:44	04/06/24 04:52	1
Diesel Range Organics (Over C10-C28)	36.3	J	49.9	15.0	mg/Kg		04/05/24 14:44	04/06/24 04:52	1
OII Range Organics (Over C28-C36)	<15.0	U	49.9	15.0	mg/Kg		04/05/24 14:44	04/06/24 04:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*144*	*S1+*	*70 - 130*	*04/05/24 14:44*	*04/06/24 04:52*	*1*
o-Terphenyl	*166*	*S1+*	*70 - 130*	*04/05/24 14:44*	*04/06/24 04:52*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	321		5.03	0.397	mg/Kg			04/09/24 22:00	1

Surrogate Summary

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41890-1
SDG: Lovington, NM

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-41890-5	SB-19-2'-3'	84	91
880-41890-5 MS	SB-19-2'-3'	104	120
880-41890-5 MSD	SB-19-2'-3'	123	121
880-41890-7	SB-20-2'-3'	78	91
880-41890-9	SB-21-2'-3'	80	99
LCS 880-77564/1-A	Lab Control Sample	101	117
LCSD 880-77564/2-A	Lab Control Sample Dup	117	101
MB 880-77564/5-A	Method Blank	71	105

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-41890-5	SB-19-2'-3'	122	138 S1+
880-41890-7	SB-20-2'-3'	129	145 S1+
880-41890-9	SB-21-2'-3'	144 S1+	166 S1+
LCS 880-77497/2-A	Lab Control Sample	88	105
LCSD 880-77497/3-A	Lab Control Sample Dup	79	94
MB 880-77497/1-A	Method Blank	115	127

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41890-1
SDG: Lovington, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-77564/5-A
Matrix: Solid
Analysis Batch: 77568

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 77564

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		04/08/24 09:22	04/08/24 12:36	1
Toluene	<0.000456	U	0.00200	0.000456	mg/Kg		04/08/24 09:22	04/08/24 12:36	1
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		04/08/24 09:22	04/08/24 12:36	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		04/08/24 09:22	04/08/24 12:36	1
o-Xylene	<0.000344	U	0.00200	0.000344	mg/Kg		04/08/24 09:22	04/08/24 12:36	1
Xylenes, Total	<0.00101	U	0.00400	0.00101	mg/Kg		04/08/24 09:22	04/08/24 12:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*71*		*70 - 130*	*04/08/24 09:22*	*04/08/24 12:36*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*04/08/24 09:22*	*04/08/24 12:36*	*1*

Lab Sample ID: LCS 880-77564/1-A
Matrix: Solid
Analysis Batch: 77568

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 77564

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09146		mg/Kg		91	70 - 130
Toluene	0.100	0.09023		mg/Kg		90	70 - 130
Ethylbenzene	0.100	0.09523		mg/Kg		95	70 - 130
m-Xylene & p-Xylene	0.200	0.1934		mg/Kg		97	70 - 130
o-Xylene	0.100	0.09499		mg/Kg		95	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*117*		*70 - 130*

Lab Sample ID: LCSD 880-77564/2-A
Matrix: Solid
Analysis Batch: 77568

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 77564

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09181		mg/Kg		92	70 - 130	0	35
Toluene	0.100	0.09962		mg/Kg		100	70 - 130	10	35
Ethylbenzene	0.100	0.1108		mg/Kg		111	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.2274		mg/Kg		114	70 - 130	16	35
o-Xylene	0.100	0.1118		mg/Kg		112	70 - 130	16	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 880-41890-5 MS
Matrix: Solid
Analysis Batch: 77568

Client Sample ID: SB-19-2'-3'
Prep Type: Total/NA
Prep Batch: 77564

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.000383	U	0.0996	0.08151		mg/Kg		82	70 - 130
Toluene	<0.000454	U	0.0996	0.08030		mg/Kg		81	70 - 130

QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41890-1
SDG: Lovington, NM

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

Lab Sample ID: 880-41890-5 MS
Matrix: Solid
Analysis Batch: 77568

Client Sample ID: SB-19-2'-3'
Prep Type: Total/NA
Prep Batch: 77564

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.000563	U	0.0996	0.08519		mg/Kg		86	70 - 130
m-Xylene & p-Xylene	<0.00101	U	0.199	0.1742		mg/Kg		87	70 - 130
o-Xylene	<0.000343	U	0.0996	0.08512		mg/Kg		85	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*
1,4-Difluorobenzene (Surr)	*120*		*70 - 130*

Lab Sample ID: 880-41890-5 MSD
Matrix: Solid
Analysis Batch: 77568

Client Sample ID: SB-19-2'-3'
Prep Type: Total/NA
Prep Batch: 77564

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.000383	U	0.101	0.08833		mg/Kg		88	70 - 130	8	35
Toluene	<0.000454	U	0.101	0.08277		mg/Kg		82	70 - 130	3	35
Ethylbenzene	<0.000563	U	0.101	0.07872		mg/Kg		78	70 - 130	8	35
m-Xylene & p-Xylene	<0.00101	U	0.202	0.1673		mg/Kg		83	70 - 130	4	35
o-Xylene	<0.000343	U	0.101	0.1049		mg/Kg		104	70 - 130	21	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*123*		*70 - 130*
1,4-Difluorobenzene (Surr)	*121*		*70 - 130*

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

Lab Sample ID: MB 880-77497/1-A
Matrix: Solid
Analysis Batch: 77422

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 77497

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	22.07	J	50.0	15.0	mg/Kg		04/05/24 14:44	04/05/24 20:49	1
Diesel Range Organics (Over C10-C28)	<15.0	U	50.0	15.0	mg/Kg		04/05/24 14:44	04/05/24 20:49	1
OII Range Organics (Over C28-C36)	<15.0	U	50.0	15.0	mg/Kg		04/05/24 14:44	04/05/24 20:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*115*		*70 - 130*	*04/05/24 14:44*	*04/05/24 20:49*	*1*
o-Terphenyl	*127*		*70 - 130*	*04/05/24 14:44*	*04/05/24 20:49*	*1*

Lab Sample ID: LCS 880-77497/2-A
Matrix: Solid
Analysis Batch: 77422

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 77497

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	873.7		mg/Kg		87	70 - 130
Diesel Range Organics (Over C10-C28)	1000	757.4		mg/Kg		76	70 - 130

Eurofins Midland

QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41890-1
SDG: Lovington, NM

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

Lab Sample ID: LCS 880-77497/2-A
Matrix: Solid
Analysis Batch: 77422

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 77497

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	88		70 - 130
o-Terphenyl	105		70 - 130

Lab Sample ID: LCSD 880-77497/3-A
Matrix: Solid
Analysis Batch: 77422

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 77497

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	863.2		mg/Kg		86	70 - 130	1	20
Diesel Range Organics (Over C10-C28)			1000	791.1		mg/Kg		79	70 - 130	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	79		70 - 130
o-Terphenyl	94		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-77629/1-A
Matrix: Solid
Analysis Batch: 77728

