**Chris Brand**
Environmental Remediation/ Facility Decom Advisor

**VIA ELECTRONIC MAIL**

March 18, 2025

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

**Re: West Lovington Unit #57**
**Soil Remediation Work Plan**
Incident No. nPLM0830342476
Case No. 1RP-1992

Dear Whom it May Concern:

Please find enclosed for your files, copies of the following:
West Lovington Unit #57 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 Inc.

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. 2025 Work Plan
West Lovington Unit #57

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

# 2025 Work Plan

## West Lovington Unit #57

## Lea County, New Mexico

## Incident # nPLM0830342476

March 2025

# 2025 Work Plan

**West Lovington Unit #57**
**Incident # nPLM0830342476**
**Lea County, New Mexico**

March 2025

**Prepared By:**
Arcadis U.S., Inc.
10205 Westheimer Road, Suite 800
Houston
Texas 77042
Phone: 713 953 4800
Fax: 713 977 4620

**Prepared For:**
Chris Brand
Project Manager
CEMC
6301 Deauville Blvd.
Midland, TX 79706

Scott Foord, PG
Program Manager

# Contents



# Tables



# Figures



# Appendices

2025 Work Plan
West Lovington Unit #57

# 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 #57 (Site) located at coordinates: 32.852161, -103.371459. 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 land approximately 6 miles south of the City of Lovington in Unit H, Section 8, 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 # nPLM0830342476

According to the Initial C-141 Form, on April 1, 2007, a soil boring assessment was conducted at site No. 173608G located within the Unit Boundary of the West Lovington Unit. Evidence of groundwater impact was found indicating chloride and low-level hydrocarbon impacts sufficient to warrant further investigation. Verbal notification of potential groundwater impact was made to Chris Williams at the local NMOCD district office on February 1, 2008. The time and source of the impacting event (release) is unknown. The Initial C-141 Form for this release was submitted to the NMOCD on March 17, 2008, and approved by NMOCD on October 29, 2008. The release was assigned remediation permit number 1RP-1992. The Initial C-141 Form for this release is included in **Appendix A**.

On December 17, 2023, a request to remove the site from the Agreed Compliance Order (ACO) List and to reassign the site with a pending abatement plan status was submitted to the NMOCD due to confirmation of groundwater monitoring wells in vicinity of site. The request was approved by NMOCD on January 10, 2024. The approval is included in **Appendix B**.

# 3 Site Characterization

There are three groundwater monitoring wells located approximately 425 feet west of the Site associated with the West Lovington Unit #57 Site (Case No. 1RP-1992). The closest groundwater monitoring well to the Site was gauged with a water level meter by Arcadis on May 20, 2024, and depth to water was verified at 58.92 feet below ground surface (bgs). Photographic documentation of gauging activities by Arcadis are included in **Appendix C (Photo No. 9 - 10)**.

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 51 and 75 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 1,000 feet and 0.50 miles;
- 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 any other fresh water well or spring: Between 1,000 feet and 0.50 miles;
- Distance to incorporated municipal boundaries or a defined municipal fresh water well field: Between 1 and 5 miles;
- Distance to wetland: Between 1,000 feet and 0.50 miles;
- 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? No

The site characterization data is presented in **Appendix D**.

# 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:

| 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 |

Per Table I of NMAC part 19.15.29.12, the following closure criteria apply to the Site for remediation activities for soils at depths greater than 4 feet bgs due to depth to groundwater measured by Arcadis at 58.29 feet bgs within Chevron West Lovington Unit #057 closest groundwater monitoring well located approximately 425 feet west of the Site:

| Constituent | Limit (mg/kg) |
|---|---|
| Benzene | 10 mg/kg |
| BTEX | 50 mg/kg |
| TPH – GRO, DRO, and ORO | 2,500 mg/kg |
| Chloride | 10,000 mg/kg |

# 5 Site Assessment Activities

In January 2021, March 2023, and January 2024, Arcadis performed site assessment activities to evaluate soil impacts stemming from the release. A total of eighteen (18) sample points (SB-1 through SB-18) were advanced to depths ranging from the surface to 4 feet bgs inside and surrounding the release area to evaluate the horizontal and vertical extents of the release. Soil sample locations are shown on **Figure 3**. A photo log is included in **Appendix B**. 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 soil samples were analyzed for BTEX by United States Environmental Protection Agency (EPA) Method 8021B, TPH by EPA Method 8015, and chloride by EPA method 300.0. Soil samples analyzed for BTEX were reported with the only detection being 0.00502 J mg/kg (S-13). Soil samples analyzed for TPH were reported with concentrations ranging from 21.8 J mg/kg (S-10) to 1,240 mg/kg (S-3). Soil samples analyzed for chloride were reported with concentrations ranging from 3.82 J mg/kg (S-18) to 917 mg/kg (S-12).

Horizontal and vertical delineation of the area of concern was completed during assessment 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 assessments, including analytical methods, results, and chain-of-custody documents, are attached in **Appendix E.**

# 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 10,500 square feet. In accordance with NMAC 19.15.29.12(D)(1)(b), CEMC proposes the following alternative confirmation sampling plan as a **variance request** to adhere with NMOCD requirements. Five-point composite confirmation soil samples will be collected from the excavation floor and sidewalls at 400 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).

An estimated 1,600 cubic yards of soil will be removed and transported to the Gandy Marley Landfill located in Roswell, New Mexico, which is listed as an NMOCD approved disposal facility.

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 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 10,500 square feet of the area of concern located within the pad 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 setup 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 closure request report describing the soil 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 57**
**Lea County, New Mexico**

| 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 | -- | -- | 1,000 | -- | 2,500 | 10,000 |
| Restoration Requirements | | | 10 | -- | -- | -- | 50 | -- | -- | -- | -- | 100 | 600 |
| SB-1 | 0-0.5 | 01/28/21 | <0.000382 | <0.000452 | <0.000560 | <0.000342 | <0.000342 | 23.1 J | 33.9 J | 57 | 18.1 J | 75.1 | 580 |
| SB-2 | 0-0.5 | 01/28/21 | <0.000383 | <0.000454 | <0.000563 | <0.000343 | <0.000343 | 15.4 J | 15.9 J | 31.3 J | <15.0 | 31.3 J | 8.9 |
| SB-3 | 0-0.5 | 01/28/21 | <0.000386 | <0.000457 | <0.000566 | <0.000345 | <0.000345 | <15.0 | 947 | 947 | 294 | ***1,240*** | 43.7 |
| | 1-2 | 01/28/21 | <0.000389 | <0.000460 | <0.000570 | <0.000348 | <0.000348 | <15.0 | 78.6 | 78.6 | 78.7 | ***157*** | 93.2 |
| SB-3 (DUP) | 0-0.5 | 01/28/21 | <0.000384 | <0.000455 | <0.000564 | <0.000344 | <0.000344 | <15.0 | 632 | 632 | 288 | ***920*** | 55.0 |
| SB-4 | 0-0.5 | 01/28/21 | <0.000386 | <0.000457 | <0.000567 | <0.000346 | <0.000346 | <15.0 | 333 | 333 | 157 | ***490*** | ***616*** |
| SB-5 | 0-0.5 | 01/29/21 | <0.000382 | <0.000452 | <0.000560 | <0.000342 | <0.000342 | 21.2 B J | 198 | 219.2 | 137 | ***356*** | 95.5 |
| SB-6 | 0-0.5 | 01/29/21 | <0.000388 | <0.000459 | <0.000569 | <0.000347 | <0.000347 | 20.4 B J | 93.4 | 113.8 | 69.6 | ***183*** | 368 |
| SB-7 | 0-0.5 | 01/29/21 | <0.000384 | <0.000455 | <0.000564 | <0.000344 | <0.000344 | 19.3 B J | 112 | 131.3 | 82.3 | ***214*** | 217 |
| SB-8 | 0-0.5 | 01/29/21 | <0.000383 | <0.000453 | <0.000561 | <0.000342 | <0.000342 | 22.6 B J | 20.7 J | 43.3 J | 24.7 J | 68.0 | 12.1 |
| SB-9 | 0-0.5 | 01/29/21 | <0.000383 | <0.000454 | <0.000563 | <0.000343 | <0.000343 | 23.5 B J | 16.1 J | 39.6 J | 19.3 J | 58.9 | 15.4 |
| SB-10 | 0-0.5 | 01/29/21 | <0.000385 | <0.000456 | <0.000565 | <0.000344 | <0.000344 | 21.7 B J | 15.0 J | 36.7 J | 16.9 J | 53.6 | 24.7 |
| | 1-1.75 | 01/29/21 | <0.000385 | <0.000456 | <0.000565 | <0.000344 | <0.000344 | 21.8 B J | <14.9 | 21.8 J | <14.9 | 21.8 J | 246 |
| SB-11 | 0-0.5 | 03/22/23 | <0.000381 | <0.000451 | <0.000559 | <0.000341 | <0.000341 | 35.2 J B | <15.0 | 35.2 J B | <15.0 | 35.2 J | 407 |
| | 2 | 03/22/23 | <0.000383 | <0.000453 | <0.000562 | <0.000342 | <0.000342 | 37.9 J B | <15.0 | 37.9 J B | <15.0 | 37.9 J | 87.0 |
| | 4 | 03/22/23 | <0.000387 | <0.000459 | <0.000568 | <0.000346 | <0.000346 | 42.0 J B | <15.0 | 42.0 J B | <15.0 | 42.0 J | 104 |
| SB-12 | 0-0.5 | 03/22/23 | <0.000389 | <0.000461 | <0.000571 | <0.000347 | <0.000347 | <15.0 | 149 | 149 | <15.0 | ***149*** | 163 |
| | 2 | 03/22/23 | <0.000383 | <0.000454 | <0.000563 | <0.000343 | <0.000343 | 31.7 J B | <15.0 | 31.7 J B | <15.0 | 31.7 J | 285 F1 |
| | 4 | 03/22/23 | <0.000384 | <0.000455 | <0.000564 | <0.000343 | <0.000343 | 48.3 J B | <15.0 | 48.3 J B | <15.0 | 48.3 J | 917 |
| SB-13 | 0-0.5 | 03/22/23 | <0.000387 | <0.000459 | <0.000568 | <0.000346 | <0.000346 | 28.4 J B | 25.2 J | 53.6 J B | <15.0 | 53.6 | ***784*** |
| | 2 | 03/22/23 | <0.000386 | <0.000457 | <0.000566 | <0.000345 | <0.000345 | 28.1 J | 24.8 J | 52.9 J | <15.0 | 52.9 | ***868*** |
| | 4 | 03/22/23 | <0.000386 | 0.000502 J | <0.000566 | <0.000345 | 0.000502 J | 22.5 J | 113 | 135.5 J | <15.0 | 136 | 762 |
| SB-14 | 0-0.5 | 03/22/23 | <0.000386 | <0.000457 | <0.000566 | <0.000345 | <0.000345 | 24.2 J B | 19.5 J | 43.7 J B | <15.0 | 43.7 J | 390 |
| | 2 | 03/22/23 | <0.000383 | <0.000454 | <0.000563 | <0.000343 | <0.000343 | 22.3 J B | 19.1 J | 41.4 J B | <14.9 | 41.4 J | 266 |
| SB-15 | 1 | 01/24/24 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 144 |
| | 2 | 01/24/24 | <0.000384 | <0.000455 | <0.000564 | <0.00101 | <0.00101 | <24.8 | <24.8 | <24.8 | <24.8 | <24.8 | 144 |
| SB-16 | 1 | 01/24/24 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 14.0 |
| | 2 | 01/24/24 | <0.000386 | <0.000457 | <0.000566 | <0.00101 | <0.00101 | <25.1 | <25.1 | <25.1 | <25.1 | <25.1 | 84.6 |
| SB-17 | 1 | 01/24/24 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 11.5 |
| | 2 | 01/24/24 | <0.000383 | <0.000454 | <0.000563 | <0.00101 | <0.00101 | <25.2 | <25.2 | <25.2 | <25.2 | <25.2 | 10.4 |
| SB-18 | 1 | 01/24/24 | <0.000383 | <0.000453 | <0.000562 | <0.00100 | <0.00100 | <25.2 | <25.2 | <25.2 | <25.2 | <25.2 | 53.1 |
| | 2 | 01/24/24 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.82 J |

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.
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

**Table 1**
**Soil Analytical Results**
**Chevron Environmental Management Company**
**WLU 57**
**Lea County, New Mexico**

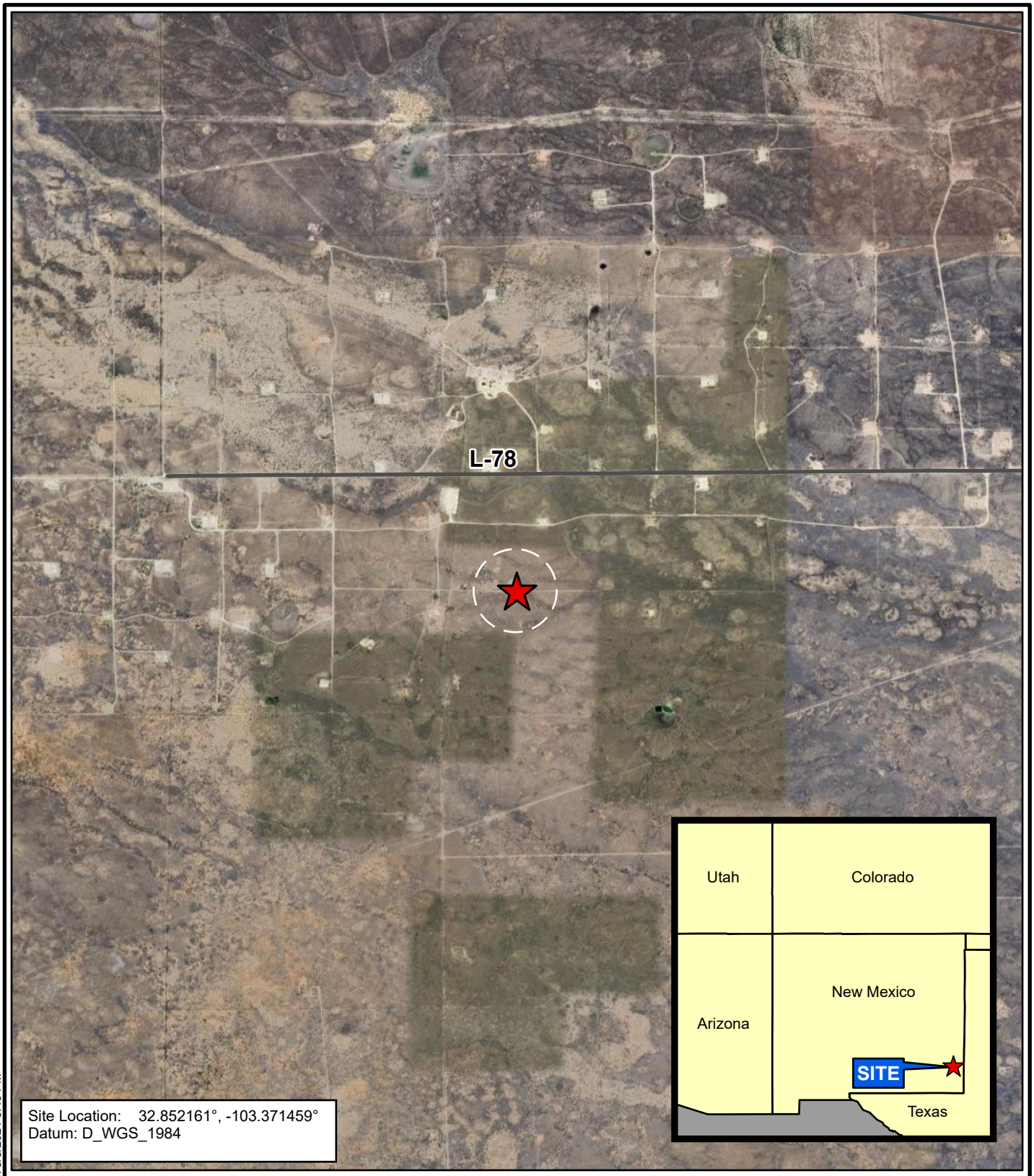
| Sample I.D. | Sample Depth (feet bgs) | Date | Benzene | Toluene | Ethylbenzene | Total Xylenes | Total BTEX | TPH-GRO | TPH-DRO | TPH GRO + DRO | TPH MRO | Total TPH | Chloride |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| NMAC Standards | | | 10 | -- | -- | -- | 50 | -- | -- | 1,000 | -- | 2,500 | 10,000 |
| Restoration Requirements | | | 10 | -- | -- | -- | 50 | -- | -- | -- | -- | 100 | 600 |

DUP: Duplicate sample

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

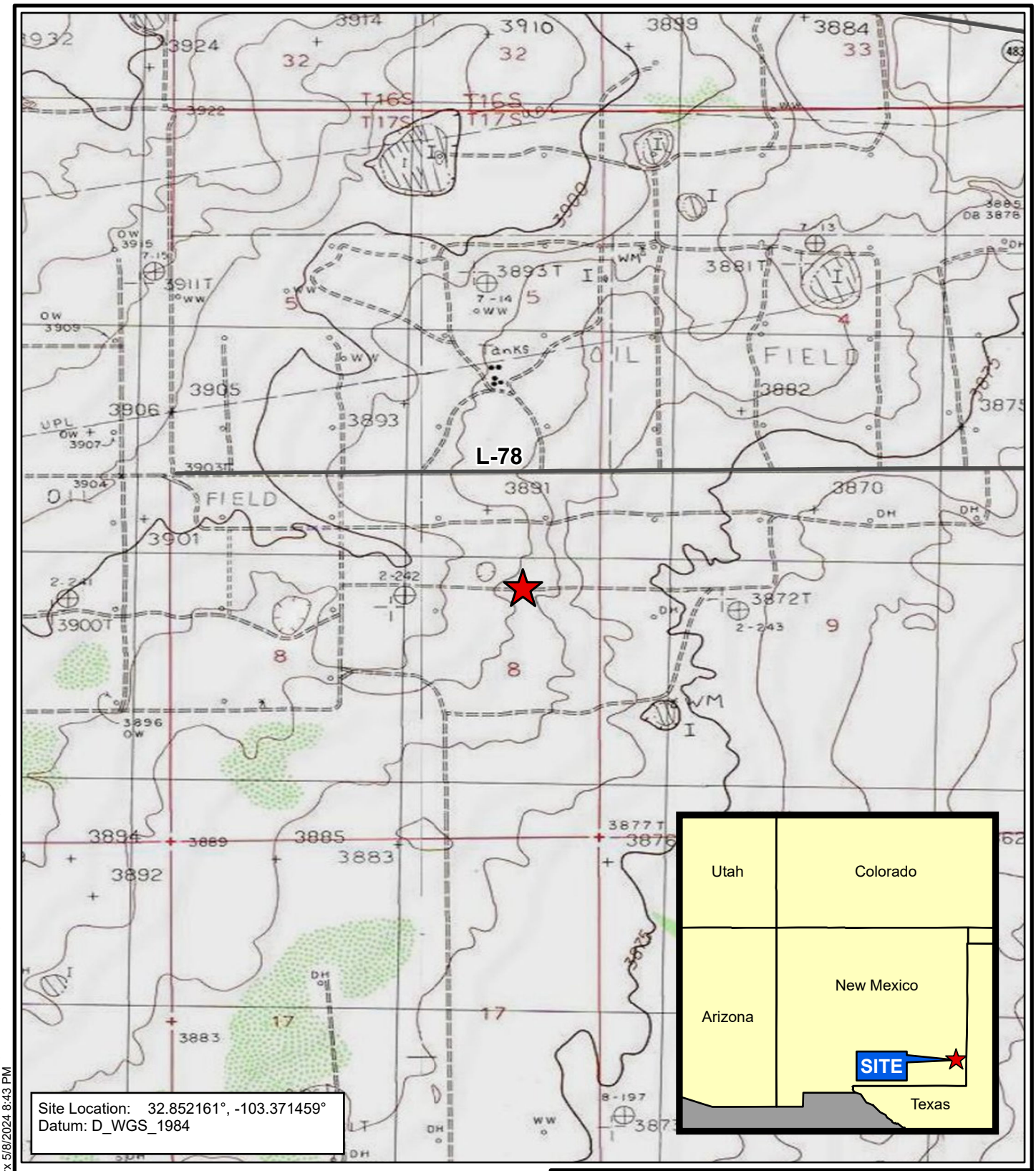
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
WEST LOVINGTON UNIT #057
LEA COUNTY, NEW MEXICO

**SITE LOCATION MAP**

ARCADIS

FIGURE 1

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: avi00976 ; Client (Project #)
T:_ENV\ChevronWLU_57_ProjWLU_57.aprx 5/8/2024 8:43 PM




**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

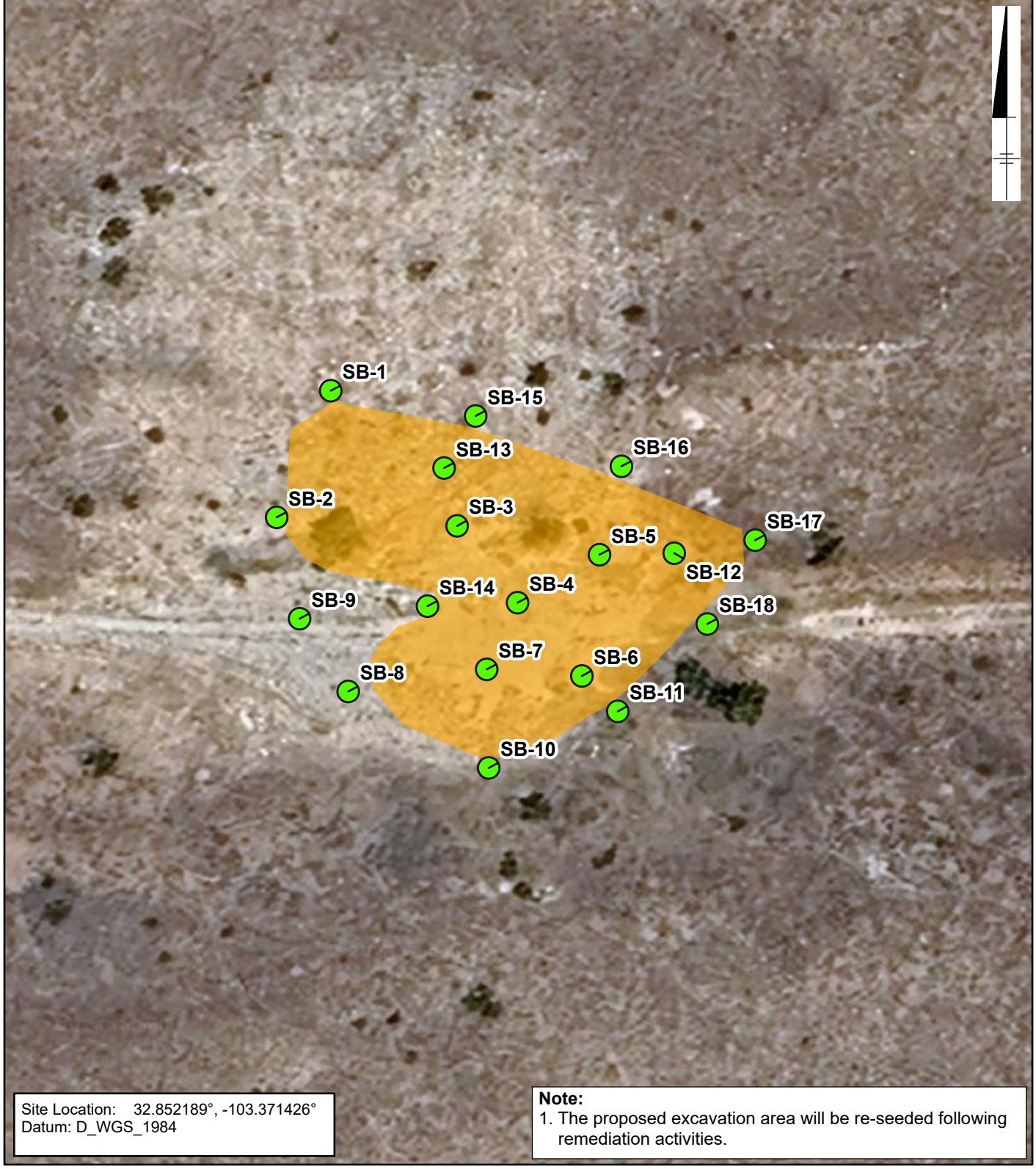
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
WEST LOVINGTON UNIT #057
LEA COUNTY, NEW MEXICO

# TOPOGRAPHIC MAP

ARCADIS

FIGURE 2

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: avi00976 ; Client (Project #) T:_ENV\Chevron\WLU_57_Pro\WLU_57.aprx 5/8/2024 8:43 PM




Site Location: 32.852189°, -103.371426°
Datum: D_WGS_1984

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

**Legend**

- Previous Assessment Sample Location
- Proposed Excavation Area

0 50 100 Feet
GRAPHIC SCALE

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
WEST LOVINGTON UNIT #057
LEA COUNTY, NEW MEXICO

# PROPOSED EXCAVATION AND SOIL SAMPLE LOCATION MAP

ARCADIS

FIGURE
3

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: amirm1212 ; Client (Project #)
T:_ENV\UpstreamWLU_57_Pro\WLU_57.aprx 7/29/2024 11:52 AM

# Appendix A

## Initial C-141 Form Incident # nPLM0830342476

RECEIVED
OCT 29 2008
HOBBS OCD

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

X Initial Report Final Report

| | |
|---|---|
| Name of Company Chevron USA | Contact TEJAY SIMPSON |
| Address HCR 60 Box 423 Lovington, N.M. 88260 | Telephone No. 505-396-4414 X 101 |
| Facility Name WEST LOVINGTON UNIT #57 | Facility Type GENERAL LEASE – IIS 173608G |

| | | |
|---|---|---|
| Surface Owner CHEVRON | Mineral Owner STATE OF NEW MEXICO | Lease No. B-4704<br>OGRID NO. 241333<br>API# 30 025 21885 |

## LOCATION OF RELEASE (Closest Chevron Operated Well)

| Unit Letter | Section | Township | Range | Feet from the | South Line | Feet from the | West Line | County |
|---|---|---|---|---|---|---|---|---|
| H | 8 | 17.0S | 36E | 1650 FNL | | 989 FEL | | Lea |

(Investigation Site) Latitude_32.8533056 __ Longitude_-103.3763333

## NATURE OF RELEASE

| | | |
|---|---|---|
| Type of Release UNKNOWN | Volume of Release UNKNOWN | Volume Recovered UNKNOWN |
| Source of Release UNKNOWN | Date and Hour of Occurrence UNKNOWN | Date and Hour of Discovery APRIL 2007 |
| Was Immediate Notice Given? * see below ☐ Yes ☒ No ☐ Not Required | If YES, To Whom? | |
| By Whom? | Date and Hour | |
| Was a Watercourse Reached? ☒ Yes ☐ No | If YES, Volume Impacting the Watercourse. UNKNOWN | |

If a Watercourse was Impacted, Describe Fully.*Chloride, Hydrocarbon and total Xylenes impact to groundwater

Describe Cause of Problem and Remedial Action Taken.*1 ISoil boring conducted in April 2007 at site No. 173608G located within the Unit Boundary of the West Lovington Unit found evidence of ground water impact. The initial investigation indicates chlorides contamination and low level hydrocarbon impact sufficient to warrant further investigation.

The origin, source, date of occurrence or responsible party for the impact is undetermined.

**Verbal notification of potential groundwater impact was made to Chris Williams at the local NMOCD District office February 1, 2008. Since the date, time and source of the impacting event is not known, it is assumed that the event was not reported at the time of occurrence.*

Describe Area Affected and Cleanup Action Taken.*

Ground water impact in remote low activity oil production and ranching location. The nearest known active livestock water supply well is located approximately one mile north of the investigation site. Water gradient flow is believed to be southeast.

A work plan is being developed to further investigate the potential source of the impact and delineate the area of groundwater impact above standards.

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: Tejay Simpson | OIL CONSERVATION DIVISION |
| Printed Name: TEJAY SIMPSON | Approved by District Supervisor: ENVIRONMENTAL ENGINEER |
| Title: OPERATIONS SUPERVISOR | Approval Date: 10.29.08 Expiration Date: 12.1.08 |
| E-mail Address tsimpson@chevron.com | Conditions of Approval: SUBMIT DETAILED REPORT INITIAL ADDING REASONS FOR INVESTIGATION BY Attached ☐ IRP#1992 |
| Date: March 17, 2008 Phone: 396-4414 X 101 | |

* Attach Additional Sheets If Necessary

# Appendix B

## NMOCD Correspondence

# OCD Permitting



## [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT) Application

### Submission Information

| | | | |
|---|---|---|---|
| **Submission ID:** | 295339 | **Districts:** | Hobbs |
| **Operator:** | [4323] CHEVRON U S A INC | **Counties:** | Lea |
| **Description:** | CHEVRON U S A INC [4323]<br>, WEST LOVINGTON UNIT #057<br>, nPLM0830342476 | | |
| **Status:** | APPROVED | | |
| **Status Date:** | 01/10/2024 | | |
| **References (2):** | 30-025-21885, nPLM0830342476 | | |

### Forms

**Attachments:** GROUND WATER ABATEMENT, Cover letter/ executive summary, Current report period activity, Plans for next reporting period, Siting Criteria

### Questions

This submission type does not have questions, at this time.

### Acknowledgments

This submission type does not have acknowledgments, at this time.

### Comments

No comments found for this submission.

### Conditions

**Summary:** *michael.buchanan (1/10/2024),* List Removal Letter has been received for the record.

### Reasons

No reasons found for this submission.

