Jason Michelson
Operations Lead, Portfolio Operations Central

July 12, 2024

Ms. Ashley Maxwell
Environmental Specialist
New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: Bass #4
Case No. 1RP-1196
Incident No. nPAC0704334283
Remediation Summary and Soil Closure Request Report

Ms. Maxwell,

Please find enclosed for your files, copies of the following:

- Bass # 4 Remediation Summary and Soil Closure Request Report

Arcadis U.S., Inc. (Arcadis) has prepared this Remediation Summary and Soil Closure Request Report on behalf of Chevron U.S.A. Inc., for soil remediation activities at the Bass #4 (Site), located in Lea County, New Mexico. Please do not hesitate to call Scott Foord with Arcadis at 713-953-4853 or myself at 832-854-5601, should you have any questions.

Respectfully,

Jason Michelson

Encl. Bass #4 Remediation Summary and Soil Closure Request Report

C.C. Amy Barnhill, Chevron/MCBU

Jason Michelson
Operations Lead Central
Portfolio Operations - Central
1500 Louisiana Street, Houston, TX 77002
Tel 832 854 5601 Mobile 281 660 8564
jmichelson@chevron.com

ARCADIS

Chevron U.S.A., Inc.

Remediation Summary and Soil Closure Request Report

Bass #4

Case No. 1RP-1196
Incident No. nPAC0704334283

July 12, 2024

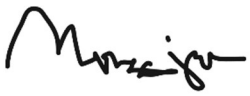
Remediation Summary and Soil Closure Request Report

Bass #4
Case No. 1RP-1196
Incident No. nPAC0704334283

July 12, 2024

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

Prepared For:
Mid-Continent Business Unit
Chevron North America Exploration and Production
1400 Smith Street, Room 40096
Houston, TX 77002



Morgan Jordan
Project Manager

Scott Foord, PG
Program Manager

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Appendices

1 Introduction

Arcadis U.S., Inc. (Arcadis) has prepared this Remediation Summary and Soil Closure Request Report (Report), on behalf of Chevron U.S.A., Inc. (Chevron), for the release site known as the Bass #4 (Site) located at coordinates: 32.538221, -103.698416.

2 Project Summary

The Site is located approximately 18 miles southwest of Eunice, in Unit G, Section 30, Township 20 South, Range 33 East, Lea County, New Mexico. As of October 2023, the site is currently active. The Site is located on New Mexico State Land; the lease is currently operated by Chevron U.S.A., Inc. A Site Location Map is included as **Figure 1**.

On January 27, 2007, a coupling on the water transfer pump failed causing the water tank to overflow and release approximately 5.5 barrels (bbls) of produced water and oil at the Site. Oil was reportedly contained within the dike area covering approximately 120 square feet (sq ft). According to the Initial C-141 Form submitted on January 27, 2007, a vacuum truck was dispatched upon discovery and recovered approximately 5 bbls of standing fluid. The Initial C-141 Form was approved with conditions and assigned remediation permit number 1RP-1196 and incident number nPAC0704334283. The Initial C-141 Form is included as **Appendix A**.

According to the New Mexico Office of the State Engineers (NMOSE) database, there is a well log on file for POD # CP 01090 POD 1 from 2022 stating an exploratory soil boring was drilled to 55 ft below ground surface (bgs) approximately 0.25 miles south of the Site and no groundwater was encountered. The well log is included as **Appendix B**.

On August 15, 2023, Chevron submitted a Remediation and Restoration Work Plan to the New Mexico Oil Conservation Division (NMOCD) and New Mexico State Land Office (NMSLO), and on August 16, 2023 the NMOCD approved the Work Plan. The approved Work Plan is included as **Appendix C**.

3 Pre-Remediation Soil Assessment and Site Characterization

In 2020 Arcadis personnel collected soil samples from six locations (SB-1 through SB-6) within the release area (bermed tank battery). The soil samples were collected with a hand auger at depths ranging from the surface to approximately 4 ft bgs. Hand auger refusal was encountered within all boring locations. The soil samples collected were analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX) by United States Environmental Protection Agency (USEPA) Method 8021B; total petroleum hydrocarbons (TPH) including diesel range organics (DRO), gasoline range organics (GRO), and oil range organics (ORO) by USEPA Method 8015; and chloride by USEPA Method 300. TPH exceeded the NMAC reclamation standard for soil within the first 4 feet of 100 milligrams per kilogram (mg/kg) at shallow depths (0.25 - 0.50 ft bgs) at five sample locations SB-1 through SB-4 and SB-6.

4 Closure Criteria for Soils Impacted by a Release

The soil analytical results were compared to the revised New Mexico Administration Code (NMAC) screening levels for restoration standards specified in NMMAC 19.15.29.13 D (1).

Constituent	Limit (mg/kg)
Benzene	10 mg/kg
BTEX	50 mg/kg
TPH (GRO+DRO+MRO)	100 mg/kg
Chloride	600 mg/kg

5 Remediation Activities Summary

5.1 Soil Removal

Soil remediation activities were performed by Arcadis from October 16 through 19, 2023. PID readings, chloride field screening utilizing Hach® test strip results, and analytical results from the pre-remediation assessment activities were evaluated prior to and during remediation activities to determine the horizontal and vertical extent to the surface affected by the spill.

The western excavated area covered an approximate 280 square foot area on west side of tank battery. The center excavated area covered an approximate 125 square foot area on north side of the tank battery. The eastern excavated area covered an approximate 150 square foot area on the east side of tank battery. Excavation activities were conducted from the surface to a maximum depth of approximately 1 foot bgs within the release area. Approximately 18 cubic yards of impacted soil was excavated, stockpiled on-site adjacent to the release area on 20 mil plastic sheeting, and covered with 20 mil plastic sheeting during remediation activities prior to disposal activities. The limits of the excavations are presented on **Figure 2**.

The stockpiled soil was transported off site and disposed of at the Lea Land Landfill facility located at Mile Marker 64, US Highway 62/180 East, Carlsbad, New Mexico as Class 2 non-hazardous material on October 27, 2023. Copies of disposal manifests can be provided upon request. Photographic documentation of the excavation activities is included in **Appendix D**.

5.2 Excavation Confirmation Sampling Activities

Arcadis, personnel conducted excavation confirmation soil sampling activities on October 16 through 19, 2023 for laboratory analysis. These activities included collection of a total of four composite base samples (B-1 through B-4) and three composite sidewall samples (SW-1 through SW-3). All composite samples were collected at intervals to maintain an approximate 200 square foot sample space or less. Composite base samples (B-1, B-2, & B-4) and sidewall samples (SW-1 and SW-2) were determined to have concentrations greater than the applicable NMAC standards specified within 19.15.29 for Total TPH. Additional soil was excavated from those areas and composite

base samples (B-1A, B-2A, & B-4A) and sidewall samples (SW-1A and SW-2A) were subsequently collected for laboratory analyses.

The soil confirmation soil samples were collected in four-ounce jars provided by Eurofins/Xenco (Eurofins) located in Midland, Texas, then placed on ice and shipped to Eurofins to be analyzed for BTEX by USEPA Method 8021, TPH by USEPA Method 8015M for GRO, DRO, and ORO, and chloride by USEPA Method 300. Confirmation soil analytical results are shown in **Table 1**. Base composite confirmation sample locations are depicted on **Figure 2** and sidewall composite confirmation sample locations are depicted on **Figure 3**. Laboratory analytical reports are included in **Appendix E**.

5.3 BTEX

Benzene concentrations were reported below the NMAC standard of 10 mg/kg at all composite confirmation soil sample locations. BTEX concentrations were reported below the NMAC standard of 50 mg/kg at all composite confirmation soil sample locations.

5.4 TPH

Total TPH concentrations were reported below the NMAC screening standard of 100 mg/kg at all composite confirmation soil sample locations following remediation activities.

5.5 Chloride

All base and sidewall composite confirmation soil samples collected within the excavated area were below the NMAC reclamation limit of 600 mg/kg following remediation activities.

6 Restoration and Reclamation

Upon receiving laboratory analytical results from the excavation confirmation soil samples, the excavated areas were backfilled with locally sourced, non-impacted "like" material. The affected area was contoured and compacted to achieve erosion control and stability. Photographic documentation of the excavation areas following backfilling activities is included in **Appendix D**.

7 Summary

Analytical results associated with remediation activities conducted in 2023 indicate that the horizontal and vertical extent of BTEX, TPH, and chloride impact in soil above NMAC Closure Criteria have been delineated both horizontally and vertically, and impacted soil above the applicable NMAC Closure Criteria has been excavated from the release areas.

8 Soil Closure Request

Remediation activities were conducted in accordance with the NMOCD regulatory guidelines stipulated in NMAC 19.15.29. Impacted soil affected above the NMOCD Closure Criteria and/or NMOCD Reclamation Standard was

excavated and transported to an NMOCD-approved disposal facility. Laboratory analytical results from confirmation soil samples indicate concentrations of BTEX, TPH and chloride are below the NMOCD Closure Criteria in each of the submitted soil samples collected from the remediated areas.

Based on laboratory analytical results and field activities conducted to date, no additional soil assessment or remediation activities are recommended at this time for the Site. Arcadis requests closure be granted to the Bass #4 site for Case No. 1RP-1196, Incident No. nPAC0704334283.