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.395	U	5.00	0.395	mg/Kg			04/09/24 16:46	1

Lab Sample ID: LCS 880-77629/2-A
Matrix: Solid
Analysis Batch: 77728

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	250.1		mg/Kg		100	90 - 110		

Lab Sample ID: LCSD 880-77629/3-A
Matrix: Solid
Analysis Batch: 77728

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	252.6		mg/Kg		101	90 - 110	1	20

QC Association Summary

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41890-1
SDG: Lovington, NM

GC VOA

Prep Batch: 77564

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41890-5	SB-19-2'-3'	Total/NA	Solid	5030B	
880-41890-7	SB-20-2'-3'	Total/NA	Solid	5030B	
880-41890-9	SB-21-2'-3'	Total/NA	Solid	5030B	
MB 880-77564/5-A	Method Blank	Total/NA	Solid	5030B	
LCS 880-77564/1-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 880-77564/2-A	Lab Control Sample Dup	Total/NA	Solid	5030B	
880-41890-5 MS	SB-19-2'-3'	Total/NA	Solid	5030B	
880-41890-5 MSD	SB-19-2'-3'	Total/NA	Solid	5030B	

Analysis Batch: 77568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41890-5	SB-19-2'-3'	Total/NA	Solid	8021B	77564
880-41890-7	SB-20-2'-3'	Total/NA	Solid	8021B	77564
880-41890-9	SB-21-2'-3'	Total/NA	Solid	8021B	77564
MB 880-77564/5-A	Method Blank	Total/NA	Solid	8021B	77564
LCS 880-77564/1-A	Lab Control Sample	Total/NA	Solid	8021B	77564
LCSD 880-77564/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	77564
880-41890-5 MS	SB-19-2'-3'	Total/NA	Solid	8021B	77564
880-41890-5 MSD	SB-19-2'-3'	Total/NA	Solid	8021B	77564

Analysis Batch: 77721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41890-5	SB-19-2'-3'	Total/NA	Solid	Total BTEX	
880-41890-7	SB-20-2'-3'	Total/NA	Solid	Total BTEX	
880-41890-9	SB-21-2'-3'	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 77422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41890-5	SB-19-2'-3'	Total/NA	Solid	8015B NM	77497
880-41890-7	SB-20-2'-3'	Total/NA	Solid	8015B NM	77497
880-41890-9	SB-21-2'-3'	Total/NA	Solid	8015B NM	77497
MB 880-77497/1-A	Method Blank	Total/NA	Solid	8015B NM	77497
LCS 880-77497/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	77497
LCSD 880-77497/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	77497

Prep Batch: 77497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41890-5	SB-19-2'-3'	Total/NA	Solid	8015NM Prep	
880-41890-7	SB-20-2'-3'	Total/NA	Solid	8015NM Prep	
880-41890-9	SB-21-2'-3'	Total/NA	Solid	8015NM Prep	
MB 880-77497/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-77497/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-77497/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 77658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41890-5	SB-19-2'-3'	Total/NA	Solid	8015 NM	
880-41890-7	SB-20-2'-3'	Total/NA	Solid	8015 NM	
880-41890-9	SB-21-2'-3'	Total/NA	Solid	8015 NM	

QC Association Summary

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41890-1
SDG: Lovington, NM

HPLC/IC

Leach Batch: 77629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41890-1	SB-18-4'-5'	Soluble	Solid	DI Leach	
880-41890-2	SB-18-10'-11'	Soluble	Solid	DI Leach	
880-41890-3	SB-18-14'-15'	Soluble	Solid	DI Leach	
880-41890-4	SB-19-0'-1'	Soluble	Solid	DI Leach	
880-41890-5	SB-19-2'-3'	Soluble	Solid	DI Leach	
880-41890-6	SB-20-0'-1'	Soluble	Solid	DI Leach	
880-41890-7	SB-20-2'-3'	Soluble	Solid	DI Leach	
880-41890-8	SB-21-0'-1'	Soluble	Solid	DI Leach	
880-41890-9	SB-21-2'-3'	Soluble	Solid	DI Leach	
MB 880-77629/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-77629/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-77629/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 77728

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41890-1	SB-18-4'-5'	Soluble	Solid	300.0	77629
880-41890-2	SB-18-10'-11'	Soluble	Solid	300.0	77629
880-41890-3	SB-18-14'-15'	Soluble	Solid	300.0	77629
880-41890-4	SB-19-0'-1'	Soluble	Solid	300.0	77629
880-41890-5	SB-19-2'-3'	Soluble	Solid	300.0	77629
880-41890-6	SB-20-0'-1'	Soluble	Solid	300.0	77629
880-41890-7	SB-20-2'-3'	Soluble	Solid	300.0	77629
880-41890-8	SB-21-0'-1'	Soluble	Solid	300.0	77629
880-41890-9	SB-21-2'-3'	Soluble	Solid	300.0	77629
MB 880-77629/1-A	Method Blank	Soluble	Solid	300.0	77629
LCS 880-77629/2-A	Lab Control Sample	Soluble	Solid	300.0	77629
LCSD 880-77629/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	77629

Lab Chronicle

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41890-1
SDG: Lovington, NM

Client Sample ID: SB-18-4'-5'
Lab Sample ID: 880-41890-1
Date Collected: 04/03/24 10:50
Matrix: Solid
Date Received: 04/05/24 11:04

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	77629	04/08/24 14:29	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	77728	04/09/24 20:57	SMC	EET MID

Client Sample ID: SB-18-10'-11'
Lab Sample ID: 880-41890-2
Date Collected: 04/03/24 11:40
Matrix: Solid
Date Received: 04/05/24 11:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.96 g	50 mL	77629	04/08/24 14:29	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	77728	04/09/24 21:03	SMC	EET MID

Client Sample ID: SB-18-14'-15'
Lab Sample ID: 880-41890-3
Date Collected: 04/03/24 12:15
Matrix: Solid
Date Received: 04/05/24 11:04

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	77629	04/08/24 14:29	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	77728	04/09/24 21:22	SMC	EET MID

Client Sample ID: SB-19-0'-1'
Lab Sample ID: 880-41890-4
Date Collected: 04/03/24 13:30
Matrix: Solid
Date Received: 04/05/24 11:04

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	77629	04/08/24 14:29	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	77728	04/09/24 21:28	SMC	EET MID

Client Sample ID: SB-19-2'-3'
Lab Sample ID: 880-41890-5
Date Collected: 04/03/24 13:35
Matrix: Solid
Date Received: 04/05/24 11:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.02 g	5 mL	77564	04/08/24 09:22	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	77568	04/08/24 12:58	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			77721	04/08/24 12:58	SM	EET MID
Total/NA	Analysis	8015 NM		1			77658	04/06/24 04:10	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	77497	04/05/24 14:44	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	77422	04/06/24 04:10	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	77629	04/08/24 14:29	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	77728	04/09/24 21:35	SMC	EET MID

Lab Chronicle

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41890-1
SDG: Lovington, NM

Client Sample ID: SB-20-0'-1'