1220 South St. Francis Drive | Santa Fe, NM 87505 | P: (505) 476-3200 | F: (505) 476-3220

# Appendix C

## Photo Log

ARCADIS

## PHOTOGRAPHIC LOG

| Property Name: | Location: | Incident No. |
|---|---|---|
| WLU 57 | Lea County, NM | nPLM0830342476 |

| Photo No. | Date: |
|---|---|
| 1 | 01/28/2021 |

**Direction Photo Taken:**

Facing south

**Description:**

North center

ARCADIS

## PHOTOGRAPHIC LOG

| Property Name: | Location: | Incident No. |
|---|---|---|
| WLU 57 | Lea County, NM | nPLM0830342476 |

| Photo No. | Date: |
|---|---|
| 2 | 01/28/2021 |

**Direction Photo Taken:**

Southwest

**Description:**

North east corner

ARCADIS

## PHOTOGRAPHIC LOG

| Property Name: | Location: | Incident No. |
|---|---|---|
| WLU 57 | Lea County, NM | nPLM0830342476 |

| Photo No. | Date: |
|---|---|
| 3 | 01/28/2021 |

**Direction Photo Taken:**

Facing west

**Description:**

East center

ARCADIS

## PHOTOGRAPHIC LOG

| Property Name: | Location: | Incident No. |
|---|---|---|
| WLU 57 | Lea County, NM | nPLM0830342476 |

| Photo No. | Date: |
|---|---|
| 4 | 01/28/2021 |

**Direction Photo Taken:**

Facing northwest

**Description:**

Southeast corner

ARCADIS

## PHOTOGRAPHIC LOG

| Property Name: | Location: | Incident No. |
|---|---|---|
| WLU 57 | Lea County, NM | nPLM0830342476 |

| Photo No. | Date: |
|---|---|
| 5 | 01/28/2021 |

**Direction Photo Taken:**

Facing north

**Description:**

South center

ARCADIS

## PHOTOGRAPHIC LOG

| Property Name: | Location: | Incident No. |
|---|---|---|
| WLU 57 | Lea County, NM | nPLM0830342476 |

| Photo No. | Date: |
|---|---|
| 6 | 01/28/2021 |

**Direction Photo Taken:**

Facing east

**Description:**

West side of site.

ARCADIS

## PHOTOGRAPHIC LOG

| Property Name: | Location: | Incident No. |
|---|---|---|
| WLU 57 | Lea County, NM | nPLM0830342476 |

| Photo No. | Date: |
|---|---|
| 7 | 01/28/2021 |

**Direction Photo Taken:**

Facing northeast

**Description:**

Southwest

ARCADIS

## PHOTOGRAPHIC LOG

| Property Name: | Location: | Incident No. |
|---|---|---|
| WLU 57 | Lea County, NM | nPLM0830342476 |

| Photo No. | Date: |
|---|---|
| 8 | 01/28/2021 |

**Direction Photo Taken:**

East

**Description:**
Well marker

ARCADIS

## PHOTOGRAPHIC LOG

| Property Name: | Location: | Incident No. |
|---|---|---|
| WLU 57 | Lea County, NM | nPLM0830342476 |

| Photo No. | Date: |
|---|---|
| 9 | 05/20/2024 |

**Direction Photo Taken:**

East

**Description:**
Groundwater Monitoring Well located directly west of site.

ARCADIS

## PHOTOGRAPHIC LOG

| Property Name: | Location: | Incident No. |
|---|---|---|
| WLU 57 | Lea County, NM | nPLM0830342476 |

| Photo No. | Date: |
|---|---|
| 10 | 05/20/2024 |

**Direction Photo Taken:**

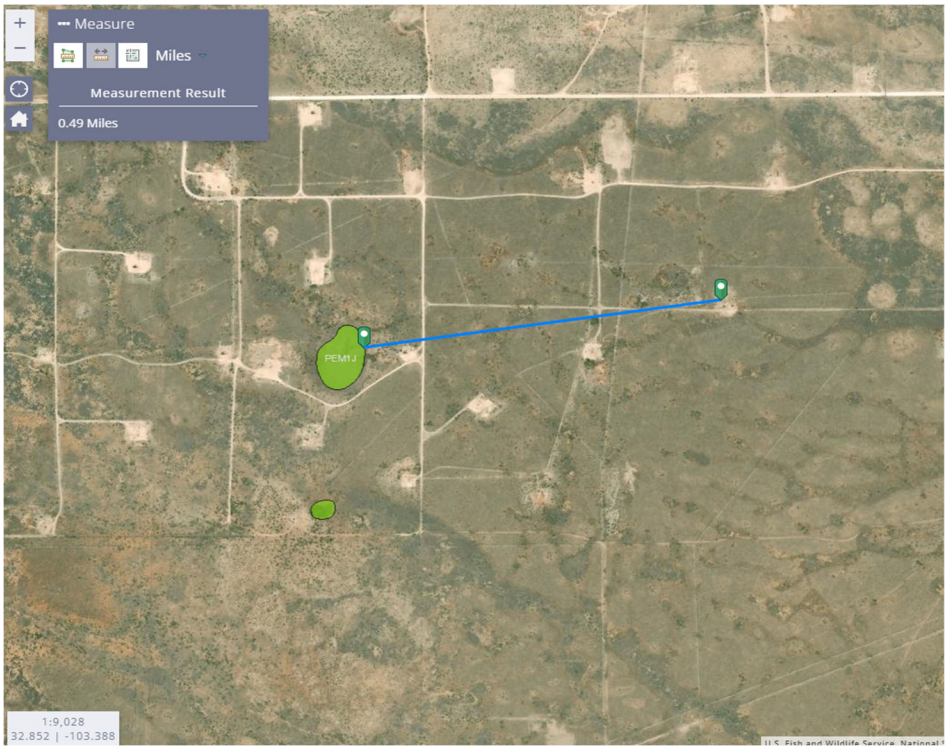
East

**Description:**
Arcadis gauging Monitoring Well on 5/20/2024.

# Appendix D

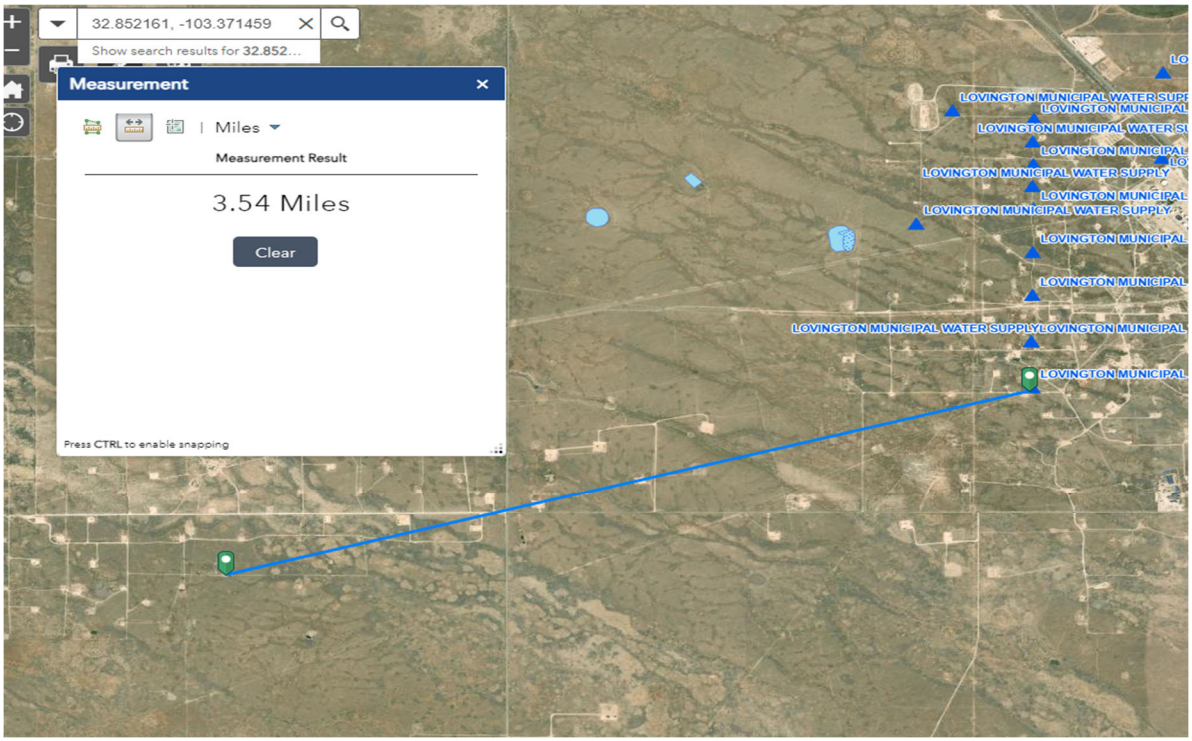
## Site Characterization Data

Distance to lakebed, sinkhole, or playa lake.

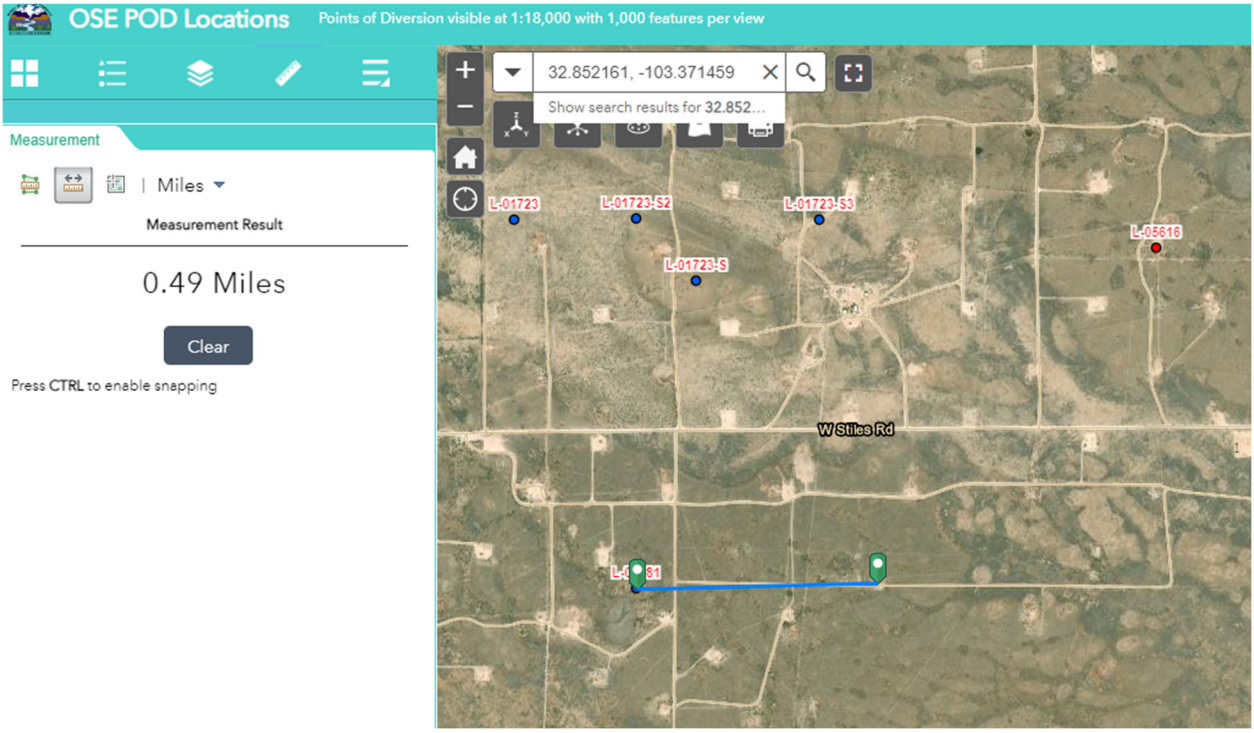



Distance to occupied permanent residence, school, hospital, institution, or church.

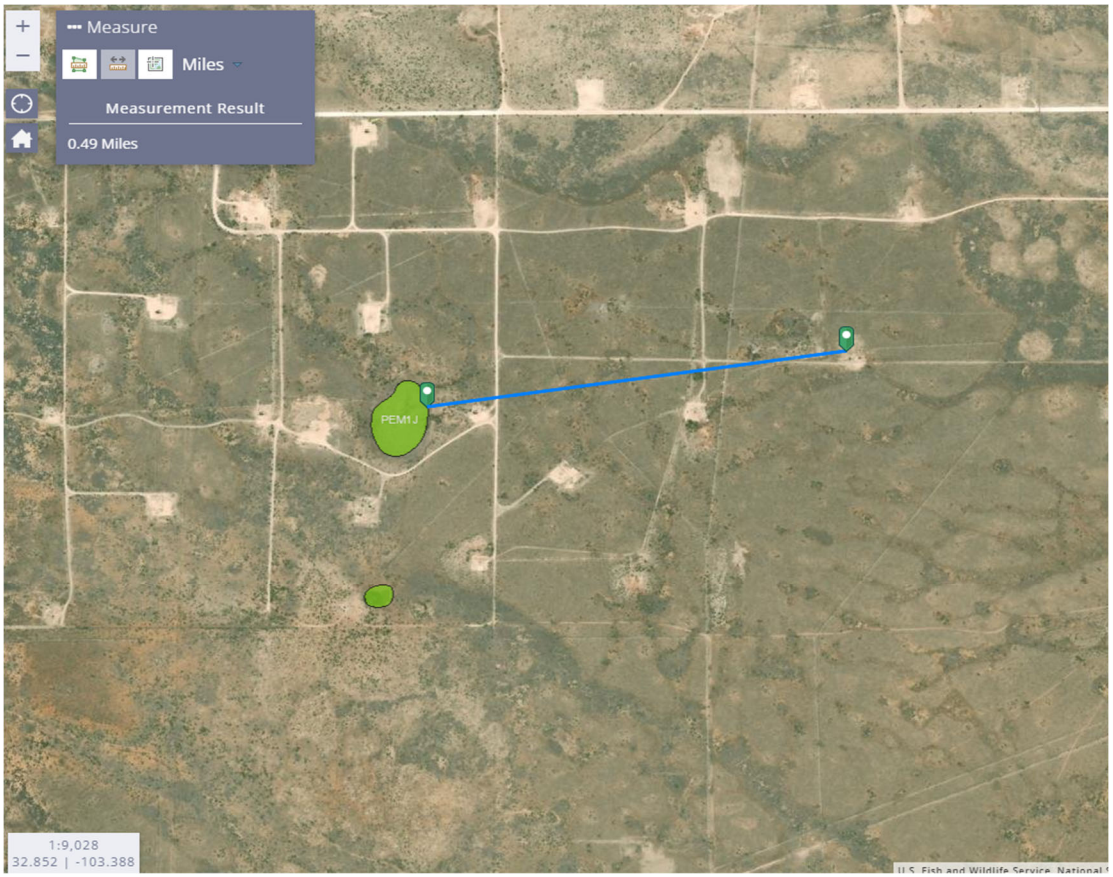
Distance to spring or private domestic fresh water well used by less than five households for domestic or stock watering purposes (Lovington Municipal Water Supply Well NM3521813).




Distance to any other fresh water well or spring (L-00381).



Distance to a wetland.



# Appendix E

## Laboratory Analytical Reports

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# Analytical Report 686645

## for

## Arcadis U.S., Inc

**Project Manager: Morgan Jordan**

**WLU 57**

**30064883-0002B**

**02.09.2021**

Collected By: Client

**1211 W. Florida Ave**
**Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-24)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-20-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)

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02.09.2021

Project Manager: **Morgan Jordan**
**Arcadis U.S., Inc**
1717 W 6th Street, Suite 210
Austin, TX 78703

Reference: Eurofins Xenco, LLC Report No(s): **686645**
**WLU 57**
Project Address:

**Morgan Jordan**:

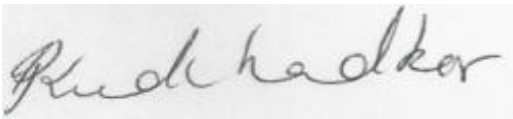
We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 686645. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 686645 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,



**Sachin Kudchadkar**
Project Manager

*A Small Business and Minority Company*

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

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# Sample Cross Reference 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| SB-5-S-0-.5-210129 | S | 01.29.2021 10:22 | | 686645-001 |
| SB-7-S-0-.5-210129 | S | 01.29.2021 11:02 | | 686645-002 |
| SB-6-S-0-.5-210129 | S | 01.29.2021 11:11 | | 686645-003 |
| SB-8-S-0-.5-210129 | S | 01.29.2021 11:40 | | 686645-004 |
| SB-9-S-0-.5-210129 | S | 01.29.2021 11:50 | | 686645-005 |
| SB-10-S-0-.5-210129 | S | 01.29.2021 12:01 | | 686645-006 |
| SB-10-S-1-1.75-210129 | S | 01.29.2021 12:06 | | 686645-007 |

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# CASE NARRATIVE

***Client Name: Arcadis U.S., Inc***

***Project Name: WLU 57***

Project ID: *30064883-0002B*
Work Order Number(s): *686645*

Report Date: *02.09.2021*
Date Received: *01.29.2021*

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

**Sample receipt non conformances and comments:**

**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3149669 BTEX by EPA 8021B

Lab Sample ID 686645-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 686645-001, -002, -003, -004, -005, -006, -007.

The Laboratory Control Sample for Toluene, Benzene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3150009 TPH By SW8015 Mod

Detection in the method blank for the gasoline range, data was accepted due to detection being <.5 the reporting limit.

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# Certificate of Analytical Results 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-5-S-0-.5-210129** Matrix: Soil Date Received:01.29.2021 17:00

Lab Sample Id: 686645-001 Date Collected: 01.29.2021 10:22

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.01.2021 16:45 % Moisture:

Seq Number: 3149707 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **95.5** | 4.99 | 0.857 | mg/kg | 02.01.2021 21:55 | | 1 |

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.03.2021 17:00 % Moisture:

Seq Number: 3150009 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **21.2** | 49.9 | 15.0 | mg/kg | 02.04.2021 03:40 | BJ | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **198** | 49.9 | 15.0 | mg/kg | 02.04.2021 03:40 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **137** | 49.9 | 15.0 | mg/kg | 02.04.2021 03:40 | | 1 |
| **Total TPH** | PHC635 | **356** | 49.9 | 15.0 | mg/kg | 02.04.2021 03:40 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 108 | % | 70-130 | 02.04.2021 03:40 | |
| o-Terphenyl | 84-15-1 | 120 | % | 70-130 | 02.04.2021 03:40 | |

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# Certificate of Analytical Results 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-5-S-0-.5-210129** Matrix: Soil Date Received:01.29.2021 17:00

Lab Sample Id: 686645-001 Date Collected: 01.29.2021 10:22

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL

Analyst: KTL Date Prep: 02.01.2021 17:15 % Moisture:

Seq Number: 3149669 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000382 | 0.00198 | 0.000382 | mg/kg | 02.02.2021 07:26 | UX | 1 |
| Toluene | 108-88-3 | <0.000452 | 0.00198 | 0.000452 | mg/kg | 02.02.2021 07:26 | UX | 1 |
| Ethylbenzene | 100-41-4 | <0.000560 | 0.00198 | 0.000560 | mg/kg | 02.02.2021 07:26 | UX | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00101 | 0.00397 | 0.00101 | mg/kg | 02.02.2021 07:26 | UX | 1 |
| o-Xylene | 95-47-6 | <0.000342 | 0.00198 | 0.000342 | mg/kg | 02.02.2021 07:26 | UX | 1 |
| Total Xylenes | 1330-20-7 | <0.000342 | 0.00198 | 0.000342 | mg/kg | 02.02.2021 07:26 | U | 1 |
| Total BTEX | | <0.000342 | 0.00198 | 0.000342 | mg/kg | 02.02.2021 07:26 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 109 | % | 70-130 | 02.02.2021 07:26 | |
| 4-Bromofluorobenzene | 460-00-4 | 130 | % | 70-130 | 02.02.2021 07:26 | |

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# Certificate of Analytical Results 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-7-S-0-.5-210129** Matrix: Soil Date Received:01.29.2021 17:00

Lab Sample Id: 686645-002 Date Collected: 01.29.2021 11:02

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.01.2021 16:45 % Moisture:

Seq Number: 3149707 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **217** | 5.05 | 0.867 | mg/kg | 02.01.2021 22:00 | | 1 |

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.03.2021 17:00 % Moisture:

Seq Number: 3150009 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **19.3** | 50.0 | 15.0 | mg/kg | 02.04.2021 04:01 | BJ | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **112** | 50.0 | 15.0 | mg/kg | 02.04.2021 04:01 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **82.3** | 50.0 | 15.0 | mg/kg | 02.04.2021 04:01 | | 1 |
| **Total TPH** | PHC635 | **214** | 50.0 | 15.0 | mg/kg | 02.04.2021 04:01 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 103 | % | 70-130 | 02.04.2021 04:01 | |
| o-Terphenyl | 84-15-1 | 118 | % | 70-130 | 02.04.2021 04:01 | |

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# Certificate of Analytical Results 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SB-7-S-0-.5-210129** | Matrix: | Soil | Date Received: | 01.29.2021 17:00 |
| Lab Sample Id: | 686645-002 | Date Collected: | 01.29.2021 11:02 | | |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5035A |
| Tech: | KTL | | | | |
| Analyst: | KTL | Date Prep: | 02.01.2021 17:15 | % Moisture: | |
| Seq Number: | 3149669 | | | Basis: | Wet Weight |

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000384 | 0.00200 | 0.000384 | mg/kg | 02.02.2021 07:47 | U | 1 |
| Toluene | 108-88-3 | <0.000455 | 0.00200 | 0.000455 | mg/kg | 02.02.2021 07:47 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000564 | 0.00200 | 0.000564 | mg/kg | 02.02.2021 07:47 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00101 | 0.00399 | 0.00101 | mg/kg | 02.02.2021 07:47 | U | 1 |
| o-Xylene | 95-47-6 | <0.000344 | 0.00200 | 0.000344 | mg/kg | 02.02.2021 07:47 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000344 | 0.00200 | 0.000344 | mg/kg | 02.02.2021 07:47 | U | 1 |
| Total BTEX | | <0.000344 | 0.00200 | 0.000344 | mg/kg | 02.02.2021 07:47 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 113 | % | 70-130 | 02.02.2021 07:47 | |
| 4-Bromofluorobenzene | 460-00-4 | 122 | % | 70-130 | 02.02.2021 07:47 | |

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# Certificate of Analytical Results 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-6-S-0-.5-210129** Matrix: Soil Date Received:01.29.2021 17:00

Lab Sample Id: 686645-003 Date Collected: 01.29.2021 11:11

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.01.2021 16:45 % Moisture:

Seq Number: 3149707 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **368** | 5.00 | 0.858 | mg/kg | 02.01.2021 22:05 | | 1 |

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.03.2021 17:00 % Moisture:

Seq Number: 3150009 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **20.4** | 50.0 | 15.0 | mg/kg | 02.04.2021 04:22 | BJ | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **93.4** | 50.0 | 15.0 | mg/kg | 02.04.2021 04:22 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **69.6** | 50.0 | 15.0 | mg/kg | 02.04.2021 04:22 | | 1 |
| **Total TPH** | PHC635 | **183** | 50.0 | 15.0 | mg/kg | 02.04.2021 04:22 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 99 | % | 70-130 | 02.04.2021 04:22 | |
| o-Terphenyl | 84-15-1 | 111 | % | 70-130 | 02.04.2021 04:22 | |

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# Certificate of Analytical Results 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-6-S-0-.5-210129** Matrix: Soil Date Received:01.29.2021 17:00

Lab Sample Id: 686645-003 Date Collected: 01.29.2021 11:11

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL

Analyst: KTL Date Prep: 02.01.2021 17:15 % Moisture:

Seq Number: 3149669 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000388 | 0.00202 | 0.000388 | mg/kg | 02.02.2021 08:08 | U | 1 |
| Toluene | 108-88-3 | <0.000459 | 0.00202 | 0.000459 | mg/kg | 02.02.2021 08:08 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000569 | 0.00202 | 0.000569 | mg/kg | 02.02.2021 08:08 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00102 | 0.00403 | 0.00102 | mg/kg | 02.02.2021 08:08 | U | 1 |
| o-Xylene | 95-47-6 | <0.000347 | 0.00202 | 0.000347 | mg/kg | 02.02.2021 08:08 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000347 | 0.00202 | 0.000347 | mg/kg | 02.02.2021 08:08 | U | 1 |
| Total BTEX | | <0.000347 | 0.00202 | 0.000347 | mg/kg | 02.02.2021 08:08 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 118 | % | 70-130 | 02.02.2021 08:08 | |
| 4-Bromofluorobenzene | 460-00-4 | 120 | % | 70-130 | 02.02.2021 08:08 | |

eurofins | Environment Testing Xenco

# Certificate of Analytical Results 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-8-S-0-.5-210129** Matrix: Soil Date Received:01.29.2021 17:00

Lab Sample Id: 686645-004 Date Collected: 01.29.2021 11:40

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.01.2021 16:45 % Moisture:

Seq Number: 3149707 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **12.1** | 5.02 | 0.862 | mg/kg | 02.01.2021 22:21 | | 1 |

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.03.2021 17:00 % Moisture:

Seq Number: 3150009 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **22.6** | 50.0 | 15.0 | mg/kg | 02.04.2021 04:43 | BJ | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **20.7** | 50.0 | 15.0 | mg/kg | 02.04.2021 04:43 | J | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **24.7** | 50.0 | 15.0 | mg/kg | 02.04.2021 04:43 | J | 1 |
| **Total TPH** | PHC635 | **68.0** | 50.0 | 15.0 | mg/kg | 02.04.2021 04:43 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 108 | % | 70-130 | 02.04.2021 04:43 | |
| o-Terphenyl | 84-15-1 | 125 | % | 70-130 | 02.04.2021 04:43 | |

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# Certificate of Analytical Results 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-8-S-0-.5-210129**
Matrix: Soil
Date Received:01.29.2021 17:00
Lab Sample Id: 686645-004
Date Collected: 01.29.2021 11:40

Analytical Method: BTEX by EPA 8021B
Prep Method: SW5035A
Tech: KTL
Analyst: KTL
Date Prep: 02.01.2021 17:15
% Moisture:
Basis: Wet Weight
Seq Number: 3149669

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000383 | 0.00199 | 0.000383 | mg/kg | 02.02.2021 08:28 | U | 1 |
| Toluene | 108-88-3 | <0.000453 | 0.00199 | 0.000453 | mg/kg | 02.02.2021 08:28 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000561 | 0.00199 | 0.000561 | mg/kg | 02.02.2021 08:28 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00101 | 0.00398 | 0.00101 | mg/kg | 02.02.2021 08:28 | U | 1 |
| o-Xylene | 95-47-6 | <0.000342 | 0.00199 | 0.000342 | mg/kg | 02.02.2021 08:28 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000342 | 0.00199 | 0.000342 | mg/kg | 02.02.2021 08:28 | U | 1 |
| Total BTEX | | <0.000342 | 0.00199 | 0.000342 | mg/kg | 02.02.2021 08:28 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 114 | % | 70-130 | 02.02.2021 08:28 | |
| 4-Bromofluorobenzene | 460-00-4 | 109 | % | 70-130 | 02.02.2021 08:28 | |

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# Certificate of Analytical Results 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-9-S-0-.5-210129** Matrix: Soil Date Received:01.29.2021 17:00

Lab Sample Id: 686645-005 Date Collected: 01.29.2021 11:50

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.01.2021 16:45 % Moisture:

Seq Number: 3149707 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **15.4** | 4.97 | 0.853 | mg/kg | 02.01.2021 22:27 | | 1 |

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.03.2021 17:00 % Moisture:

Seq Number: 3150009 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **23.5** | 49.9 | 15.0 | mg/kg | 02.04.2021 05:05 | BJ | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **16.1** | 49.9 | 15.0 | mg/kg | 02.04.2021 05:05 | J | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **19.3** | 49.9 | 15.0 | mg/kg | 02.04.2021 05:05 | J | 1 |
| **Total TPH** | PHC635 | **58.9** | 49.9 | 15.0 | mg/kg | 02.04.2021 05:05 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 97 | % | 70-130 | 02.04.2021 05:05 | |
| o-Terphenyl | 84-15-1 | 112 | % | 70-130 | 02.04.2021 05:05 | |

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# Certificate of Analytical Results 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-9-S-0-.5-210129** Matrix: Soil Date Received:01.29.2021 17:00

Lab Sample Id: 686645-005 Date Collected: 01.29.2021 11:50

Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A

Tech: KTL

Analyst: KTL Date Prep: 02.01.2021 17:15 % Moisture:

Seq Number: 3149669 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000383 | 0.00199 | 0.000383 | mg/kg | 02.02.2021 08:49 | U | 1 |
| Toluene | 108-88-3 | <0.000454 | 0.00199 | 0.000454 | mg/kg | 02.02.2021 08:49 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000563 | 0.00199 | 0.000563 | mg/kg | 02.02.2021 08:49 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00101 | 0.00398 | 0.00101 | mg/kg | 02.02.2021 08:49 | U | 1 |
| o-Xylene | 95-47-6 | <0.000343 | 0.00199 | 0.000343 | mg/kg | 02.02.2021 08:49 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000343 | 0.00199 | 0.000343 | mg/kg | 02.02.2021 08:49 | U | 1 |
| Total BTEX | | <0.000343 | 0.00199 | 0.000343 | mg/kg | 02.02.2021 08:49 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 116 | % | 70-130 | 02.02.2021 08:49 | |
| 4-Bromofluorobenzene | 460-00-4 | 113 | % | 70-130 | 02.02.2021 08:49 | |

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# Certificate of Analytical Results 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-10-S-0-.5-210129** Matrix: Soil Date Received:01.29.2021 17:00

Lab Sample Id: 686645-006 Date Collected: 01.29.2021 12:01

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.01.2021 16:45 % Moisture:

Seq Number: 3149707 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **24.7** | 4.99 | 0.857 | mg/kg | 02.01.2021 22:43 | | 1 |

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.03.2021 17:00 % Moisture:

Seq Number: 3150009 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **21.7** | 49.9 | 15.0 | mg/kg | 02.04.2021 05:26 | BJ | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **15.0** | 49.9 | 15.0 | mg/kg | 02.04.2021 05:26 | J | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **16.9** | 49.9 | 15.0 | mg/kg | 02.04.2021 05:26 | J | 1 |
| **Total TPH** | PHC635 | **53.6** | 49.9 | 15.0 | mg/kg | 02.04.2021 05:26 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 97 | % | 70-130 | 02.04.2021 05:26 | |
| o-Terphenyl | 84-15-1 | 112 | % | 70-130 | 02.04.2021 05:26 | |

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# Certificate of Analytical Results 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SB-10-S-0-.5-210129** | Matrix: | Soil | Date Received: | 01.29.2021 17:00 |
| Lab Sample Id: | 686645-006 | Date Collected: | 01.29.2021 12:01 | | |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5035A |
| Tech: | KTL | | | | |
| Analyst: | KTL | Date Prep: | 02.01.2021 17:15 | % Moisture: | |
| Seq Number: | 3149669 | | | Basis: | Wet Weight |