Tables

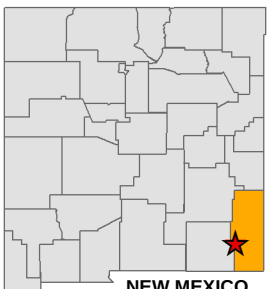
Table 1
2023 Confirmation Soil Sample Analytical Results
Bass #4
Case No. 1RP-1196, Incident No. nPAC0704334283
Eddy County, New Mexico

Location ID	Depth (Feet)	Date Collected	Soil Status	Benzene mg/kg	Total BTEX mg/kg	Total TPH mg/kg	Chloride, Dissolved mg/kg
Restoration Requirements				**10**	**50**	**100**	**600**
B-1	0.5	10/16/2023	Removed	<0.000387	<0.00102	***418***	116
B-1A	1	10/19/2023	In-Situ	<0.000383	<0.00100	93.4	81.8
B-2	0.5	10/16/2023	Removed	<0.000386	<0.00101	***570***	100
B-2A	1	10/19/2023	In-Situ	<0.000384	<0.00101	69.4	86.3
B-3	0.5	10/16/2023	In-Situ	<0.000383	<0.00101	92.6	244
B-4	0.5	10/16/2023	Removed	<0.000383	<0.00100	***105***	145
B-4A	1	10/19/2023	In-Situ	<0.000386	<0.00101	20.6 J	62.2
SW-1	0.5	10/16/2023	Removed	<0.000383	<0.00101	***443***	116
SW-1A	0.9	10/19/2023	In-Situ	<0.000383	<0.00101	66.1	95.8
SW-2	0.75	10/16/2023	Removed	<0.000383	<0.00100	***112***	215
SW-2A	0.9	10/19/2023	In-Situ	<0.000383	<0.00100	<15.2	31
SW-3	0.75	10/16/2023	In-Situ	<0.000386	<0.00101	87.9	139

Legend:
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
Analytes exceeding New Mexico Adminstration Code Standards are indicated in **bold**
'<' indicates the analyte was not detected at or above the Method Detection Limit (MDL)
mg/kg: Milligram per Kilogram

Notes:
1. Chloride analyzed by EPA Method 300
2. TPH analyzed by EPA Method 8015 M
3. BTEX analyzed by EPA Method 8260B
4. Closure Criteria New Mexico Administrative Code 19.15.29.12.E(2)

Figures



N

NOTES:
1. Datum: D_WGS_1984
2. Site Location: 32.538277, -103.698055

Chevron Environmental Management Company
Bass #4
Lea County, New Mexico

SITE LOCATION MAP

ARCADIS

FIGURE
1

P:\...T:_ENV\Chevron\Cheveron_Bass\MXD\Figure 1_Site Location Map.mxd: 12/10/2020: 12:57:03 PM

NOTES:

1. Datum: GCS_WGS_1984
2. Site Location: 103.6980555°W 32.5382777°N

Legend

- Composite Base Soil Sample
- Excavation (1 feet)

0 20 40 Feet

GRAPHIC SCALE

Chevron Environmental Management Company
Bass #4
Lea County, New Mexico

EXCAVATION BASE SOIL SAMPLE RESULTS MAP

ARCADIS | FIGURE 2

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: wberry ; Client (Project #)
T:_EHSS\ArcGIS_ProLand\ChevronBass_4\Bass_4_Closure.aprx 11/16/2023 2:53 PM

NOTES:

1. Datum: GCS_WGS_1984

2. Site Location: 103.6980555°W 32.5382777°N

Legend

- Composite Sidewall Soil Sample
- Excavation (1 feet)

0 20 40 Feet

GRAPHIC SCALE

Chevron Environmental Management Company
Bass #4
Lea County, New Mexico

EXCAVATION SIDEWALL SOIL SAMPLE RESULTS MAP

ARCADIS | FIGURE 3

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: wberry ; Client (Project #)
T:_EHSSArcGIS_ProLand\Chevron\Bass_4\Bass_4_Closure.aprx 11/16/2023 2:53 PM

Appendix A

Initial C-141 Form Incident # nPAC0704334283

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Chevron Midcontinent LP	Contact Larry Ridenour
Address HCR 60 Box 423 Lovington, NM 88260	Telephone No. 505-396-4414 x102
Facility Name Bass #4	Facility Type tank battery

Surface Owner State	Mineral Owner State	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	30	20S	33E	1700	N	1815	East	Lea

Latitude 32 deg 32 min 17.8 sec **Longitude** 103 deg 41 min 53 sec

WTR 50

NATURE OF RELEASE

Type of Release Oil	Volume of Release 5.5 bbls	Volume Recovered 5
Source of Release tank spill	Date and Hour of Occurrence 1/27/07 1:00 AM	Date and Hour of Discovery 1/27/07 2:15 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Pat Caperton	
By Whom? Larry Ridenour	Date and Hour 1/27/07 11:15AM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Coupling on water transfer pump failed. Water tank filled up and caused tanks to run over.

Describe Area Affected and Cleanup Action Taken.*
Oil was contained in dike area. Oil pooled up in one corner of the dike covering approximately 120 square feet. Vacuum truck picked up oil. Loose oily dirt and pea gravel will be removed and fresh dirt/gravel put back in place area.

Received Hobbs OCD FEB 2007

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

Signature: Larry D Ridenour

Printed Name: Larry D. Ridenour

Title: Operations Representative

E-mail Address: LRidenour@Chevron.com

Date: 1/30/07 Phone: 505-396-4414 x102

OIL CONSERVATION DIVISION

Approved by District ~~Supervisor~~ ENVIRO ENGR

Approval Date: 2.9.07 Expiration Date: 4-9.07

Conditions of Approval:
① SUBMIT FINAL C-141 W/ CONFIRMATION OF DISPOSAL OF AFFECTED MATERIAL
② PROVIDE VERTICAL DELINEATION OF POOLED AREA

Attached ☐

* Attach Additional Sheets If Necessary

Facility fPAC-0704334209
Incident -nPAC0704334283
Application -pPAC0704334374

2RP# 1196

Appendix B

Boring Log

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
POD1		CP-1090

WELL OWNER NAME(S)	PHONE (OPTIONAL)
Devon Energy Corporation	405-318-4697

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
6488 Seven Rivers Highway	Artesia	NM	88210

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	36	39.32	N
	LONGITUDE	104	4	58.53	W

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

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

Unit Letter "N", Section 33, T19S, R29E

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1755	John Norris	Hungry Horse, LLC

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
7/15/2022	7/15/2022		55	NA

COMPLETED WELL IS: ☐ ARTESIAN ☑ DRY HOLE ☐ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): NA

DATE STATIC MEASURED:

DRILLING FLUID: ☑ AIR ☐ MUD ADDITIVES – SPECIFY:

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

CHECK HERE IF PITLESS ADAPTER IS INSTALLED ☐

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
			No Casing				

OSE DIT AUG 5 2022 PM 1:42

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0	55	6	Bentonite grout	10.8	tremie

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 01/28/2022)

FILE NO. CP-01090	POD NO. 1	TRN NO. 602836
LOCATION 20S.33E.31.1.1.2	WELL TAG ID NO.	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	20	20	Sand	Y ✓ N	
20	30	10	Caliche	Y ✓ N	
30	35	5	Clay	Y ✓ N	
35	55	20	Gypsum	Y ✓ N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☑ OTHER – SPECIFY: Not tested

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

5. TEST; RIG SUPERVISION

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

MISCELLANEOUS INFORMATION: Borehole was drilled as per NMOCD. Drill a 55' borehole, wait 72 hours, then gauge for presence of water. No water was present so borehole was plugged.

RECEIVED OSE DIV AUG 5 2022 PM1:42

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

Dean Parent

6. SIGNATURE

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

John Norris — 7/25/2022

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 01/28/2022)

FILE NO. CP-01090	POD NO. 1	TRN NO. 602836
LOCATION 20S.33E.31.1.1.2	WELL TAG ID NO.	PAGE 2 OF 2

Appendix C

Work Plan

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	nPAC0704334283
District RP	1RP- 1196
Facility ID	fPAC0704334209
Application ID	pPAC0704334374

Release Notification

Responsible Party

Responsible Party: Chevron USA Inc.	OGRID: 4323
Contact Name: Jason Michelson	Contact Telephone
Contact email: jmichelson@chevron.com	Incident # nPAC0704334283
Contact mailing address:	

Location of Release Source

Latitude 32.538214 Longitude -103.698426
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Bass #4	Site Type: Tank Battery
Date Release Discovered: January 27, 2007	API# NA

Unit Letter	Section	Township	Range	County
G	30	20S	33E	Lea

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☒ Crude Oil	Volume Released (bbls) **5.5**	Volume Recovered (bbls) **5**
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
A coupling on the water transfer pump failed causing the water tank to overflow and release approximately 5.5 barrels (bbls) of produced water and oil at the Site. Oil was reportedly contained within the dike area covering approximately 120 square feet (sq ft). According to the Initial C-141 Form submitted on January 27, 2007, a vacuum truck was dispatched upon discovery and recovered approximately 5 bbls of standing fluid. The Initial C-141 Form was approved with conditions and assigned remediation permit number 1RP-1196 and incident number nPAC0704334283.

State of New Mexico
Oil Conservation Division

Incident ID	nPAC0704334283
District RP	1RP- 1196
Facility ID	fPAC0704334209
Application ID	pPAC0704334374

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release? **Release was less than 25 barrels.**
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

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.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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.