Lab Sample ID: 880-41890-6
Matrix: Solid
Date Collected: 04/03/24 14:00
Date Received: 04/05/24 11:04

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	77629	04/08/24 14:29	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	77728	04/09/24 21:41	SMC	EET MID

Client Sample ID: SB-20-2'-3'

Lab Sample ID: 880-41890-7
Matrix: Solid
Date Collected: 04/03/24 14:05
Date Received: 04/05/24 11:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.97 g	5 mL	77564	04/08/24 09:22	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	77568	04/08/24 13:19	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			77721	04/08/24 13:19	SM	EET MID
Total/NA	Analysis	8015 NM		1			77658	04/06/24 04:31	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	77497	04/05/24 14:44	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	77422	04/06/24 04:31	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	77629	04/08/24 14:29	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	77728	04/09/24 21:47	SMC	EET MID

Client Sample ID: SB-21-0'-1'

Lab Sample ID: 880-41890-8
Matrix: Solid
Date Collected: 04/03/24 14:35
Date Received: 04/05/24 11:04

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	77629	04/08/24 14:29	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	77728	04/09/24 21:54	SMC	EET MID

Client Sample ID: SB-21-2'-3'

Lab Sample ID: 880-41890-9
Matrix: Solid
Date Collected: 04/03/24 14:40
Date Received: 04/05/24 11:04

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.96 g	5 mL	77564	04/08/24 09:22	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	77568	04/08/24 13:39	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			77721	04/08/24 13:39	SM	EET MID
Total/NA	Analysis	8015 NM		1			77658	04/06/24 04:52	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	77497	04/05/24 14:44	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	77422	04/06/24 04:52	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	77629	04/08/24 14:29	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	77728	04/09/24 22:00	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41890-1
SDG: Lovington, 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	T104704400-23-26	06-30-24

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: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41890-1
SDG: Lovington, 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
5030B	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: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41890-1
SDG: Lovington, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-41890-1	SB-18-4'-5'	Solid	04/03/24 10:50	04/05/24 11:04	4-5
880-41890-2	SB-18-10'-11'	Solid	04/03/24 11:40	04/05/24 11:04	10-11
880-41890-3	SB-18-14'-15'	Solid	04/03/24 12:15	04/05/24 11:04	14-15
880-41890-4	SB-19-0'-1'	Solid	04/03/24 13:30	04/05/24 11:04	0-1
880-41890-5	SB-19-2'-3'	Solid	04/03/24 13:35	04/05/24 11:04	2-3
880-41890-6	SB-20-0'-1'	Solid	04/03/24 14:00	04/05/24 11:04	0-1
880-41890-7	SB-20-2'-3'	Solid	04/03/24 14:05	04/05/24 11:04	2-3
880-41890-8	SB-21-0'-1'	Solid	04/03/24 14:35	04/05/24 11:04	0-1
880-41890-9	SB-21-2'-3'	Solid	04/03/24 14:40	04/05/24 11:04	2-3

Login Sample Receipt Checklist

Client: Arcadis U.S., Inc.

Job Number: 880-41890-1
SDG Number: Lovington, NM

Login Number: 41890
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Morgan Jordan
Arcadis U.S., Inc.
1004 North Big Spring
Suite 300
Midland, Texas 79701

Generated 4/11/2024 6:25:06 PM

JOB DESCRIPTION

WLU 47
Lovington, NM

JOB NUMBER

880-41919-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

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
4/11/2024 6:25:06 PM

Authorized for release by
John Builes, Project Manager
John.Builes@et.eurofinsus.com
(561)558-4549

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Laboratory Job ID: 880-41919-1
SDG: Lovington, NM

Table of Contents

Definitions/Glossary

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41919-1
SDG: Lovington, NM

Qualifiers

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

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

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
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: Arcadis U.S., Inc.
Project: WLU 47

Job ID: 880-41919-1

Job ID: 880-41919-1 Eurofins Midland

Job Narrative
880-41919-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

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

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

Receipt
The samples were received on 4/8/2024 9:02 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.9°C.

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: SB-22-2'-3' (880-41919-1), SB-22-8'-9' (880-41919-2), SB-22-12'-13' (880-41919-3), SB-23-4'-5' (880-41919-4), SB-23-8'-9' (880-41919-5), SB-23-10'-11' (880-41919-6), SB-24-0-1' (880-41919-7) and SB-24-2'-3' (880-41919-8).

GC VOA
Method 8021B: The following sample was diluted due to the nature of the sample matrix: SB-22-2'-3' (880-41919-1). 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.

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-77526 and analytical batch 880-77550 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: SB-22-2'-3' (880-41919-1), SB-22-8'-9' (880-41919-2), (880-41908-A-11-A), (880-41908-A-11-B MS) and (880-41908-A-11-C MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41919-1
SDG: Lovington, NM

Client Sample ID: SB-22-2'-3'

Lab Sample ID: 880-41919-1
Matrix: Solid
Date Collected: 04/04/24 09:20
Date Received: 04/08/24 09:02
Sample Depth: 2-3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.0107**	**J**	0.0199	0.00383	mg/Kg		04/08/24 09:22	04/08/24 20:09	10
Toluene	<0.00453	U	0.0199	0.00453	mg/Kg		04/08/24 09:22	04/08/24 20:09	10
Ethylbenzene	<0.00562	U	0.0199	0.00562	mg/Kg		04/08/24 09:22	04/08/24 20:09	10
m-Xylene & p-Xylene	<0.0100	U	0.0398	0.0100	mg/Kg		04/08/24 09:22	04/08/24 20:09	10
o-Xylene	<0.00342	U	0.0199	0.00342	mg/Kg		04/08/24 09:22	04/08/24 20:09	10
Xylenes, Total	<0.0100	U	0.0398	0.0100	mg/Kg		04/08/24 09:22	04/08/24 20:09	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*82*		*70 - 130*	*04/08/24 09:22*	*04/08/24 20:09*	*10*
1,4-Difluorobenzene (Surr)	*115*		*70 - 130*	*04/08/24 09:22*	*04/08/24 20:09*	*10*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	**0.0107**	**J**	0.0398	0.0100	mg/Kg			04/08/24 20:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**46.5**	**J**	49.9	15.0	mg/Kg			04/08/24 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	**46.5**	**J**	49.9	15.0	mg/Kg		04/08/24 10:40	04/08/24 21:15	1
Diesel Range Organics (Over C10-C28)	<15.0	U	49.9	15.0	mg/Kg		04/08/24 10:40	04/08/24 21:15	1
OII Range Organics (Over C28-C36)	<15.0	U	49.9	15.0	mg/Kg		04/08/24 10:40	04/08/24 21:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*183*	*S1+*	*70 - 130*	*04/08/24 10:40*	*04/08/24 21:15*	*1*
o-Terphenyl	*145*	*S1+*	*70 - 130*	*04/08/24 10:40*	*04/08/24 21:15*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**637**		5.04	0.398	mg/Kg			04/10/24 19:11	1

Client Sample ID: SB-22-8'-9'