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000385 | 0.00200 | 0.000385 | mg/kg | 02.02.2021 09:10 | U | 1 |
| Toluene | 108-88-3 | <0.000456 | 0.00200 | 0.000456 | mg/kg | 02.02.2021 09:10 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000565 | 0.00200 | 0.000565 | mg/kg | 02.02.2021 09:10 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00101 | 0.00400 | 0.00101 | mg/kg | 02.02.2021 09:10 | U | 1 |
| o-Xylene | 95-47-6 | <0.000344 | 0.00200 | 0.000344 | mg/kg | 02.02.2021 09:10 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000344 | 0.00200 | 0.000344 | mg/kg | 02.02.2021 09:10 | U | 1 |
| Total BTEX | | <0.000344 | 0.00200 | 0.000344 | mg/kg | 02.02.2021 09:10 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 116 | % | 70-130 | 02.02.2021 09:10 | |
| 1,4-Difluorobenzene | 540-36-3 | 117 | % | 70-130 | 02.02.2021 09:10 | |

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# Certificate of Analytical Results 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-10-S-1-1.75-210129** Matrix: Soil Date Received:01.29.2021 17:00

Lab Sample Id: 686645-007 Date Collected: 01.29.2021 12:06

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.01.2021 16:45 % Moisture:

Seq Number: 3149707 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **246** | 5.02 | 0.862 | mg/kg | 02.01.2021 22:48 | | 1 |

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.03.2021 17:00 % Moisture:

Seq Number: 3150009 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **21.8** | 49.8 | 14.9 | mg/kg | 02.04.2021 05:48 | BJ | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <14.9 | 49.8 | 14.9 | mg/kg | 02.04.2021 05:48 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <14.9 | 49.8 | 14.9 | mg/kg | 02.04.2021 05:48 | U | 1 |
| **Total TPH** | PHC635 | **21.8** | 49.8 | 14.9 | mg/kg | 02.04.2021 05:48 | J | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 94 | % | 70-130 | 02.04.2021 05:48 | |
| o-Terphenyl | 84-15-1 | 108 | % | 70-130 | 02.04.2021 05:48 | |

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# Certificate of Analytical Results 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SB-10-S-1-1.75-210129** | Matrix: | Soil | Date Received: | 01.29.2021 17:00 |
| Lab Sample Id: | 686645-007 | Date Collected: | 01.29.2021 12:06 | | |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5035A |
| Tech: | KTL | | | | |
| Analyst: | KTL | Date Prep: | 02.01.2021 17:15 | % Moisture: | |
| Seq Number: | 3149669 | | | Basis: | Wet Weight |

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000385 | 0.00200 | 0.000385 | mg/kg | 02.02.2021 09:31 | U | 1 |
| Toluene | 108-88-3 | <0.000456 | 0.00200 | 0.000456 | mg/kg | 02.02.2021 09:31 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000565 | 0.00200 | 0.000565 | mg/kg | 02.02.2021 09:31 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00101 | 0.00400 | 0.00101 | mg/kg | 02.02.2021 09:31 | U | 1 |
| o-Xylene | 95-47-6 | <0.000344 | 0.00200 | 0.000344 | mg/kg | 02.02.2021 09:31 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000344 | 0.00200 | 0.000344 | mg/kg | 02.02.2021 09:31 | U | 1 |
| Total BTEX | | <0.000344 | 0.00200 | 0.000344 | mg/kg | 02.02.2021 09:31 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 115 | % | 70-130 | 02.02.2021 09:31 | |
| 1,4-Difluorobenzene | 540-36-3 | 111 | % | 70-130 | 02.02.2021 09:31 | |

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# Blank Summary 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

**Sample Id:** **7720557-1-BLK** Matrix: SOLID

Lab Sample Id: **7720557-1-BLK**

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.01.2021 16:45

Seq Number: 3149707

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <0.858 | 5.00 | 0.858 | mg/kg | 02.01.2021 20:35 | U | 1 |

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# Blank Summary 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

**Sample Id:** **7720565-1-BLK** Matrix: SOLID

Lab Sample Id: **7720565-1-BLK**

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A

Tech: KTL

Analyst: KTL Date Prep: 02.01.2021 17:15

Seq Number: 3149669

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000385 | 0.00200 | 0.000385 | mg/kg | 02.02.2021 07:04 | U | 1 |
| Toluene | 108-88-3 | <0.000456 | 0.00200 | 0.000456 | mg/kg | 02.02.2021 07:04 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000565 | 0.00200 | 0.000565 | mg/kg | 02.02.2021 07:04 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00101 | 0.00400 | 0.00101 | mg/kg | 02.02.2021 07:04 | U | 1 |
| o-Xylene | 95-47-6 | <0.000344 | 0.00200 | 0.000344 | mg/kg | 02.02.2021 07:04 | U | 1 |

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# Blank Summary 686645

## Arcadis U.S., Inc, Austin, TX

WLU 57

**Sample Id:** **7720763-1-BLK** Matrix: SOLID

Lab Sample Id: **7720763-1-BLK**

Analytical Method: **TPH By SW8015 Mod** Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.03.2021 17:00

Seq Number: 3150009

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | 21.1 | 50.0 | 15.0 | mg/kg | 02.03.2021 21:39 | BJ | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 50.0 | 15.0 | mg/kg | 02.03.2021 21:39 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 50.0 | 15.0 | mg/kg | 02.03.2021 21:39 | U | 1 |

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# Form 2 - Surrogate Recoveries

**Project Name:** WLU 57

**Report Date:** 02092021

**Work Orders :** 686645 **Project ID:** 30064883-0002B

**Lab Batch #:** 3149669 **Sample:** 7720565-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 02.02.2021 05:04 **SURROGATE RECOVERY STUDY**

| BTEX by EPA 8021B<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 0.0340 | 0.0300 | 113 | 70-130 | |
| 4-Bromofluorobenzene | 0.0325 | 0.0300 | 108 | 70-130 | |

**Lab Batch #:** 3149669 **Sample:** 7720565-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 02.02.2021 05:24 **SURROGATE RECOVERY STUDY**

| BTEX by EPA 8021B<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 0.0321 | 0.0300 | 107 | 70-130 | |
| 4-Bromofluorobenzene | 0.0331 | 0.0300 | 110 | 70-130 | |

**Lab Batch #:** 3149669 **Sample:** 686645-001 S / MS **Batch:** 1 **Matrix:** Soil

**Units:** mg/kg **Date Analyzed:** 02.02.2021 05:45 **SURROGATE RECOVERY STUDY**

| BTEX by EPA 8021B<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 0.0313 | 0.0300 | 104 | 70-130 | |
| 4-Bromofluorobenzene | 0.0345 | 0.0300 | 115 | 70-130 | |

**Lab Batch #:** 3149669 **Sample:** 686645-001 SD / MSD **Batch:** 1 **Matrix:** Soil

**Units:** mg/kg **Date Analyzed:** 02.02.2021 06:06 **SURROGATE RECOVERY STUDY**

| BTEX by EPA 8021B<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 0.0327 | 0.0300 | 109 | 70-130 | |
| 4-Bromofluorobenzene | 0.0336 | 0.0300 | 112 | 70-130 | |

**Lab Batch #:** 3149669 **Sample:** 7720565-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 02.02.2021 07:04 **SURROGATE RECOVERY STUDY**

| BTEX by EPA 8021B<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 0.0308 | 0.0300 | 103 | 70-130 | |
| 4-Bromofluorobenzene | 0.0360 | 0.0300 | 120 | 70-130 | |

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

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# Form 2 - Surrogate Recoveries

## Project Name: WLU 57

**Report Date:** 02092021

**Work Orders :** 686645 **Project ID:** 30064883-0002B

**Lab Batch #:** 3150009 **Sample:** 7720763-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 02.03.2021 21:39 **SURROGATE RECOVERY STUDY**

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1-Chlorooctane | 106 | 100 | 106 | 70-130 | |
| o-Terphenyl | 62.7 | 50.0 | 125 | 70-130 | |

**Lab Batch #:** 3150009 **Sample:** 7720763-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 02.03.2021 22:01 **SURROGATE RECOVERY STUDY**

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1-Chlorooctane | 105 | 100 | 105 | 70-130 | |
| o-Terphenyl | 55.5 | 50.0 | 111 | 70-130 | |

**Lab Batch #:** 3150009 **Sample:** 7720763-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 02.03.2021 22:22 **SURROGATE RECOVERY STUDY**

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1-Chlorooctane | 106 | 100 | 106 | 70-130 | |
| o-Terphenyl | 55.5 | 50.0 | 111 | 70-130 | |

**Lab Batch #:** 3150009 **Sample:** 686580-001 S / MS **Batch:** 1 **Matrix:** Soil

**Units:** mg/kg **Date Analyzed:** 02.03.2021 23:04 **SURROGATE RECOVERY STUDY**

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1-Chlorooctane | 84.2 | 99.7 | 84 | 70-130 | |
| o-Terphenyl | 41.7 | 49.9 | 84 | 70-130 | |

**Lab Batch #:** 3150009 **Sample:** 686580-001 SD / MSD **Batch:** 1 **Matrix:** Soil

**Units:** mg/kg **Date Analyzed:** 02.03.2021 23:25 **SURROGATE RECOVERY STUDY**

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1-Chlorooctane | 87.0 | 99.9 | 87 | 70-130 | |
| o-Terphenyl | 43.3 | 50.0 | 87 | 70-130 | |

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

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# QC Summary 686645

## Arcadis U.S., Inc

WLU 57

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3149707 — Matrix: Solid — Date Prep: 02.01.2021
MB Sample Id: 7720557-1-BLK — LCS Sample Id: 7720557-1-BKS — LCSD Sample Id: 7720557-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.858 | 250 | 239 | 96 | 244 | 98 | 90-110 | 2 | 20 | mg/kg | 02.01.2021 20:40 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3149707 — Matrix: Soil — Date Prep: 02.01.2021
Parent Sample Id: 686558-005 — MS Sample Id: 686558-005 S — MSD Sample Id: 686558-005 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 514 | 252 | 745 | 92 | 865 | 139 | 90-110 | 15 | 20 | mg/kg | 02.01.2021 20:56 | X |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3149707 — Matrix: Soil — Date Prep: 02.01.2021
Parent Sample Id: 686645-003 — MS Sample Id: 686645-003 S — MSD Sample Id: 686645-003 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 368 | 250 | 599 | 92 | 615 | 99 | 90-110 | 3 | 20 | mg/kg | 02.01.2021 22:11 | |

**Analytical Method:** TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3150009 — Matrix: Solid — Date Prep: 02.03.2021
MB Sample Id: 7720763-1-BLK — LCS Sample Id: 7720763-1-BKS — LCSD Sample Id: 7720763-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <15.0 | 1000 | 917 | 92 | 904 | 90 | 70-130 | 1 | 20 | mg/kg | 02.03.2021 22:01 | |
| Diesel Range Organics (DRO) | <15.0 | 1000 | 1040 | 104 | 1030 | 103 | 70-130 | 1 | 20 | mg/kg | 02.03.2021 22:01 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 106 | | 105 | | 106 | | 70-130 | % | 02.03.2021 22:01 |
| o-Terphenyl | 125 | | 111 | | 111 | | 70-130 | % | 02.03.2021 22:01 |

**Analytical Method:** TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3150009 — Matrix: Solid — Date Prep: 02.03.2021
MB Sample Id: 7720763-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <15.0 | mg/kg | 02.03.2021 21:39 | |

MS/MSD Percent Recovery — [D] = 100*(C-A) / B — LCS = Laboratory Control Sample — MS = Matrix Spike
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) | — A = Parent Result — B = Spike Added
LCS/LCSD Recovery — [D] = 100 * (C) / [B] — C = MS/LCS Result — D = MSD/LCSD % Rec
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample) — E = MSD/LCSD Result

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# QC Summary 686645

## Arcadis U.S., Inc

WLU 57

**Analytical Method:** **TPH By SW8015 Mod** Prep Method: SW8015P
Seq Number: 3150009 Matrix: Soil Date Prep: 02.03.2021
Parent Sample Id: 686580-001 MS Sample Id: 686580-001 S MSD Sample Id: 686580-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <15.0 | 997 | 833 | 84 | 846 | 85 | 70-130 | 2 | 20 | mg/kg | 02.03.2021 23:04 | |
| Diesel Range Organics (DRO) | <15.0 | 997 | 899 | 90 | 933 | 93 | 70-130 | 4 | 20 | mg/kg | 02.03.2021 23:04 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 84 | | 87 | | 70-130 | % | 02.03.2021 23:04 |
| o-Terphenyl | 84 | | 87 | | 70-130 | % | 02.03.2021 23:04 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3149669 Matrix: Solid Date Prep: 02.01.2021
MB Sample Id: 7720565-1-BLK LCS Sample Id: 7720565-1-BKS LCSD Sample Id: 7720565-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000385 | 0.100 | 0.0947 | 95 | 0.0878 | 88 | 70-130 | 8 | 35 | mg/kg | 02.02.2021 05:04 | |
| Toluene | <0.000456 | 0.100 | 0.101 | 101 | 0.0970 | 97 | 70-130 | 4 | 35 | mg/kg | 02.02.2021 05:04 | |
| Ethylbenzene | <0.000565 | 0.100 | 0.0983 | 98 | 0.0947 | 95 | 70-130 | 4 | 35 | mg/kg | 02.02.2021 05:04 | |
| m,p-Xylenes | <0.00101 | 0.200 | 0.199 | 100 | 0.186 | 93 | 70-130 | 7 | 35 | mg/kg | 02.02.2021 05:04 | |
| o-Xylene | <0.000344 | 0.100 | 0.101 | 101 | 0.0947 | 95 | 70-130 | 6 | 35 | mg/kg | 02.02.2021 05:04 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 103 | | 113 | | 107 | | 70-130 | % | 02.02.2021 05:04 |
| 4-Bromofluorobenzene | 120 | | 108 | | 110 | | 70-130 | % | 02.02.2021 05:04 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3149669 Matrix: Soil Date Prep: 02.01.2021
Parent Sample Id: 686645-001 MS Sample Id: 686645-001 S MSD Sample Id: 686645-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000381 | 0.0990 | 0.0334 | 34 | 0.0450 | 45 | 70-130 | 30 | 35 | mg/kg | 02.02.2021 05:45 | X |
| Toluene | <0.000451 | 0.0990 | 0.0325 | 33 | 0.0387 | 39 | 70-130 | 17 | 35 | mg/kg | 02.02.2021 05:45 | X |
| Ethylbenzene | <0.000559 | 0.0990 | 0.0260 | 26 | 0.0330 | 33 | 70-130 | 24 | 35 | mg/kg | 02.02.2021 05:45 | X |
| m,p-Xylenes | <0.00100 | 0.198 | 0.0503 | 25 | 0.0646 | 32 | 70-130 | 25 | 35 | mg/kg | 02.02.2021 05:45 | X |
| o-Xylene | <0.000341 | 0.0990 | 0.0290 | 29 | 0.0317 | 32 | 70-130 | 9 | 35 | mg/kg | 02.02.2021 05:45 | X |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 104 | | 109 | | 70-130 | % | 02.02.2021 05:45 |
| 4-Bromofluorobenzene | 115 | | 112 | | 70-130 | % | 02.02.2021 05:45 |

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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# Flagging Criteria

**X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

**B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

**D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

**E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

**F** RPD exceeded lab control limits.

**J** The target analyte was positively identified below the quantitation limit and above the detection limit.

**U** Analyte was not detected.

**L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

**H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

**K** Sample analyzed outside of recommended hold time.

**JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit. **ND** Not Detected.

**RL** Reporting Limit

**MDL** Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

**PQL** Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample **BLK** Method Blank

**BKS/LCS** Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

**MD/SD** Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

**Eurofins Xenco**
1211 W Florida Ave
Midland TX 79701
Phone 432-704-5440

# Chain of Custody Record

| Client Information | Sampler: J. Steinmann | Lab PM: Kudchadkar, Sachin G | Carrier Tracking No(s): | COC No: 600-23595-8666.1 |
|---|---|---|---|---|
| Client Contact: Motgan Jordan | Phone: 619 851 8792 | E-Mail: sachin.kudchadkar@testamericainc.com | | Page: Page 1 of 1 |
| Company: ARCADIS U.S., Inc. | | | | Job#: 6866045 |
| Address: 1717 W 6th Street. Suite 210 | Due Date Requested: | | | |
| City: Austin | TAT Requested (days): std | | | |
| State, Zip: TX, 78703 | | | | |
| Phone: 281 644 9437 | PO #: | | | |
| Email: douglas.jordan@arcadis.com | WO #: | | | |
| Project Name: 30064883-0002B | Project #: 30064883-0002B | | | |
| Site: WLU 57 | SSOW#: | | | |

**Analysis Requested**

**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 - Na2S2SO3 |
| 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 | 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) | 8015_GRO/ DRO/ ORO | 300 - Chloride | 8021- BTEX | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | X | X | N | N | N | X | |
| SB-5-S-0-.5-210129 | 1/29/21 | 1022 | G | Solid | | | | | | 1 | |
| SB-7-S-0-.5-210129 | | 1102 | | Solid | | | | | | | |
| SB-6-S-0-.5-210129 | | 1111 | | Solid | | | | | | | |
| SB-8-S-0-.5-210129 | | 1140 | | Solid | | | | | | | |
| SB-9-S-0-.5-210129 | | 1150 | | Solid | | | | | | | |
| SB-10-S-0-.5-210129 | | 1201 | | Solid | | | | | | | |
| SB-10-S-1-1.75-210129 | | 1206 | | Solid | | | | | | | |
| | | | | Solid | | | | | | | |
| | | | | Solid | | | | | | | |
| c/s 1/29/21 | | | | Solid | | | | | | | |
| | | | | Solid | | | | | | | |

**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 | Justin Steinmann | 1/29/21 1500 | Arcadis | Carlos Grajeda | 1-29-21 1500 | Arcadis |
| 2 | Carlos Grajeda | 1-29-21 1700 | Arcadis | | 1/29/21 1700 | |
| 3 | | | | | | |

Custody Seals Intact: △ Yes △ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 0.3 , 0.5

# Eurofins Xenco, LLC

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** Arcadis U.S., Inc

**Date/ Time Received:** 01.29.2021 05.00.00 PM

**Work Order #:** 686645

**Acceptable Temperature Range: 0 - 6 degC**
**Air and Metal samples Acceptable Range: Ambient**

**Temperature Measuring device used : IR8**

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | .3 |
| #2 *Shipping container in good condition? | **Yes** |
| #3 *Samples received on ice? | **Yes** |
| #4 *Custody Seals intact on shipping container/ cooler? | **N/A** |
| #5 Custody Seals intact on sample bottles? | **N/A** |
| #6*Custody Seals Signed and dated? | **N/A** |
| #7 *Chain of Custody present? | **Yes** |
| #8 Any missing/extra samples? | **No** |
| #9 Chain of Custody signed when relinquished/ received? | **Yes** |
| #10 Chain of Custody agrees with sample labels/matrix? | **Yes** |
| #11 Container label(s) legible and intact? | **Yes** |
| #12 Samples in proper container/ bottle? | **Yes** |
| #13 Samples properly preserved? | **Yes** |
| #14 Sample container(s) intact? | **Yes** |
| #15 Sufficient sample amount for indicated test(s)? | **Yes** |
| #16 All samples received within hold time? | **Yes** |
| #17 Subcontract of sample(s)? | **N/A** |
| #18 Water VOC samples have zero headspace? | **N/A** |

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

**Checklist completed by:** Brianna Teel Date: 01.29.2021

Brianna Teel

**Checklist reviewed by:** Sachin Kudchadkar Date: 01.29.2021

Sachin Kudchadkar

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# Analytical Report 686646

## for

## Arcadis U.S., Inc

**Project Manager: Morgan Jordan**

**WLU 57**

**30064883-0002B**

**03.04.2021**

Collected By: Client

**1211 W. Florida Ave**
**Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-24)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-20-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)

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03.04.2021

Project Manager: **Morgan Jordan**
**Arcadis U.S., Inc**
1717 W 6th Street, Suite 210
Austin, TX 78703

Reference: Eurofins Xenco, LLC Report No(s): **686646**
**WLU 57**
Project Address:

**Morgan Jordan**:

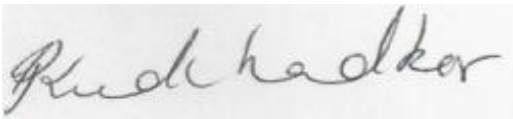
We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 686646. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 686646 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,



**Sachin Kudchadkar**
Project Manager

*A Small Business and Minority Company*

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

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# Sample Cross Reference 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|---|---|---|---|---|
| SB-1-S-0-.5-210128 | S | 01.28.2021 13:16 | | 686646-001 |
| SB-2-S-0-.5-210128 | S | 01.28.2021 13:36 | | 686646-002 |
| SB-3-S-0-.5-210128 | S | 01.28.2021 13:49 | | 686646-003 |
| SB-3-S-1-2-210128 | S | 01.28.2021 14:10 | | 686646-004 |
| SB-4-S-0-.5-210128 | S | 01.28.2021 14:38 | | 686646-005 |
| SB-3-SD-0-.5-210128 | S | 01.28.2021 00:00 | | 686646-006 |

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# CASE NARRATIVE

***Client Name: Arcadis U.S., Inc***

***Project Name: WLU 57***

Project ID: *30064883-0002B*
Work Order Number(s): *686646*

Report Date: *03.04.2021*
Date Received: *01.29.2021*

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

**Sample receipt non conformances and comments:**

**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3150167 TPH By SW8015 Mod

Samples affected are: 686646-001.

Surrogate o-Terphenyl recovered above QC limits. Samples affected are: 7720889-1-BKS,7720889-1-BLK,7720889-1-BSD,686655-001 S,686655-001 SD,686646-001,686646-002,686646-003,686646-004.

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# Certificate of Analytical Results 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-1-S-0-.5-210128** Matrix: Soil Date Received:01.29.2021 17:00

Lab Sample Id: 686646-001 Date Collected: 01.28.2021 13:16

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.01.2021 16:45 % Moisture:

Seq Number: 3149707 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **580** | 49.8 | 8.55 | mg/kg | 02.01.2021 22:53 | | 10 |

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.04.2021 11:00 % Moisture:

Seq Number: 3150167 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **23.1** | 49.9 | 15.0 | mg/kg | 02.04.2021 19:03 | J | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **33.9** | 49.9 | 15.0 | mg/kg | 02.04.2021 19:03 | J | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **18.1** | 49.9 | 15.0 | mg/kg | 02.04.2021 19:03 | J | 1 |
| **Total TPH** | PHC635 | **75.1** | 49.9 | 15.0 | mg/kg | 02.04.2021 19:03 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 129 | % | 70-130 | 02.04.2021 19:03 | |
| o-Terphenyl | 84-15-1 | 191 | % | 70-130 | 02.04.2021 19:03 | ** |

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# Certificate of Analytical Results 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SB-1-S-0-.5-210128** | Matrix: | Soil | Date Received: | 01.29.2021 17:00 |
| Lab Sample Id: | 686646-001 | Date Collected: | 01.28.2021 13:16 | | |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5035A |
| Tech: | KTL | | | | |
| Analyst: | KTL | Date Prep: | 02.01.2021 17:15 | % Moisture: | |
| Seq Number: | 3149669 | | | Basis: | Wet Weight |

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000382 | 0.00198 | 0.000382 | mg/kg | 02.02.2021 09:51 | U | 1 |
| Toluene | 108-88-3 | <0.000452 | 0.00198 | 0.000452 | mg/kg | 02.02.2021 09:51 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000560 | 0.00198 | 0.000560 | mg/kg | 02.02.2021 09:51 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00101 | 0.00397 | 0.00101 | mg/kg | 02.02.2021 09:51 | U | 1 |
| o-Xylene | 95-47-6 | <0.000342 | 0.00198 | 0.000342 | mg/kg | 02.02.2021 09:51 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000342 | 0.00198 | 0.000342 | mg/kg | 02.02.2021 09:51 | U | 1 |
| Total BTEX | | <0.000342 | 0.00198 | 0.000342 | mg/kg | 02.02.2021 09:51 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 117 | % | 70-130 | 02.02.2021 09:51 | |
| 4-Bromofluorobenzene | 460-00-4 | 124 | % | 70-130 | 02.02.2021 09:51 | |

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# Certificate of Analytical Results 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-2-S-0-.5-210128** Matrix: Soil Date Received:01.29.2021 17:00

Lab Sample Id: 686646-002 Date Collected: 01.28.2021 13:36

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.01.2021 16:45 % Moisture:

Seq Number: 3149707 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **8.90** | 5.00 | 0.858 | mg/kg | 02.01.2021 22:59 | | 1 |

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.04.2021 11:00 % Moisture:

Seq Number: 3150167 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Hydrocarbons (GRO)** | PHC610 | **15.4** | 50.0 | 15.0 | mg/kg | 02.04.2021 19:24 | J | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **15.9** | 50.0 | 15.0 | mg/kg | 02.04.2021 19:24 | J | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 50.0 | 15.0 | mg/kg | 02.04.2021 19:24 | U | 1 |
| **Total TPH** | PHC635 | **31.3** | 50.0 | 15.0 | mg/kg | 02.04.2021 19:24 | J | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 115 | % | 70-130 | 02.04.2021 19:24 | |
| o-Terphenyl | 84-15-1 | 146 | % | 70-130 | 02.04.2021 19:24 | ** |

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# Certificate of Analytical Results 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SB-2-S-0-.5-210128** | Matrix: | Soil | Date Received: | 01.29.2021 17:00 |
| Lab Sample Id: | 686646-002 | Date Collected: | 01.28.2021 13:36 | | |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5035A |
| Tech: | KTL | | | | |
| Analyst: | KTL | Date Prep: | 02.01.2021 17:15 | % Moisture: | |
| Seq Number: | 3149669 | | | Basis: | Wet Weight |

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000383 | 0.00199 | 0.000383 | mg/kg | 02.02.2021 10:12 | U | 1 |
| Toluene | 108-88-3 | <0.000454 | 0.00199 | 0.000454 | mg/kg | 02.02.2021 10:12 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000563 | 0.00199 | 0.000563 | mg/kg | 02.02.2021 10:12 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00101 | 0.00398 | 0.00101 | mg/kg | 02.02.2021 10:12 | U | 1 |
| o-Xylene | 95-47-6 | <0.000343 | 0.00199 | 0.000343 | mg/kg | 02.02.2021 10:12 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000343 | 0.00199 | 0.000343 | mg/kg | 02.02.2021 10:12 | U | 1 |
| Total BTEX | | <0.000343 | 0.00199 | 0.000343 | mg/kg | 02.02.2021 10:12 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 108 | % | 70-130 | 02.02.2021 10:12 | |
| 4-Bromofluorobenzene | 460-00-4 | 118 | % | 70-130 | 02.02.2021 10:12 | |

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# Certificate of Analytical Results 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-3-S-0-.5-210128** Matrix: Soil Date Received:01.29.2021 17:00

Lab Sample Id: 686646-003 Date Collected: 01.28.2021 13:49

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.01.2021 16:45 % Moisture:

Seq Number: 3149707 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **43.7** | 5.03 | 0.864 | mg/kg | 02.01.2021 23:04 | | 1 |

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.04.2021 11:00 % Moisture:

Seq Number: 3150167 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 50.0 | 15.0 | mg/kg | 02.04.2021 19:46 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **947** | 50.0 | 15.0 | mg/kg | 02.04.2021 19:46 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **294** | 50.0 | 15.0 | mg/kg | 02.04.2021 19:46 | | 1 |
| **Total TPH** | PHC635 | **1240** | 50.0 | 15.0 | mg/kg | 02.04.2021 19:46 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 115 | % | 70-130 | 02.04.2021 19:46 | |
| o-Terphenyl | 84-15-1 | 158 | % | 70-130 | 02.04.2021 19:46 | ** |

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# Certificate of Analytical Results 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SB-3-S-0-.5-210128** | Matrix: | Soil | Date Received: | 01.29.2021 17:00 |
| Lab Sample Id: | 686646-003 | Date Collected: | 01.28.2021 13:49 | | |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5035A |
| Tech: | KTL | | | | |
| Analyst: | KTL | Date Prep: | 02.01.2021 17:15 | % Moisture: | |
| Seq Number: | 3149669 | | | Basis: | Wet Weight |

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000386 | 0.00200 | 0.000386 | mg/kg | 02.02.2021 10:33 | U | 1 |
| Toluene | 108-88-3 | <0.000457 | 0.00200 | 0.000457 | mg/kg | 02.02.2021 10:33 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000566 | 0.00200 | 0.000566 | mg/kg | 02.02.2021 10:33 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00102 | 0.00401 | 0.00102 | mg/kg | 02.02.2021 10:33 | U | 1 |
| o-Xylene | 95-47-6 | <0.000345 | 0.00200 | 0.000345 | mg/kg | 02.02.2021 10:33 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000345 | 0.00200 | 0.000345 | mg/kg | 02.02.2021 10:33 | U | 1 |
| Total BTEX | | <0.000345 | 0.00200 | 0.000345 | mg/kg | 02.02.2021 10:33 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 119 | % | 70-130 | 02.02.2021 10:33 | |
| 4-Bromofluorobenzene | 460-00-4 | 126 | % | 70-130 | 02.02.2021 10:33 | |

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# Certificate of Analytical Results 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-3-S-1-2-210128** Matrix: Soil Date Received:01.29.2021 17:00

Lab Sample Id: 686646-004 Date Collected: 01.28.2021 14:10

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.01.2021 16:45 % Moisture:

Seq Number: 3149707 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **93.2** | 5.00 | 0.858 | mg/kg | 02.01.2021 23:09 | | 1 |

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.04.2021 11:00 % Moisture:

Seq Number: 3150167 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 49.9 | 15.0 | mg/kg | 02.04.2021 20:07 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **78.6** | 49.9 | 15.0 | mg/kg | 02.04.2021 20:07 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **78.7** | 49.9 | 15.0 | mg/kg | 02.04.2021 20:07 | | 1 |
| **Total TPH** | PHC635 | **157** | 49.9 | 15.0 | mg/kg | 02.04.2021 20:07 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 124 | % | 70-130 | 02.04.2021 20:07 | |
| o-Terphenyl | 84-15-1 | 167 | % | 70-130 | 02.04.2021 20:07 | ** |