Printed Name: ___Jason Michelson_____ Title: __Operation Lead Central_____

Signature: _____ Date: _7/28/2023_____

email: ___ jmichelson@chevron.com _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Incident ID	nPAC0704334283
District RP	1RP- 1196
Facility ID	fPAC0704334209
Application ID	pPAC0704334374

Site Assessment/Characterization

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?	> 55 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs- **Not Applicable**
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	nPAC0704334283
District RP	1RP- 1196
Facility ID	fPAC0704334209
Application ID	pPAC0704334374

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.

Printed Name: ___Jason Michelson_____ Title: __Operation Lead Central_____

Signature: _____ Date: _7/28/2023_____

email: ___ jmichelson@chevron.com _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Incident ID	nPAC0704334283
District RP	1RP- 1196
Facility ID	fPAC0704334209
Application ID	pPAC0704334374

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

☒ Detailed description of proposed remediation technique
☒ Scaled sitemap with GPS coordinates showing delineation points
☒ Estimated volume of material to be remediated
☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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.

Printed Name: ___Jason Michelson_____ Title: __Operation Lead Central_____

Signature: _____ Date: _7/28/2023_____

email: ___ jmichelson@chevron.com _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

Jason Michelson
Operations Lead, Portfolio Operations Central

VIA ELECTRONIC MAIL

July 28, 2023

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

Re: Bass #4 2023 Remediation and Restoration Work Plan

Dear Whom it May Concern:

Please find enclosed for your files, copies of the following:

- Bass #4 2023 Remediation and Restoration Work Plan

The 2023 Remediation and Restoration Work Plan was prepared by Arcadis U.S., Inc. (Arcadis) on behalf of Chevron Environmental Management Company (CEMC) for Chevron USA.

Please do not hesitate to call Scott Foord with Arcadis at 713.953.4853, or myself at 832.854.5601, should you have any questions.

Sincerely,

Jason Michelson

Encl. Bass #4 2023 Remediation and Restoration Work Plan

cc. Scott Foord – Arcadis
Morgan Jordan – Arcadis

Jason Michelson
Operations Lead Central
Portfolio Operations - Central
1500 Louisiana Street Houston, Texas 77002
Tel 832 854 5601 Mobile 281 660 8564
jmichelson@chevron.com

ARCADIS

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

Arcadis U.S., Inc.
10205 Westheimer Road
Suite 800
Houston
Texas 77042
Phone: 713 953 4800
Fax: 713 977 4620
www.arcadis.com

TX Engineering License # F-533
TX Geoscientist License # 50158

Date: July 28, 2023
Subject: 2023 Remediation and Restoration
Bass #4 Work Plan
Case No. 1RP-1196
Incident No. nPAC0704334283
Lea County, New Mexico

Dear Whom it May Concern,

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 to perform environmental remediation services for the Bass #4 (Site), located in Lea County, New Mexico on New Mexico State Land. Environmental remediation at the Site is required by the New Mexico Oil Conservation Division (NMOCD) and New Mexico State Land Office (NMSLO).

The Site is located approximately 18 miles southwest of Eunice, in Unit G, Section 30, Township 20 South, Range 33 East, Lea County, New Mexico.

On January 27, 2007, a coupling on the water transfer pump failed causing the water tank to overflow and release approximately 5.5 barrels (bbls) of produced water and oil at the Site. Oil was reportedly contained within the dike area covering approximately 120 square feet (sq ft). According to the Initial C-141 Form submitted on January 27, 2007, a vacuum truck was dispatched upon discovery and recovered approximately 5 bbls of standing fluid. The Initial C-141 Form was approved with conditions and assigned remediation permit number 1RP-1196 and incident number nPAC0704334283. The Initial C-141 Form is included as **Attachment 1**.

According to the New Mexico Office of the State Engineers (NMOSE) database, there is a well log on file from 2022 stating an exploratory soil boring was drilled to 55 ft below ground surface (bgs) approximately 0.25 miles south of the Site and no groundwater was encountered.

In 2020 Arcadis personnel collected soil samples from six locations (SB-1 through SB-6) within the release area (bermed tank battery). The soil samples were collected with a hand auger at depths ranging from the surface to approximately 4 ft bgs. Hand auger refusal was encountered within all boring locations. The soil samples collected were analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX) by United States Environmental Protection Agency (USEPA) Method 8021B; total petroleum hydrocarbons (TPH) including diesel range organics (DRO), gasoline range organics (GRO), and oil range organics (ORO) by USEPA Method 8015; and chloride by USEPA Method 300. TPH exceeded the NMAC reclamation standard for soil within the first 4 feet of 100 milligrams per kilogram (mg/kg) at shallow depths (0.25-0.50 ft bgs) at five sample locations SB-1 through SB-4 and SB-6.

NMOCD
July 28, 2023

Scope of Work

Soil Remediation and Restoration

Arcadis proposes to conduct soil remediation activities in areas with impacted soil located inside the active tank battery. Impacted soil will be excavated manually by hand digging with shovels accompanied by confirmation soil sample analysis. Field screening of soils for chloride and petroleum hydrocarbons will be performed to guide excavation activities and confirmation samples. Subsequently, the excavation will be backfilled with clean caliche. The following outlines basic project details that will be completed by Arcadis and Arcadis subcontractors.

- Prior to mobilizing excavation equipment to the Site, a New Mexico 811 utility notification will made at least 48-hours prior to mobilization.
- Arcadis will contract GPRS to locate subsurface utilities prior to starting any excavation.
- Arcadis will contract Standard Environmental for excavation/ hand digging with shovels inside the active tank battery.
- Excavated soils will be stored on bermed plastic sheeting during excavation activities.
- It is anticipated that approximately 15 cubic yards (cy) of shallow soil will be excavated. Impacted soil in the affected areas will be excavated to a depth directly below previous assessment exceedance depths or when confirmation field screening indicates that the soil is below the restoration limits for benzene (10 mg/kg), BTEX (50 mg/kg), TPH (100 mg/kg), and chloride (600 mg/kg) as specified in NMMAC 19.15.29.13 D (1).
- Soils will be field screened for chloride during excavation activities utilizing Hach chloride test strips and for volatile organic compounds (VOCs) utilizing a photo-ionization detector (PID).
- Excavated soils will be transported to the Lea Land Landfill facility for disposal.
- Five-point composite confirmation soil samples will be collected from the excavation floor and sidewalls at 200 square foot intervals for laboratory analysis.
- Soil samples will be collected by Arcadis and shipped overnight via FedEx to Eurofins Xenco Laboratory in Midland, Texas.
- The excavation will then be backfilled with caliche and gravel.

The confirmation samples will be collected in clean, laboratory-supplied sample containers, labeled, placed on ice, cooled to approximately 4 degrees Celsius and shipped to Pace Analytical Laboratory located in Mt Juliet, Tennessee under chain-of-custody protocol. Soil samples will be analyzed for the following analyses:

- BTEX by USEPA Method 8021B;
- TPH-GRO by USEPA Method 8015;
- TPH-DRO by USEPA Method 8015;
- TPH-ORO by USEPA by Method 8015; and
- Chloride by USEPA Method 300.

A cultural resource inventory (CRI), in compliance with the New Mexico State Land Office (NMSLO) Cultural Properties Protection (CPP) Rule, will not be required due to all excavation activities will be performed on the well pad at the Site.

NMOCD
July 28, 2023

Schedule - The proposed remediation activities will be implemented within 90 days following approval of this work plan by the NMSLO and 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.

Reporting

A report summarizing the Bass 4 Site 2023 field activities will be submitted to the NMOCD and the NMSLO. The report will summarize the results of the remediation activities and will include a sample location map, tabulation of the soil analytical results, excavation boundaries map, waste disposal documentation, and photographic documentation.

Work Plan Approval Request

Arcadis is prepared to initiate the scope of work within 30 days of receiving written approval from the NMSLO and NMOCD. If you have any questions or comments with regards to this work plan, please do not hesitate to contact Scott Foord at our Houston office at (713) 953-4853 or william.foord@arcadis.com or Jason Michelson with CEMC at (832) 854-5601 or jmichelson@chevron.com. Your timely response to this correspondence is appreciated.

Sincerely,
Arcadis U.S., Inc.