Lab Sample ID: 880-41919-2
Matrix: Solid
Date Collected: 04/04/24 10:00
Date Received: 04/08/24 09:02
Sample Depth: 8-9

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000381	U	0.00198	0.000381	mg/Kg		04/08/24 09:22	04/08/24 19:08	1
Toluene	<0.000451	U	0.00198	0.000451	mg/Kg		04/08/24 09:22	04/08/24 19:08	1
Ethylbenzene	<0.000559	U	0.00198	0.000559	mg/Kg		04/08/24 09:22	04/08/24 19:08	1
m-Xylene & p-Xylene	<0.00100	U	0.00396	0.00100	mg/Kg		04/08/24 09:22	04/08/24 19:08	1
o-Xylene	<0.000341	U	0.00198	0.000341	mg/Kg		04/08/24 09:22	04/08/24 19:08	1
Xylenes, Total	<0.00100	U	0.00396	0.00100	mg/Kg		04/08/24 09:22	04/08/24 19:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*88*		*70 - 130*	*04/08/24 09:22*	*04/08/24 19:08*	*1*

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41919-1
SDG: Lovington, NM

Client Sample ID: SB-22-8'-9'

Lab Sample ID: 880-41919-2
Matrix: Solid

Date Collected: 04/04/24 10:00
Date Received: 04/08/24 09:02
Sample Depth: 8-9

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

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*04/08/24 09:22*	*04/08/24 19:08*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00100	U	0.00396	0.00100	mg/Kg			04/08/24 19:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**32.2**	**J**	49.8	14.9	mg/Kg			04/08/24 21:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**32.2**	**J**	49.8	14.9	mg/Kg		04/08/24 10:40	04/08/24 21:36	1
Diesel Range Organics (Over C10-C28)	<14.9	U	49.8	14.9	mg/Kg		04/08/24 10:40	04/08/24 21:36	1
OII Range Organics (Over C28-C36)	<14.9	U	49.8	14.9	mg/Kg		04/08/24 10:40	04/08/24 21:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*173*	*S1+*	*70 - 130*	*04/08/24 10:40*	*04/08/24 21:36*	*1*
o-Terphenyl	*135*	*S1+*	*70 - 130*	*04/08/24 10:40*	*04/08/24 21:36*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1380**		25.3	1.99	mg/Kg			04/11/24 12:41	5

Client Sample ID: SB-22-12'-13'

Lab Sample ID: 880-41919-3
Matrix: Solid

Date Collected: 04/04/24 10:45
Date Received: 04/08/24 09:02
Sample Depth: 12-13

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1090**		5.05	0.399	mg/Kg			04/11/24 12:46	1

Client Sample ID: SB-23-4'-5'

Lab Sample ID: 880-41919-4
Matrix: Solid

Date Collected: 04/04/24 12:30
Date Received: 04/08/24 09:02
Sample Depth: 4-5

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**178**		5.05	0.399	mg/Kg			04/10/24 19:45	1

Client Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41919-1
SDG: Lovington, NM

Client Sample ID: SB-23-8'-9'
Lab Sample ID: 880-41919-5

Date Collected: 04/04/24 13:25
Matrix: Solid
Date Received: 04/08/24 09:02
Sample Depth: 8-9

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	292		5.03	0.397	mg/Kg			04/10/24 19:49	1

Client Sample ID: SB-23-10'-11'
Lab Sample ID: 880-41919-6

Date Collected: 04/04/24 13:50
Matrix: Solid
Date Received: 04/08/24 09:02
Sample Depth: 10-11

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	66.8		5.04	0.398	mg/Kg			04/10/24 19:54	1

Client Sample ID: SB-24-0-1'
Lab Sample ID: 880-41919-7

Date Collected: 04/04/24 14:45
Matrix: Solid
Date Received: 04/08/24 09:02
Sample Depth: 0-1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10.1		5.02	0.397	mg/Kg			04/10/24 19:59	1

Client Sample ID: SB-24-2'-3'
Lab Sample ID: 880-41919-8

Date Collected: 04/04/24 14:50
Matrix: Solid
Date Received: 04/08/24 09:02
Sample Depth: 2-3

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.53		5.01	0.396	mg/Kg			04/10/24 20:04	1

Surrogate Summary

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41919-1
SDG: Lovington, NM

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-41919-1	SB-22-2'-3'	82	115
880-41919-2	SB-22-8'-9'	88	91
LCS 880-77564/1-A	Lab Control Sample	101	117
LCSD 880-77564/2-A	Lab Control Sample Dup	117	101
MB 880-77564/5-A	Method Blank	71	105

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
880-41919-1	SB-22-2'-3'	183 S1+	145 S1+
880-41919-2	SB-22-8'-9'	173 S1+	135 S1+
LCS 880-77526/2-A	Lab Control Sample	98	95
LCSD 880-77526/3-A	Lab Control Sample Dup	83	73
MB 880-77526/1-A	Method Blank	245 S1+	197 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41919-1
SDG: Lovington, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-77564/5-A
Matrix: Solid
Analysis Batch: 77568

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 77564

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		04/08/24 09:22	04/08/24 12:36	1
Toluene	<0.000456	U	0.00200	0.000456	mg/Kg		04/08/24 09:22	04/08/24 12:36	1
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		04/08/24 09:22	04/08/24 12:36	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		04/08/24 09:22	04/08/24 12:36	1
o-Xylene	<0.000344	U	0.00200	0.000344	mg/Kg		04/08/24 09:22	04/08/24 12:36	1
Xylenes, Total	<0.00101	U	0.00400	0.00101	mg/Kg		04/08/24 09:22	04/08/24 12:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*71*		*70 - 130*	*04/08/24 09:22*	*04/08/24 12:36*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*04/08/24 09:22*	*04/08/24 12:36*	*1*

Lab Sample ID: LCS 880-77564/1-A
Matrix: Solid
Analysis Batch: 77568

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 77564

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.09146		mg/Kg		91	70 - 130
Toluene	0.100	0.09023		mg/Kg		90	70 - 130
Ethylbenzene	0.100	0.09523		mg/Kg		95	70 - 130
m-Xylene & p-Xylene	0.200	0.1934		mg/Kg		97	70 - 130
o-Xylene	0.100	0.09499		mg/Kg		95	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
1,4-Difluorobenzene (Surr)	*117*		*70 - 130*

Lab Sample ID: LCSD 880-77564/2-A
Matrix: Solid
Analysis Batch: 77568

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 77564

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.09181		mg/Kg		92	70 - 130	0	35
Toluene	0.100	0.09962		mg/Kg		100	70 - 130	10	35
Ethylbenzene	0.100	0.1108		mg/Kg		111	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.2274		mg/Kg		114	70 - 130	16	35
o-Xylene	0.100	0.1118		mg/Kg		112	70 - 130	16	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41919-1
SDG: Lovington, NM