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# Certificate of Analytical Results 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SB-3-S-1-2-210128** | Matrix: | Soil | Date Received: | 01.29.2021 17:00 |
| Lab Sample Id: | 686646-004 | Date Collected: | 01.28.2021 14:10 | | |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5035A |
| Tech: | KTL | | | | |
| Analyst: | KTL | Date Prep: | 02.01.2021 17:15 | % Moisture: | |
| Seq Number: | 3149669 | | | Basis: | Wet Weight |

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000389 | 0.00202 | 0.000389 | mg/kg | 02.02.2021 11:56 | U | 1 |
| Toluene | 108-88-3 | <0.000460 | 0.00202 | 0.000460 | mg/kg | 02.02.2021 11:56 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000570 | 0.00202 | 0.000570 | mg/kg | 02.02.2021 11:56 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00102 | 0.00404 | 0.00102 | mg/kg | 02.02.2021 11:56 | U | 1 |
| o-Xylene | 95-47-6 | <0.000348 | 0.00202 | 0.000348 | mg/kg | 02.02.2021 11:56 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000348 | 0.00202 | 0.000348 | mg/kg | 02.02.2021 11:56 | U | 1 |
| Total BTEX | | <0.000348 | 0.00202 | 0.000348 | mg/kg | 02.02.2021 11:56 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 113 | % | 70-130 | 02.02.2021 11:56 | |
| 4-Bromofluorobenzene | 460-00-4 | 106 | % | 70-130 | 02.02.2021 11:56 | |

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# Certificate of Analytical Results 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-4-S-0-.5-210128** Matrix: Soil Date Received:01.29.2021 17:00

Lab Sample Id: 686646-005 Date Collected: 01.28.2021 14:38

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.01.2021 16:45 % Moisture:

Seq Number: 3149707 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **616** | 5.00 | 0.858 | mg/kg | 02.01.2021 23:15 | | 1 |

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.03.2021 17:00 % Moisture:

Seq Number: 3149995 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 49.9 | 15.0 | mg/kg | 02.04.2021 08:13 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **333** | 49.9 | 15.0 | mg/kg | 02.04.2021 08:13 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **157** | 49.9 | 15.0 | mg/kg | 02.04.2021 08:13 | | 1 |
| **Total TPH** | PHC635 | **490** | 49.9 | 15.0 | mg/kg | 02.04.2021 08:13 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 104 | % | 70-130 | 02.04.2021 08:13 | |
| o-Terphenyl | 84-15-1 | 112 | % | 70-130 | 02.04.2021 08:13 | |

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# Certificate of Analytical Results 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-4-S-0-.5-210128**
Matrix: Soil
Date Received:01.29.2021 17:00
Lab Sample Id: 686646-005
Date Collected: 01.28.2021 14:38

Analytical Method: BTEX by EPA 8021B
Prep Method: SW5035A
Tech: KTL
Analyst: KTL
Date Prep: 02.01.2021 17:15
% Moisture:
Basis: Wet Weight
Seq Number: 3149669

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000386 | 0.00201 | 0.000386 | mg/kg | 02.02.2021 12:17 | U | 1 |
| Toluene | 108-88-3 | <0.000457 | 0.00201 | 0.000457 | mg/kg | 02.02.2021 12:17 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000567 | 0.00201 | 0.000567 | mg/kg | 02.02.2021 12:17 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00102 | 0.00402 | 0.00102 | mg/kg | 02.02.2021 12:17 | U | 1 |
| o-Xylene | 95-47-6 | <0.000346 | 0.00201 | 0.000346 | mg/kg | 02.02.2021 12:17 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000346 | 0.00201 | 0.000346 | mg/kg | 02.02.2021 12:17 | U | 1 |
| Total BTEX | | <0.000346 | 0.00201 | 0.000346 | mg/kg | 02.02.2021 12:17 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 540-36-3 | 113 | % | 70-130 | 02.02.2021 12:17 | |
| 4-Bromofluorobenzene | 460-00-4 | 122 | % | 70-130 | 02.02.2021 12:17 | |

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# Certificate of Analytical Results 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

Sample Id: **SB-3-SD-0-.5-210128** Matrix: Soil Date Received:01.29.2021 17:00

Lab Sample Id: 686646-006 Date Collected: 01.28.2021 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: SPC

Analyst: SPC Date Prep: 02.02.2021 16:20 % Moisture:

Seq Number: 3149807 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| **Chloride** | 16887-00-6 | **55.0** | 4.98 | 0.855 | mg/kg | 02.02.2021 20:35 | | 1 |

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.03.2021 17:00 % Moisture:

Seq Number: 3149995 Basis: Wet Weight

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 50.0 | 15.0 | mg/kg | 02.04.2021 08:35 | U | 1 |
| **Diesel Range Organics (DRO)** | C10C28DRO | **632** | 50.0 | 15.0 | mg/kg | 02.04.2021 08:35 | | 1 |
| **Motor Oil Range Hydrocarbons (MRO)** | PHCG2835 | **288** | 50.0 | 15.0 | mg/kg | 02.04.2021 08:35 | | 1 |
| **Total TPH** | PHC635 | **920** | 50.0 | 15.0 | mg/kg | 02.04.2021 08:35 | | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 111-85-3 | 105 | % | 70-130 | 02.04.2021 08:35 | |
| o-Terphenyl | 84-15-1 | 105 | % | 70-130 | 02.04.2021 08:35 | |

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# Certificate of Analytical Results 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

| | | | | | |
|---|---|---|---|---|---|
| Sample Id: | **SB-3-SD-0-.5-210128** | Matrix: | Soil | Date Received: | 01.29.2021 17:00 |
| Lab Sample Id: | 686646-006 | Date Collected: | 01.28.2021 00:00 | | |
| Analytical Method: | BTEX by EPA 8021B | | | Prep Method: | SW5035A |
| Tech: | KTL | | | | |
| Analyst: | KTL | Date Prep: | 02.01.2021 17:15 | % Moisture: | |
| Seq Number: | 3149669 | | | Basis: | Wet Weight |

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000384 | 0.00200 | 0.000384 | mg/kg | 02.02.2021 12:38 | U | 1 |
| Toluene | 108-88-3 | <0.000455 | 0.00200 | 0.000455 | mg/kg | 02.02.2021 12:38 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000564 | 0.00200 | 0.000564 | mg/kg | 02.02.2021 12:38 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00101 | 0.00399 | 0.00101 | mg/kg | 02.02.2021 12:38 | U | 1 |
| o-Xylene | 95-47-6 | <0.000344 | 0.00200 | 0.000344 | mg/kg | 02.02.2021 12:38 | U | 1 |
| Total Xylenes | 1330-20-7 | <0.000344 | 0.00200 | 0.000344 | mg/kg | 02.02.2021 12:38 | U | 1 |
| Total BTEX | | <0.000344 | 0.00200 | 0.000344 | mg/kg | 02.02.2021 12:38 | U | 1 |

| Surrogate | Cas Number | % Recovery | Units | Limits | Analysis Date | Flag |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene | 460-00-4 | 117 | % | 70-130 | 02.02.2021 12:38 | |
| 1,4-Difluorobenzene | 540-36-3 | 118 | % | 70-130 | 02.02.2021 12:38 | |

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# Blank Summary 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

**Sample Id:** **7720557-1-BLK** Matrix: SOLID

Lab Sample Id: **7720557-1-BLK**

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.01.2021 16:45

Seq Number: 3149707

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <0.858 | 5.00 | 0.858 | mg/kg | 02.01.2021 20:35 | U | 1 |

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# Blank Summary 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

**Sample Id:** **7720565-1-BLK** Matrix: SOLID

Lab Sample Id: **7720565-1-BLK**

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A

Tech: KTL

Analyst: KTL Date Prep: 02.01.2021 17:15

Seq Number: 3149669

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Benzene | 71-43-2 | <0.000385 | 0.00200 | 0.000385 | mg/kg | 02.02.2021 07:04 | U | 1 |
| Toluene | 108-88-3 | <0.000456 | 0.00200 | 0.000456 | mg/kg | 02.02.2021 07:04 | U | 1 |
| Ethylbenzene | 100-41-4 | <0.000565 | 0.00200 | 0.000565 | mg/kg | 02.02.2021 07:04 | U | 1 |
| m,p-Xylenes | 179601-23-1 | <0.00101 | 0.00400 | 0.00101 | mg/kg | 02.02.2021 07:04 | U | 1 |
| o-Xylene | 95-47-6 | <0.000344 | 0.00200 | 0.000344 | mg/kg | 02.02.2021 07:04 | U | 1 |

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# Blank Summary 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

**Sample Id:** **7720615-1-BLK** Matrix: SOLID

Lab Sample Id: **7720615-1-BLK**

Analytical Method: **Chloride by EPA 300** Prep Method: E300P

Tech: SPC

Analyst: SPC Date Prep: 02.02.2021 16:20

Seq Number: 3149807

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Chloride | 16887-00-6 | <0.858 | 5.00 | 0.858 | mg/kg | 02.02.2021 18:22 | U | 1 |

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# Blank Summary 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

**Sample Id:** **7720754-1-BLK** Matrix: SOLID

Lab Sample Id: **7720754-1-BLK**

Analytical Method: **TPH By SW8015 Mod** Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.03.2021 17:00

Seq Number: 3149995

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 50.0 | 15.0 | mg/kg | 02.03.2021 21:28 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 50.0 | 15.0 | mg/kg | 02.03.2021 21:28 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 50.0 | 15.0 | mg/kg | 02.03.2021 21:28 | U | 1 |

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# Blank Summary 686646

## Arcadis U.S., Inc, Austin, TX

WLU 57

**Sample Id:** **7720889-1-BLK** Matrix: SOLID

Lab Sample Id: **7720889-1-BLK**

Analytical Method: **TPH By SW8015 Mod** Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.04.2021 11:00

Seq Number: 3150167

| Parameter | Cas Number | Result | RL | MDL | Units | Analysis Date | Flag | Dil |
|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | PHC610 | <15.0 | 50.0 | 15.0 | mg/kg | 02.04.2021 11:50 | U | 1 |
| Diesel Range Organics (DRO) | C10C28DRO | <15.0 | 50.0 | 15.0 | mg/kg | 02.04.2021 11:50 | U | 1 |
| Motor Oil Range Hydrocarbons (MRO) | PHCG2835 | <15.0 | 50.0 | 15.0 | mg/kg | 02.04.2021 11:50 | U | 1 |

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# Form 2 - Surrogate Recoveries

**Project Name:** WLU 57

**Report Date:** 03042021

**Work Orders :** 686646

**Project ID:** 30064883-0002B

**Lab Batch #:** 3149669 **Sample:** 7720565-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 02.02.2021 05:04 **SURROGATE RECOVERY STUDY**

| BTEX by EPA 8021B<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 0.0340 | 0.0300 | 113 | 70-130 | |
| 4-Bromofluorobenzene | 0.0325 | 0.0300 | 108 | 70-130 | |

**Lab Batch #:** 3149669 **Sample:** 7720565-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 02.02.2021 05:24 **SURROGATE RECOVERY STUDY**

| BTEX by EPA 8021B<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 0.0321 | 0.0300 | 107 | 70-130 | |
| 4-Bromofluorobenzene | 0.0331 | 0.0300 | 110 | 70-130 | |

**Lab Batch #:** 3149669 **Sample:** 686645-001 S / MS **Batch:** 1 **Matrix:** Soil

**Units:** mg/kg **Date Analyzed:** 02.02.2021 05:45 **SURROGATE RECOVERY STUDY**

| BTEX by EPA 8021B<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 0.0313 | 0.0300 | 104 | 70-130 | |
| 4-Bromofluorobenzene | 0.0345 | 0.0300 | 115 | 70-130 | |

**Lab Batch #:** 3149669 **Sample:** 686645-001 SD / MSD **Batch:** 1 **Matrix:** Soil

**Units:** mg/kg **Date Analyzed:** 02.02.2021 06:06 **SURROGATE RECOVERY STUDY**

| BTEX by EPA 8021B<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 0.0327 | 0.0300 | 109 | 70-130 | |
| 4-Bromofluorobenzene | 0.0336 | 0.0300 | 112 | 70-130 | |

**Lab Batch #:** 3149669 **Sample:** 7720565-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 02.02.2021 07:04 **SURROGATE RECOVERY STUDY**

| BTEX by EPA 8021B<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 0.0308 | 0.0300 | 103 | 70-130 | |
| 4-Bromofluorobenzene | 0.0360 | 0.0300 | 120 | 70-130 | |

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

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# Form 2 - Surrogate Recoveries

**Project Name:** WLU 57

**Report Date:** 03042021

**Work Orders :** 686646

**Project ID:** 30064883-0002B

**Lab Batch #:** 3149995 **Sample:** 7720754-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 02.03.2021 21:28 **SURROGATE RECOVERY STUDY**

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1-Chlorooctane | 107 | 100 | 107 | 70-130 | |
| o-Terphenyl | 60.2 | 50.0 | 120 | 70-130 | |

**Lab Batch #:** 3149995 **Sample:** 7720754-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 02.03.2021 21:49 **SURROGATE RECOVERY STUDY**

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1-Chlorooctane | 114 | 100 | 114 | 70-130 | |
| o-Terphenyl | 58.8 | 50.0 | 118 | 70-130 | |

**Lab Batch #:** 3149995 **Sample:** 7720754-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 02.03.2021 22:11 **SURROGATE RECOVERY STUDY**

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1-Chlorooctane | 119 | 100 | 119 | 70-130 | |
| o-Terphenyl | 61.8 | 50.0 | 124 | 70-130 | |

**Lab Batch #:** 3149995 **Sample:** 686581-041 S / MS **Batch:** 1 **Matrix:** Soil

**Units:** mg/kg **Date Analyzed:** 02.03.2021 22:53 **SURROGATE RECOVERY STUDY**

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1-Chlorooctane | 99.7 | 99.7 | 100 | 70-130 | |
| o-Terphenyl | 51.8 | 49.9 | 104 | 70-130 | |

**Lab Batch #:** 3149995 **Sample:** 686581-041 SD / MSD **Batch:** 1 **Matrix:** Soil

**Units:** mg/kg **Date Analyzed:** 02.03.2021 23:15 **SURROGATE RECOVERY STUDY**

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1-Chlorooctane | 105 | 99.9 | 105 | 70-130 | |
| o-Terphenyl | 54.6 | 50.0 | 109 | 70-130 | |

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

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# Form 2 - Surrogate Recoveries

**Project Name:** WLU 57

**Report Date:** 03042021

**Work Orders :** 686646 **Project ID:** 30064883-0002B

**Lab Batch #:** 3150167 **Sample:** 7720889-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 02.04.2021 11:50 **SURROGATE RECOVERY STUDY**

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1-Chlorooctane | 102 | 100 | 102 | 70-130 | |
| o-Terphenyl | 66.3 | 50.0 | 133 | 70-130 | ** |

**Lab Batch #:** 3150167 **Sample:** 7720889-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 02.04.2021 12:11 **SURROGATE RECOVERY STUDY**

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1-Chlorooctane | 125 | 100 | 125 | 70-130 | |
| o-Terphenyl | 75.0 | 50.0 | 150 | 70-130 | ** |

**Lab Batch #:** 3150167 **Sample:** 7720889-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 02.04.2021 12:32 **SURROGATE RECOVERY STUDY**

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1-Chlorooctane | 128 | 100 | 128 | 70-130 | |
| o-Terphenyl | 80.9 | 50.0 | 162 | 70-130 | ** |

**Lab Batch #:** 3150167 **Sample:** 686655-001 S / MS **Batch:** 1 **Matrix:** Soil

**Units:** mg/kg **Date Analyzed:** 02.04.2021 13:14 **SURROGATE RECOVERY STUDY**

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1-Chlorooctane | 123 | 99.9 | 123 | 70-130 | |
| o-Terphenyl | 70.5 | 50.0 | 141 | 70-130 | ** |

**Lab Batch #:** 3150167 **Sample:** 686655-001 SD / MSD **Batch:** 1 **Matrix:** Soil

**Units:** mg/kg **Date Analyzed:** 02.04.2021 13:35 **SURROGATE RECOVERY STUDY**

| TPH By SW8015 Mod<br>Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|---|---|---|---|---|---|
| 1-Chlorooctane | 118 | 100 | 118 | 70-130 | |
| o-Terphenyl | 69.0 | 50.0 | 138 | 70-130 | ** |

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

# QC Summary 686646



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## Arcadis U.S., Inc

WLU 57

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3149707 — Matrix: Solid — Date Prep: 02.01.2021
MB Sample Id: 7720557-1-BLK — LCS Sample Id: 7720557-1-BKS — LCSD Sample Id: 7720557-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.858 | 250 | 239 | 96 | 244 | 98 | 90-110 | 2 | 20 | mg/kg | 02.01.2021 20:40 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3149807 — Matrix: Solid — Date Prep: 02.02.2021
MB Sample Id: 7720615-1-BLK — LCS Sample Id: 7720615-1-BKS — LCSD Sample Id: 7720615-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.858 | 250 | 242 | 97 | 241 | 96 | 90-110 | 0 | 20 | mg/kg | 02.02.2021 18:27 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3149707 — Matrix: Soil — Date Prep: 02.01.2021
Parent Sample Id: 686558-005 — MS Sample Id: 686558-005 S — MSD Sample Id: 686558-005 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 514 | 252 | 745 | 92 | 865 | 139 | 90-110 | 15 | 20 | mg/kg | 02.01.2021 20:56 | X |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3149707 — Matrix: Soil — Date Prep: 02.01.2021
Parent Sample Id: 686645-003 — MS Sample Id: 686645-003 S — MSD Sample Id: 686645-003 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 368 | 250 | 599 | 92 | 615 | 99 | 90-110 | 3 | 20 | mg/kg | 02.01.2021 22:11 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3149807 — Matrix: Soil — Date Prep: 02.02.2021
Parent Sample Id: 686865-009 — MS Sample Id: 686865-009 S — MSD Sample Id: 686865-009 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 214 | 249 | 471 | 103 | 469 | 102 | 90-110 | 0 | 20 | mg/kg | 02.02.2021 19:57 | |

**Analytical Method:** Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3149807 — Matrix: Soil — Date Prep: 02.02.2021
Parent Sample Id: 686867-001 — MS Sample Id: 686867-001 S — MSD Sample Id: 686867-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 902 | 249 | 1110 | 84 | 1110 | 84 | 90-110 | 0 | 20 | mg/kg | 02.02.2021 18:43 | X |

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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# QC Summary 686646

## Arcadis U.S., Inc

WLU 57

**Analytical Method:** TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3149995 — Matrix: Solid — Date Prep: 02.03.2021
MB Sample Id: 7720754-1-BLK — LCS Sample Id: 7720754-1-BKS — LCSD Sample Id: 7720754-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <15.0 | 1000 | 966 | 97 | 1020 | 102 | 70-130 | 5 | 20 | mg/kg | 02.03.2021 21:49 | |
| Diesel Range Organics (DRO) | <15.0 | 1000 | 1020 | 102 | 1090 | 109 | 70-130 | 7 | 20 | mg/kg | 02.03.2021 21:49 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 107 | | 114 | | 119 | | 70-130 | % | 02.03.2021 21:49 |
| o-Terphenyl | 120 | | 118 | | 124 | | 70-130 | % | 02.03.2021 21:49 |

**Analytical Method:** TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3150167 — Matrix: Solid — Date Prep: 02.04.2021
MB Sample Id: 7720889-1-BLK — LCS Sample Id: 7720889-1-BKS — LCSD Sample Id: 7720889-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <15.0 | 1000 | 870 | 87 | 870 | 87 | 70-130 | 0 | 20 | mg/kg | 02.04.2021 12:11 | |
| Diesel Range Organics (DRO) | <15.0 | 1000 | 1130 | 113 | 1130 | 113 | 70-130 | 0 | 20 | mg/kg | 02.04.2021 12:11 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 102 | | 125 | | 128 | | 70-130 | % | 02.04.2021 12:11 |
| o-Terphenyl | 133 | ** | 150 | ** | 162 | ** | 70-130 | % | 02.04.2021 12:11 |

**Analytical Method:** TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3149995 — Matrix: Solid — Date Prep: 02.03.2021
MB Sample Id: 7720754-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <15.0 | mg/kg | 02.03.2021 21:28 | |

**Analytical Method:** TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3150167 — Matrix: Solid — Date Prep: 02.04.2021
MB Sample Id: 7720889-1-BLK

| Parameter | MB Result | Units | Analysis Date | Flag |
|---|---|---|---|---|
| Motor Oil Range Hydrocarbons (MRO) | <15.0 | mg/kg | 02.04.2021 11:50 | |

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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# QC Summary 686646

## Arcadis U.S., Inc

WLU 57

**Analytical Method:** **TPH By SW8015 Mod** Prep Method: SW8015P
Seq Number: 3149995 Matrix: Soil Date Prep: 02.03.2021
Parent Sample Id: 686581-041 MS Sample Id: 686581-041 S MSD Sample Id: 686581-041 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <15.0 | 997 | 989 | 99 | 978 | 98 | 70-130 | 1 | 20 | mg/kg | 02.03.2021 22:53 | |
| Diesel Range Organics (DRO) | <15.0 | 997 | 912 | 91 | 966 | 97 | 70-130 | 6 | 20 | mg/kg | 02.03.2021 22:53 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 100 | | 105 | | 70-130 | % | 02.03.2021 22:53 |
| o-Terphenyl | 104 | | 109 | | 70-130 | % | 02.03.2021 22:53 |

**Analytical Method:** **TPH By SW8015 Mod** Prep Method: SW8015P
Seq Number: 3150167 Matrix: Soil Date Prep: 02.04.2021
Parent Sample Id: 686655-001 MS Sample Id: 686655-001 S MSD Sample Id: 686655-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Hydrocarbons (GRO) | <15.0 | 999 | 1030 | 103 | 1080 | 108 | 70-130 | 5 | 20 | mg/kg | 02.04.2021 13:14 | |
| Diesel Range Organics (DRO) | <15.0 | 999 | 1300 | 130 | 1300 | 130 | 70-130 | 0 | 20 | mg/kg | 02.04.2021 13:14 | |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1-Chlorooctane | 123 | | 118 | | 70-130 | % | 02.04.2021 13:14 |
| o-Terphenyl | 141 | ** | 138 | ** | 70-130 | % | 02.04.2021 13:14 |

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3149669 Matrix: Solid Date Prep: 02.01.2021
MB Sample Id: 7720565-1-BLK LCS Sample Id: 7720565-1-BKS LCSD Sample Id: 7720565-1-BSD

| Parameter | MB Result | Spike Amount | LCS Result | LCS %Rec | LCSD Result | LCSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000385 | 0.100 | 0.0947 | 95 | 0.0878 | 88 | 70-130 | 8 | 35 | mg/kg | 02.02.2021 05:04 | |
| Toluene | <0.000456 | 0.100 | 0.101 | 101 | 0.0970 | 97 | 70-130 | 4 | 35 | mg/kg | 02.02.2021 05:04 | |
| Ethylbenzene | <0.000565 | 0.100 | 0.0983 | 98 | 0.0947 | 95 | 70-130 | 4 | 35 | mg/kg | 02.02.2021 05:04 | |
| m,p-Xylenes | <0.00101 | 0.200 | 0.199 | 100 | 0.186 | 93 | 70-130 | 7 | 35 | mg/kg | 02.02.2021 05:04 | |
| o-Xylene | <0.000344 | 0.100 | 0.101 | 101 | 0.0947 | 95 | 70-130 | 6 | 35 | mg/kg | 02.02.2021 05:04 | |

| Surrogate | MB %Rec | MB Flag | LCS %Rec | LCS Flag | LCSD %Rec | LCSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 103 | | 113 | | 107 | | 70-130 | % | 02.02.2021 05:04 |
| 4-Bromofluorobenzene | 120 | | 108 | | 110 | | 70-130 | % | 02.02.2021 05:04 |

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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# QC Summary 686646

## Arcadis U.S., Inc

WLU 57

**Analytical Method:** **BTEX by EPA 8021B** Prep Method: SW5035A

Seq Number: 3149669 Matrix: Soil Date Prep: 02.01.2021

Parent Sample Id: 686645-001 MS Sample Id: 686645-001 S MSD Sample Id: 686645-001 SD

| Parameter | Parent Result | Spike Amount | MS Result | MS %Rec | MSD Result | MSD %Rec | Limits | %RPD | RPD Limit | Units | Analysis Date | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000381 | 0.0990 | 0.0334 | 34 | 0.0450 | 45 | 70-130 | 30 | 35 | mg/kg | 02.02.2021 05:45 | X |
| Toluene | <0.000451 | 0.0990 | 0.0325 | 33 | 0.0387 | 39 | 70-130 | 17 | 35 | mg/kg | 02.02.2021 05:45 | X |
| Ethylbenzene | <0.000559 | 0.0990 | 0.0260 | 26 | 0.0330 | 33 | 70-130 | 24 | 35 | mg/kg | 02.02.2021 05:45 | X |
| m,p-Xylenes | <0.00100 | 0.198 | 0.0503 | 25 | 0.0646 | 32 | 70-130 | 25 | 35 | mg/kg | 02.02.2021 05:45 | X |
| o-Xylene | <0.000341 | 0.0990 | 0.0290 | 29 | 0.0317 | 32 | 70-130 | 9 | 35 | mg/kg | 02.02.2021 05:45 | X |

| Surrogate | MS %Rec | MS Flag | MSD %Rec | MSD Flag | Limits | Units | Analysis Date |
|---|---|---|---|---|---|---|---|
| 1,4-Difluorobenzene | 104 | | 109 | | 70-130 | % | 02.02.2021 05:45 |
| 4-Bromofluorobenzene | 115 | | 112 | | 70-130 | % | 02.02.2021 05:45 |

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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# Flagging Criteria

**X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

**B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

**D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

**E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

**F** RPD exceeded lab control limits.

**J** The target analyte was positively identified below the quantitation limit and above the detection limit.

**U** Analyte was not detected.

**L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

**H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

**K** Sample analyzed outside of recommended hold time.

**JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit. **ND** Not Detected.

**RL** Reporting Limit

**MDL** Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

**PQL** Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample **BLK** Method Blank

**BKS/LCS** Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

**MD/SD** Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

**Eurofins Xenco**
1211 W Florida Ave
Midland TX 79701
Phone 432-704-5440

# Chain of Custody Record

| **Client Information** | Sampler: J. Steinmann | Lab PM: Kudchadkar, Sachin G | Carrier Tracking No(s): | COC No: 600-23595-8666.1 |
|---|---|---|---|---|
| Client Contact: Motgan Jordan | Phone: 619 851 8792 | E-Mail: sachin.kudchadkar@testamericainc.com | | Page: Page 1 of 1 |
| Company: ARCADIS U.S., Inc. | | | | Job #: 68666416 |
| Address: 1717 W 6th Street. Suite 210 | Due Date Requested: | | | |
| City: Austin | TAT Requested (days): Std | | | |
| State, Zip: TX, 78703 | | | | |
| Phone: 281 649 9437 | PO #: | | | |
| Email: douglas.jordan@arcadis.com | WO #: | | | |
| Project Name: 30064883-0002B | Project #: 30064883-0002B | | | |
| Site: WLU 57 | SSOW#: | | | |

**Analysis Requested**

**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 - Na2S2SO3 |
| 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 | 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) | 8015_GRO/ DRO/ ORO | 300 - Chloride | 8021- BTEX | Total Number of containers | Special Instructions/Note: |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Preservation Code: | | | | N | N | N | | |
| SB-1-S-0-.5-210128 | 1/28/21 | 1316 | G | Solid | | | | | | 1 | |
| SB-2-S-0-.5-210128 | | 1336 | | Solid | | | | | | | |
| SB-3-S-0-.5-210128 | | 1349 | | Solid | | | | | | | |
| SB-3-S-1-2-210128 | | 1410 | | Solid | | | | | | | |
| SB-4-S-0-.5-210128 | | 1438 | | Solid | | | | | | | |
| SB-3-SD-0-.5-210128 | | — | | Solid | | | | | | | |
| | | | | Solid | | | | | | | |
| | | | | Solid | | | | | | | |
| | | | | Solid | | | | | | | |
| | | | | Solid | | | | | | | |
| | | | | Solid | | | | | | | |

QC 1/28/21

**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: |
|---|---|---|---|

| | Date/Time: | Company | | Date/Time: | Company |
|---|---|---|---|---|---|
| Relinquished by: | 1/28/21 1600 | Arcadis | Received by: | 1-28-21 1600 | Arcadis |
| Relinquished by: | 1-29-21 1700 | Arcadis | Received by: | 1/29/21 1700 | |
| 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: .3 .5

# Eurofins Xenco, LLC

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** Arcadis U.S., Inc

**Date/ Time Received:** 01.29.2021 05.00.00 PM

**Work Order #:** 686646

**Acceptable Temperature Range: 0 - 6 degC**
**Air and Metal samples Acceptable Range: Ambient**

**Temperature Measuring device used : IR8**

| Sample Receipt Checklist | Comments |
|---|---|
| #1 *Temperature of cooler(s)? | .3 |
| #2 *Shipping container in good condition? | **Yes** |
| #3 *Samples received on ice? | **Yes** |
| #4 *Custody Seals intact on shipping container/ cooler? | **N/A** |
| #5 Custody Seals intact on sample bottles? | **N/A** |
| #6*Custody Seals Signed and dated? | **N/A** |
| #7 *Chain of Custody present? | **Yes** |
| #8 Any missing/extra samples? | **No** |
| #9 Chain of Custody signed when relinquished/ received? | **Yes** |
| #10 Chain of Custody agrees with sample labels/matrix? | **Yes** |
| #11 Container label(s) legible and intact? | **Yes** |
| #12 Samples in proper container/ bottle? | **Yes** |
| #13 Samples properly preserved? | **Yes** |
| #14 Sample container(s) intact? | **Yes** |
| #15 Sufficient sample amount for indicated test(s)? | **Yes** |
| #16 All samples received within hold time? | **Yes** |
| #17 Subcontract of sample(s)? | **N/A** |
| #18 Water VOC samples have zero headspace? | **N/A** |

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

**Checklist completed by:** Brianna Teel Date: 01.29.2021

Brianna Teel

**Checklist reviewed by:** Sachin Kudchadkar Date: 01.29.2021

Sachin Kudchadkar

eurofins | Environment Testing



# ANALYTICAL REPORT

## PREPARED FOR

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

Generated 4/5/2023 12:02:52 PM

## JOB DESCRIPTION

Lovington Field Assessment
SDG NUMBER WLU 57

## JOB NUMBER

880-26267-1

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
4/5/2023 12:02:52 PM

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

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Laboratory Job ID: 880-26267-1
SDG: WLU 57

# Table of Contents

# Definitions/Glossary

Client: ARCADIS U.S. Inc Job ID: 880-26267-1
Project/Site: Lovington Field Assessment SDG: WLU 57

## 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 |
|---|---|
| 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: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## Job ID: 880-26267-1

**Laboratory: Eurofins Midland**

**Narrative**

**Job Narrative**
**880-26267-1**

**Receipt**
The samples were received on 3/23/2023 8:20 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.3°C

**Receipt Exceptions**
The following samples analyzed for method <TPH 8015> were received and analyzed from an unpreserved bulk soil jar

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

**GC Semi VOA**
Method 8015MOD_NM: The method blank for preparation batch 880-49755 and analytical batch 880-49777 contained Gasoline Range Organics (GRO)-C6-C10 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 surrogate recovery for the blank associated with preparation batch 880-49771 and analytical batch 880-49783 was outside the upper control limits.