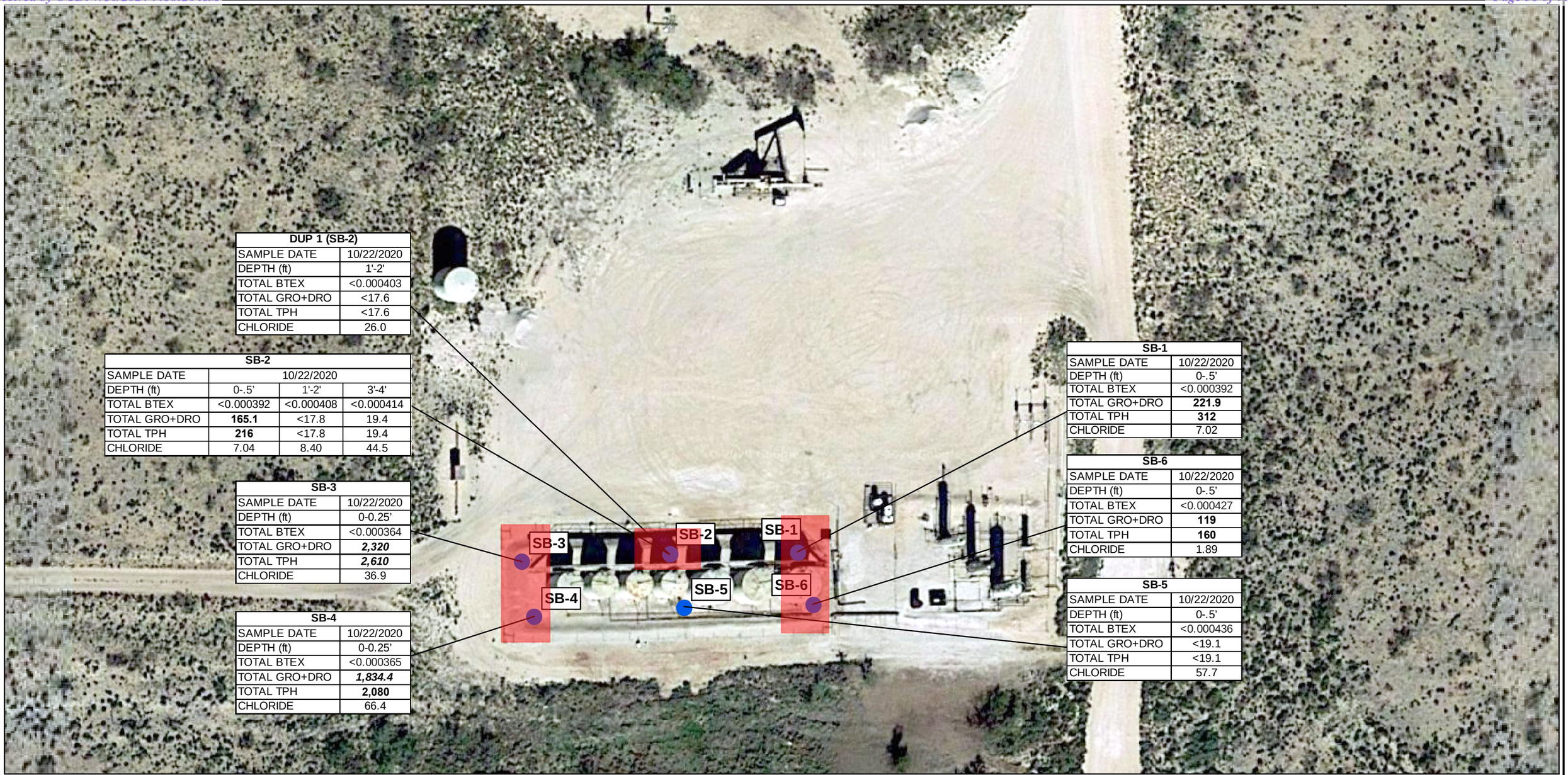
Scott Foord
Program Manager

Email: william.foord@arcadis.com
Direct Line: 713.953.4853

CC. Jason Michelson - CEMC

Enclosures:
Figure 1. Proposed Excavation Area
Attachment 1. Initial C-141 Form

Figures



DUP 1 (SB-2)	
SAMPLE DATE	10/22/2020
DEPTH (ft)	1'-2'
TOTAL BTEX	<0.000403
TOTAL GRO+DRO	<17.6
TOTAL TPH	<17.6
CHLORIDE	26.0

SB-2			
SAMPLE DATE	10/22/2020		
DEPTH (ft)	0-.5'	1'-2'	3'-4'
TOTAL BTEX	<0.000392	<0.000408	<0.000414
TOTAL GRO+DRO	**165.1**	<17.8	19.4
TOTAL TPH	**216**	<17.8	19.4
CHLORIDE	7.04	8.40	44.5

SB-3	
SAMPLE DATE	10/22/2020
DEPTH (ft)	0-0.25'
TOTAL BTEX	<0.000364
TOTAL GRO+DRO	***2,320***
TOTAL TPH	***2,610***
CHLORIDE	36.9

SB-4	
SAMPLE DATE	10/22/2020
DEPTH (ft)	0-0.25'
TOTAL BTEX	<0.000365
TOTAL GRO+DRO	***1,834.4***
TOTAL TPH	**2,080**
CHLORIDE	66.4

SB-1	
SAMPLE DATE	10/22/2020
DEPTH (ft)	0-.5'
TOTAL BTEX	<0.000392
TOTAL GRO+DRO	**221.9**
TOTAL TPH	**312**
CHLORIDE	7.02

SB-6	
SAMPLE DATE	10/22/2020
DEPTH (ft)	0-.5'
TOTAL BTEX	<0.000427
TOTAL GRO+DRO	**119**
TOTAL TPH	**160**
CHLORIDE	1.89

SB-5	
SAMPLE DATE	10/22/2020
DEPTH (ft)	0-.5'
TOTAL BTEX	<0.000436
TOTAL GRO+DRO	<19.1
TOTAL TPH	<19.1
CHLORIDE	57.7

LEGEND:

- Soil Sample Locations
- Proposed Excavation Area

NOTES:
1. Datum: GCS_WGS_1984
2. Site Location: 32.538277, -103.698055

Notes:
1. ***BOLD*** = *Analytes exceeding NMAC standards and restoration requirements for Chloride*
2. '<' Indicates the analyte was not detected at or above the Method Detection Limit (MDL).
3. J Indicates Result is less than the Reporting Limit but greater than or equal to the MDL and the concentration is an approximate value.
4. NMAC Indicates New Mexico Administration Code.
5. All values are in mg/kg (Milligram per Kilogram).
6. "' ' " Indicates one foot.
7. BTEX Indicates Benzene, Toluene, Ethylbenzene, and Total Xylenes.
8. TPH GRO Indicates Total Petroleum Hydrocarbons Gasoline Range Organics.
9. TPH MRO Indicates Total Petroleum Hydrocarbons Motor Oil Range Organics.
10. TPH DRO Indicates Total Petroleum Hydrocarbon Diesel Range Organics.
11. *Revised screening limit and restoration criteria within the first 4 feet below ground surface per Rule 19.15.29 effective August 14, 2018
12. Chloride analyzed by USEPA Method 300.0.
13. TPH analyzed by DRO/ORO Method SW8015.
14. BTEX analyzed by USEPA Method 8021B.
15. Closure Criteria New Mexico Administrative Code 19.15.29.12.E(2).

N

0 25 50 100 Feet

Chevron Environmental Management Company
Bass #4
Lea County, New Mexico

PROPOSED EXCAVATION AREA

ARCADIS

FIGURE
1

P:\...\ENV\Chevron\Cheveron_Bass\MXD\Figure 3_Soil Analytical Map.mxd: 12/10/2020: 9:22:40 PM

Attachment 1

Initial C-141 Form

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Chevron Midcontinent LP	Contact Larry Ridenour
Address HCR 60 Box 423 Lovington, NM 88260	Telephone No. 505-396-4414 x102
Facility Name Bass #4	Facility Type tank battery

Surface Owner State	Mineral Owner State	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	30	20S	33E	1700	N	1815	East	Lea

Latitude 32 deg 32 min 17.8 sec **Longitude** 103 deg 41 min 53 sec

WTR 50

NATURE OF RELEASE

Type of Release Oil	Volume of Release 5.5 bbls	Volume Recovered 5
Source of Release tank spill	Date and Hour of Occurrence 1/27/07 1:00 AM	Date and Hour of Discovery 1/27/07 2:15 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Pat Caperton	
By Whom? Larry Ridenour	Date and Hour 1/27/07 11:15AM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Coupling on water transfer pump failed. Water tank filled up and caused tanks to run over.

Describe Area Affected and Cleanup Action Taken.*
Oil was contained in dike area. Oil pooled up in one corner of the dike covering approximately 120 square feet. Vacuum truck picked up oil. Loose oily dirt and pea gravel will be removed and fresh dirt/gravel put back in place area.

Received Hobbs OCD FEB 2007

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

Signature: Larry D Ridenour

Printed Name: Larry D. Ridenour

Title: Operations Representative

E-mail Address: LRidenour@Chevron.com

Date: 1/30/07 Phone: 505-396-4414 x102

OIL CONSERVATION DIVISION

Approved by District Supervisor: ENVIRO ENGR

Approval Date: 2.9.07 Expiration Date: 4-9.07

Conditions of Approval:
① SUBMIT FINAL C-141 W/ CONFIRMATION OF DISPOSAL OF AFFECTED MATERIAL
② PROVIDE VERTICAL DELINEATION OF POOLED AREA

Attached ☐

* Attach Additional Sheets If Necessary

Facility fPAC-0704334209
Incident -nPAC0704334283
Application -pPAC0704334374

2RP# 1196

Appendix D

2023 Soil Remediation Photographic Log

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Bass #4	Lea County, NM	1RP-1196

Photo No.	Date:
1	10/18/2023

Direction Photo Taken:

Facing South

Description:

West excavation.

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Bass #4	Lea County, NM	1RP-1196

Photo No.	Date:
2	10/18/2023

Direction Photo Taken:

Facing East

Description:

Central excavation, north side of tank battery.

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Bass #4	Lea County, NM	1RP-1196

Photo No.	Date:
3	10/18/2023

Direction Photo Taken:

Facing West

Description:

East excavation.