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

Lab Sample ID: MB 880-77526/1-A
Matrix: Solid
Analysis Batch: 77550

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 77526

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<15.0	U	50.0	15.0	mg/Kg		04/06/24 08:45	04/08/24 09:11	1
Diesel Range Organics (Over C10-C28)	<15.0	U	50.0	15.0	mg/Kg		04/06/24 08:45	04/08/24 09:11	1
Oil Range Organics (Over C28-C36)	<15.0	U	50.0	15.0	mg/Kg		04/06/24 08:45	04/08/24 09:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*245*	*S1+*	*70 - 130*	*04/06/24 08:45*	*04/08/24 09:11*	*1*
o-Terphenyl	*197*	*S1+*	*70 - 130*	*04/06/24 08:45*	*04/08/24 09:11*	*1*

Lab Sample ID: LCS 880-77526/2-A
Matrix: Solid
Analysis Batch: 77550

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 77526

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	905.4		mg/Kg		91	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	900.1		mg/Kg		90	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*98*		*70 - 130*
o-Terphenyl	*95*		*70 - 130*

Lab Sample ID: LCSD 880-77526/3-A
Matrix: Solid
Analysis Batch: 77550

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 77526

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	941.7		mg/Kg		94	70 - 130	4	20
Diesel Range Organics (Over C10-C28)			1000	891.8		mg/Kg		89	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*83*		*70 - 130*
o-Terphenyl	*73*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-77719/1-A
Matrix: Solid
Analysis Batch: 77819

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.395	U	5.00	0.395	mg/Kg			04/10/24 17:48	1

QC Sample Results

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41919-1
SDG: Lovington, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-77719/2-A
Matrix: Solid
Analysis Batch: 77819

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	272.8		mg/Kg		109	90 - 110		

Lab Sample ID: LCSD 880-77719/3-A
Matrix: Solid
Analysis Batch: 77819

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	273.3		mg/Kg		109	90 - 110	0	20

Lab Sample ID: 880-41919-1 MS
Matrix: Solid
Analysis Batch: 77819

Client Sample ID: SB-22-2'-3'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	637		252	888.4		mg/Kg		100	90 - 110		

Lab Sample ID: 880-41919-1 MSD
Matrix: Solid
Analysis Batch: 77819

Client Sample ID: SB-22-2'-3'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	637		252	885.1		mg/Kg		98	90 - 110	0	20

QC Association Summary

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41919-1
SDG: Lovington, NM

GC VOA

Prep Batch: 77564

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41919-1	SB-22-2'-3'	Total/NA	Solid	5030B	
880-41919-2	SB-22-8'-9'	Total/NA	Solid	5030B	
MB 880-77564/5-A	Method Blank	Total/NA	Solid	5030B	
LCS 880-77564/1-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 880-77564/2-A	Lab Control Sample Dup	Total/NA	Solid	5030B	

Analysis Batch: 77568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41919-1	SB-22-2'-3'	Total/NA	Solid	8021B	77564
880-41919-2	SB-22-8'-9'	Total/NA	Solid	8021B	77564
MB 880-77564/5-A	Method Blank	Total/NA	Solid	8021B	77564
LCS 880-77564/1-A	Lab Control Sample	Total/NA	Solid	8021B	77564
LCSD 880-77564/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	77564

Analysis Batch: 77724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41919-1	SB-22-2'-3'	Total/NA	Solid	Total BTEX	
880-41919-2	SB-22-8'-9'	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 77526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41919-1	SB-22-2'-3'	Total/NA	Solid	8015NM Prep	
880-41919-2	SB-22-8'-9'	Total/NA	Solid	8015NM Prep	
MB 880-77526/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-77526/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-77526/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 77550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41919-1	SB-22-2'-3'	Total/NA	Solid	8015B NM	77526
880-41919-2	SB-22-8'-9'	Total/NA	Solid	8015B NM	77526
MB 880-77526/1-A	Method Blank	Total/NA	Solid	8015B NM	77526
LCS 880-77526/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	77526
LCSD 880-77526/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	77526

Analysis Batch: 77754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41919-1	SB-22-2'-3'	Total/NA	Solid	8015 NM	
880-41919-2	SB-22-8'-9'	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 77719

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41919-1	SB-22-2'-3'	Soluble	Solid	DI Leach	
880-41919-2	SB-22-8'-9'	Soluble	Solid	DI Leach	
880-41919-3	SB-22-12'-13'	Soluble	Solid	DI Leach	
880-41919-4	SB-23-4'-5'	Soluble	Solid	DI Leach	
880-41919-5	SB-23-8'-9'	Soluble	Solid	DI Leach	
880-41919-6	SB-23-10'-11'	Soluble	Solid	DI Leach	

QC Association Summary

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41919-1
SDG: Lovington, NM

HPLC/IC (Continued)

Leach Batch: 77719 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41919-7	SB-24-0-1'	Soluble	Solid	DI Leach	
880-41919-8	SB-24-2'-3'	Soluble	Solid	DI Leach	
MB 880-77719/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-77719/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-77719/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-41919-1 MS	SB-22-2'-3'	Soluble	Solid	DI Leach	
880-41919-1 MSD	SB-22-2'-3'	Soluble	Solid	DI Leach	

Analysis Batch: 77819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41919-1	SB-22-2'-3'	Soluble	Solid	300.0	77719
880-41919-2	SB-22-8'-9'	Soluble	Solid	300.0	77719
880-41919-3	SB-22-12'-13'	Soluble	Solid	300.0	77719
880-41919-4	SB-23-4'-5'	Soluble	Solid	300.0	77719
880-41919-5	SB-23-8'-9'	Soluble	Solid	300.0	77719
880-41919-6	SB-23-10'-11'	Soluble	Solid	300.0	77719
880-41919-7	SB-24-0-1'	Soluble	Solid	300.0	77719
880-41919-8	SB-24-2'-3'	Soluble	Solid	300.0	77719
MB 880-77719/1-A	Method Blank	Soluble	Solid	300.0	77719
LCS 880-77719/2-A	Lab Control Sample	Soluble	Solid	300.0	77719
LCSD 880-77719/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	77719
880-41919-1 MS	SB-22-2'-3'	Soluble	Solid	300.0	77719
880-41919-1 MSD	SB-22-2'-3'	Soluble	Solid	300.0	77719

Lab Chronicle

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41919-1
SDG: Lovington, NM

Client Sample ID: SB-22-2'-3'

Lab Sample ID: 880-41919-1
Matrix: Solid
Date Collected: 04/04/24 09:20
Date Received: 04/08/24 09:02

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.03 g	5 mL	77564	04/08/24 09:22	EL	EET MID
Total/NA	Analysis	8021B		10	5 mL	5 mL	77568	04/08/24 20:09	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			77724	04/08/24 20:09	SM	EET MID
Total/NA	Analysis	8015 NM		1			77754	04/08/24 21:15	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	77526	04/08/24 10:40	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	77550	04/08/24 21:15	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	77719	04/09/24 10:08	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	77819	04/10/24 19:11	SMC	EET MID

Client Sample ID: SB-22-8'-9'