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

**HPLC/IC**
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-50160 and analytical batch 880-50338 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-12-S-2'-20230322 (880-26267-7), SB-12-S-4'-20230322 (880-26267-8), SB-13-S-0.5'-20230322 (880-26267-9), SB-13-S-2'-20230322 (880-26267-10), SB-13-S-4'-20230322 (880-26267-11), (880-26267-A-7-D MS) and (880-26267-A-7-E MSD)

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: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## Client Sample ID: SB-14-S-0.5'-20230322

**Lab Sample ID: 880-26267-1**
**Matrix: Solid**
**Date Collected: 03/22/23 15:10**
**Date Received: 03/23/23 08:20**

### 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 | | 03/29/23 16:35 | 04/03/23 11:23 | 1 |
| Toluene | <0.000457 | U | 0.00200 | 0.000457 | mg/Kg | | 03/29/23 16:35 | 04/03/23 11:23 | 1 |
| Ethylbenzene | <0.000566 | U | 0.00200 | 0.000566 | mg/Kg | | 03/29/23 16:35 | 04/03/23 11:23 | 1 |
| m-Xylene & p-Xylene | <0.00101 | U | 0.00401 | 0.00101 | mg/Kg | | 03/29/23 16:35 | 04/03/23 11:23 | 1 |
| o-Xylene | <0.000345 | U | 0.00200 | 0.000345 | mg/Kg | | 03/29/23 16:35 | 04/03/23 11:23 | 1 |
| Xylenes, Total | <0.00101 | U | 0.00401 | 0.00101 | mg/Kg | | 03/29/23 16:35 | 04/03/23 11:23 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *101* | | *70 - 130* | *03/29/23 16:35* | *04/03/23 11:23* | *1* |
| *1,4-Difluorobenzene (Surr)* | *87* | | *70 - 130* | *03/29/23 16:35* | *04/03/23 11:23* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **43.7** | **J** | 50.0 | 15.0 | mg/Kg | | | 03/30/23 12:51 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Organics (GRO)-C6-C10** | **24.2** | **J B** | 50.0 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 02:17 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **19.5** | **J** | 50.0 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 02:17 | 1 |
| Oil Range Organics (Over C28-C36) | <15.0 | U | 50.0 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 02:17 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *97* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 02:17* | *1* |
| *o-Terphenyl* | *104* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 02:17* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **390** | | 49.7 | 3.93 | mg/Kg | | | 03/31/23 12:09 | 10 |

## Client Sample ID: SB-14-S-2'-20230322

**Lab Sample ID: 880-26267-2**
**Matrix: Solid**
**Date Collected: 03/22/23 15:30**
**Date Received: 03/23/23 08:20**

### 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 | | 03/29/23 16:35 | 04/03/23 11:44 | 1 |
| Toluene | <0.000454 | U | 0.00199 | 0.000454 | mg/Kg | | 03/29/23 16:35 | 04/03/23 11:44 | 1 |
| Ethylbenzene | <0.000563 | U | 0.00199 | 0.000563 | mg/Kg | | 03/29/23 16:35 | 04/03/23 11:44 | 1 |
| m-Xylene & p-Xylene | <0.00101 | U | 0.00398 | 0.00101 | mg/Kg | | 03/29/23 16:35 | 04/03/23 11:44 | 1 |
| o-Xylene | <0.000343 | U | 0.00199 | 0.000343 | mg/Kg | | 03/29/23 16:35 | 04/03/23 11:44 | 1 |
| Xylenes, Total | <0.00101 | U | 0.00398 | 0.00101 | mg/Kg | | 03/29/23 16:35 | 04/03/23 11:44 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* | *03/29/23 16:35* | *04/03/23 11:44* | *1* |
| *1,4-Difluorobenzene (Surr)* | *100* | | *70 - 130* | *03/29/23 16:35* | *04/03/23 11:44* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **41.4** | **J** | 49.8 | 14.9 | mg/Kg | | | 03/30/23 12:51 | 1 |

# Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## Client Sample ID: SB-14-S-2'-20230322

**Lab Sample ID: 880-26267-2**
**Matrix: Solid**
**Date Collected: 03/22/23 15:30**
**Date Received: 03/23/23 08:20**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | 22.3 | J B | 49.8 | 14.9 | mg/Kg | | 03/28/23 13:32 | 03/30/23 02:38 | 1 |
| Diesel Range Organics (Over C10-C28) | 19.1 | J | 49.8 | 14.9 | mg/Kg | | 03/28/23 13:32 | 03/30/23 02:38 | 1 |
| OII Range Organics (Over C28-C36) | <14.9 | U | 49.8 | 14.9 | mg/Kg | | 03/28/23 13:32 | 03/30/23 02:38 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *83* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 02:38* | *1* |
| *o-Terphenyl* | *89* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 02:38* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 266 | | 4.97 | 0.393 | mg/Kg | | | 03/31/23 12:13 | 1 |

## Client Sample ID: SB-11-S-0.5'-20230322

**Lab Sample ID: 880-26267-3**
**Matrix: Solid**
**Date Collected: 03/22/23 15:35**
**Date Received: 03/23/23 08:20**

### 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 | | 03/29/23 16:35 | 04/03/23 12:05 | 1 |
| Toluene | <0.000451 | U | 0.00198 | 0.000451 | mg/Kg | | 03/29/23 16:35 | 04/03/23 12:05 | 1 |
| Ethylbenzene | <0.000559 | U | 0.00198 | 0.000559 | mg/Kg | | 03/29/23 16:35 | 04/03/23 12:05 | 1 |
| m-Xylene & p-Xylene | <0.00100 | U | 0.00396 | 0.00100 | mg/Kg | | 03/29/23 16:35 | 04/03/23 12:05 | 1 |
| o-Xylene | <0.000341 | U | 0.00198 | 0.000341 | mg/Kg | | 03/29/23 16:35 | 04/03/23 12:05 | 1 |
| Xylenes, Total | <0.00100 | U | 0.00396 | 0.00100 | mg/Kg | | 03/29/23 16:35 | 04/03/23 12:05 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *101* | | *70 - 130* | *03/29/23 16:35* | *04/03/23 12:05* | *1* |
| *1,4-Difluorobenzene (Surr)* | *99* | | *70 - 130* | *03/29/23 16:35* | *04/03/23 12:05* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | 35.2 | J | 50.0 | 15.0 | mg/Kg | | | 03/30/23 12:51 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | 35.2 | J B | 50.0 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 03:00 | 1 |
| Diesel Range Organics (Over C10-C28) | <15.0 | U | 50.0 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 03:00 | 1 |
| OII Range Organics (Over C28-C36) | <15.0 | U | 50.0 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 03:00 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *86* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 03:00* | *1* |
| *o-Terphenyl* | *89* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 03:00* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 407 | | 4.95 | 0.391 | mg/Kg | | | 03/31/23 12:18 | 1 |

# Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## Client Sample ID: SB-11-S-2'-20230322

**Lab Sample ID: 880-26267-4**
**Matrix: Solid**
**Date Collected: 03/22/23 15:50**
**Date Received: 03/23/23 08:20**

### 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 | | 03/29/23 16:35 | 04/03/23 12:26 | 1 |
| Toluene | <0.000453 | U | 0.00199 | 0.000453 | mg/Kg | | 03/29/23 16:35 | 04/03/23 12:26 | 1 |
| Ethylbenzene | <0.000562 | U | 0.00199 | 0.000562 | mg/Kg | | 03/29/23 16:35 | 04/03/23 12:26 | 1 |
| m-Xylene & p-Xylene | <0.00100 | U | 0.00398 | 0.00100 | mg/Kg | | 03/29/23 16:35 | 04/03/23 12:26 | 1 |
| o-Xylene | <0.000342 | U | 0.00199 | 0.000342 | mg/Kg | | 03/29/23 16:35 | 04/03/23 12:26 | 1 |
| Xylenes, Total | <0.00100 | U | 0.00398 | 0.00100 | mg/Kg | | 03/29/23 16:35 | 04/03/23 12:26 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *101* | | *70 - 130* | *03/29/23 16:35* | *04/03/23 12:26* | *1* |
| *1,4-Difluorobenzene (Surr)* | *98* | | *70 - 130* | *03/29/23 16:35* | *04/03/23 12:26* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **37.9** | **J** | 49.9 | 15.0 | mg/Kg | | | 03/30/23 12:51 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Organics (GRO)-C6-C10** | **37.9** | **J B** | 49.9 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 03:21 | 1 |
| Diesel Range Organics (Over C10-C28) | <15.0 | U | 49.9 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 03:21 | 1 |
| OII Range Organics (Over C28-C36) | <15.0 | U | 49.9 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 03:21 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *99* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 03:21* | *1* |
| *o-Terphenyl* | *105* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 03:21* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **87.0** | | 5.01 | 0.396 | mg/Kg | | | 03/31/23 12:22 | 1 |

## Client Sample ID: SB-11-S-4'-20230322

**Lab Sample ID: 880-26267-5**
**Matrix: Solid**
**Date Collected: 03/22/23 16:05**
**Date Received: 03/23/23 08:20**

### 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 | | 03/29/23 16:35 | 04/03/23 12:47 | 1 |
| Toluene | <0.000459 | U | 0.00201 | 0.000459 | mg/Kg | | 03/29/23 16:35 | 04/03/23 12:47 | 1 |
| Ethylbenzene | <0.000568 | U | 0.00201 | 0.000568 | mg/Kg | | 03/29/23 16:35 | 04/03/23 12:47 | 1 |
| m-Xylene & p-Xylene | <0.00102 | U | 0.00402 | 0.00102 | mg/Kg | | 03/29/23 16:35 | 04/03/23 12:47 | 1 |
| o-Xylene | <0.000346 | U | 0.00201 | 0.000346 | mg/Kg | | 03/29/23 16:35 | 04/03/23 12:47 | 1 |
| Xylenes, Total | <0.00102 | U | 0.00402 | 0.00102 | mg/Kg | | 03/29/23 16:35 | 04/03/23 12:47 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *114* | | *70 - 130* | *03/29/23 16:35* | *04/03/23 12:47* | *1* |
| *1,4-Difluorobenzene (Surr)* | *99* | | *70 - 130* | *03/29/23 16:35* | *04/03/23 12:47* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **42.0** | **J** | 49.9 | 15.0 | mg/Kg | | | 03/30/23 12:51 | 1 |

# Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## Client Sample ID: SB-11-S-4'-20230322

**Lab Sample ID: 880-26267-5**
**Matrix: Solid**
**Date Collected: 03/22/23 16:05**
**Date Received: 03/23/23 08:20**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Organics (GRO)-C6-C10** | **42.0** | **J B** | 49.9 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 03:43 | 1 |
| Diesel Range Organics (Over C10-C28) | <15.0 | U | 49.9 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 03:43 | 1 |
| OII Range Organics (Over C28-C36) | <15.0 | U | 49.9 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 03:43 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *99* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 03:43* | *1* |
| *o-Terphenyl* | *103* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 03:43* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **104** | | 5.03 | 0.397 | mg/Kg | | | 03/31/23 12:27 | 1 |

## Client Sample ID: SB-12-S-0.5'-20230322

**Lab Sample ID: 880-26267-6**
**Matrix: Solid**
**Date Collected: 03/22/23 16:10**
**Date Received: 03/23/23 08:20**

### 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 | | 03/29/23 16:35 | 04/03/23 13:08 | 1 |
| Toluene | <0.000461 | U | 0.00202 | 0.000461 | mg/Kg | | 03/29/23 16:35 | 04/03/23 13:08 | 1 |
| Ethylbenzene | <0.000571 | U | 0.00202 | 0.000571 | mg/Kg | | 03/29/23 16:35 | 04/03/23 13:08 | 1 |
| m-Xylene & p-Xylene | <0.00102 | U | 0.00404 | 0.00102 | mg/Kg | | 03/29/23 16:35 | 04/03/23 13:08 | 1 |
| o-Xylene | <0.000347 | U | 0.00202 | 0.000347 | mg/Kg | | 03/29/23 16:35 | 04/03/23 13:08 | 1 |
| Xylenes, Total | <0.00102 | U | 0.00404 | 0.00102 | mg/Kg | | 03/29/23 16:35 | 04/03/23 13:08 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *103* | | *70 - 130* | *03/29/23 16:35* | *04/03/23 13:08* | *1* |
| *1,4-Difluorobenzene (Surr)* | *101* | | *70 - 130* | *03/29/23 16:35* | *04/03/23 13:08* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **149** | | 49.9 | 15.0 | mg/Kg | | | 03/30/23 12:51 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <15.0 | U | 49.9 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 05:10 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **149** | | 49.9 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 05:10 | 1 |
| OII Range Organics (Over C28-C36) | <15.0 | U | 49.9 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 05:10 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *88* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 05:10* | *1* |
| *o-Terphenyl* | *87* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 05:10* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **163** | | 4.97 | 0.393 | mg/Kg | | | 03/31/23 12:31 | 1 |

# Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## Client Sample ID: SB-12-S-2'-20230322

**Lab Sample ID: 880-26267-7**
**Matrix: Solid**
**Date Collected: 03/22/23 16:15**
**Date Received: 03/23/23 08:20**

### 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 | | 03/29/23 16:35 | 04/03/23 13:28 | 1 |
| Toluene | <0.000454 | U | 0.00199 | 0.000454 | mg/Kg | | 03/29/23 16:35 | 04/03/23 13:28 | 1 |
| Ethylbenzene | <0.000563 | U | 0.00199 | 0.000563 | mg/Kg | | 03/29/23 16:35 | 04/03/23 13:28 | 1 |
| m-Xylene & p-Xylene | <0.00101 | U | 0.00398 | 0.00101 | mg/Kg | | 03/29/23 16:35 | 04/03/23 13:28 | 1 |
| o-Xylene | <0.000343 | U | 0.00199 | 0.000343 | mg/Kg | | 03/29/23 16:35 | 04/03/23 13:28 | 1 |
| Xylenes, Total | <0.00101 | U | 0.00398 | 0.00101 | mg/Kg | | 03/29/23 16:35 | 04/03/23 13:28 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *102* | | *70 - 130* | *03/29/23 16:35* | *04/03/23 13:28* | *1* |
| *1,4-Difluorobenzene (Surr)* | *98* | | *70 - 130* | *03/29/23 16:35* | *04/03/23 13:28* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **31.7** | **J** | 50.0 | 15.0 | mg/Kg | | | 03/30/23 12:51 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Organics (GRO)-C6-C10** | **31.7** | **J B** | 50.0 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 04:05 | 1 |
| Diesel Range Organics (Over C10-C28) | <15.0 | U | 50.0 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 04:05 | 1 |
| OII Range Organics (Over C28-C36) | <15.0 | U | 50.0 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 04:05 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *85* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 04:05* | *1* |
| *o-Terphenyl* | *87* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 04:05* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **285** | **F1** | 5.05 | 0.399 | mg/Kg | | | 04/04/23 20:54 | 1 |

## Client Sample ID: SB-12-S-4'-20230322

**Lab Sample ID: 880-26267-8**
**Matrix: Solid**
**Date Collected: 03/22/23 16:20**
**Date Received: 03/23/23 08:20**

### 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 | | 04/03/23 12:22 | 04/04/23 02:26 | 1 |
| Toluene | <0.000455 | U | 0.00200 | 0.000455 | mg/Kg | | 04/03/23 12:22 | 04/04/23 02:26 | 1 |
| Ethylbenzene | <0.000564 | U | 0.00200 | 0.000564 | mg/Kg | | 04/03/23 12:22 | 04/04/23 02:26 | 1 |
| m-Xylene & p-Xylene | <0.00101 | U | 0.00399 | 0.00101 | mg/Kg | | 04/03/23 12:22 | 04/04/23 02:26 | 1 |
| o-Xylene | <0.000343 | U | 0.00200 | 0.000343 | mg/Kg | | 04/03/23 12:22 | 04/04/23 02:26 | 1 |
| Xylenes, Total | <0.00101 | U | 0.00399 | 0.00101 | mg/Kg | | 04/03/23 12:22 | 04/04/23 02:26 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *110* | | *70 - 130* | *04/03/23 12:22* | *04/04/23 02:26* | *1* |
| *1,4-Difluorobenzene (Surr)* | *83* | | *70 - 130* | *04/03/23 12:22* | *04/04/23 02:26* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **48.3** | **J** | 49.9 | 15.0 | mg/Kg | | | 03/30/23 12:51 | 1 |

# Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## Client Sample ID: SB-12-S-4'-20230322

**Lab Sample ID: 880-26267-8**
**Matrix: Solid**
**Date Collected: 03/22/23 16:20**
**Date Received: 03/23/23 08:20**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Organics (GRO)-C6-C10** | **48.3** | **J B** | 49.9 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 04:27 | 1 |
| Diesel Range Organics (Over C10-C28) | <15.0 | U | 49.9 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 04:27 | 1 |
| OII Range Organics (Over C28-C36) | <15.0 | U | 49.9 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 04:27 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *96* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 04:27* | *1* |
| *o-Terphenyl* | *99* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 04:27* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **917** | | 24.9 | 1.97 | mg/Kg | | | 04/04/23 21:09 | 5 |

## Client Sample ID: SB-13-S-0.5'-20230322

**Lab Sample ID: 880-26267-9**
**Matrix: Solid**
**Date Collected: 03/22/23 16:25**
**Date Received: 03/23/23 08:20**

### 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 | | 04/03/23 12:22 | 04/04/23 02:47 | 1 |
| Toluene | <0.000459 | U | 0.00201 | 0.000459 | mg/Kg | | 04/03/23 12:22 | 04/04/23 02:47 | 1 |
| Ethylbenzene | <0.000568 | U | 0.00201 | 0.000568 | mg/Kg | | 04/03/23 12:22 | 04/04/23 02:47 | 1 |
| m-Xylene & p-Xylene | <0.00102 | U | 0.00402 | 0.00102 | mg/Kg | | 04/03/23 12:22 | 04/04/23 02:47 | 1 |
| o-Xylene | <0.000346 | U | 0.00201 | 0.000346 | mg/Kg | | 04/03/23 12:22 | 04/04/23 02:47 | 1 |
| Xylenes, Total | <0.00102 | U | 0.00402 | 0.00102 | mg/Kg | | 04/03/23 12:22 | 04/04/23 02:47 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *108* | | *70 - 130* | *04/03/23 12:22* | *04/04/23 02:47* | *1* |
| *1,4-Difluorobenzene (Surr)* | *77* | | *70 - 130* | *04/03/23 12:22* | *04/04/23 02:47* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **53.6** | | 49.9 | 15.0 | mg/Kg | | | 03/30/23 12:51 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Organics (GRO)-C6-C10** | **28.4** | **J B** | 49.9 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 04:49 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **25.2** | **J** | 49.9 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 04:49 | 1 |
| OII Range Organics (Over C28-C36) | <15.0 | U | 49.9 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/30/23 04:49 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *84* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 04:49* | *1* |
| *o-Terphenyl* | *87* | | *70 - 130* | *03/28/23 13:32* | *03/30/23 04:49* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **784** | | 25.0 | 1.98 | mg/Kg | | | 04/04/23 21:14 | 5 |

# Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## Client Sample ID: SB-13-S-2'-20230322

**Lab Sample ID: 880-26267-10**
**Matrix: Solid**
**Date Collected: 03/22/23 16:35**
**Date Received: 03/23/23 08:20**

### 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 | | 04/03/23 12:22 | 04/04/23 03:07 | 1 |
| Toluene | <0.000457 | U | 0.00200 | 0.000457 | mg/Kg | | 04/03/23 12:22 | 04/04/23 03:07 | 1 |
| Ethylbenzene | <0.000566 | U | 0.00200 | 0.000566 | mg/Kg | | 04/03/23 12:22 | 04/04/23 03:07 | 1 |
| m-Xylene & p-Xylene | <0.00101 | U | 0.00401 | 0.00101 | mg/Kg | | 04/03/23 12:22 | 04/04/23 03:07 | 1 |
| o-Xylene | <0.000345 | U | 0.00200 | 0.000345 | mg/Kg | | 04/03/23 12:22 | 04/04/23 03:07 | 1 |
| Xylenes, Total | <0.00101 | U | 0.00401 | 0.00101 | mg/Kg | | 04/03/23 12:22 | 04/04/23 03:07 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *93* | | *70 - 130* | *04/03/23 12:22* | *04/04/23 03:07* | *1* |
| *1,4-Difluorobenzene (Surr)* | *93* | | *70 - 130* | *04/03/23 12:22* | *04/04/23 03:07* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **52.9** | | 49.9 | 15.0 | mg/Kg | | | 03/30/23 12:56 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Gasoline Range Organics (GRO)-C6-C10** | **28.1** | **J** | 49.9 | 15.0 | mg/Kg | | 03/28/23 17:17 | 03/29/23 11:15 | 1 |
| **Diesel Range Organics (Over C10-C28)** | **24.8** | **J** | 49.9 | 15.0 | mg/Kg | | 03/28/23 17:17 | 03/29/23 11:15 | 1 |
| OII Range Organics (Over C28-C36) | <15.0 | U | 49.9 | 15.0 | mg/Kg | | 03/28/23 17:17 | 03/29/23 11:15 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *118* | | *70 - 130* | *03/28/23 17:17* | *03/29/23 11:15* | *1* |
| *o-Terphenyl* | *110* | | *70 - 130* | *03/28/23 17:17* | *03/29/23 11:15* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **868** | | 25.1 | 1.98 | mg/Kg | | | 04/04/23 21:18 | 5 |

## Client Sample ID: SB-13-S-4'-20230322

**Lab Sample ID: 880-26267-11**
**Matrix: Solid**
**Date Collected: 03/22/23 16:45**
**Date Received: 03/23/23 08:20**

### 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 | | 03/29/23 16:20 | 04/03/23 19:56 | 1 |
| **Toluene** | **0.000502** | **J** | 0.00200 | 0.000457 | mg/Kg | | 03/29/23 16:20 | 04/03/23 19:56 | 1 |
| Ethylbenzene | <0.000566 | U | 0.00200 | 0.000566 | mg/Kg | | 03/29/23 16:20 | 04/03/23 19:56 | 1 |
| m-Xylene & p-Xylene | <0.00101 | U | 0.00401 | 0.00101 | mg/Kg | | 03/29/23 16:20 | 04/03/23 19:56 | 1 |
| o-Xylene | <0.000345 | U | 0.00200 | 0.000345 | mg/Kg | | 03/29/23 16:20 | 04/03/23 19:56 | 1 |
| Xylenes, Total | <0.00101 | U | 0.00401 | 0.00101 | mg/Kg | | 03/29/23 16:20 | 04/03/23 19:56 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *100* | | *70 - 130* | *03/29/23 16:20* | *04/03/23 19:56* | *1* |
| *1,4-Difluorobenzene (Surr)* | *107* | | *70 - 130* | *03/29/23 16:20* | *04/03/23 19:56* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Total TPH** | **136** | | 49.9 | 15.0 | mg/Kg | | | 03/30/23 12:56 | 1 |

# Client Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## Client Sample ID: SB-13-S-4'-20230322

**Date Collected: 03/22/23 16:45**
**Date Received: 03/23/23 08:20**

## Lab Sample ID: 880-26267-11

**Matrix: Solid**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | 22.5 | J | 49.9 | 15.0 | mg/Kg | | 03/28/23 17:17 | 03/29/23 12:20 | 1 |
| Diesel Range Organics (Over C10-C28) | 113 | | 49.9 | 15.0 | mg/Kg | | 03/28/23 17:17 | 03/29/23 12:20 | 1 |
| OII Range Organics (Over C28-C36) | <15.0 | U | 49.9 | 15.0 | mg/Kg | | 03/28/23 17:17 | 03/29/23 12:20 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *100* | | *70 - 130* | *03/28/23 17:17* | *03/29/23 12:20* | *1* |
| *o-Terphenyl* | *95* | | *70 - 130* | *03/28/23 17:17* | *03/29/23 12:20* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 762 | | 25.0 | 1.97 | mg/Kg | | | 04/04/23 21:23 | 5 |

# Surrogate Summary

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## 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) |
| 880-26267-1 | SB-14-S-0.5'-20230322 | 101 | 87 |
| 880-26267-1 MS | SB-14-S-0.5'-20230322 | 103 | 91 |
| 880-26267-1 MSD | SB-14-S-0.5'-20230322 | 104 | 90 |
| 880-26267-2 | SB-14-S-2'-20230322 | 104 | 100 |
| 880-26267-3 | SB-11-S-0.5'-20230322 | 101 | 99 |
| 880-26267-4 | SB-11-S-2'-20230322 | 101 | 98 |
| 880-26267-5 | SB-11-S-4'-20230322 | 114 | 99 |
| 880-26267-6 | SB-12-S-0.5'-20230322 | 103 | 101 |
| 880-26267-7 | SB-12-S-2'-20230322 | 102 | 98 |
| 880-26267-8 | SB-12-S-4'-20230322 | 110 | 83 |
| 880-26267-9 | SB-13-S-0.5'-20230322 | 108 | 77 |
| 880-26267-10 | SB-13-S-2'-20230322 | 93 | 93 |
| 880-26267-11 | SB-13-S-4'-20230322 | 100 | 107 |
| LCS 880-49883/1-A | Lab Control Sample | 97 | 109 |
| LCS 880-49890/1-A | Lab Control Sample | 92 | 90 |
| LCS 880-50190/1-A | Lab Control Sample | 111 | 103 |
| LCSD 880-49883/2-A | Lab Control Sample Dup | 97 | 113 |
| LCSD 880-49890/2-A | Lab Control Sample Dup | 105 | 98 |
| LCSD 880-50190/2-A | Lab Control Sample Dup | 106 | 107 |
| MB 880-49883/5-B | Method Blank | 90 | 97 |
| MB 880-49890/5-A | Method Blank | 98 | 81 |
| MB 880-50130/5-A | Method Blank | 77 | 97 |
| MB 880-50190/5-A | Method Blank | 80 | 96 |

**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) |
| 880-26267-1 | SB-14-S-0.5'-20230322 | 97 | 104 |
| 880-26267-2 | SB-14-S-2'-20230322 | 83 | 89 |
| 880-26267-3 | SB-11-S-0.5'-20230322 | 86 | 89 |
| 880-26267-4 | SB-11-S-2'-20230322 | 99 | 105 |
| 880-26267-5 | SB-11-S-4'-20230322 | 99 | 103 |
| 880-26267-6 | SB-12-S-0.5'-20230322 | 88 | 87 |
| 880-26267-7 | SB-12-S-2'-20230322 | 85 | 87 |
| 880-26267-8 | SB-12-S-4'-20230322 | 96 | 99 |
| 880-26267-9 | SB-13-S-0.5'-20230322 | 84 | 87 |
| 880-26267-10 | SB-13-S-2'-20230322 | 118 | 110 |
| 880-26267-10 MS | SB-13-S-2'-20230322 | 117 | 101 |
| 880-26267-10 MSD | SB-13-S-2'-20230322 | 105 | 91 |
| 880-26267-11 | SB-13-S-4'-20230322 | 100 | 95 |
| LCS 880-49755/2-A | Lab Control Sample | 111 | 115 |
| LCS 880-49771/2-A | Lab Control Sample | 123 | 115 |
| LCSD 880-49755/3-A | Lab Control Sample Dup | 112 | 119 |

# Surrogate Summary

Client: ARCADIS U.S. Inc Job ID: 880-26267-1
Project/Site: Lovington Field Assessment SDG: WLU 57

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

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

| | | Percent Surrogate Recovery (Acceptance Limits) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1CO1 | OTPH1 | | | | | | | | |
| Lab Sample ID | Client Sample ID | (70-130) | (70-130) | | | | | | | | |
| LCSD 880-49771/3-A | Lab Control Sample Dup | 118 | 113 | | | | | | | | |
| MB 880-49755/1-A | Method Blank | 119 | 124 | | | | | | | | |
| MB 880-49771/1-A | Method Blank | 132 S1+ | 119 | | | | | | | | |

**Surrogate Legend**

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

# QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

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

**Lab Sample ID: MB 880-49883/5-B**
**Matrix: Solid**
**Analysis Batch: 50103**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 49883**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000385 | U | 0.00200 | 0.000385 | mg/Kg | | 03/29/23 16:20 | 04/03/23 11:48 | 1 |
| Toluene | <0.000456 | U | 0.00200 | 0.000456 | mg/Kg | | 03/29/23 16:20 | 04/03/23 11:48 | 1 |
| Ethylbenzene | <0.000565 | U | 0.00200 | 0.000565 | mg/Kg | | 03/29/23 16:20 | 04/03/23 11:48 | 1 |
| m-Xylene & p-Xylene | <0.00101 | U | 0.00400 | 0.00101 | mg/Kg | | 03/29/23 16:20 | 04/03/23 11:48 | 1 |
| o-Xylene | <0.000344 | U | 0.00200 | 0.000344 | mg/Kg | | 03/29/23 16:20 | 04/03/23 11:48 | 1 |
| Xylenes, Total | <0.00101 | U | 0.00400 | 0.00101 | mg/Kg | | 03/29/23 16:20 | 04/03/23 11:48 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *90* | | *70 - 130* | *03/29/23 16:20* | *04/03/23 11:48* | *1* |
| *1,4-Difluorobenzene (Surr)* | *97* | | *70 - 130* | *03/29/23 16:20* | *04/03/23 11:48* | *1* |