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Bass #4	Lea County, NM	1RP-1196

Photo No.	Date:
4	10/18/2023

Direction Photo Taken:

Facing NW

Description:

Excavated soil pile.

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Bass #4	Lea County, NM	1RP-1196

Photo No.	Date:
5	10/19/2023

Direction Photo Taken:

Facing South

Description:

West excavation backfilled.

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Bass #4	Lea County, NM	1RP-1196

Photo No.	Date:
6	10/19/2023

Direction Photo Taken:

Facing East

Description:

Central excavation backfilled.

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Bass #4	Lea County, NM	1RP-1196

Photo No.	Date:
7	10/19/2023

Direction Photo Taken:

Facing West

Description:

East excavation backfilled.

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Bass #4	Lea County, NM	1RP-1196

Photo No.	Date:
8	10/19/2023

Direction Photo Taken:

Facing West

Description:

East excavation backfilled.

Appendix E

Laboratory Analytical Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Morgan Jordan
ARCADIS US Inc
98 San Jacinto Blvd.
Suite 414
Austin, Texas 78701

Generated 10/18/2023 4:43:36 PM

JOB DESCRIPTION

Bass 4 Site
SDG NUMBER Lea County, NM

JOB NUMBER

880-34522-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

my EOL

Eurofins Midland

Job Notes

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

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

Authorization

Generated
10/18/2023 4:43:36 PM

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

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Laboratory Job ID: 880-34522-1
SDG: Lea County, NM

Table of Contents

Definitions/Glossary

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Case Narrative

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

Job ID: 880-34522-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-34522-1

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 10/17/2023 11:07 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.5°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: B-1-S-6"-101623 (880-34522-1), B-2-S-6"-101623 (880-34522-2), B-3-S-6"-101623 (880-34522-3), B-4-S-6"-101623 (880-34522-4), SW-1-S-0-6"-101623 (880-34522-5), SW-2-S-0-.75'-101623 (880-34522-6) and SW-3-S-0-.75'-101623 (880-34522-7).

GC VOA
Method 8021B: Surrogate recovery for the following sample was outside control limits: SW-3-S-0-.75'-101623 (880-34522-7). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

GC Semi VOA
Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-64905 and analytical batch 880-64848 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: B-1-S-6"-101623 (880-34522-1), B-2-S-6"-101623 (880-34522-2), B-4-S-6"-101623 (880-34522-4), SW-1-S-0-6"-101623 (880-34522-5) and SW-3-S-0-.75'-101623 (880-34522-7). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-64848/31) and (CCV 880-64848/47). Evidence of matrix interferences is not obvious.

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

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

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

Client Sample ID: B-1-S-6"-101623

Lab Sample ID: 880-34522-1
Date Collected: 10/16/23 10:30
Matrix: Solid
Date Received: 10/17/23 11:07

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		10/17/23 13:18	10/17/23 17:00	1
Toluene	<0.000459	U	0.00201	0.000459	mg/Kg		10/17/23 13:18	10/17/23 17:00	1
Ethylbenzene	<0.000568	U	0.00201	0.000568	mg/Kg		10/17/23 13:18	10/17/23 17:00	1
m-Xylene & p-Xylene	<0.00102	U	0.00402	0.00102	mg/Kg		10/17/23 13:18	10/17/23 17:00	1
o-Xylene	<0.000346	U	0.00201	0.000346	mg/Kg		10/17/23 13:18	10/17/23 17:00	1
Xylenes, Total	<0.00102	U	0.00402	0.00102	mg/Kg		10/17/23 13:18	10/17/23 17:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*	*10/17/23 13:18*	*10/17/23 17:00*	*1*
4-Bromofluorobenzene (Surr)	*75*		*70 - 130*	*10/17/23 13:18*	*10/17/23 17:21*	*1*
1,4-Difluorobenzene (Surr)	*78*		*70 - 130*	*10/17/23 13:18*	*10/17/23 17:00*	*1*
1,4-Difluorobenzene (Surr)	*80*		*70 - 130*	*10/17/23 13:18*	*10/17/23 17:21*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00102	U	0.00402	0.00102	mg/Kg			10/17/23 17:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**418**		49.6	14.9	mg/Kg			10/17/23 22:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**45.1**	**J**	49.6	14.9	mg/Kg		10/17/23 15:26	10/17/23 22:23	1
Diesel Range Organics (Over C10-C28)	**373**		49.6	14.9	mg/Kg		10/17/23 15:26	10/17/23 22:23	1
OII Range Organics (Over C28-C36)	<14.9	U	49.6	14.9	mg/Kg		10/17/23 15:26	10/17/23 22:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*134*	*S1+*	*70 - 130*	*10/17/23 15:26*	*10/17/23 22:23*	*1*
o-Terphenyl	*113*		*70 - 130*	*10/17/23 15:26*	*10/17/23 22:23*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**116**		5.04	0.398	mg/Kg			10/18/23 05:31	1

Client Sample ID: B-2-S-6"-101623

Lab Sample ID: 880-34522-2
Date Collected: 10/16/23 11:45
Matrix: Solid
Date Received: 10/17/23 11:07

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		10/17/23 13:18	10/17/23 17:41	1
Toluene	<0.000457	U	0.00200	0.000457	mg/Kg		10/17/23 13:18	10/17/23 17:41	1
Ethylbenzene	<0.000566	U	0.00200	0.000566	mg/Kg		10/17/23 13:18	10/17/23 17:41	1
m-Xylene & p-Xylene	<0.00101	U	0.00401	0.00101	mg/Kg		10/17/23 13:18	10/17/23 17:41	1
o-Xylene	<0.000345	U	0.00200	0.000345	mg/Kg		10/17/23 13:18	10/17/23 17:41	1
Xylenes, Total	<0.00101	U	0.00401	0.00101	mg/Kg		10/17/23 13:18	10/17/23 17:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*	*10/17/23 13:18*	*10/17/23 17:41*	*1*

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

Client Sample ID: B-2-S-6"-101623

Lab Sample ID: 880-34522-2
Matrix: Solid
Date Collected: 10/16/23 11:45
Date Received: 10/17/23 11:07

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*10/17/23 13:18*	*10/17/23 17:41*	*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			10/17/23 17:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**570**		50.3	15.1	mg/Kg			10/17/23 22:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**32.4**	**J**	50.3	15.1	mg/Kg		10/17/23 15:26	10/17/23 22:45	1
Diesel Range Organics (Over C10-C28)	**538**		50.3	15.1	mg/Kg		10/17/23 15:26	10/17/23 22:45	1
Oil Range Organics (Over C28-C36)	<15.1	U	50.3	15.1	mg/Kg		10/17/23 15:26	10/17/23 22:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*132*	*S1+*	*70 - 130*	*10/17/23 15:26*	*10/17/23 22:45*	*1*
o-Terphenyl	*106*		*70 - 130*	*10/17/23 15:26*	*10/17/23 22:45*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**100**		5.02	0.397	mg/Kg			10/18/23 05:38	1

Client Sample ID: B-3-S-6"-101623

Lab Sample ID: 880-34522-3
Matrix: Solid
Date Collected: 10/16/23 13:30
Date Received: 10/17/23 11:07

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		10/17/23 13:18	10/17/23 18:02	1
Toluene	<0.000454	U	0.00199	0.000454	mg/Kg		10/17/23 13:18	10/17/23 18:02	1
Ethylbenzene	<0.000563	U	0.00199	0.000563	mg/Kg		10/17/23 13:18	10/17/23 18:02	1
m-Xylene & p-Xylene	<0.00101	U	0.00398	0.00101	mg/Kg		10/17/23 13:18	10/17/23 18:02	1
o-Xylene	<0.000343	U	0.00199	0.000343	mg/Kg		10/17/23 13:18	10/17/23 18:02	1
Xylenes, Total	<0.00101	U	0.00398	0.00101	mg/Kg		10/17/23 13:18	10/17/23 18:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*82*		*70 - 130*	*10/17/23 13:18*	*10/17/23 18:02*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*10/17/23 13:18*	*10/17/23 18:02*	*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			10/17/23 18:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**92.6**		50.5	15.2	mg/Kg			10/17/23 21:17	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

Client Sample ID: B-3-S-6"-101623

Lab Sample ID: 880-34522-3

Date Collected: 10/16/23 13:30

Matrix: Solid

Date Received: 10/17/23 11:07

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**34.6**	**J**	50.5	15.2	mg/Kg		10/17/23 15:26	10/17/23 21:17	1
Diesel Range Organics (Over C10-C28)	**58.0**		50.5	15.2	mg/Kg		10/17/23 15:26	10/17/23 21:17	1
OII Range Organics (Over C28-C36)	<15.2	U	50.5	15.2	mg/Kg		10/17/23 15:26	10/17/23 21:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*128*		*70 - 130*	*10/17/23 15:26*	*10/17/23 21:17*	*1*
o-Terphenyl	*108*		*70 - 130*	*10/17/23 15:26*	*10/17/23 21:17*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**244**		4.98	0.393	mg/Kg			10/18/23 05:58	1