Lab Sample ID: 880-41919-2
Matrix: Solid
Date Collected: 04/04/24 10:00
Date Received: 04/08/24 09:02

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.05 g	5 mL	77564	04/08/24 09:22	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	77568	04/08/24 19:08	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			77724	04/08/24 19:08	SM	EET MID
Total/NA	Analysis	8015 NM		1			77754	04/08/24 21:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	77526	04/08/24 10:40	EL	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	77550	04/08/24 21:36	SM	EET MID
Soluble	Leach	DI Leach			4.95 g	50 mL	77719	04/09/24 10:08	SA	EET MID
Soluble	Analysis	300.0		5	50 mL	50 mL	77819	04/11/24 12:41	SMC	EET MID

Client Sample ID: SB-22-12'-13'

Lab Sample ID: 880-41919-3
Matrix: Solid
Date Collected: 04/04/24 10:45
Date Received: 04/08/24 09:02

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	77719	04/09/24 10:08	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	77819	04/11/24 12:46	SMC	EET MID

Client Sample ID: SB-23-4'-5'

Lab Sample ID: 880-41919-4
Matrix: Solid
Date Collected: 04/04/24 12:30
Date Received: 04/08/24 09:02

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	77719	04/09/24 10:08	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	77819	04/10/24 19:45	SMC	EET MID

Lab Chronicle

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41919-1
SDG: Lovington, NM

Client Sample ID: SB-23-8'-9'
Lab Sample ID: 880-41919-5
Date Collected: 04/04/24 13:25
Matrix: Solid
Date Received: 04/08/24 09:02

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	77719	04/09/24 10:08	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	77819	04/10/24 19:49	SMC	EET MID

Client Sample ID: SB-23-10'-11'
Lab Sample ID: 880-41919-6
Date Collected: 04/04/24 13:50
Matrix: Solid
Date Received: 04/08/24 09:02

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.96 g	50 mL	77719	04/09/24 10:08	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	77819	04/10/24 19:54	SMC	EET MID

Client Sample ID: SB-24-0-1'
Lab Sample ID: 880-41919-7
Date Collected: 04/04/24 14:45
Matrix: Solid
Date Received: 04/08/24 09:02

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	77719	04/09/24 10:08	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	77819	04/10/24 19:59	SMC	EET MID

Client Sample ID: SB-24-2'-3'
Lab Sample ID: 880-41919-8
Date Collected: 04/04/24 14:50
Matrix: Solid
Date Received: 04/08/24 09:02

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	77719	04/09/24 10:08	SA	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	77819	04/10/24 20:04	SMC	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41919-1
SDG: Lovington, 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	T104704400-23-26	06-30-24

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: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41919-1
SDG: Lovington, 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
5030B	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: Arcadis U.S., Inc.
Project/Site: WLU 47

Job ID: 880-41919-1
SDG: Lovington, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-41919-1	SB-22-2'-3'	Solid	04/04/24 09:20	04/08/24 09:02	2-3
880-41919-2	SB-22-8'-9'	Solid	04/04/24 10:00	04/08/24 09:02	8-9
880-41919-3	SB-22-12'-13'	Solid	04/04/24 10:45	04/08/24 09:02	12-13
880-41919-4	SB-23-4'-5'	Solid	04/04/24 12:30	04/08/24 09:02	4-5
880-41919-5	SB-23-8'-9'	Solid	04/04/24 13:25	04/08/24 09:02	8-9
880-41919-6	SB-23-10'-11'	Solid	04/04/24 13:50	04/08/24 09:02	10-11
880-41919-7	SB-24-0-1'	Solid	04/04/24 14:45	04/08/24 09:02	0-1
880-41919-8	SB-24-2'-3'	Solid	04/04/24 14:50	04/08/24 09:02	2-3

eurofins | 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
Little Rock, AR (501) 224-5060

Wo

880-41919 Chain of Custody

Project Manager:	Morgan Jordan	Bill to (if different)	
Company Name:	Arcadis	Company Name	
Address	1004 N Big Spring Suite 300	Address	
City, State ZIP:	Midland, TX 79701	City, State ZIP:	
Phone	281-844-9437	Email	Douglas.Jordan@Arcadis.com

Work Order Comments

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

Project Name:	Luke 47
Project Number:	30209668
Project Location:	Lovington, NM
Sampler's Name	Heath Boyd
PO #:	

Turn Around: ☑ Routine ☐ Rush — Pres. Code
Due Date:
TAT starts the day received by the lab, if received by 4 30pm

SAMPLE RECEIPT	Temp Blank:	Yes (No)	Wet Ice	(Yes) No
Samples Received Intact:	(Yes) No		Thermometer ID	IN8
Cooler Custody Seals	Yes No (N/A)		Correction Factor	-1.0
Sample Custody Seals	Yes No (N/A)		Temperature Reading	3.0
Total Containers			Corrected Temperature	2.5

ANALYSIS REQUEST (Parameters: BTX 8..., MOD NM, ORGFM-28D)

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	BTX 8	MOD NM	ORGFM-28D	Sample Comments
SB-22-2'-3'	S	4/4/24	920	2-3	G	1	X	X	X	
SB-22-8'-9'	|	|	1000	8-9	|	1	X	X	X	
SB-22-12'-13'	|	|	1045	12-13	|	1			X	
SB-23-4'-5'	|	|	1230	4-5	|	1			X	
SB-23-8'-9'	|	|	1325	8-9	|	1			X	
SB-23 10-11'	|	|	1350	10-11	|	1			X	
SB 24 0-1'	|	|	1445	0-1	|	1			X	
SB-24 2'-3'	X	X	1450	2-3	X	1			X	

Preservative Codes

None: NO	DI Water: H_2O
Cool: Cool	MeOH: Me
HCL: HC	HNO_3
H_2SO_4: H_2	NaOH: Na
H_3PO_4: HP	
$NaHSO_4$: NABIS	
$Na_2S_2O_3$: $NaSO_3$	
Zn Acetate+NaOH: Zn	
NaOH+Ascorbic Acid: SAPC	

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010:** 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg 1631 / 245 1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xenco. A minimum charge of $85.00 will be applied to each project and a charge of $5 for each sample submitted to Eurofins Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 [signature]	BCOX	4/4/24 1200	2 BCOX	[signature]	4/8/24 902
3			4		
5			6		

Revised Date: 08/25/2020 Rev 2020.2

Login Sample Receipt Checklist

Client: Arcadis U.S., Inc.