**Lab Sample ID: LCS 880-49883/1-A**
**Matrix: Solid**
**Analysis Batch: 50103**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 49883**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.08870 | | mg/Kg | | 89 | 70 - 130 | | |
| Toluene | | | 0.100 | 0.08620 | | mg/Kg | | 86 | 70 - 130 | | |
| Ethylbenzene | | | 0.100 | 0.07860 | | mg/Kg | | 79 | 70 - 130 | | |
| m-Xylene & p-Xylene | | | 0.200 | 0.1546 | | mg/Kg | | 77 | 70 - 130 | | |
| o-Xylene | | | 0.100 | 0.07966 | | mg/Kg | | 80 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *109* | | *70 - 130* |

**Lab Sample ID: LCSD 880-49883/2-A**
**Matrix: Solid**
**Analysis Batch: 50103**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 49883**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | | | 0.100 | 0.09479 | | mg/Kg | | 95 | 70 - 130 | 7 | 35 |
| Toluene | | | 0.100 | 0.09119 | | mg/Kg | | 91 | 70 - 130 | 6 | 35 |
| Ethylbenzene | | | 0.100 | 0.08287 | | mg/Kg | | 83 | 70 - 130 | 5 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.1624 | | mg/Kg | | 81 | 70 - 130 | 5 | 35 |
| o-Xylene | | | 0.100 | 0.08296 | | mg/Kg | | 83 | 70 - 130 | 4 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *97* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *113* | | *70 - 130* |

**Lab Sample ID: MB 880-49890/5-A**
**Matrix: Solid**
**Analysis Batch: 50118**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 49890**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000385 | U | 0.00200 | 0.000385 | mg/Kg | | 03/29/23 16:35 | 04/03/23 11:02 | 1 |
| Toluene | <0.000456 | U | 0.00200 | 0.000456 | mg/Kg | | 03/29/23 16:35 | 04/03/23 11:02 | 1 |

# QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

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

**Lab Sample ID: MB 880-49890/5-A**
**Matrix: Solid**
**Analysis Batch: 50118**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 49890**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Ethylbenzene | <0.000565 | U | 0.00200 | 0.000565 | mg/Kg | | 03/29/23 16:35 | 04/03/23 11:02 | 1 |
| m-Xylene & p-Xylene | <0.00101 | U | 0.00400 | 0.00101 | mg/Kg | | 03/29/23 16:35 | 04/03/23 11:02 | 1 |
| o-Xylene | <0.000344 | U | 0.00200 | 0.000344 | mg/Kg | | 03/29/23 16:35 | 04/03/23 11:02 | 1 |
| Xylenes, Total | <0.00101 | U | 0.00400 | 0.00101 | mg/Kg | | 03/29/23 16:35 | 04/03/23 11:02 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *98* | | *70 - 130* | *03/29/23 16:35* | *04/03/23 11:02* | *1* |
| *1,4-Difluorobenzene (Surr)* | *81* | | *70 - 130* | *03/29/23 16:35* | *04/03/23 11:02* | *1* |

**Lab Sample ID: LCS 880-49890/1-A**
**Matrix: Solid**
**Analysis Batch: 50118**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 49890**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Benzene | 0.100 | 0.09023 | | mg/Kg | | 90 | 70 - 130 |
| Toluene | 0.100 | 0.09583 | | mg/Kg | | 96 | 70 - 130 |
| Ethylbenzene | 0.100 | 0.08819 | | mg/Kg | | 88 | 70 - 130 |
| m-Xylene & p-Xylene | 0.200 | 0.1798 | | mg/Kg | | 90 | 70 - 130 |
| o-Xylene | 0.100 | 0.08983 | | mg/Kg | | 90 | 70 - 130 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *92* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *90* | | *70 - 130* |

**Lab Sample ID: LCSD 880-49890/2-A**
**Matrix: Solid**
**Analysis Batch: 50118**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 49890**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.100 | 0.09909 | | mg/Kg | | 99 | 70 - 130 | 9 | 35 |
| Toluene | 0.100 | 0.1074 | | mg/Kg | | 107 | 70 - 130 | 11 | 35 |
| Ethylbenzene | 0.100 | 0.09936 | | mg/Kg | | 99 | 70 - 130 | 12 | 35 |
| m-Xylene & p-Xylene | 0.200 | 0.2037 | | mg/Kg | | 102 | 70 - 130 | 12 | 35 |
| o-Xylene | 0.100 | 0.1013 | | mg/Kg | | 101 | 70 - 130 | 12 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *105* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *98* | | *70 - 130* |

**Lab Sample ID: 880-26267-1 MS**
**Matrix: Solid**
**Analysis Batch: 50118**

**Client Sample ID: SB-14-S-0.5'-20230322**
**Prep Type: Total/NA**
**Prep Batch: 49890**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000386 | U | 0.0998 | 0.09733 | | mg/Kg | | 98 | 70 - 130 |
| Toluene | <0.000457 | U | 0.0998 | 0.1056 | | mg/Kg | | 106 | 70 - 130 |
| Ethylbenzene | <0.000566 | U | 0.0998 | 0.09611 | | mg/Kg | | 96 | 70 - 130 |
| m-Xylene & p-Xylene | <0.00101 | U | 0.200 | 0.1967 | | mg/Kg | | 99 | 70 - 130 |

# QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

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

**Lab Sample ID: 880-26267-1 MS**
**Matrix: Solid**
**Analysis Batch: 50118**

**Client Sample ID: SB-14-S-0.5'-20230322**
**Prep Type: Total/NA**
**Prep Batch: 49890**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| o-Xylene | <0.000345 | U | 0.0998 | 0.09628 | | mg/Kg | | 96 | 70 - 130 |

| *Surrogate* | *MS %Recovery* | *MS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *103* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *91* | | *70 - 130* |

**Lab Sample ID: 880-26267-1 MSD**
**Matrix: Solid**
**Analysis Batch: 50118**

**Client Sample ID: SB-14-S-0.5'-20230322**
**Prep Type: Total/NA**
**Prep Batch: 49890**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000386 | U | 0.100 | 0.09477 | | mg/Kg | | 95 | 70 - 130 | 3 | 35 |
| Toluene | <0.000457 | U | 0.100 | 0.1021 | | mg/Kg | | 102 | 70 - 130 | 3 | 35 |
| Ethylbenzene | <0.000566 | U | 0.100 | 0.09258 | | mg/Kg | | 92 | 70 - 130 | 4 | 35 |
| m-Xylene & p-Xylene | <0.00101 | U | 0.200 | 0.1889 | | mg/Kg | | 94 | 70 - 130 | 4 | 35 |
| o-Xylene | <0.000345 | U | 0.100 | 0.09317 | | mg/Kg | | 93 | 70 - 130 | 3 | 35 |

| *Surrogate* | *MSD %Recovery* | *MSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *104* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *90* | | *70 - 130* |

**Lab Sample ID: MB 880-50130/5-A**
**Matrix: Solid**
**Analysis Batch: 50119**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 50130**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000383 | U | 0.00199 | 0.000383 | mg/Kg | | 04/03/23 08:39 | 04/03/23 11:01 | 1 |
| Toluene | <0.000453 | U | 0.00199 | 0.000453 | mg/Kg | | 04/03/23 08:39 | 04/03/23 11:01 | 1 |
| Ethylbenzene | <0.000562 | U | 0.00199 | 0.000562 | mg/Kg | | 04/03/23 08:39 | 04/03/23 11:01 | 1 |
| m-Xylene & p-Xylene | <0.00100 | U | 0.00398 | 0.00100 | mg/Kg | | 04/03/23 08:39 | 04/03/23 11:01 | 1 |
| o-Xylene | <0.000342 | U | 0.00199 | 0.000342 | mg/Kg | | 04/03/23 08:39 | 04/03/23 11:01 | 1 |
| Xylenes, Total | <0.00100 | U | 0.00398 | 0.00100 | mg/Kg | | 04/03/23 08:39 | 04/03/23 11:01 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *77* | | *70 - 130* | *04/03/23 08:39* | *04/03/23 11:01* | *1* |
| *1,4-Difluorobenzene (Surr)* | *97* | | *70 - 130* | *04/03/23 08:39* | *04/03/23 11:01* | *1* |

**Lab Sample ID: MB 880-50190/5-A**
**Matrix: Solid**
**Analysis Batch: 50119**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 50190**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000385 | U | 0.00200 | 0.000385 | mg/Kg | | 04/03/23 12:22 | 04/03/23 21:38 | 1 |
| Toluene | <0.000456 | U | 0.00200 | 0.000456 | mg/Kg | | 04/03/23 12:22 | 04/03/23 21:38 | 1 |
| Ethylbenzene | <0.000565 | U | 0.00200 | 0.000565 | mg/Kg | | 04/03/23 12:22 | 04/03/23 21:38 | 1 |
| m-Xylene & p-Xylene | <0.00101 | U | 0.00400 | 0.00101 | mg/Kg | | 04/03/23 12:22 | 04/03/23 21:38 | 1 |
| o-Xylene | <0.000344 | U | 0.00200 | 0.000344 | mg/Kg | | 04/03/23 12:22 | 04/03/23 21:38 | 1 |
| Xylenes, Total | <0.00101 | U | 0.00400 | 0.00101 | mg/Kg | | 04/03/23 12:22 | 04/03/23 21:38 | 1 |

# QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

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

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 80 | | 70 - 130 | 04/03/23 12:22 | 04/03/23 21:38 | 1 |
| 1,4-Difluorobenzene (Surr) | 96 | | 70 - 130 | 04/03/23 12:22 | 04/03/23 21:38 | 1 |

**Lab Sample ID: LCS 880-50190/1-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 50119** — **Prep Batch: 50190**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Benzene | 0.100 | 0.1000 | | mg/Kg | | 100 | 70 - 130 |
| Toluene | 0.100 | 0.09798 | | mg/Kg | | 98 | 70 - 130 |
| Ethylbenzene | 0.100 | 0.09773 | | mg/Kg | | 98 | 70 - 130 |
| m-Xylene & p-Xylene | 0.200 | 0.2101 | | mg/Kg | | 105 | 70 - 130 |
| o-Xylene | 0.100 | 0.1071 | | mg/Kg | | 107 | 70 - 130 |

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

**Lab Sample ID: LCSD 880-50190/2-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 50119** — **Prep Batch: 50190**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.100 | 0.1016 | | mg/Kg | | 102 | 70 - 130 | 2 | 35 |
| Toluene | 0.100 | 0.09788 | | mg/Kg | | 98 | 70 - 130 | 0 | 35 |
| Ethylbenzene | 0.100 | 0.09718 | | mg/Kg | | 97 | 70 - 130 | 1 | 35 |
| m-Xylene & p-Xylene | 0.200 | 0.2084 | | mg/Kg | | 104 | 70 - 130 | 1 | 35 |
| o-Xylene | 0.100 | 0.1061 | | mg/Kg | | 106 | 70 - 130 | 1 | 35 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 4-Bromofluorobenzene (Surr) | 106 | | 70 - 130 |
| 1,4-Difluorobenzene (Surr) | 107 | | 70 - 130 |

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

**Lab Sample ID: MB 880-49755/1-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 49777** — **Prep Batch: 49755**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | 21.02 | J | 50.0 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/29/23 20:09 | 1 |
| Diesel Range Organics (Over C10-C28) | <15.0 | U | 50.0 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/29/23 20:09 | 1 |
| OII Range Organics (Over C28-C36) | <15.0 | U | 50.0 | 15.0 | mg/Kg | | 03/28/23 13:32 | 03/29/23 20:09 | 1 |

| Surrogate | MB %Recovery | MB Qualifier | Limits | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|
| 1-Chlorooctane | 119 | | 70 - 130 | 03/28/23 13:32 | 03/29/23 20:09 | 1 |
| o-Terphenyl | 124 | | 70 - 130 | 03/28/23 13:32 | 03/29/23 20:09 | 1 |

# QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

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

**Lab Sample ID: LCS 880-49755/2-A**
**Matrix: Solid**
**Analysis Batch: 49777**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 49755**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 856.4 | | mg/Kg | | 86 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 863.7 | | mg/Kg | | 86 | 70 - 130 | | |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *111* | | *70 - 130* |
| *o-Terphenyl* | *115* | | *70 - 130* |

**Lab Sample ID: LCSD 880-49755/3-A**
**Matrix: Solid**
**Analysis Batch: 49777**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 49755**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 843.1 | | mg/Kg | | 84 | 70 - 130 | 2 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 889.4 | | mg/Kg | | 89 | 70 - 130 | 3 | 20 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *112* | | *70 - 130* |
| *o-Terphenyl* | *119* | | *70 - 130* |

**Lab Sample ID: MB 880-49771/1-A**
**Matrix: Solid**
**Analysis Batch: 49783**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 49771**

| 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 | | 03/28/23 17:17 | 03/29/23 08:47 | 1 |
| Diesel Range Organics (Over C10-C28) | <15.0 | U | 50.0 | 15.0 | mg/Kg | | 03/28/23 17:17 | 03/29/23 08:47 | 1 |
| OII Range Organics (Over C28-C36) | <15.0 | U | 50.0 | 15.0 | mg/Kg | | 03/28/23 17:17 | 03/29/23 08:47 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *132* | *S1+* | *70 - 130* | *03/28/23 17:17* | *03/29/23 08:47* | *1* |
| *o-Terphenyl* | *119* | | *70 - 130* | *03/28/23 17:17* | *03/29/23 08:47* | *1* |

**Lab Sample ID: LCS 880-49771/2-A**
**Matrix: Solid**
**Analysis Batch: 49783**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 49771**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 846.1 | | mg/Kg | | 85 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 801.6 | | mg/Kg | | 80 | 70 - 130 | | |

# QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

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

**Lab Sample ID: LCS 880-49771/2-A**
**Matrix: Solid**
**Analysis Batch: 49783**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 49771**

| Surrogate | LCS %Recovery | LCS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 123 | | 70 - 130 |
| o-Terphenyl | 115 | | 70 - 130 |

**Lab Sample ID: LCSD 880-49771/3-A**
**Matrix: Solid**
**Analysis Batch: 49783**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 49771**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1000 | 820.0 | | mg/Kg | | 82 | 70 - 130 | 3 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1000 | 833.0 | | mg/Kg | | 83 | 70 - 130 | 4 | 20 |

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 118 | | 70 - 130 |
| o-Terphenyl | 113 | | 70 - 130 |

**Lab Sample ID: 880-26267-10 MS**
**Matrix: Solid**
**Analysis Batch: 49783**

**Client Sample ID: SB-13-S-2'-20230322**
**Prep Type: Total/NA**
**Prep Batch: 49771**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | 28.1 | J | 998 | 1118 | | mg/Kg | | 109 | 70 - 130 | | |
| Diesel Range Organics (Over C10-C28) | 24.8 | J | 998 | 833.6 | | mg/Kg | | 81 | 70 - 130 | | |

| Surrogate | MS %Recovery | MS Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 117 | | 70 - 130 |
| o-Terphenyl | 101 | | 70 - 130 |

**Lab Sample ID: 880-26267-10 MSD**
**Matrix: Solid**
**Analysis Batch: 49783**

**Client Sample ID: SB-13-S-2'-20230322**
**Prep Type: Total/NA**
**Prep Batch: 49771**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | 28.1 | J | 999 | 1004 | | mg/Kg | | 98 | 70 - 130 | 11 | 20 |
| Diesel Range Organics (Over C10-C28) | 24.8 | J | 999 | 748.7 | | mg/Kg | | 72 | 70 - 130 | 11 | 20 |

| Surrogate | MSD %Recovery | MSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 105 | | 70 - 130 |
| o-Terphenyl | 91 | | 70 - 130 |

# QC Sample Results

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-50002/1-A**
**Matrix: Solid**
**Analysis Batch: 50028**

**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 | | | 03/31/23 10:19 | 1 |

**Lab Sample ID: LCS 880-50002/2-A**
**Matrix: Solid**
**Analysis Batch: 50028**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Chloride | 250 | 228.3 | | mg/Kg | | 91 | 90 - 110 |

**Lab Sample ID: LCSD 880-50002/3-A**
**Matrix: Solid**
**Analysis Batch: 50028**

**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 | 229.1 | | mg/Kg | | 92 | 90 - 110 | 0 | 20 |

**Lab Sample ID: MB 880-50160/1-A**
**Matrix: Solid**
**Analysis Batch: 50338**

**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 20:40 | 1 |

**Lab Sample ID: LCS 880-50160/2-A**
**Matrix: Solid**
**Analysis Batch: 50338**

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

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Chloride | 250 | 258.5 | | mg/Kg | | 103 | 90 - 110 |

**Lab Sample ID: LCSD 880-50160/3-A**
**Matrix: Solid**
**Analysis Batch: 50338**

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

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 250 | 259.3 | | mg/Kg | | 104 | 90 - 110 | 0 | 20 |

**Lab Sample ID: 880-26267-7 MS**
**Matrix: Solid**
**Analysis Batch: 50338**

**Client Sample ID: SB-12-S-2'-20230322**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 285 | F1 | 253 | 579.9 | F1 | mg/Kg | | 117 | 90 - 110 |

**Lab Sample ID: 880-26267-7 MSD**
**Matrix: Solid**
**Analysis Batch: 50338**

**Client Sample ID: SB-12-S-2'-20230322**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 285 | F1 | 253 | 577.6 | F1 | mg/Kg | | 116 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## GC VOA

### Prep Batch: 49883

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-26267-11 | SB-13-S-4'-20230322 | Total/NA | Solid | 5030B | |
| MB 880-49883/5-B | Method Blank | Total/NA | Solid | 5030B | |
| LCS 880-49883/1-A | Lab Control Sample | Total/NA | Solid | 5030B | |
| LCSD 880-49883/2-A | Lab Control Sample Dup | Total/NA | Solid | 5030B | |

### Prep Batch: 49890

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-26267-1 | SB-14-S-0.5'-20230322 | Total/NA | Solid | 5030B | |
| 880-26267-2 | SB-14-S-2'-20230322 | Total/NA | Solid | 5030B | |
| 880-26267-3 | SB-11-S-0.5'-20230322 | Total/NA | Solid | 5030B | |
| 880-26267-4 | SB-11-S-2'-20230322 | Total/NA | Solid | 5030B | |
| 880-26267-5 | SB-11-S-4'-20230322 | Total/NA | Solid | 5030B | |
| 880-26267-6 | SB-12-S-0.5'-20230322 | Total/NA | Solid | 5030B | |
| 880-26267-7 | SB-12-S-2'-20230322 | Total/NA | Solid | 5030B | |
| MB 880-49890/5-A | Method Blank | Total/NA | Solid | 5030B | |
| LCS 880-49890/1-A | Lab Control Sample | Total/NA | Solid | 5030B | |
| LCSD 880-49890/2-A | Lab Control Sample Dup | Total/NA | Solid | 5030B | |
| 880-26267-1 MS | SB-14-S-0.5'-20230322 | Total/NA | Solid | 5030B | |
| 880-26267-1 MSD | SB-14-S-0.5'-20230322 | Total/NA | Solid | 5030B | |

### Analysis Batch: 50103

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-26267-11 | SB-13-S-4'-20230322 | Total/NA | Solid | 8021B | 49883 |
| MB 880-49883/5-B | Method Blank | Total/NA | Solid | 8021B | 49883 |
| LCS 880-49883/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 49883 |
| LCSD 880-49883/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 49883 |

### Analysis Batch: 50118

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-26267-1 | SB-14-S-0.5'-20230322 | Total/NA | Solid | 8021B | 49890 |
| 880-26267-2 | SB-14-S-2'-20230322 | Total/NA | Solid | 8021B | 49890 |
| 880-26267-3 | SB-11-S-0.5'-20230322 | Total/NA | Solid | 8021B | 49890 |
| 880-26267-4 | SB-11-S-2'-20230322 | Total/NA | Solid | 8021B | 49890 |
| 880-26267-5 | SB-11-S-4'-20230322 | Total/NA | Solid | 8021B | 49890 |
| 880-26267-6 | SB-12-S-0.5'-20230322 | Total/NA | Solid | 8021B | 49890 |
| 880-26267-7 | SB-12-S-2'-20230322 | Total/NA | Solid | 8021B | 49890 |
| MB 880-49890/5-A | Method Blank | Total/NA | Solid | 8021B | 49890 |
| LCS 880-49890/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 49890 |
| LCSD 880-49890/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 49890 |
| 880-26267-1 MS | SB-14-S-0.5'-20230322 | Total/NA | Solid | 8021B | 49890 |
| 880-26267-1 MSD | SB-14-S-0.5'-20230322 | Total/NA | Solid | 8021B | 49890 |

### Analysis Batch: 50119

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-26267-8 | SB-12-S-4'-20230322 | Total/NA | Solid | 8021B | 50190 |
| 880-26267-9 | SB-13-S-0.5'-20230322 | Total/NA | Solid | 8021B | 50190 |
| 880-26267-10 | SB-13-S-2'-20230322 | Total/NA | Solid | 8021B | 50190 |
| MB 880-50130/5-A | Method Blank | Total/NA | Solid | 8021B | 50130 |
| MB 880-50190/5-A | Method Blank | Total/NA | Solid | 8021B | 50190 |
| LCS 880-50190/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 50190 |
| LCSD 880-50190/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 50190 |

# QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## GC VOA

### Prep Batch: 50130

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-50130/5-A | Method Blank | Total/NA | Solid | 5035 | |

### Prep Batch: 50190

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-26267-8 | SB-12-S-4'-20230322 | Total/NA | Solid | 5030B | |
| 880-26267-9 | SB-13-S-0.5'-20230322 | Total/NA | Solid | 5030B | |
| 880-26267-10 | SB-13-S-2'-20230322 | Total/NA | Solid | 5030B | |
| MB 880-50190/5-A | Method Blank | Total/NA | Solid | 5030B | |
| LCS 880-50190/1-A | Lab Control Sample | Total/NA | Solid | 5030B | |
| LCSD 880-50190/2-A | Lab Control Sample Dup | Total/NA | Solid | 5030B | |

## GC Semi VOA

### Prep Batch: 49755

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-26267-1 | SB-14-S-0.5'-20230322 | Total/NA | Solid | 8015NM Prep | |
| 880-26267-2 | SB-14-S-2'-20230322 | Total/NA | Solid | 8015NM Prep | |
| 880-26267-3 | SB-11-S-0.5'-20230322 | Total/NA | Solid | 8015NM Prep | |
| 880-26267-4 | SB-11-S-2'-20230322 | Total/NA | Solid | 8015NM Prep | |
| 880-26267-5 | SB-11-S-4'-20230322 | Total/NA | Solid | 8015NM Prep | |
| 880-26267-6 | SB-12-S-0.5'-20230322 | Total/NA | Solid | 8015NM Prep | |
| 880-26267-7 | SB-12-S-2'-20230322 | Total/NA | Solid | 8015NM Prep | |
| 880-26267-8 | SB-12-S-4'-20230322 | Total/NA | Solid | 8015NM Prep | |
| 880-26267-9 | SB-13-S-0.5'-20230322 | Total/NA | Solid | 8015NM Prep | |
| MB 880-49755/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-49755/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-49755/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |

### Prep Batch: 49771

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-26267-10 | SB-13-S-2'-20230322 | Total/NA | Solid | 8015NM Prep | |
| 880-26267-11 | SB-13-S-4'-20230322 | Total/NA | Solid | 8015NM Prep | |
| MB 880-49771/1-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 880-49771/2-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 880-49771/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |
| 880-26267-10 MS | SB-13-S-2'-20230322 | Total/NA | Solid | 8015NM Prep | |
| 880-26267-10 MSD | SB-13-S-2'-20230322 | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 49777

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-26267-1 | SB-14-S-0.5'-20230322 | Total/NA | Solid | 8015B NM | 49755 |
| 880-26267-2 | SB-14-S-2'-20230322 | Total/NA | Solid | 8015B NM | 49755 |
| 880-26267-3 | SB-11-S-0.5'-20230322 | Total/NA | Solid | 8015B NM | 49755 |
| 880-26267-4 | SB-11-S-2'-20230322 | Total/NA | Solid | 8015B NM | 49755 |
| 880-26267-5 | SB-11-S-4'-20230322 | Total/NA | Solid | 8015B NM | 49755 |
| 880-26267-6 | SB-12-S-0.5'-20230322 | Total/NA | Solid | 8015B NM | 49755 |
| 880-26267-7 | SB-12-S-2'-20230322 | Total/NA | Solid | 8015B NM | 49755 |
| 880-26267-8 | SB-12-S-4'-20230322 | Total/NA | Solid | 8015B NM | 49755 |
| 880-26267-9 | SB-13-S-0.5'-20230322 | Total/NA | Solid | 8015B NM | 49755 |
| MB 880-49755/1-A | Method Blank | Total/NA | Solid | 8015B NM | 49755 |
| LCS 880-49755/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 49755 |

# QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## GC Semi VOA (Continued)

### Analysis Batch: 49777 (Continued)

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| LCSD 880-49755/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 49755 |

### Analysis Batch: 49783

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-26267-10 | SB-13-S-2'-20230322 | Total/NA | Solid | 8015B NM | 49771 |
| 880-26267-11 | SB-13-S-4'-20230322 | Total/NA | Solid | 8015B NM | 49771 |
| MB 880-49771/1-A | Method Blank | Total/NA | Solid | 8015B NM | 49771 |
| LCS 880-49771/2-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 49771 |
| LCSD 880-49771/3-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 49771 |
| 880-26267-10 MS | SB-13-S-2'-20230322 | Total/NA | Solid | 8015B NM | 49771 |
| 880-26267-10 MSD | SB-13-S-2'-20230322 | Total/NA | Solid | 8015B NM | 49771 |

### Analysis Batch: 49935

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-26267-1 | SB-14-S-0.5'-20230322 | Total/NA | Solid | 8015 NM | |
| 880-26267-2 | SB-14-S-2'-20230322 | Total/NA | Solid | 8015 NM | |
| 880-26267-3 | SB-11-S-0.5'-20230322 | Total/NA | Solid | 8015 NM | |
| 880-26267-4 | SB-11-S-2'-20230322 | Total/NA | Solid | 8015 NM | |
| 880-26267-5 | SB-11-S-4'-20230322 | Total/NA | Solid | 8015 NM | |
| 880-26267-6 | SB-12-S-0.5'-20230322 | Total/NA | Solid | 8015 NM | |
| 880-26267-7 | SB-12-S-2'-20230322 | Total/NA | Solid | 8015 NM | |
| 880-26267-8 | SB-12-S-4'-20230322 | Total/NA | Solid | 8015 NM | |
| 880-26267-9 | SB-13-S-0.5'-20230322 | Total/NA | Solid | 8015 NM | |
| 880-26267-10 | SB-13-S-2'-20230322 | Total/NA | Solid | 8015 NM | |
| 880-26267-11 | SB-13-S-4'-20230322 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 50002

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-26267-1 | SB-14-S-0.5'-20230322 | Soluble | Solid | DI Leach | |
| 880-26267-2 | SB-14-S-2'-20230322 | Soluble | Solid | DI Leach | |
| 880-26267-3 | SB-11-S-0.5'-20230322 | Soluble | Solid | DI Leach | |
| 880-26267-4 | SB-11-S-2'-20230322 | Soluble | Solid | DI Leach | |
| 880-26267-5 | SB-11-S-4'-20230322 | Soluble | Solid | DI Leach | |
| 880-26267-6 | SB-12-S-0.5'-20230322 | Soluble | Solid | DI Leach | |
| MB 880-50002/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-50002/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-50002/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |

### Analysis Batch: 50028

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-26267-1 | SB-14-S-0.5'-20230322 | Soluble | Solid | 300.0 | 50002 |
| 880-26267-2 | SB-14-S-2'-20230322 | Soluble | Solid | 300.0 | 50002 |
| 880-26267-3 | SB-11-S-0.5'-20230322 | Soluble | Solid | 300.0 | 50002 |
| 880-26267-4 | SB-11-S-2'-20230322 | Soluble | Solid | 300.0 | 50002 |
| 880-26267-5 | SB-11-S-4'-20230322 | Soluble | Solid | 300.0 | 50002 |
| 880-26267-6 | SB-12-S-0.5'-20230322 | Soluble | Solid | 300.0 | 50002 |
| MB 880-50002/1-A | Method Blank | Soluble | Solid | 300.0 | 50002 |
| LCS 880-50002/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 50002 |
| LCSD 880-50002/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 50002 |

# QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## HPLC/IC

### Leach Batch: 50160

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-26267-7 | SB-12-S-2'-20230322 | Soluble | Solid | DI Leach | |
| 880-26267-8 | SB-12-S-4'-20230322 | Soluble | Solid | DI Leach | |
| 880-26267-9 | SB-13-S-0.5'-20230322 | Soluble | Solid | DI Leach | |
| 880-26267-10 | SB-13-S-2'-20230322 | Soluble | Solid | DI Leach | |
| 880-26267-11 | SB-13-S-4'-20230322 | Soluble | Solid | DI Leach | |
| MB 880-50160/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-50160/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-50160/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 880-26267-7 MS | SB-12-S-2'-20230322 | Soluble | Solid | DI Leach | |
| 880-26267-7 MSD | SB-12-S-2'-20230322 | Soluble | Solid | DI Leach | |

### Analysis Batch: 50338

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-26267-7 | SB-12-S-2'-20230322 | Soluble | Solid | 300.0 | 50160 |
| 880-26267-8 | SB-12-S-4'-20230322 | Soluble | Solid | 300.0 | 50160 |
| 880-26267-9 | SB-13-S-0.5'-20230322 | Soluble | Solid | 300.0 | 50160 |
| 880-26267-10 | SB-13-S-2'-20230322 | Soluble | Solid | 300.0 | 50160 |
| 880-26267-11 | SB-13-S-4'-20230322 | Soluble | Solid | 300.0 | 50160 |
| MB 880-50160/1-A | Method Blank | Soluble | Solid | 300.0 | 50160 |
| LCS 880-50160/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 50160 |
| LCSD 880-50160/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 50160 |
| 880-26267-7 MS | SB-12-S-2'-20230322 | Soluble | Solid | 300.0 | 50160 |
| 880-26267-7 MSD | SB-12-S-2'-20230322 | Soluble | Solid | 300.0 | 50160 |

# Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## Client Sample ID: SB-14-S-0.5'-20230322