Client Sample ID: B-4-S-6"-101623

Lab Sample ID: 880-34522-4

Date Collected: 10/16/23 14:15

Matrix: Solid

Date Received: 10/17/23 11:07

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		10/17/23 13:18	10/17/23 18:22	1
Toluene	<0.000453	U	0.00199	0.000453	mg/Kg		10/17/23 13:18	10/17/23 18:22	1
Ethylbenzene	<0.000562	U	0.00199	0.000562	mg/Kg		10/17/23 13:18	10/17/23 18:22	1
m-Xylene & p-Xylene	<0.00100	U	0.00398	0.00100	mg/Kg		10/17/23 13:18	10/17/23 18:22	1
o-Xylene	<0.000342	U	0.00199	0.000342	mg/Kg		10/17/23 13:18	10/17/23 18:22	1
Xylenes, Total	<0.00100	U	0.00398	0.00100	mg/Kg		10/17/23 13:18	10/17/23 18:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*	*10/17/23 13:18*	*10/17/23 18:22*	*1*
1,4-Difluorobenzene (Surr)	*75*		*70 - 130*	*10/17/23 13:18*	*10/17/23 18:22*	*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			10/17/23 18:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**105**		49.9	15.0	mg/Kg			10/17/23 23:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**25.4**	**J**	49.9	15.0	mg/Kg		10/17/23 15:26	10/17/23 23:07	1
Diesel Range Organics (Over C10-C28)	**79.9**		49.9	15.0	mg/Kg		10/17/23 15:26	10/17/23 23:07	1
OII Range Organics (Over C28-C36)	<15.0	U	49.9	15.0	mg/Kg		10/17/23 15:26	10/17/23 23:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*138*	*S1+*	*70 - 130*	*10/17/23 15:26*	*10/17/23 23:07*	*1*
o-Terphenyl	*115*		*70 - 130*	*10/17/23 15:26*	*10/17/23 23:07*	*1*

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

Client Sample ID: B-4-S-6"-101623

Lab Sample ID: 880-34522-4
Matrix: Solid
Date Collected: 10/16/23 14:15
Date Received: 10/17/23 11:07

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**146**		4.99	0.394	mg/Kg			10/18/23 06:05	1

Client Sample ID: SW-1-S-0-6"-101623

Lab Sample ID: 880-34522-5
Matrix: Solid
Date Collected: 10/16/23 14:20
Date Received: 10/17/23 11:07

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		10/17/23 13:18	10/17/23 18:43	1
Toluene	<0.000454	U	0.00199	0.000454	mg/Kg		10/17/23 13:18	10/17/23 18:43	1
Ethylbenzene	<0.000563	U	0.00199	0.000563	mg/Kg		10/17/23 13:18	10/17/23 18:43	1
m-Xylene & p-Xylene	<0.00101	U	0.00398	0.00101	mg/Kg		10/17/23 13:18	10/17/23 18:43	1
o-Xylene	<0.000343	U	0.00199	0.000343	mg/Kg		10/17/23 13:18	10/17/23 18:43	1
Xylenes, Total	<0.00101	U	0.00398	0.00101	mg/Kg		10/17/23 13:18	10/17/23 18:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*	*10/17/23 13:18*	*10/17/23 18:43*	*1*
1,4-Difluorobenzene (Surr)	*79*		*70 - 130*	*10/17/23 13:18*	*10/17/23 18:43*	*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			10/17/23 18:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**443**		49.6	14.9	mg/Kg			10/17/23 23:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**39.9**	**J**	49.6	14.9	mg/Kg		10/17/23 15:26	10/17/23 23:30	1
Diesel Range Organics (Over C10-C28)	**403**		49.6	14.9	mg/Kg		10/17/23 15:26	10/17/23 23:30	1
OII Range Organics (Over C28-C36)	<14.9	U	49.6	14.9	mg/Kg		10/17/23 15:26	10/17/23 23:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*137*	*S1+*	*70 - 130*	*10/17/23 15:26*	*10/17/23 23:30*	*1*
o-Terphenyl	*108*		*70 - 130*	*10/17/23 15:26*	*10/17/23 23:30*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**116**		5.02	0.397	mg/Kg			10/18/23 06:11	1

Client Sample ID: SW-2-S-0-.75'-101623

Lab Sample ID: 880-34522-6
Matrix: Solid
Date Collected: 10/16/23 14:25
Date Received: 10/17/23 11:07

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		10/17/23 13:18	10/17/23 19:03	1
Toluene	<0.000453	U	0.00199	0.000453	mg/Kg		10/17/23 13:18	10/17/23 19:03	1
Ethylbenzene	<0.000562	U	0.00199	0.000562	mg/Kg		10/17/23 13:18	10/17/23 19:03	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

Client Sample ID: SW-2-S-0-.75'-101623

Lab Sample ID: 880-34522-6
Date Collected: 10/16/23 14:25
Matrix: Solid
Date Received: 10/17/23 11:07

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	<0.00100	U	0.00398	0.00100	mg/Kg		10/17/23 13:18	10/17/23 19:03	1
o-Xylene	<0.000342	U	0.00199	0.000342	mg/Kg		10/17/23 13:18	10/17/23 19:03	1
Xylenes, Total	<0.00100	U	0.00398	0.00100	mg/Kg		10/17/23 13:18	10/17/23 19:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*	*10/17/23 13:18*	*10/17/23 19:03*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*	*10/17/23 13:18*	*10/17/23 19:03*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00100	U	0.00398	0.00100	mg/Kg			10/17/23 19:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**112**		50.2	15.0	mg/Kg			10/17/23 23:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**40.4**	**J**	50.2	15.0	mg/Kg		10/17/23 15:26	10/17/23 23:52	1
Diesel Range Organics (Over C10-C28)	**71.6**		50.2	15.0	mg/Kg		10/17/23 15:26	10/17/23 23:52	1
OII Range Organics (Over C28-C36)	<15.0	U	50.2	15.0	mg/Kg		10/17/23 15:26	10/17/23 23:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*129*		*70 - 130*	*10/17/23 15:26*	*10/17/23 23:52*	*1*
o-Terphenyl	*104*		*70 - 130*	*10/17/23 15:26*	*10/17/23 23:52*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**215**		5.01	0.396	mg/Kg			10/18/23 06:18	1

Client Sample ID: SW-3-S-0-.75'-101623

Lab Sample ID: 880-34522-7
Date Collected: 10/16/23 14:30
Matrix: Solid
Date Received: 10/17/23 11:07

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		10/17/23 13:18	10/17/23 19:24	1
Toluene	<0.000457	U	0.00200	0.000457	mg/Kg		10/17/23 13:18	10/17/23 19:24	1
Ethylbenzene	<0.000566	U	0.00200	0.000566	mg/Kg		10/17/23 13:18	10/17/23 19:24	1
m-Xylene & p-Xylene	<0.00101	U	0.00401	0.00101	mg/Kg		10/17/23 13:18	10/17/23 19:24	1
o-Xylene	**0.000393**	**J**	0.00200	0.000345	mg/Kg		10/17/23 13:18	10/17/23 19:24	1
Xylenes, Total	<0.00101	U	0.00401	0.00101	mg/Kg		10/17/23 13:18	10/17/23 19:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*68*	*S1-*	*70 - 130*	*10/17/23 13:18*	*10/17/23 19:24*	*1*
1,4-Difluorobenzene (Surr)	*84*		*70 - 130*	*10/17/23 13:18*	*10/17/23 19:24*	*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			10/17/23 19:24	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

Client Sample ID: SW-3-S-0-.75'-101623

Lab Sample ID: 880-34522-7

Date Collected: 10/16/23 14:30
Matrix: Solid
Date Received: 10/17/23 11:07

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	87.9		50.5	15.2	mg/Kg			10/18/23 00:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	38.2	J	50.5	15.2	mg/Kg		10/17/23 15:26	10/18/23 00:15	1
Diesel Range Organics (Over C10-C28)	49.7	J	50.5	15.2	mg/Kg		10/17/23 15:26	10/18/23 00:15	1
Oil Range Organics (Over C28-C36)	<15.2	U	50.5	15.2	mg/Kg		10/17/23 15:26	10/18/23 00:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*146*	*S1+*	*70 - 130*	*10/17/23 15:26*	*10/18/23 00:15*	*1*
o-Terphenyl	*119*		*70 - 130*	*10/17/23 15:26*	*10/18/23 00:15*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	139		4.97	0.393	mg/Kg			10/18/23 06:25	1

Surrogate Summary

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-34522-1	B-1-S-6"-101623	97	78
880-34522-1	B-1-S-6"-101623	75	80
880-34522-2	B-2-S-6"-101623	86	86
880-34522-3	B-3-S-6"-101623	82	92
880-34522-4	B-4-S-6"-101623	91	75
880-34522-5	SW-1-S-0-6"-101623	86	79
880-34522-6	SW-2-S-0-.75'-101623	85	93
880-34522-7	SW-3-S-0-.75'-101623	68 S1-	84
LCS 880-64865/1-A	Lab Control Sample	119	121
LCSD 880-64865/2-A	Lab Control Sample Dup	117	116
MB 880-64865/5-A	Method Blank	77	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)
880-34522-1	B-1-S-6"-101623	134 S1+	113
880-34522-2	B-2-S-6"-101623	132 S1+	106
880-34522-3	B-3-S-6"-101623	128	108
880-34522-3 MS	B-3-S-6"-101623	127	96
880-34522-3 MSD	B-3-S-6"-101623	126	94
880-34522-4	B-4-S-6"-101623	138 S1+	115
880-34522-5	SW-1-S-0-6"-101623	137 S1+	108
880-34522-6	SW-2-S-0-.75'-101623	129	104
880-34522-7	SW-3-S-0-.75'-101623	146 S1+	119
LCS 880-64905/2-A	Lab Control Sample	95	89
LCSD 880-64905/3-A	Lab Control Sample Dup	87	86
MB 880-64905/1-A	Method Blank	171 S1+	147 S1+