Job Number: 880-41919-1
SDG Number: Lovington, NM

Login Number: 41919
List Number: 1
Creator: Rodriguez, Leticia

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	

Appendix C

NMOCD Correspondence

From: Jordan, Morgan
Sent: Monday, May 6, 2024 10:52 AM
To: Krueger, Lauren
Subject: FW: [EXTERNAL] NMOCD Deadline Extension Requests - Chevron Sites

Thank You,

Morgan Jordan | Project Manager | douglas.jordan@arcadis.com
Arcadis | Arcadis U.S., Inc.
98 San Jacinto Blvd, Suite 414 | Austin, TX | 78701 | USA
M. +1 281 644 9437

From: Maxwell, Ashley, EMNRD <Ashley.Maxwell@emnrd.nm.gov>
Sent: Thursday, May 2, 2024 12:54 PM
To: Foord, Scott <William.Foord@arcadis.com>
Cc: Chrisbrand@chevron.com; Michelson, Jason C <jmichelson@chevron.com>; Jordan, Morgan <Douglas.Jordan@arcadis.com>; Hall, Brittany, EMNRD <Brittany.Hall@emnrd.nm.gov>; Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Subject: RE: [EXTERNAL] NMOCD Deadline Extension Requests - Chevron Sites

Good Afternoon Scott,

The incidents below have been granted a **final** 60 day extension of July 24, 2024. Please submit all reports via the OCD permitting portal by July 24, 2024.

1. Inc. No. nLWJ1016954547 – WLU East Test Sat (State Land) - Additional soil assessment activities completed in February and April 2024. The Site Characterization and Remediation Work Plan is currently under development and will be submitted to NMOCD.
2. Inc. No. nPAC0614230052 & nPAC0718639351 – WLU Water Inj Station (State Land) - Additional soil assessment activities completed in January and April 2024. The Site Characterization and Remediation Work Plan is currently under development and will be submitted to NMOCD.
3. Inc. No. nGRL1006731469 – WLU 41 (Private) - Additional soil assessment activities conducted in January and February 2024. Vertical delineation was not completed, additional assessment will be required and will be conducted within 30 days. A Site Characterization and Remediation Work Plan will be prepared and submitted to NMOCD following completion of assessment activities within the next 30 days.
4. Inc. No. nPAC0708526071 – WLU 47 (Private) - Additional soil assessment activities completed in January and February 2024. The Site Characterization and Remediation Work Plan is currently under development and will be submitted to NMOCD.

5. Inc. No. nPAC0617348887 – WLU 56 (Private) - The latest soil assessment was completed in March 2023 and a Site Characterization and Remediation Work Plan was submitted to NMOCD in December 2023. The 2023 Site Characterization and Remediation Work Plan was rejected and is currently being revised to address NMOCD comments for resubmittal to the Portal.
6. Inc. No. nTO1424533890 – Keel Fed Battery (BLM) - Closure request report was submitted in December of 2023 and denied by NMOCD on December 22, 2023. The Closure Request Report is currently being revised to address NMOCD comments and will be resubmitted to the Portal.
7. Inc. No. nKJ1515353221 – Moran 2-6 Tank Battery (State Land) – Closure request report was submitted in December of 2023 and denied by NMOCD on December 22, 2023. The Closure Request Report is currently being revised to address NMOCD comments and will be resubmitted to the Portal.

Ashley Maxwell ● Environmental Specialist
Environmental Bureau Projects Group
EMNRD - Oil Conservation Division
1000 Rio Brazos Road | Aztec, NM 87110
505.635.5000 | Ashley.Maxwell@emnrd.nm.gov
http://www.emnrd.state.nm.us/OCD/

Please be advised that the new Digital C-141 is live as of December 1, 2023. Please review the new Digital C-141 submission Dec 1, 2023 Guidance document posted on the EMRND Website prior to submitting any C-141s. The guidance documents can be found at https://www.emnrd.nm.gov/ocd/ocd-announcements-and-notifications/or https://www.emnrd.nm.gov/ocd/ocd-forms/.

From: Foord, Scott <William.Foord@arcadis.com>
Sent: Thursday, May 2, 2024 11:02 AM
To: Maxwell, Ashley, EMNRD <Ashley.Maxwell@emnrd.nm.gov>
Cc: Chrisbrand@chevron.com; Michelson, Jason C <jmichelson@chevron.com>; Jordan, Morgan <Douglas.Jordan@arcadis.com>; Hall, Brittany, EMNRD <Brittany.Hall@emnrd.nm.gov>; Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Subject: RE: [EXTERNAL] NMOCD Deadline Extension Requests - Chevron Sites

Ashley,

Just following up. Please let me know if you have any questions or need anything additional information.

Thanks,
Scott
Direct 713-953-4853
Cell 281-725-7477

From: Foord, Scott
Sent: Monday, April 29, 2024 9:13 AM
To: Maxwell, Ashley, EMNRD <Ashley.Maxwell@emnrd.nm.gov>
Cc: Chrisbrand@chevron.com; Michelson, Jason C <jmichelson@chevron.com>; Jordan, Morgan <Douglas.Jordan@arcadis.com>; Hall, Brittany, EMNRD <Brittany.Hall@emnrd.nm.gov>; Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Subject: RE: [EXTERNAL] NMOCD Deadline Extension Requests - Chevron Sites

Ashley,

Please see responses below and let me know if you need any additional information.

1. Inc. No. nLWJ1016954547 – WLU East Test Sat (State Land) - Additional soil assessment activities completed in February and April 2024. The Site Characterization and Remediation Work Plan is currently under development and will be submitted to NMOCD.
2. Inc. No. nPAC0614230052 & nPAC0718639351 – WLU Water Inj Station (State Land) - Additional soil assessment activities completed in January and April 2024. The Site Characterization and Remediation Work Plan is currently under development and will be submitted to NMOCD.
3. Inc. No. nGRL1006731469 – WLU 41 (Private) - Additional soil assessment activities conducted in January and February 2024. Vertical delineation was not completed, additional assessment will be required and will be conducted within 30 days. A Site Characterization and Remediation Work Plan will be prepared and submitted to NMOCD following completion of assessment activities within the next 30 days.
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5. Inc. No. nPAC0617348887 – WLU 56 (Private) - The latest soil assessment was completed in March 2023 and a Site Characterization and Remediation Work Plan was submitted to NMOCD in December 2023. The 2023 Site Characterization and Remediation Work Plan was rejected and is currently being revised to address NMOCD comments for resubmittal to the Portal.
6. Inc. No. nTO1424533890 – Keel Fed Battery (BLM) - Closure request report was submitted in December of 2023 and denied by NMOCD on December 22, 2023. The Closure Request Report is currently being revised to address NMOCD comments and will be resubmitted to the Portal.
7. Inc. No. nKJ1515353221 – Moran 2-6 Tank Battery (State Land) – Closure request report was submitted in December of 2023 and denied by NMOCD on December 22, 2023. The Closure Request Report is currently being revised to address NMOCD comments and will be resubmitted to the Portal.

Thanks,
Scott
Direct 713-953-4853
Cell 281-725-7477

From: Maxwell, Ashley, EMNRD <Ashley.Maxwell@emnrd.nm.gov>
Sent: Wednesday, April 24, 2024 9:27 AM
To: Foord, Scott <William.Foord@arcadis.com>
Cc: Chrisbrand@chevron.com; Michelson, Jason C <jmichelson@chevron.com>; Jordan, Morgan <Douglas.Jordan@arcadis.com>; Hall, Brittany, EMNRD <Brittany.Hall@emnrd.nm.gov>; Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Subject: RE: [EXTERNAL] NMOCD Deadline Extension Requests - Chevron Sites

Good Morning,

Please see the notes below for the requested extensions:

1. Inc. No. nLWJ1016954547 – WLU East Test Sat (State Land)-Before an extension can be granted, describe what work has been completed and specify why work has not been completed within the initial time granted.
2. Inc. No. nPAC0614230052 & nPAC0718639351 – WLU Water Inj Station (State Land)- Before an extension can be granted, describe what work has been completed and specify why work has not been completed within the initial time granted.