**Lab Sample ID: 880-26267-1**
**Matrix: Solid**
**Date Collected: 03/22/23 15:10**
**Date Received: 03/23/23 08:20**

| 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 | 49890 | 03/29/23 16:35 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 50118 | 04/03/23 11:23 | MNR | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 49935 | 03/30/23 12:51 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 49755 | 03/28/23 13:32 | AJ | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 49777 | 03/30/23 02:17 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.03 g | 50 mL | 50002 | 03/31/23 08:54 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 10 | 50 mL | 50 mL | 50028 | 03/31/23 12:09 | SMC | EET MID |

## Client Sample ID: SB-14-S-2'-20230322

**Lab Sample ID: 880-26267-2**
**Matrix: Solid**
**Date Collected: 03/22/23 15:30**
**Date Received: 03/23/23 08:20**

| 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 | 49890 | 03/29/23 16:35 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 50118 | 04/03/23 11:44 | MNR | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 49935 | 03/30/23 12:51 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.04 g | 10 mL | 49755 | 03/28/23 13:32 | AJ | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 49777 | 03/30/23 02:38 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.03 g | 50 mL | 50002 | 03/31/23 08:54 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | 50 mL | 50 mL | 50028 | 03/31/23 12:13 | SMC | EET MID |

## Client Sample ID: SB-11-S-0.5'-20230322

**Lab Sample ID: 880-26267-3**
**Matrix: Solid**
**Date Collected: 03/22/23 15:35**
**Date Received: 03/23/23 08:20**

| 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 | 49890 | 03/29/23 16:35 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 50118 | 04/03/23 12:05 | MNR | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 49935 | 03/30/23 12:51 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 49755 | 03/28/23 13:32 | AJ | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 49777 | 03/30/23 03:00 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.05 g | 50 mL | 50002 | 03/31/23 08:54 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | 50 mL | 50 mL | 50028 | 03/31/23 12:18 | SMC | EET MID |

## Client Sample ID: SB-11-S-2'-20230322

**Lab Sample ID: 880-26267-4**
**Matrix: Solid**
**Date Collected: 03/22/23 15:50**
**Date Received: 03/23/23 08:20**

| 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 | 49890 | 03/29/23 16:35 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 50118 | 04/03/23 12:26 | MNR | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 49935 | 03/30/23 12:51 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 49755 | 03/28/23 13:32 | AJ | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 49777 | 03/30/23 03:21 | SM | EET MID |

# Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## Client Sample ID: SB-11-S-2'-20230322
**Lab Sample ID: 880-26267-4**
**Date Collected: 03/22/23 15:50**
**Matrix: Solid**
**Date Received: 03/23/23 08:20**

| 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 | 50002 | 03/31/23 08:54 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | 50 mL | 50 mL | 50028 | 03/31/23 12:22 | SMC | EET MID |

## Client Sample ID: SB-11-S-4'-20230322
**Lab Sample ID: 880-26267-5**
**Date Collected: 03/22/23 16:05**
**Matrix: Solid**
**Date Received: 03/23/23 08:20**

| 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 | 49890 | 03/29/23 16:35 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 50118 | 04/03/23 12:47 | MNR | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 49935 | 03/30/23 12:51 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 49755 | 03/28/23 13:32 | AJ | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 49777 | 03/30/23 03:43 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 4.97 g | 50 mL | 50002 | 03/31/23 08:54 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | 50 mL | 50 mL | 50028 | 03/31/23 12:27 | SMC | EET MID |

## Client Sample ID: SB-12-S-0.5'-20230322
**Lab Sample ID: 880-26267-6**
**Date Collected: 03/22/23 16:10**
**Matrix: Solid**
**Date Received: 03/23/23 08:20**

| 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 | 49890 | 03/29/23 16:35 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 50118 | 04/03/23 13:08 | MNR | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 49935 | 03/30/23 12:51 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.03 g | 10 mL | 49755 | 03/28/23 13:32 | AJ | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 49777 | 03/30/23 05:10 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.03 g | 50 mL | 50002 | 03/31/23 08:54 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | 50 mL | 50 mL | 50028 | 03/31/23 12:31 | SMC | EET MID |

## Client Sample ID: SB-12-S-2'-20230322
**Lab Sample ID: 880-26267-7**
**Date Collected: 03/22/23 16:15**
**Matrix: Solid**
**Date Received: 03/23/23 08:20**

| 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 | 49890 | 03/29/23 16:35 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 50118 | 04/03/23 13:28 | MNR | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 49935 | 03/30/23 12:51 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.01 g | 10 mL | 49755 | 03/28/23 13:32 | AJ | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 49777 | 03/30/23 04:05 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 4.95 g | 50 mL | 50160 | 04/03/23 10:58 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 1 | 50 mL | 50 mL | 50338 | 04/04/23 20:54 | SMC | EET MID |

# Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## Client Sample ID: SB-12-S-4'-20230322

**Lab Sample ID: 880-26267-8**
**Matrix: Solid**
**Date Collected: 03/22/23 16:20**
**Date Received: 03/23/23 08:20**

| 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 | 50190 | 04/03/23 12:22 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 50119 | 04/04/23 02:26 | MNR | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 49935 | 03/30/23 12:51 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 49755 | 03/28/23 13:32 | AJ | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 49777 | 03/30/23 04:27 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5.02 g | 50 mL | 50160 | 04/03/23 10:58 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 5 | 50 mL | 50 mL | 50338 | 04/04/23 21:09 | SMC | EET MID |

## Client Sample ID: SB-13-S-0.5'-20230322

**Lab Sample ID: 880-26267-9**
**Matrix: Solid**
**Date Collected: 03/22/23 16:25**
**Date Received: 03/23/23 08:20**

| 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 | 50190 | 04/03/23 12:22 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 50119 | 04/04/23 02:47 | MNR | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 49935 | 03/30/23 12:51 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.03 g | 10 mL | 49755 | 03/28/23 13:32 | AJ | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 49777 | 03/30/23 04:49 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 5 g | 50 mL | 50160 | 04/03/23 10:58 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 5 | 50 mL | 50 mL | 50338 | 04/04/23 21:14 | SMC | EET MID |

## Client Sample ID: SB-13-S-2'-20230322

**Lab Sample ID: 880-26267-10**
**Matrix: Solid**
**Date Collected: 03/22/23 16:35**
**Date Received: 03/23/23 08:20**

| 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 | 50190 | 04/03/23 12:22 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 50119 | 04/04/23 03:07 | MNR | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 49935 | 03/30/23 12:56 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.03 g | 10 mL | 49771 | 03/28/23 17:17 | AJ | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 49783 | 03/29/23 11:15 | SM | EET MID |
| Soluble | Leach | DI Leach | | | 4.99 g | 50 mL | 50160 | 04/03/23 10:58 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 5 | 50 mL | 50 mL | 50338 | 04/04/23 21:18 | SMC | EET MID |

## Client Sample ID: SB-13-S-4'-20230322

**Lab Sample ID: 880-26267-11**
**Matrix: Solid**
**Date Collected: 03/22/23 16:45**
**Date Received: 03/23/23 08:20**

| 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 | 49883 | 03/29/23 16:20 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 50103 | 04/03/23 19:56 | MNR | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 49935 | 03/30/23 12:56 | SM | EET MID |
| Total/NA | Prep | 8015NM Prep | | | 10.02 g | 10 mL | 49771 | 03/28/23 17:17 | AJ | EET MID |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 49783 | 03/29/23 12:20 | SM | EET MID |

# Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

**Client Sample ID: SB-13-S-4'-20230322**
**Date Collected: 03/22/23 16:45**
**Date Received: 03/23/23 08:20**

**Lab Sample ID: 880-26267-11**
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 5.01 g | 50 mL | 50160 | 04/03/23 10:58 | KS | EET MID |
| Soluble | Analysis | 300.0 | | 5 | 50 mL | 50 mL | 50338 | 04/04/23 21:23 | 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: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

## 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: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

| 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: Lovington Field Assessment

Job ID: 880-26267-1
SDG: WLU 57

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 880-26267-1 | SB-14-S-0.5'-20230322 | Solid | 03/22/23 15:10 | 03/23/23 08:20 |
| 880-26267-2 | SB-14-S-2'-20230322 | Solid | 03/22/23 15:30 | 03/23/23 08:20 |
| 880-26267-3 | SB-11-S-0.5'-20230322 | Solid | 03/22/23 15:35 | 03/23/23 08:20 |
| 880-26267-4 | SB-11-S-2'-20230322 | Solid | 03/22/23 15:50 | 03/23/23 08:20 |
| 880-26267-5 | SB-11-S-4'-20230322 | Solid | 03/22/23 16:05 | 03/23/23 08:20 |
| 880-26267-6 | SB-12-S-0.5'-20230322 | Solid | 03/22/23 16:10 | 03/23/23 08:20 |
| 880-26267-7 | SB-12-S-2'-20230322 | Solid | 03/22/23 16:15 | 03/23/23 08:20 |
| 880-26267-8 | SB-12-S-4'-20230322 | Solid | 03/22/23 16:20 | 03/23/23 08:20 |
| 880-26267-9 | SB-13-S-0.5'-20230322 | Solid | 03/22/23 16:25 | 03/23/23 08:20 |
| 880-26267-10 | SB-13-S-2'-20230322 | Solid | 03/22/23 16:35 | 03/23/23 08:20 |
| 880-26267-11 | SB-13-S-4'-20230322 | Solid | 03/22/23 16:45 | 03/23/23 08:20 |

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

# Chain of Custody Record

26267

eurofins | Environment Testing

| Client Information | Sampler: Daniel McGee | Lab PM: Builes John | Carrier Tracking No(s): | COC No.: 880-5489-722 1 |
|---|---|---|---|---|
| Client Contact: Douglas Jordan | Phone: 432-999-2980 | E-Mail: John.Builes@et.eurofinsus.com | State of Origin: NM | Page: Page ~~1 of 2~~ 1 of 1 |
| Company: ARCADIS U S Inc | PWSID: | | | 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 -00026 | | | |
| Email: douglas.jordan@arcadis.com | WO #: | | | |
| Project Name: ~~Lovington~~ WLU 57 | Project #: 88001697 | | | |
| Site | SSOW#: | | | |

880-26267 Chain of Custody

Preservation Codes:
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)
I Ice; J DI Water; K EDTA; L EDA
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-14-S-0.5'-20230322 | 3-22-23 | 1310 | G | Solid | | | X | 1 | 402 |
| SB-14-S-2'-20230322 | | 1530 | | Solid | | | X | 1 | |
| SB-11-S-0.5'-20230322 | | 1535 | | Solid | | | X | 1 | |
| SB-11-S-2'-20230322 | | 1550 | | Solid | | | X | 1 | |
| SB-11-S-4'-20230322 | | 1605 | | Solid | | | X | 1 | |
| SB-12-S-0.5'-20230322 | | 1610 | | Solid | | | X | 1 | |
| SB-12-S-2'-20230322 | | 1615 | | Solid | | | X | 1 | |
| SB-12-S-4'-20230322 | | 1620 | | Solid | | | X | 1 | |
| SB-13-S-0.5'-20230322 | | 1625 | | Solid | | | X | 1 | |
| SB-13-S-2'-20230322 | | 1635 | | Solid | | | X | 1 | |
| SB-13-S-4'-20230322 | 3-22-23 | 1645 | G | Solid | | | X | 1 | |

**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 | | 3-23-23 0820 | Arcadis | | 3/23/23 0820 | |
| 2 | Relinquished by: | Date/Time | Company | Received by: | Date/Time: | Company |
| 3 | Relinquished by: | Date/Time | Company | Received by | Date/Time: | Company |

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

Cooler Temperature(s) °C and Other Remarks: 0.6 | 0.3 | -0.3

Ver: 01/16/2019

# Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 880-26267-1
SDG Number: WLU 57

**Login Number: 26267**
**List Number: 1**
**Creator: Teel, Brianna**

**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 | |

eurofins | Environment Testing



# ANALYTICAL REPORT

## PREPARED FOR

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

Generated 2/12/2024 10:49:16 AM

## JOB DESCRIPTION

WLU 57
Lovington, NM

## JOB NUMBER

880-38636-1

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
2/12/2024 10:49:16 AM

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

Client: ARCADIS US Inc
Project/Site: WLU 57

Laboratory Job ID: 880-38636-1
SDG: Lovington, NM

# Table of Contents

# Definitions/Glossary

Client: ARCADIS US Inc
Project/Site: WLU 57

Job ID: 880-38636-1
SDG: Lovington, NM

## Qualifiers

### GC VOA

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

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| *1 | LCS/LCSD RPD exceeds control limits. |
| 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 US Inc
Project: WLU 57

Job ID: 880-38636-1

## Job ID: 880-38636-1 Eurofins Midland

**Job Narrative**
**880-38636-1**

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 1/30/2024 8:38 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.7°C

**Receipt Exceptions**
The following samples were received and analyzed from an unpreserved bulk soil jar: SB-15-S-1'-240124 (880-38636-1), SB-15-S-2'-240124 (880-38636-2), SB-16-S-1'-240124 (880-38636-3), SB-16-S-2'-240124 (880-38636-4), SB-17-S-1'-240124 (880-38636-5), SB-17-S-2'-240124 (880-38636-6), SB-18-S-1'-240124 (880-38636-7) and SB-18-S-2'-240124 (880-38636-8).

**GC VOA**
Method 8021B: Surrogate recovery for the following samples were outside control limits: SB-15-S-2'-240124 (880-38636-2), SB-17-S-2'-240124 (880-38636-6) and SB-18-S-1'-240124 (880-38636-7). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-72362 and analytical batch 880-72315 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

Method 8021B: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 880-72315 recovered outside control limits for the following analytes: MTBE.

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 RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 870-17905 and analytical batch 870-17969 recovered outside control limits for the following analytes: Gasoline Range Organics (GRO).

Method 8015MOD_NM: An incorrect volume of spiking solution was inadvertently added the following samples: (CCV 870-17969/164). Percent recoveries are based on the amount spiked.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside the upper control limit: SB-15-S-2'-240124 (880-38636-2), SB-16-S-2'-240124 (880-38636-4), SB-17-S-2'-240124 (880-38636-6), SB-18-S-1'-240124 (880-38636-7) and (890-6038-A-1-J). This sample did not contain any target analytes; 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 US Inc
Project/Site: WLU 57

Job ID: 880-38636-1
SDG: Lovington, NM

## Client Sample ID: SB-15-S-1'-240124

**Lab Sample ID: 880-38636-1**
**Matrix: Solid**
**Date Collected: 01/24/24 08:30**
**Date Received: 01/30/24 08:38**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 144 | | 4.95 | 0.391 | mg/Kg | | | 01/31/24 08:40 | 1 |

## Client Sample ID: SB-15-S-2'-240124

**Lab Sample ID: 880-38636-2**
**Matrix: Solid**
**Date Collected: 01/24/24 08:40**
**Date Received: 01/30/24 08:38**

### 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 | | 02/05/24 11:33 | 02/06/24 03:27 | 1 |
| Toluene | <0.000455 | U | 0.00200 | 0.000455 | mg/Kg | | 02/05/24 11:33 | 02/06/24 03:27 | 1 |
| Ethylbenzene | <0.000564 | U *+ | 0.00200 | 0.000564 | mg/Kg | | 02/05/24 11:33 | 02/06/24 03:27 | 1 |
| m-Xylene & p-Xylene | <0.00101 | U *+ | 0.00399 | 0.00101 | mg/Kg | | 02/05/24 11:33 | 02/06/24 03:27 | 1 |
| o-Xylene | <0.000343 | U | 0.00200 | 0.000343 | mg/Kg | | 02/05/24 11:33 | 02/06/24 03:27 | 1 |
| Xylenes, Total | <0.00101 | U *+ | 0.00399 | 0.00101 | mg/Kg | | 02/05/24 11:33 | 02/06/24 03:27 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *86* | | *70 - 130* | *02/05/24 11:33* | *02/06/24 03:27* | *1* |
| *1,4-Difluorobenzene (Surr)* | *64* | *S1-* | *70 - 130* | *02/05/24 11:33* | *02/06/24 03:27* | *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 | | | 02/06/24 03:27 | 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 | 49.6 | 24.8 | mg/Kg | | | 02/05/24 18:50 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <24.8 | U *1 | 49.6 | 24.8 | mg/Kg | | 01/30/24 11:32 | 02/05/24 18:50 | 1 |
| Diesel Range Organics (Over C10-C28) | <24.8 | U | 49.6 | 24.8 | mg/Kg | | 01/30/24 11:32 | 02/05/24 18:50 | 1 |
| OII Range Organics (Over C28-C36) | <24.8 | U | 49.6 | 24.8 | mg/Kg | | 01/30/24 11:32 | 02/05/24 18:50 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *137* | *S1+* | *70 - 130* | *01/30/24 11:32* | *02/05/24 18:50* | *1* |
| *o-Terphenyl* | *154* | *S1+* | *70 - 130* | *01/30/24 11:32* | *02/05/24 18:50* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 144 | | 4.95 | 0.391 | mg/Kg | | | 01/31/24 08:46 | 1 |

## Client Sample ID: SB-16-S-1'-240124

**Lab Sample ID: 880-38636-3**
**Matrix: Solid**
**Date Collected: 01/24/24 09:00**
**Date Received: 01/30/24 08:38**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 14.0 | | 5.03 | 0.397 | mg/Kg | | | 01/31/24 04:19 | 1 |

# Client Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 57

Job ID: 880-38636-1
SDG: Lovington, NM

## Client Sample ID: SB-16-S-2'-240124

**Lab Sample ID: 880-38636-4**
**Matrix: Solid**
**Date Collected: 01/24/24 09:10**
**Date Received: 01/30/24 08:38**

### 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 | | 02/05/24 11:33 | 02/06/24 03:48 | 1 |
| Toluene | <0.000457 | U | 0.00200 | 0.000457 | mg/Kg | | 02/05/24 11:33 | 02/06/24 03:48 | 1 |
| Ethylbenzene | <0.000566 | U *+ | 0.00200 | 0.000566 | mg/Kg | | 02/05/24 11:33 | 02/06/24 03:48 | 1 |
| m-Xylene & p-Xylene | <0.00101 | U *+ | 0.00401 | 0.00101 | mg/Kg | | 02/05/24 11:33 | 02/06/24 03:48 | 1 |
| **o-Xylene** | **0.000555** | **J** | 0.00200 | 0.000345 | mg/Kg | | 02/05/24 11:33 | 02/06/24 03:48 | 1 |
| Xylenes, Total | <0.00101 | U *+ | 0.00401 | 0.00101 | mg/Kg | | 02/05/24 11:33 | 02/06/24 03:48 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *88* | | *70 - 130* | *02/05/24 11:33* | *02/06/24 03:48* | *1* |
| *1,4-Difluorobenzene (Surr)* | *72* | | *70 - 130* | *02/05/24 11:33* | *02/06/24 03:48* | *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 | 0.00401 | 0.00101 | mg/Kg | | | 02/06/24 03:48 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <25.1 | U | 50.2 | 25.1 | mg/Kg | | | 02/05/24 19:11 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <25.1 | U *1 | 50.2 | 25.1 | mg/Kg | | 01/30/24 11:32 | 02/05/24 19:11 | 1 |
| Diesel Range Organics (Over C10-C28) | <25.1 | U | 50.2 | 25.1 | mg/Kg | | 01/30/24 11:32 | 02/05/24 19:11 | 1 |
| OII Range Organics (Over C28-C36) | <25.1 | U | 50.2 | 25.1 | mg/Kg | | 01/30/24 11:32 | 02/05/24 19:11 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *116* | | *70 - 130* | *01/30/24 11:32* | *02/05/24 19:11* | *1* |
| *o-Terphenyl* | *133* | *S1+* | *70 - 130* | *01/30/24 11:32* | *02/05/24 19:11* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **84.6** | | 5.01 | 0.396 | mg/Kg | | | 01/31/24 04:26 | 1 |

## Client Sample ID: SB-17-S-1'-240124

**Lab Sample ID: 880-38636-5**
**Matrix: Solid**
**Date Collected: 01/24/24 09:30**
**Date Received: 01/30/24 08:38**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **11.5** | | 4.97 | 0.393 | mg/Kg | | | 01/31/24 04:33 | 1 |

## Client Sample ID: SB-17-S-2'-240124

**Lab Sample ID: 880-38636-6**
**Matrix: Solid**
**Date Collected: 01/24/24 09:40**
**Date Received: 01/30/24 08:38**

### 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 | | 02/05/24 11:33 | 02/06/24 04:08 | 1 |
| Toluene | <0.000454 | U | 0.00199 | 0.000454 | mg/Kg | | 02/05/24 11:33 | 02/06/24 04:08 | 1 |
| Ethylbenzene | <0.000563 | U *+ | 0.00199 | 0.000563 | mg/Kg | | 02/05/24 11:33 | 02/06/24 04:08 | 1 |

# Client Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 57

Job ID: 880-38636-1
SDG: Lovington, NM

## Client Sample ID: SB-17-S-2'-240124

**Lab Sample ID: 880-38636-6**
**Matrix: Solid**
**Date Collected: 01/24/24 09:40**
**Date Received: 01/30/24 08:38**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| m-Xylene & p-Xylene | <0.00101 | U *+ | 0.00398 | 0.00101 | mg/Kg | | 02/05/24 11:33 | 02/06/24 04:08 | 1 |
| o-Xylene | <0.000343 | U | 0.00199 | 0.000343 | mg/Kg | | 02/05/24 11:33 | 02/06/24 04:08 | 1 |
| Xylenes, Total | <0.00101 | U *+ | 0.00398 | 0.00101 | mg/Kg | | 02/05/24 11:33 | 02/06/24 04:08 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *90* | | *70 - 130* | *02/05/24 11:33* | *02/06/24 04:08* | *1* |
| *1,4-Difluorobenzene (Surr)* | *62* | *S1-* | *70 - 130* | *02/05/24 11:33* | *02/06/24 04:08* | *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 | | | 02/06/24 04:08 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <25.2 | U | 50.4 | 25.2 | mg/Kg | | | 02/05/24 19:32 | 1 |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | <25.2 | U *1 | 50.4 | 25.2 | mg/Kg | | 01/30/24 11:32 | 02/05/24 19:32 | 1 |
| Diesel Range Organics (Over C10-C28) | <25.2 | U | 50.4 | 25.2 | mg/Kg | | 01/30/24 11:32 | 02/05/24 19:32 | 1 |
| OII Range Organics (Over C28-C36) | <25.2 | U | 50.4 | 25.2 | mg/Kg | | 01/30/24 11:32 | 02/05/24 19:32 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *124* | | *70 - 130* | *01/30/24 11:32* | *02/05/24 19:32* | *1* |
| *o-Terphenyl* | *141* | *S1+* | *70 - 130* | *01/30/24 11:32* | *02/05/24 19:32* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **10.4** | | 4.99 | 0.394 | mg/Kg | | | 01/31/24 04:40 | 1 |

## Client Sample ID: SB-18-S-1'-240124

**Lab Sample ID: 880-38636-7**
**Matrix: Solid**
**Date Collected: 01/24/24 10:10**
**Date Received: 01/30/24 08:38**

### 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 | | 02/05/24 11:33 | 02/06/24 04:29 | 1 |
| Toluene | <0.000453 | U | 0.00199 | 0.000453 | mg/Kg | | 02/05/24 11:33 | 02/06/24 04:29 | 1 |
| Ethylbenzene | <0.000562 | U *+ | 0.00199 | 0.000562 | mg/Kg | | 02/05/24 11:33 | 02/06/24 04:29 | 1 |
| m-Xylene & p-Xylene | <0.00100 | U *+ | 0.00398 | 0.00100 | mg/Kg | | 02/05/24 11:33 | 02/06/24 04:29 | 1 |
| o-Xylene | <0.000342 | U | 0.00199 | 0.000342 | mg/Kg | | 02/05/24 11:33 | 02/06/24 04:29 | 1 |
| Xylenes, Total | <0.00100 | U *+ | 0.00398 | 0.00100 | mg/Kg | | 02/05/24 11:33 | 02/06/24 04:29 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *89* | | *70 - 130* | *02/05/24 11:33* | *02/06/24 04:29* | *1* |
| *1,4-Difluorobenzene (Surr)* | *59* | *S1-* | *70 - 130* | *02/05/24 11:33* | *02/06/24 04:29* | *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 | | | 02/06/24 04:29 | 1 |

# Client Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 57

Job ID: 880-38636-1
SDG: Lovington, NM

## Client Sample ID: SB-18-S-1'-240124

**Lab Sample ID: 880-38636-7**
**Matrix: Solid**
**Date Collected: 01/24/24 10:10**
**Date Received: 01/30/24 08:38**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Total TPH | <25.2 | U | 50.4 | 25.2 | mg/Kg | | | 02/05/24 19:52 | 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 | <25.2 | U *1 | 50.4 | 25.2 | mg/Kg | | 01/30/24 11:32 | 02/05/24 19:52 | 1 |
| Diesel Range Organics (Over C10-C28) | <25.2 | U | 50.4 | 25.2 | mg/Kg | | 01/30/24 11:32 | 02/05/24 19:52 | 1 |
| Oil Range Organics (Over C28-C36) | <25.2 | U | 50.4 | 25.2 | mg/Kg | | 01/30/24 11:32 | 02/05/24 19:52 | 1 |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *137* | *S1+* | *70 - 130* | *01/30/24 11:32* | *02/05/24 19:52* | *1* |
| *o-Terphenyl* | *157* | *S1+* | *70 - 130* | *01/30/24 11:32* | *02/05/24 19:52* | *1* |

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **53.1** | | 4.98 | 0.393 | mg/Kg | | | 01/31/24 04:46 | 1 |

## Client Sample ID: SB-18-S-2'-240124

**Lab Sample ID: 880-38636-8**
**Matrix: Solid**
**Date Collected: 01/24/24 10:00**
**Date Received: 01/30/24 08:38**

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

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| **Chloride** | **3.82** | **J** | 5.03 | 0.397 | mg/Kg | | | 01/31/24 05:07 | 1 |

# Surrogate Summary

Client: ARCADIS US Inc
Project/Site: WLU 57

Job ID: 880-38636-1
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) | | | | | | | | | | |
| 880-38636-2 | SB-15-S-2'-240124 | 86 | 64 S1- | | | | | | | | | | |
| 880-38636-4 | SB-16-S-2'-240124 | 88 | 72 | | | | | | | | | | |
| 880-38636-6 | SB-17-S-2'-240124 | 90 | 62 S1- | | | | | | | | | | |
| 880-38636-7 | SB-18-S-1'-240124 | 89 | 59 S1- | | | | | | | | | | |
| LCS 880-72362/1-A | Lab Control Sample | 110 | 92 | | | | | | | | | | |
| LCSD 880-72362/2-A | Lab Control Sample Dup | 129 | 97 | | | | | | | | | | |
| MB 880-72103/5-A | Method Blank | 76 | 77 | | | | | | | | | | |
| MB 880-72362/5-A | Method Blank | 73 | 80 | | | | | | | | | | |

**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) | | | | | | | | | | |
| 880-38636-2 | SB-15-S-2'-240124 | 137 S1+ | 154 S1+ | | | | | | | | | | |
| 880-38636-4 | SB-16-S-2'-240124 | 116 | 133 S1+ | | | | | | | | | | |
| 880-38636-6 | SB-17-S-2'-240124 | 124 | 141 S1+ | | | | | | | | | | |
| 880-38636-7 | SB-18-S-1'-240124 | 137 S1+ | 157 S1+ | | | | | | | | | | |
| LCS 870-17905/1-A | Lab Control Sample | 108 | 125 | | | | | | | | | | |
| LCSD 870-17905/2-A | Lab Control Sample Dup | 112 | 126 | | | | | | | | | | |
| MB 870-17905/3-A | Method Blank | 122 | 128 | | | | | | | | | | |

**Surrogate Legend**

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

# QC Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 57

Job ID: 880-38636-1
SDG: Lovington, NM

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

**Lab Sample ID: MB 880-72103/5-A**
**Matrix: Solid**
**Analysis Batch: 72315**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 72103**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000385 | U | 0.00200 | 0.000385 | mg/Kg | | 02/01/24 10:19 | 02/05/24 11:23 | 1 |
| Toluene | <0.000456 | U | 0.00200 | 0.000456 | mg/Kg | | 02/01/24 10:19 | 02/05/24 11:23 | 1 |
| Ethylbenzene | <0.000565 | U | 0.00200 | 0.000565 | mg/Kg | | 02/01/24 10:19 | 02/05/24 11:23 | 1 |
| m-Xylene & p-Xylene | <0.00101 | U | 0.00400 | 0.00101 | mg/Kg | | 02/01/24 10:19 | 02/05/24 11:23 | 1 |
| o-Xylene | <0.000344 | U | 0.00200 | 0.000344 | mg/Kg | | 02/01/24 10:19 | 02/05/24 11:23 | 1 |
| Xylenes, Total | <0.00101 | U | 0.00400 | 0.00101 | mg/Kg | | 02/01/24 10:19 | 02/05/24 11:23 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *76* | | *70 - 130* | *02/01/24 10:19* | *02/05/24 11:23* | *1* |
| *1,4-Difluorobenzene (Surr)* | *77* | | *70 - 130* | *02/01/24 10:19* | *02/05/24 11:23* | *1* |

**Lab Sample ID: MB 880-72362/5-A**
**Matrix: Solid**
**Analysis Batch: 72315**

**Client Sample ID: Method Blank**
**Prep Type: Total/NA**
**Prep Batch: 72362**

| Analyte | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed | Dil Fac |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.000385 | U | 0.00200 | 0.000385 | mg/Kg | | 02/05/24 11:33 | 02/05/24 22:36 | 1 |
| Toluene | <0.000456 | U | 0.00200 | 0.000456 | mg/Kg | | 02/05/24 11:33 | 02/05/24 22:36 | 1 |
| Ethylbenzene | <0.000565 | U | 0.00200 | 0.000565 | mg/Kg | | 02/05/24 11:33 | 02/05/24 22:36 | 1 |
| m-Xylene & p-Xylene | <0.00101 | U | 0.00400 | 0.00101 | mg/Kg | | 02/05/24 11:33 | 02/05/24 22:36 | 1 |
| o-Xylene | <0.000344 | U | 0.00200 | 0.000344 | mg/Kg | | 02/05/24 11:33 | 02/05/24 22:36 | 1 |
| Xylenes, Total | <0.00101 | U | 0.00400 | 0.00101 | mg/Kg | | 02/05/24 11:33 | 02/05/24 22:36 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *73* | | *70 - 130* | *02/05/24 11:33* | *02/05/24 22:36* | *1* |
| *1,4-Difluorobenzene (Surr)* | *80* | | *70 - 130* | *02/05/24 11:33* | *02/05/24 22:36* | *1* |