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-64865/5-A
Matrix: Solid
Analysis Batch: 64863

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 64865

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		10/17/23 09:11	10/17/23 11:43	1
Toluene	<0.000456	U	0.00200	0.000456	mg/Kg		10/17/23 09:11	10/17/23 11:43	1
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		10/17/23 09:11	10/17/23 11:43	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		10/17/23 09:11	10/17/23 11:43	1
o-Xylene	<0.000344	U	0.00200	0.000344	mg/Kg		10/17/23 09:11	10/17/23 11:43	1
Xylenes, Total	<0.00101	U	0.00400	0.00101	mg/Kg		10/17/23 09:11	10/17/23 11:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*77*		*70 - 130*	*10/17/23 09:11*	*10/17/23 11:43*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*10/17/23 09:11*	*10/17/23 11:43*	*1*

Lab Sample ID: LCS 880-64865/1-A
Matrix: Solid
Analysis Batch: 64863

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64865

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1161		mg/Kg		116	70 - 130
Toluene	0.100	0.1054		mg/Kg		105	70 - 130
Ethylbenzene	0.100	0.1098		mg/Kg		110	70 - 130
m-Xylene & p-Xylene	0.200	0.2404		mg/Kg		120	70 - 130
o-Xylene	0.100	0.1193		mg/Kg		119	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*119*		*70 - 130*
1,4-Difluorobenzene (Surr)	*121*		*70 - 130*

Lab Sample ID: LCSD 880-64865/2-A
Matrix: Solid
Analysis Batch: 64863

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 64865

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1053		mg/Kg		105	70 - 130	10	35
Toluene	0.100	0.09393		mg/Kg		94	70 - 130	11	35
Ethylbenzene	0.100	0.09872		mg/Kg		99	70 - 130	11	35
m-Xylene & p-Xylene	0.200	0.2163		mg/Kg		108	70 - 130	11	35
o-Xylene	0.100	0.1076		mg/Kg		108	70 - 130	10	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*
1,4-Difluorobenzene (Surr)	*116*		*70 - 130*

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

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

Lab Sample ID: MB 880-64905/1-A
Matrix: Solid
Analysis Batch: 64848

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 64905

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		10/17/23 15:26	10/17/23 20:10	1
Diesel Range Organics (Over C10-C28)	<15.0	U	50.0	15.0	mg/Kg		10/17/23 15:26	10/17/23 20:10	1
Oil Range Organics (Over C28-C36)	<15.0	U	50.0	15.0	mg/Kg		10/17/23 15:26	10/17/23 20:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*171*	*S1+*	*70 - 130*	*10/17/23 15:26*	*10/17/23 20:10*	*1*
o-Terphenyl	*147*	*S1+*	*70 - 130*	*10/17/23 15:26*	*10/17/23 20:10*	*1*

Lab Sample ID: LCS 880-64905/2-A
Matrix: Solid
Analysis Batch: 64848

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64905

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1073		mg/Kg		107	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	964.6		mg/Kg		96	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*95*		*70 - 130*
o-Terphenyl	*89*		*70 - 130*

Lab Sample ID: LCSD 880-64905/3-A
Matrix: Solid
Analysis Batch: 64848

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 64905

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	1033		mg/Kg		103	70 - 130	4	20
Diesel Range Organics (Over C10-C28)			1000	926.6		mg/Kg		93	70 - 130	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*87*		*70 - 130*
o-Terphenyl	*86*		*70 - 130*

Lab Sample ID: 880-34522-3 MS
Matrix: Solid
Analysis Batch: 64848

Client Sample ID: B-3-S-6"-101623
Prep Type: Total/NA
Prep Batch: 64905

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	34.6	J	994	959.3		mg/Kg		93	70 - 130		
Diesel Range Organics (Over C10-C28)	58.0		994	1151		mg/Kg		110	70 - 130		

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

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

Lab Sample ID: 880-34522-3 MS
Matrix: Solid
Analysis Batch: 64848

Client Sample ID: B-3-S-6"-101623
Prep Type: Total/NA
Prep Batch: 64905

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*127*		*70 - 130*
o-Terphenyl	*96*		*70 - 130*

Lab Sample ID: 880-34522-3 MSD
Matrix: Solid
Analysis Batch: 64848

Client Sample ID: B-3-S-6"-101623
Prep Type: Total/NA
Prep Batch: 64905

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	34.6	J	994	939.8		mg/Kg		91	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	58.0		994	1133		mg/Kg		108	70 - 130	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*126*		*70 - 130*
o-Terphenyl	*94*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-64868/1-A
Matrix: Solid
Analysis Batch: 64884

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			10/17/23 11:59	1

Lab Sample ID: LCS 880-64868/2-A
Matrix: Solid
Analysis Batch: 64884

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	228.0		mg/Kg		91	90 - 110

Lab Sample ID: LCSD 880-64868/3-A
Matrix: Solid
Analysis Batch: 64884

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	226.6		mg/Kg		91	90 - 110	1	20

QC Association Summary

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

GC VOA

Analysis Batch: 64863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34522-1	B-1-S-6"-101623	Total/NA	Solid	8021B	64865
880-34522-1	B-1-S-6"-101623	Total/NA	Solid	8021B	64865
880-34522-2	B-2-S-6"-101623	Total/NA	Solid	8021B	64865
880-34522-3	B-3-S-6"-101623	Total/NA	Solid	8021B	64865
880-34522-4	B-4-S-6"-101623	Total/NA	Solid	8021B	64865
880-34522-5	SW-1-S-0-6"-101623	Total/NA	Solid	8021B	64865
880-34522-6	SW-2-S-0-.75'-101623	Total/NA	Solid	8021B	64865
880-34522-7	SW-3-S-0-.75'-101623	Total/NA	Solid	8021B	64865
MB 880-64865/5-A	Method Blank	Total/NA	Solid	8021B	64865
LCS 880-64865/1-A	Lab Control Sample	Total/NA	Solid	8021B	64865
LCSD 880-64865/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	64865

Prep Batch: 64865

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34522-1	B-1-S-6"-101623	Total/NA	Solid	5030B	
880-34522-2	B-2-S-6"-101623	Total/NA	Solid	5030B	
880-34522-3	B-3-S-6"-101623	Total/NA	Solid	5030B	
880-34522-4	B-4-S-6"-101623	Total/NA	Solid	5030B	
880-34522-5	SW-1-S-0-6"-101623	Total/NA	Solid	5030B	
880-34522-6	SW-2-S-0-.75'-101623	Total/NA	Solid	5030B	
880-34522-7	SW-3-S-0-.75'-101623	Total/NA	Solid	5030B	
MB 880-64865/5-A	Method Blank	Total/NA	Solid	5030B	
LCS 880-64865/1-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 880-64865/2-A	Lab Control Sample Dup	Total/NA	Solid	5030B	

Analysis Batch: 65013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34522-1	B-1-S-6"-101623	Total/NA	Solid	Total BTEX	
880-34522-2	B-2-S-6"-101623	Total/NA	Solid	Total BTEX	
880-34522-3	B-3-S-6"-101623	Total/NA	Solid	Total BTEX	
880-34522-4	B-4-S-6"-101623	Total/NA	Solid	Total BTEX	
880-34522-5	SW-1-S-0-6"-101623	Total/NA	Solid	Total BTEX	
880-34522-6	SW-2-S-0-.75'-101623	Total/NA	Solid	Total BTEX	
880-34522-7	SW-3-S-0-.75'-101623	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 64848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34522-1	B-1-S-6"-101623	Total/NA	Solid	8015B NM	64905
880-34522-2	B-2-S-6"-101623	Total/NA	Solid	8015B NM	64905
880-34522-3	B-3-S-6"-101623	Total/NA	Solid	8015B NM	64905
880-34522-4	B-4-S-6"-101623	Total/NA	Solid	8015B NM	64905
880-34522-5	SW-1-S-0-6"-101623	Total/NA	Solid	8015B NM	64905
880-34522-6	SW-2-S-0-.75'-101623	Total/NA	Solid	8015B NM	64905
880-34522-7	SW-3-S-0-.75'-101623	Total/NA	Solid	8015B NM	64905
MB 880-64905/1-A	Method Blank	Total/NA	Solid	8015B NM	64905
LCS 880-64905/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	64905
LCSD 880-64905/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	64905
880-34522-3 MS	B-3-S-6"-101623	Total/NA	Solid	8015B NM	64905
880-34522-3 MSD	B-3-S-6"-101623	Total/NA	Solid	8015B NM	64905

QC Association Summary

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

GC Semi VOA

Prep Batch: 64905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34522-1	B-1-S-6"-101623	Total/NA	Solid	8015NM Prep	
880-34522-2	B-2-S-6"-101623	Total/NA	Solid	8015NM Prep	
880-34522-3	B-3-S-6"-101623	Total/NA	Solid	8015NM Prep	
880-34522-4	B-4-S-6"-101623	Total/NA	Solid	8015NM Prep	
880-34522-5	SW-1-S-0-6"-101623	Total/NA	Solid	8015NM Prep	
880-34522-6	SW-2-S-0-.75'-101623	Total/NA	Solid	8015NM Prep	
880-34522-7	SW-3-S-0-.75'-101623	Total/NA	Solid	8015NM Prep	
MB 880-64905/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-64905/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-64905/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-34522-3 MS	B-3-S-6"-101623	Total/NA	Solid	8015NM Prep	
880-34522-3 MSD	B-3-S-6"-101623	Total/NA	Solid	8015NM Prep	