3. Inc. No. nGRL1006731469 – WLU 41 (Private)- Before an extension can be granted, describe what work has been completed and specify why work has not been completed within the initial time granted.
4. Inc. No. nPAC0712954774 – WLU 47 (Private)-Incident nPAC0712954774 is a duplicate incident. Refer to incident NPAC0708526071 for current status.
5. Inc. No. nPAC0617348887 – WLU 56 (Private)- Before an extension can be granted, describe what work has been completed and specify why work has not been completed within the initial time granted.
6. Inc. No. nTO1424533890 – Keel Fed Battery (BLM)- Before an extension can be granted, describe what work has been completed and specify why work has not been completed within the initial time granted.
7. Inc. No. nKJ1515353221 – Moran 2-6 Tank Battery (State Land)- Before an extension can be granted, describe what work has been completed and specify why work has not been completed within the initial time granted.

Ashley Maxwell • Environmental Specialist
Environmental Bureau Projects Group
EMNRD - Oil Conservation Division
1000 Rio Brazos Road | Aztec, NM 87110
505.635.5000 | Ashley.Maxwell@emnrd.nm.gov
http://www.emnrd.state.nm.us/OCD/

Please be advised that the new Digital C-141 is live as of December 1, 2023. Please review the new Digital C-141 submission Dec 1, 2023 Guidance document posted on the EMRND Website prior to submitting any C-141s. The guidance documents can be found at https://www.emnrd.nm.gov/ocd/ocd-announcements-and-notifications/or https://www.emnrd.nm.gov/ocd/ocd-forms/.

From: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Sent: Wednesday, April 24, 2024 8:04 AM
To: Maxwell, Ashley, EMNRD <Ashley.Maxwell@emnrd.nm.gov>
Subject: Fw: [EXTERNAL] NMOCD Deadline Extension Requests - Chevron Sites

FYI. All are under your review except for the second one.

Nelson V

From: Foord, Scott <William.Foord@arcadis.com>
Sent: Wednesday, April 3, 2024 3:43 PM
To: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Cc: Brand, Chris M <Chrisbrand@chevron.com>; Michelson, Jason C <jmichelson@chevron.com>; Jordan, Morgan <Douglas.Jordan@arcadis.com>
Subject: [EXTERNAL] NMOCD Deadline Extension Requests - Chevron Sites

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

Nelson,

We would like to please request 90-day extensions on the 4/30/2024 deadlines for the following sites. Additional assessments are currently ongoing and remediation work plans or closure requests will be submitted within that timeline. We are also working with the other agencies if applicable.

1. Inc. No. nLWJ1016954547 – WLU East Test Sat (State Land)
2. Inc. No. nPAC0614230052 & nPAC0718639351 – WLU Water Inj Station (State Land)

3. Inc. No. nGRL1006731469 – WLU 41 (Private)
4. Inc. No. nPAC0712954774 – WLU 47 (Private)
5. Inc. No. nPAC0617348887 – WLU 56 (Private)
6. Inc. No. nTO1424533890 – Keel Fed Battery (BLM)
7. Inc. No. nKJ1515353221 – Moran 2-6 Tank Battery (State Land)

Thanks,
Scott

Scott Foord PG, RSO, CPM
AFS Group Service Leader
Arcadis U.S., Inc.
10205 Westheimer Road Suite 800 | Houston, Texas | 77042 | USA
T +1 713 953 4853
M +1 281 725 7477
www.arcadis.com

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Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

QUESTIONS

Action 366393

QUESTIONS

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 366393
	Action Type: [C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nPAC0708526071**
Incident Name	**NPAC0708526071 WEST LOVINGTON UNIT #047 @ 30-025-03920**
Incident Type	**Produced Water Release**
Incident Status	**Remediation Plan Received**
Incident Well	**[30-025-03920] WEST LOVINGTON UNIT #047**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	WEST LOVINGTON UNIT #047
Date Release Discovered	01/14/2007
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	*Not answered.*
Produced Water Released (bbls) Details	Cause: Corrosion | Flow Line - Injection | Produced Water | Released: 5 BBL | Recovered: 0 BBL | Lost: 5 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	*Not answered.*
Natural Gas Vented (Mcf) Details	*Not answered.*
Natural Gas Flared (Mcf) Details	*Not answered.*
Other Released Details	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	*Not answered.*

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QUESTIONS (continued)

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 366393
	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)	**More info needed to determine if this will be treated as a "gas only" report.**
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	**No**
Reasons why this would be considered a submission for a notification of a major release	*Unavailable.*
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response	
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	*Not answered.*
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: Chris Brand Title: Lead Environmental Specialist Email: Chrisbrand@chevron.com Date: 07/23/2024

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QUESTIONS (continued)

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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	Direct Measurement
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	Greater than 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between ½ and 1 (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 ½ and 1 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Between 1 and 5 (mi.)
A wetland	Between ½ and 1 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	Yes

Remediation Plan	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)	
Chloride (EPA 300.0 or SM4500 Cl B)	7420
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	182
GRO+DRO (EPA SW-846 Method 8015M)	182
BTEX (EPA SW-846 Method 8021B or 8260B)	0
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	08/23/2024
On what date will (or did) the final sampling or liner inspection occur	08/24/2024
On what date will (or was) the remediation complete(d)	09/23/2024
What is the estimated surface area (in square feet) that will be reclaimed	33500
What is the estimated volume (in cubic yards) that will be reclaimed	6720
What is the estimated surface area (in square feet) that will be remediated	33500
What is the estimated volume (in cubic yards) that will be remediated	6720
These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.	
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

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QUESTIONS

Remediation Plan (continued)	
Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
(Select all answers below that apply.)	
(Ex Situ) Excavation and **off-site** disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for **off-site** disposal	R360 ARTESIA LLC LANDFARM [fEEM0112340644]
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)	No
(In Situ) Soil Vapor Extraction	No
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	No
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	No
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	No
Ground Water Abatement pursuant to 19.15.30 NMAC	No
OTHER (Non-listed remedial process)	No
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
I hereby agree and sign off to the above statement	Name: Chris Brand Title: Lead Environmental Specialist Email: Chrisbrand@chevron.com Date: 07/23/2024
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

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QUESTIONS

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

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QUESTIONS (continued)

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QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	***{Unavailable.}***

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 366393

CONDITIONS

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CONDITIONS

Created By	Condition	Condition Date
amaxwell	Remediation plan approved.	7/23/2024
amaxwell	Submit a report via the OCD permitting portal by November 25, 2024.	7/23/2024