**Lab Sample ID: LCS 880-72362/1-A**
**Matrix: Solid**
**Analysis Batch: 72315**

**Client Sample ID: Lab Control Sample**
**Prep Type: Total/NA**
**Prep Batch: 72362**

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|
| Benzene | 0.100 | 0.08244 | | mg/Kg | | 82 | 70 - 130 |
| Toluene | 0.100 | 0.09597 | | mg/Kg | | 96 | 70 - 130 |
| Ethylbenzene | 0.100 | 0.1204 | | mg/Kg | | 120 | 70 - 130 |
| m-Xylene & p-Xylene | 0.200 | 0.2275 | | mg/Kg | | 114 | 70 - 130 |
| o-Xylene | 0.100 | 0.1104 | | mg/Kg | | 110 | 70 - 130 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *110* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *92* | | *70 - 130* |

**Lab Sample ID: LCSD 880-72362/2-A**
**Matrix: Solid**
**Analysis Batch: 72315**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 72362**

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.100 | 0.09873 | | mg/Kg | | 99 | 70 - 130 | 18 | 35 |

# QC Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 57

Job ID: 880-38636-1
SDG: Lovington, NM

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

**Lab Sample ID: LCSD 880-72362/2-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 72315** — **Prep Batch: 72362**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Toluene | | | 0.100 | 0.1077 | | mg/Kg | | 108 | 70 - 130 | 11 | 35 |
| Ethylbenzene | | | 0.100 | 0.1382 | *+ | mg/Kg | | 138 | 70 - 130 | 14 | 35 |
| m-Xylene & p-Xylene | | | 0.200 | 0.2649 | *+ | mg/Kg | | 132 | 70 - 130 | 15 | 35 |
| o-Xylene | | | 0.100 | 0.1288 | | mg/Kg | | 129 | 70 - 130 | 15 | 35 |

| *Surrogate* | *LCSD %Recovery* | *LCSD Qualifier* | *Limits* |
|---|---|---|---|
| *4-Bromofluorobenzene (Surr)* | *129* | | *70 - 130* |
| *1,4-Difluorobenzene (Surr)* | *97* | | *70 - 130* |

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

**Lab Sample ID: MB 870-17905/3-A** — **Client Sample ID: Method Blank**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 17969** — **Prep Batch: 17905**

| 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 | | 01/30/24 11:32 | 02/05/24 15:43 | 1 |
| Diesel Range Organics (Over C10-C28) | <25.0 | U | 50.0 | 25.0 | mg/Kg | | 01/30/24 11:32 | 02/05/24 15:43 | 1 |
| OII Range Organics (Over C28-C36) | <25.0 | U | 50.0 | 25.0 | mg/Kg | | 01/30/24 11:32 | 02/05/24 15:43 | 1 |

| *Surrogate* | *MB %Recovery* | *MB Qualifier* | *Limits* | *Prepared* | *Analyzed* | *Dil Fac* |
|---|---|---|---|---|---|---|
| *1-Chlorooctane* | *122* | | *70 - 130* | *01/30/24 11:32* | *02/05/24 15:43* | *1* |
| *o-Terphenyl* | *128* | | *70 - 130* | *01/30/24 11:32* | *02/05/24 15:43* | *1* |

**Lab Sample ID: LCS 870-17905/1-A** — **Client Sample ID: Lab Control Sample**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 17969** — **Prep Batch: 17905**

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1020 | 1174 | | mg/Kg | | 115 | 70 - 130 |
| Diesel Range Organics (Over C10-C28) | | | 1010 | 1217 | | mg/Kg | | 120 | 70 - 130 |

| *Surrogate* | *LCS %Recovery* | *LCS Qualifier* | *Limits* |
|---|---|---|---|
| *1-Chlorooctane* | *108* | | *70 - 130* |
| *o-Terphenyl* | *125* | | *70 - 130* |

**Lab Sample ID: LCSD 870-17905/2-A** — **Client Sample ID: Lab Control Sample Dup**
**Matrix: Solid** — **Prep Type: Total/NA**
**Analysis Batch: 17969** — **Prep Batch: 17905**

| Analyte | | | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO)-C6-C10 | | | 1020 | 906.0 | *1 | mg/Kg | | 89 | 70 - 130 | 26 | 20 |
| Diesel Range Organics (Over C10-C28) | | | 1010 | 1213 | | mg/Kg | | 120 | 70 - 130 | 0 | 20 |

Eurofins Midland

# QC Sample Results

Client: ARCADIS US Inc
Project/Site: WLU 57

Job ID: 880-38636-1
SDG: Lovington, NM

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

**Lab Sample ID: LCSD 870-17905/2-A**
**Matrix: Solid**
**Analysis Batch: 17969**

**Client Sample ID: Lab Control Sample Dup**
**Prep Type: Total/NA**
**Prep Batch: 17905**

| Surrogate | LCSD %Recovery | LCSD Qualifier | Limits |
|---|---|---|---|
| 1-Chlorooctane | 112 | | 70 - 130 |
| o-Terphenyl | 126 | | 70 - 130 |

## Method: 300.0 - Anions, Ion Chromatography

**Lab Sample ID: MB 880-71925/1-A**
**Matrix: Solid**
**Analysis Batch: 71958**

**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 02:50 | 1 |

**Lab Sample ID: LCS 880-71925/2-A**
**Matrix: Solid**
**Analysis Batch: 71958**

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

| Analyte | | | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | | | 250 | 260.5 | | mg/Kg | | 104 | 90 - 110 | | |

**Lab Sample ID: LCSD 880-71925/3-A**
**Matrix: Solid**
**Analysis Batch: 71958**

**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 | 261.1 | | mg/Kg | | 104 | 90 - 110 | 0 | 20 |

**Lab Sample ID: 880-38636-7 MS**
**Matrix: Solid**
**Analysis Batch: 71958**

**Client Sample ID: SB-18-S-1'-240124**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec Limits | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 53.1 | | 249 | 305.7 | | mg/Kg | | 101 | 90 - 110 | | |

**Lab Sample ID: 880-38636-7 MSD**
**Matrix: Solid**
**Analysis Batch: 71958**

**Client Sample ID: SB-18-S-1'-240124**
**Prep Type: Soluble**

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 53.1 | | 249 | 305.6 | | mg/Kg | | 101 | 90 - 110 | 0 | 20 |

# QC Association Summary

Client: ARCADIS US Inc
Project/Site: WLU 57

Job ID: 880-38636-1
SDG: Lovington, NM

## GC VOA

### Prep Batch: 72103

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| MB 880-72103/5-A | Method Blank | Total/NA | Solid | 5035 | |

### Analysis Batch: 72315

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-38636-2 | SB-15-S-2'-240124 | Total/NA | Solid | 8021B | 72362 |
| 880-38636-4 | SB-16-S-2'-240124 | Total/NA | Solid | 8021B | 72362 |
| 880-38636-6 | SB-17-S-2'-240124 | Total/NA | Solid | 8021B | 72362 |
| 880-38636-7 | SB-18-S-1'-240124 | Total/NA | Solid | 8021B | 72362 |
| MB 880-72103/5-A | Method Blank | Total/NA | Solid | 8021B | 72103 |
| MB 880-72362/5-A | Method Blank | Total/NA | Solid | 8021B | 72362 |
| LCS 880-72362/1-A | Lab Control Sample | Total/NA | Solid | 8021B | 72362 |
| LCSD 880-72362/2-A | Lab Control Sample Dup | Total/NA | Solid | 8021B | 72362 |

### Prep Batch: 72362

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-38636-2 | SB-15-S-2'-240124 | Total/NA | Solid | 5030B | |
| 880-38636-4 | SB-16-S-2'-240124 | Total/NA | Solid | 5030B | |
| 880-38636-6 | SB-17-S-2'-240124 | Total/NA | Solid | 5030B | |
| 880-38636-7 | SB-18-S-1'-240124 | Total/NA | Solid | 5030B | |
| MB 880-72362/5-A | Method Blank | Total/NA | Solid | 5030B | |
| LCS 880-72362/1-A | Lab Control Sample | Total/NA | Solid | 5030B | |
| LCSD 880-72362/2-A | Lab Control Sample Dup | Total/NA | Solid | 5030B | |

### Analysis Batch: 72513

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-38636-2 | SB-15-S-2'-240124 | Total/NA | Solid | Total BTEX | |
| 880-38636-4 | SB-16-S-2'-240124 | Total/NA | Solid | Total BTEX | |
| 880-38636-6 | SB-17-S-2'-240124 | Total/NA | Solid | Total BTEX | |
| 880-38636-7 | SB-18-S-1'-240124 | Total/NA | Solid | Total BTEX | |

## GC Semi VOA

### Prep Batch: 17905

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-38636-2 | SB-15-S-2'-240124 | Total/NA | Solid | 8015NM Prep | |
| 880-38636-4 | SB-16-S-2'-240124 | Total/NA | Solid | 8015NM Prep | |
| 880-38636-6 | SB-17-S-2'-240124 | Total/NA | Solid | 8015NM Prep | |
| 880-38636-7 | SB-18-S-1'-240124 | Total/NA | Solid | 8015NM Prep | |
| MB 870-17905/3-A | Method Blank | Total/NA | Solid | 8015NM Prep | |
| LCS 870-17905/1-A | Lab Control Sample | Total/NA | Solid | 8015NM Prep | |
| LCSD 870-17905/2-A | Lab Control Sample Dup | Total/NA | Solid | 8015NM Prep | |

### Analysis Batch: 17969

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-38636-2 | SB-15-S-2'-240124 | Total/NA | Solid | 8015B NM | 17905 |
| 880-38636-4 | SB-16-S-2'-240124 | Total/NA | Solid | 8015B NM | 17905 |
| 880-38636-6 | SB-17-S-2'-240124 | Total/NA | Solid | 8015B NM | 17905 |
| 880-38636-7 | SB-18-S-1'-240124 | Total/NA | Solid | 8015B NM | 17905 |
| MB 870-17905/3-A | Method Blank | Total/NA | Solid | 8015B NM | 17905 |
| LCS 870-17905/1-A | Lab Control Sample | Total/NA | Solid | 8015B NM | 17905 |
| LCSD 870-17905/2-A | Lab Control Sample Dup | Total/NA | Solid | 8015B NM | 17905 |

# QC Association Summary

Client: ARCADIS US Inc
Project/Site: WLU 57

Job ID: 880-38636-1
SDG: Lovington, NM

## GC Semi VOA

### Analysis Batch: 17982

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-38636-2 | SB-15-S-2'-240124 | Total/NA | Solid | 8015 NM | |
| 880-38636-4 | SB-16-S-2'-240124 | Total/NA | Solid | 8015 NM | |
| 880-38636-6 | SB-17-S-2'-240124 | Total/NA | Solid | 8015 NM | |
| 880-38636-7 | SB-18-S-1'-240124 | Total/NA | Solid | 8015 NM | |

## HPLC/IC

### Leach Batch: 71925

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-38636-1 | SB-15-S-1'-240124 | Soluble | Solid | DI Leach | |
| 880-38636-2 | SB-15-S-2'-240124 | Soluble | Solid | DI Leach | |
| 880-38636-3 | SB-16-S-1'-240124 | Soluble | Solid | DI Leach | |
| 880-38636-4 | SB-16-S-2'-240124 | Soluble | Solid | DI Leach | |
| 880-38636-5 | SB-17-S-1'-240124 | Soluble | Solid | DI Leach | |
| 880-38636-6 | SB-17-S-2'-240124 | Soluble | Solid | DI Leach | |
| 880-38636-7 | SB-18-S-1'-240124 | Soluble | Solid | DI Leach | |
| 880-38636-8 | SB-18-S-2'-240124 | Soluble | Solid | DI Leach | |
| MB 880-71925/1-A | Method Blank | Soluble | Solid | DI Leach | |
| LCS 880-71925/2-A | Lab Control Sample | Soluble | Solid | DI Leach | |
| LCSD 880-71925/3-A | Lab Control Sample Dup | Soluble | Solid | DI Leach | |
| 880-38636-7 MS | SB-18-S-1'-240124 | Soluble | Solid | DI Leach | |
| 880-38636-7 MSD | SB-18-S-1'-240124 | Soluble | Solid | DI Leach | |

### Analysis Batch: 71958

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---|---|---|---|---|---|
| 880-38636-1 | SB-15-S-1'-240124 | Soluble | Solid | 300.0 | 71925 |
| 880-38636-2 | SB-15-S-2'-240124 | Soluble | Solid | 300.0 | 71925 |
| 880-38636-3 | SB-16-S-1'-240124 | Soluble | Solid | 300.0 | 71925 |
| 880-38636-4 | SB-16-S-2'-240124 | Soluble | Solid | 300.0 | 71925 |
| 880-38636-5 | SB-17-S-1'-240124 | Soluble | Solid | 300.0 | 71925 |
| 880-38636-6 | SB-17-S-2'-240124 | Soluble | Solid | 300.0 | 71925 |
| 880-38636-7 | SB-18-S-1'-240124 | Soluble | Solid | 300.0 | 71925 |
| 880-38636-8 | SB-18-S-2'-240124 | Soluble | Solid | 300.0 | 71925 |
| MB 880-71925/1-A | Method Blank | Soluble | Solid | 300.0 | 71925 |
| LCS 880-71925/2-A | Lab Control Sample | Soluble | Solid | 300.0 | 71925 |
| LCSD 880-71925/3-A | Lab Control Sample Dup | Soluble | Solid | 300.0 | 71925 |
| 880-38636-7 MS | SB-18-S-1'-240124 | Soluble | Solid | 300.0 | 71925 |
| 880-38636-7 MSD | SB-18-S-1'-240124 | Soluble | Solid | 300.0 | 71925 |

# Lab Chronicle

Client: ARCADIS US Inc
Project/Site: WLU 57

Job ID: 880-38636-1
SDG: Lovington, NM

## Client Sample ID: SB-15-S-1'-240124
**Date Collected: 01/24/24 08:30**
**Date Received: 01/30/24 08:38**

## Lab Sample ID: 880-38636-1
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 5.05 g | 50 mL | 71925 | 01/30/24 10:30 | SMC | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 71958 | 01/31/24 08:40 | CH | EET MID |

## Client Sample ID: SB-15-S-2'-240124
**Date Collected: 01/24/24 08:40**
**Date Received: 01/30/24 08:38**

## Lab Sample ID: 880-38636-2
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5030B | | | 5.01 g | 5 mL | 72362 | 02/05/24 11:33 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 72315 | 02/06/24 03:27 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 72513 | 02/06/24 03:27 | SM | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 17982 | 02/05/24 18:50 | CC | EET DAL |
| Total/NA | Prep | 8015NM Prep | | | 10.09 g | 10 mL | 17905 | 01/30/24 11:32 | WP | EET DAL |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 17969 | 02/05/24 18:50 | WP | EET DAL |
| Soluble | Leach | DI Leach | | | 5.05 g | 50 mL | 71925 | 01/30/24 10:30 | SMC | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 71958 | 01/31/24 08:46 | CH | EET MID |

## Client Sample ID: SB-16-S-1'-240124
**Date Collected: 01/24/24 09:00**
**Date Received: 01/30/24 08:38**

## Lab Sample ID: 880-38636-3
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 4.97 g | 50 mL | 71925 | 01/30/24 10:30 | SMC | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 71958 | 01/31/24 04:19 | CH | EET MID |

## Client Sample ID: SB-16-S-2'-240124
**Date Collected: 01/24/24 09:10**
**Date Received: 01/30/24 08:38**

## Lab Sample ID: 880-38636-4
**Matrix: Solid**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Total/NA | Prep | 5030B | | | 4.99 g | 5 mL | 72362 | 02/05/24 11:33 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 72315 | 02/06/24 03:48 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 72513 | 02/06/24 03:48 | SM | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 17982 | 02/05/24 19:11 | CC | EET DAL |
| Total/NA | Prep | 8015NM Prep | | | 9.97 g | 10 mL | 17905 | 01/30/24 11:32 | WP | EET DAL |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 17969 | 02/05/24 19:11 | WP | EET DAL |
| Soluble | Leach | DI Leach | | | 4.99 g | 50 mL | 71925 | 01/30/24 10:30 | SMC | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 71958 | 01/31/24 04:26 | CH | EET MID |

# Lab Chronicle

Client: ARCADIS US Inc
Project/Site: WLU 57

Job ID: 880-38636-1
SDG: Lovington, NM

## Client Sample ID: SB-17-S-1'-240124

**Lab Sample ID: 880-38636-5**
**Matrix: Solid**
**Date Collected: 01/24/24 09:30**
**Date Received: 01/30/24 08:38**

| Prep Type | Batch Type | Batch Method | Run | Dil Factor | Initial Amount | Final Amount | Batch Number | Prepared or Analyzed | Analyst | Lab |
|---|---|---|---|---|---|---|---|---|---|---|
| Soluble | Leach | DI Leach | | | 5.03 g | 50 mL | 71925 | 01/30/24 10:30 | SMC | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 71958 | 01/31/24 04:33 | CH | EET MID |

## Client Sample ID: SB-17-S-2'-240124

**Lab Sample ID: 880-38636-6**
**Matrix: Solid**
**Date Collected: 01/24/24 09:40**
**Date Received: 01/30/24 08:38**

| 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 | 72362 | 02/05/24 11:33 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 72315 | 02/06/24 04:08 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 72513 | 02/06/24 04:08 | SM | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 17982 | 02/05/24 19:32 | CC | EET DAL |
| Total/NA | Prep | 8015NM Prep | | | 9.92 g | 10 mL | 17905 | 01/30/24 11:32 | WP | EET DAL |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 17969 | 02/05/24 19:32 | WP | EET DAL |
| Soluble | Leach | DI Leach | | | 5.01 g | 50 mL | 71925 | 01/30/24 10:30 | SMC | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 71958 | 01/31/24 04:40 | CH | EET MID |

## Client Sample ID: SB-18-S-1'-240124

**Lab Sample ID: 880-38636-7**
**Matrix: Solid**
**Date Collected: 01/24/24 10:10**
**Date Received: 01/30/24 08:38**

| 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 | 72362 | 02/05/24 11:33 | MNR | EET MID |
| Total/NA | Analysis | 8021B | | 1 | 5 mL | 5 mL | 72315 | 02/06/24 04:29 | MNR | EET MID |
| Total/NA | Analysis | Total BTEX | | 1 | | | 72513 | 02/06/24 04:29 | SM | EET MID |
| Total/NA | Analysis | 8015 NM | | 1 | | | 17982 | 02/05/24 19:52 | CC | EET DAL |
| Total/NA | Prep | 8015NM Prep | | | 9.93 g | 10 mL | 17905 | 01/30/24 11:32 | WP | EET DAL |
| Total/NA | Analysis | 8015B NM | | 1 | 1 uL | 1 uL | 17969 | 02/05/24 19:52 | WP | EET DAL |
| Soluble | Leach | DI Leach | | | 5.02 g | 50 mL | 71925 | 01/30/24 10:30 | SMC | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 71958 | 01/31/24 04:46 | CH | EET MID |

## Client Sample ID: SB-18-S-2'-240124

**Lab Sample ID: 880-38636-8**
**Matrix: Solid**
**Date Collected: 01/24/24 10:00**
**Date Received: 01/30/24 08:38**

| 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 | 71925 | 01/30/24 10:30 | SMC | EET MID |
| Soluble | Analysis | 300.0 | | 1 | | | 71958 | 01/31/24 05:07 | 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 57

Job ID: 880-38636-1
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 57

Job ID: 880-38636-1
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 57

Job ID: 880-38636-1
SDG: Lovington, NM

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 880-38636-1 | SB-15-S-1'-240124 | Solid | 01/24/24 08:30 | 01/30/24 08:38 |
| 880-38636-2 | SB-15-S-2'-240124 | Solid | 01/24/24 08:40 | 01/30/24 08:38 |
| 880-38636-3 | SB-16-S-1'-240124 | Solid | 01/24/24 09:00 | 01/30/24 08:38 |
| 880-38636-4 | SB-16-S-2'-240124 | Solid | 01/24/24 09:10 | 01/30/24 08:38 |
| 880-38636-5 | SB-17-S-1'-240124 | Solid | 01/24/24 09:30 | 01/30/24 08:38 |
| 880-38636-6 | SB-17-S-2'-240124 | Solid | 01/24/24 09:40 | 01/30/24 08:38 |
| 880-38636-7 | SB-18-S-1'-240124 | Solid | 01/24/24 10:10 | 01/30/24 08:38 |
| 880-38636-8 | SB-18-S-2'-240124 | Solid | 01/24/24 10:00 | 01/30/24 08:38 |

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

# Chain of Custody Record

880-38636 Chain of Custody

nent Testing

| Client Information | Sampler: Heath Boyd | Lab PM: Builes, John | Ca: | |
|---|---|---|---|---|
| Client Contact: Mr Morgan Jordan | Phone: 575-942-0292 | E-Mail: John.Builes@et.eurofinsus.com | State of Origin: NM | Page: Page 5 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: WLU 57 | Project #: ~~88002020~~ 30209670 | | | |
| Site: Lovington, NM | SSOW#: | | | |

**Analysis Requested**

**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:

| 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-15-S-1'-240124 | 1/24/24 | 830 | G | Solid | | | | X | | |
| SB-15-S-2'-240124 | | 840 | | Solid | | | X | X | | |
| SB-16-S-1'-240124 | | 900 | | Solid | | | | X | | |
| SB-16-S-2'-240124 | | 910 | | Solid | | | X | X | | |
| SB-17-S-1'-240124 | | 930 | | Solid | | | | X | | |
| SB-17-S-2'-240124 | | 940 | | Solid | | | X | X | | |
| SB-18-S-2'-240124 | | 1010 | | Solid | | | X | X | | |
| SB-18-S-1'-240124 | X | 1000 | X | Solid | | | | X | | |
| | | | | Solid | | | | | | |
| | | | | Solid | | | | | | |
| | | | | Solid | | | | | | |

**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 |
|---|---|---|---|---|---|---|
| | | 1/25/24 1500 | Arcadis | Dathne Gonzales | 1/25/24 | |
| | | | | | 1/30/24 | |
| | | | | | 838 | |

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

Cooler Temperature(s) °C and Other Remarks: 3.5/3.7

Ver 01/16/2019

**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 #: 880-38636-1 |
| Address: 9701 Harry Hines Blvd, , | Due Date Requested: 2/5/2024 | | | |
| City: Dallas | TAT Requested (days): | | | |
| State, Zip: TX, 75220 | | | | |
| Phone: 214-902-0300(Tel) | PO #: | | | |
| Email: | WO #: | | | |
| Project Name: WLU 57 | Project #: 88002020 | | | |
| Site: | 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 - 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-15-S-2'-240124 (880-38636-2) | 1/24/24 | 08:40 Central | | Solid | | | X | X | 1 | |
| SB-16-S-2'-240124 (880-38636-4) | 1/24/24 | 09:10 Central | | Solid | | | X | X | 1 | |
| SB-17-S-2'-240124 (880-38636-6) | 1/24/24 | 09:40 Central | | Solid | | | X | X | 1 | |
| SB-18-S-1'-240124 (880-38636-7) | 1/24/24 | 10:10 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

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 #: 880-38636-1 |
| Address: 9701 Harry Hines Blvd, , | Due Date Requested: 2/5/2024 | | | |
| City: Dallas | TAT Requested (days): | | | |
| State, Zip: TX, 75220 | | | | |
| Phone: 214-902-0300(Tel) | PO #: | | | |
| Email: | WO #: | | | |
| Project Name: WLU 57 | 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-15-S-2'-240124 (880-38636-2) | 1/24/24 | 08:40 Central | | Solid | | | X | X | 1 | |
| SB-16-S-2'-240124 (880-38636-4) | 1/24/24 | 09:10 Central | | Solid | | | X | X | 1 | |
| SB-17-S-2'-240124 (880-38636-6) | 1/24/24 | 09:40 Central | | Solid | | | X | X | 1 | |
| SB-18-S-1'-240124 (880-38636-7) | 1/24/24 | 10:10 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: AT Eurofins | Date/Time: 2/02/24 1100 | Company | Received by: Eurofins | Date/Time: | Company | |
| Relinquished by: Eurofins | 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

# Login Sample Receipt Checklist

Client: ARCADIS US Inc

Job Number: 880-38636-1
SDG Number: Lovington, NM

**Login Number: 38636**
**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: 880-38636-1
SDG Number: Lovington, NM

**Login Number: 38636**
**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 | |

Arcadis U.S., Inc.
10205 Westheimer Road, Suite 800
Houston
Texas 77042
Phone: 713 953 4800
Fax: 713 977 4620
www.arcadis.com

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



## QUESTIONS

| | |
|---|---|
| Operator:<br>CHEVRON U S A INC<br>6301 Deauville Blvd<br>Midland, TX 79706 | OGRID:<br>4323 |
| | Action Number:<br>445308 |
| | Action Type:<br>[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan) |

**QUESTIONS**

| **Prerequisites** | |
|---|---|
| Incident ID (n#) | **nPLM0830342476** |
| Incident Name | **NPLM0830342476 WEST LOVINGTON UNIT #057 @ 30-025-21885** |
| Incident Type | **Other** |
| Incident Status | **Remediation Plan Received** |
| Incident Well | **[30-025-21885] WEST LOVINGTON UNIT #057** |

| **Location of Release Source** | |
|---|---|
| *Please answer all the questions in this group.* | |
| Site Name | WEST LOVINGTON UNIT #057 |
| Date Release Discovered | 01/01/1999 |
| Surface Owner | Private |

| **Incident Details** | |
|---|---|
| *Please answer all the questions in this group.* | |
| Incident Type | Other |
| 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 | Yes |

| **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 | *Not answered.* |
| Is the concentration of chloride in the produced water >10,000 mg/l | *Not answered.* |
| Condensate Released (bbls) Details | *Not answered.* |
| Natural Gas Vented (Mcf) Details | *Not answered.* |
| Natural Gas Flared (Mcf) Details | *Not answered.* |
| Other Released Details | Cause: Other \| Unknown \| Unknown \| Released: 0 BBL \| Recovered: 0 BBL \| Lost: 0 BBL. |
| 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:<br>CHEVRON U S A INC<br>6301 Deauville Blvd<br>Midland, TX 79706 | OGRID:<br>4323 |
| | Action Number:<br>445308 |
| | Action Type:<br>[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 | **Yes** |
| Reasons why this would be considered a submission for a notification of a major release | **From paragraph A. "Major release" determine using:**<br>**(4) a release of a volume that may with reasonable probability be detrimental to fresh water.** |
| *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 | n/a |
| *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<br>Title: Lead Environmental Specialist<br>Email: Chrisbrand@chevron.com<br>Date: 04/23/2025 |

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## QUESTIONS (continued)

| | |
|---|---|
| Operator:<br>CHEVRON U S A INC<br>6301 Deauville Blvd<br>Midland, TX 79706 | OGRID:<br>4323 |
| | Action Number:<br>445308 |
| | Action Type:<br>[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan) |

**QUESTIONS**

| **Site Characterization** | |
|---|---|
| *Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.* | |
| What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs) | Between 51 and 75 (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 1000 (ft.) and ½ (mi.) |
| An occupied permanent residence, school, hospital, institution, or church | Between 1 and 5 (mi.) |
| A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes | Between 1 and 5 (mi.) |
| Any other fresh water well or spring | Between 1000 (ft.) and ½ (mi.) |
| Incorporated municipal boundaries or a defined municipal fresh water well field | Between 1 and 5 (mi.) |
| A wetland | Between 1000 (ft.) and ½ (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 | No |

| **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) | 917 |
| TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M) | 1240 |
| GRO+DRO (EPA SW-846 Method 8015M) | 947 |
| 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 | 05/12/2025 |
| On what date will (or did) the final sampling or liner inspection occur | 06/09/2025 |
| On what date will (or was) the remediation complete(d) | 06/13/2025 |
| What is the estimated surface area (in square feet) that will be reclaimed | 10500 |
| What is the estimated volume (in cubic yards) that will be reclaimed | 1600 |
| What is the estimated surface area (in square feet) that will be remediated | 10500 |
| What is the estimated volume (in cubic yards) that will be remediated | 1600 |
| *These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.* | |
| *The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.* | |

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## QUESTIONS (continued)

| | |
|---|---|
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| | Action Number:<br>445308 |
| | Action Type:<br>[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan) |

**QUESTIONS**

| | |
|---|---|
| **Remediation Plan (continued)** | |
| *Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.* | |
| **This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:** | |
| *(Select all answers below that apply.)* | |
| (Ex Situ) Excavation and **off-site** disposal (i.e. dig and haul, hydrovac, etc.) | Yes |
| Which OCD approved facility will be used for **off-site** disposal | GANDY MARLEY LANDFARM/LANDFILL [fEEM0112338393] |
| **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<br>Title: Lead Environmental Specialist<br>Email: Chrisbrand@chevron.com<br>Date: 04/23/2025 |
| *The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.* | |

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## QUESTIONS (continued)

| | |
|---|---|
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**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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| | Action Number:<br>445308 |
| | Action Type:<br>[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan) |

**QUESTIONS**

| **Sampling Event Information** | |
|---|---|
| Last sampling notification (C-141N) recorded | **460121** |
| Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC | **05/13/2025** |
| What was the (estimated) number of samples that were to be gathered | **27** |
| What was the sampling surface area in square feet | **10500** |

| **Remediation Closure Request** | |
|---|---|
| *Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.* | |
| Requesting a remediation closure approval with this submission | No |

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## CONDITIONS

| | |
|---|---|
| Operator:<br>CHEVRON U S A INC<br>6301 Deauville Blvd<br>Midland, TX 79706 | OGRID:<br>4323 |
| | Action Number:<br>445308 |
| | Action Type:<br>[C-141] Site Char./Remediation Plan C-141 (C-141-v-Plan) |

**CONDITIONS**

| Created By | Condition | Condition Date |
|---|---|---|
| nvelez | Remediation plan is approved as written except with the following condition; 1. Alternative sampling plan request not to exceed 400 square feet (ft.2) for each five (5) point composite (5pc) from the excavation floor per 19.15.29.12D (1b) NMAC is approved. Sidewall confirmation sample(s) will abide at 200 ft.2 for each 5pc per 19.15.29.12D (1c) NMAC. All other provisions addressed in 19.15.29.12D NMAC remain in effect. 2. Chevron has 90-days (August 7, 2025) to submit to OCD its appropriate or final remediation closure report. | 5/9/2025 |