Analysis Batch: 64985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34522-1	B-1-S-6"-101623	Total/NA	Solid	8015 NM	
880-34522-2	B-2-S-6"-101623	Total/NA	Solid	8015 NM	
880-34522-3	B-3-S-6"-101623	Total/NA	Solid	8015 NM	
880-34522-4	B-4-S-6"-101623	Total/NA	Solid	8015 NM	
880-34522-5	SW-1-S-0-6"-101623	Total/NA	Solid	8015 NM	
880-34522-6	SW-2-S-0-.75'-101623	Total/NA	Solid	8015 NM	
880-34522-7	SW-3-S-0-.75'-101623	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 64868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34522-1	B-1-S-6"-101623	Soluble	Solid	DI Leach	
880-34522-2	B-2-S-6"-101623	Soluble	Solid	DI Leach	
880-34522-3	B-3-S-6"-101623	Soluble	Solid	DI Leach	
880-34522-4	B-4-S-6"-101623	Soluble	Solid	DI Leach	
880-34522-5	SW-1-S-0-6"-101623	Soluble	Solid	DI Leach	
880-34522-6	SW-2-S-0-.75'-101623	Soluble	Solid	DI Leach	
880-34522-7	SW-3-S-0-.75'-101623	Soluble	Solid	DI Leach	
MB 880-64868/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-64868/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-64868/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 64884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34522-1	B-1-S-6"-101623	Soluble	Solid	300.0	64868
880-34522-2	B-2-S-6"-101623	Soluble	Solid	300.0	64868
880-34522-3	B-3-S-6"-101623	Soluble	Solid	300.0	64868
880-34522-4	B-4-S-6"-101623	Soluble	Solid	300.0	64868
880-34522-5	SW-1-S-0-6"-101623	Soluble	Solid	300.0	64868
880-34522-6	SW-2-S-0-.75'-101623	Soluble	Solid	300.0	64868
880-34522-7	SW-3-S-0-.75'-101623	Soluble	Solid	300.0	64868
MB 880-64868/1-A	Method Blank	Soluble	Solid	300.0	64868
LCS 880-64868/2-A	Lab Control Sample	Soluble	Solid	300.0	64868
LCSD 880-64868/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	64868

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

Client Sample ID: B-1-S-6"-101623

Lab Sample ID: 880-34522-1

Date Collected: 10/16/23 10:30

Matrix: Solid

Date Received: 10/17/23 11:07

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	64865	10/17/23 13:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64863	10/17/23 17:00	MNR	EET MID
Total/NA	Prep	5030B			4.97 g	5 mL	64865	10/17/23 13:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64863	10/17/23 17:21	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			65013	10/17/23 17:00	SM	EET MID
Total/NA	Analysis	8015 NM		1			64985	10/17/23 22:23	SM	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	64905	10/17/23 15:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64848	10/17/23 22:23	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	64868	10/17/23 12:18	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	64884	10/18/23 05:31	CH	EET MID

Client Sample ID: B-2-S-6"-101623

Lab Sample ID: 880-34522-2

Date Collected: 10/16/23 11:45

Matrix: Solid

Date Received: 10/17/23 11:07

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	64865	10/17/23 13:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64863	10/17/23 17:41	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			65013	10/17/23 17:41	SM	EET MID
Total/NA	Analysis	8015 NM		1			64985	10/17/23 22:45	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	64905	10/17/23 15:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64848	10/17/23 22:45	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	64868	10/17/23 12:18	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	64884	10/18/23 05:38	CH	EET MID

Client Sample ID: B-3-S-6"-101623

Lab Sample ID: 880-34522-3

Date Collected: 10/16/23 13:30

Matrix: Solid

Date Received: 10/17/23 11:07

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	64865	10/17/23 13:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64863	10/17/23 18:02	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			65013	10/17/23 18:02	SM	EET MID
Total/NA	Analysis	8015 NM		1			64985	10/17/23 21:17	SM	EET MID
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	64905	10/17/23 15:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64848	10/17/23 21:17	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	64868	10/17/23 12:18	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	64884	10/18/23 05:58	CH	EET MID

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

Client Sample ID: B-4-S-6"-101623

Lab Sample ID: 880-34522-4

Date Collected: 10/16/23 14:15

Matrix: Solid

Date Received: 10/17/23 11:07

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	64865	10/17/23 13:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64863	10/17/23 18:22	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			65013	10/17/23 18:22	SM	EET MID
Total/NA	Analysis	8015 NM		1			64985	10/17/23 23:07	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	64905	10/17/23 15:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64848	10/17/23 23:07	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	64868	10/17/23 12:18	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	64884	10/18/23 06:05	CH	EET MID

Client Sample ID: SW-1-S-0-6"-101623

Lab Sample ID: 880-34522-5

Date Collected: 10/16/23 14:20

Matrix: Solid

Date Received: 10/17/23 11:07

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	64865	10/17/23 13:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64863	10/17/23 18:43	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			65013	10/17/23 18:43	SM	EET MID
Total/NA	Analysis	8015 NM		1			64985	10/17/23 23:30	SM	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	64905	10/17/23 15:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64848	10/17/23 23:30	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	64868	10/17/23 12:18	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	64884	10/18/23 06:11	CH	EET MID

Client Sample ID: SW-2-S-0-.75'-101623

Lab Sample ID: 880-34522-6

Date Collected: 10/16/23 14:25

Matrix: Solid

Date Received: 10/17/23 11:07

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	64865	10/17/23 13:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64863	10/17/23 19:03	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			65013	10/17/23 19:03	SM	EET MID
Total/NA	Analysis	8015 NM		1			64985	10/17/23 23:52	SM	EET MID
Total/NA	Prep	8015NM Prep			9.97 g	10 mL	64905	10/17/23 15:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64848	10/17/23 23:52	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	64868	10/17/23 12:18	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	64884	10/18/23 06:18	CH	EET MID

Client Sample ID: SW-3-S-0-.75'-101623

Lab Sample ID: 880-34522-7

Date Collected: 10/16/23 14:30

Matrix: Solid

Date Received: 10/17/23 11:07

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	64865	10/17/23 13:18	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64863	10/17/23 19:24	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			65013	10/17/23 19:24	SM	EET MID

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

Client Sample ID: SW-3-S-0-.75'-101623
Date Collected: 10/16/23 14:30
Date Received: 10/17/23 11:07

Lab Sample ID: 880-34522-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			64985	10/18/23 00:15	SM	EET MID
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	64905	10/17/23 15:26	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64848	10/18/23 00:15	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	64868	10/17/23 12:18	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	64884	10/18/23 06:25	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

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

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5030B	Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34522-1
SDG: Lea County, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-34522-1	B-1-S-6"-101623	Solid	10/16/23 10:30	10/17/23 11:07
880-34522-2	B-2-S-6"-101623	Solid	10/16/23 11:45	10/17/23 11:07
880-34522-3	B-3-S-6"-101623	Solid	10/16/23 13:30	10/17/23 11:07
880-34522-4	B-4-S-6"-101623	Solid	10/16/23 14:15	10/17/23 11:07
880-34522-5	SW-1-S-0-6"-101623	Solid	10/16/23 14:20	10/17/23 11:07
880-34522-6	SW-2-S-0-.75'-101623	Solid	10/16/23 14:25	10/17/23 11:07
880-34522-7	SW-3-S-0-.75'-101623	Solid	10/16/23 14:30	10/17/23 11:07

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

Chain of Custody Record

eurofins Environment Testing

34522

Client Information	Sampler: Heath Boyd	Lab PM: Builes John	Carrier Tracking No(s):	COC No: 880-7043-1002 1
Client Contact: Mr Morgan Jordan	Phone: 575-390-4018	E-Mail: John.Builes@et.eurofinsus.com	State of Origin: NM	Page: Page 1 of 1
Company: ARCADIS US Inc	PWSID:			Job #:
Address: 98 San Jacinto Blvd Suite 414	Due Date Requested:			
City: Austin	TAT Requested (days): 24 hr Rush			
State, Zip: TX 78701	Compliance Project: Δ Yes Δ No			
Phone: 281-644-9437(Tel)	PO #: 30196891-0004			
Email: douglas.jordan@arcadis.com	WO #:			
Project Name: Bass 4 Site	Project #: 88001925			
Site: Lea County, NM	SSOW#:			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_ORGFM_28D, 8015MOD_NM, 8021B	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
B-1-S-6"-101623	10/16/23	1030	C	Solid			X		
B-2-S-6"-101623		1145		Solid			X		
B-3-S-.75'-101623		1330		Solid			X		
B-4-S-.75'-101623		1415		Solid			X		
SW-1-S-Ø-6"-101623		1420		Solid			X		
SW-2-S-Ø-.75'-101623		1425		Solid			X		
SW-3-S-Ø-.75'-101623	X	1430	X	Solid			X		
				Solid					
				Solid					
				Solid					
				Solid					

880-34522 Chain of Custody

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

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

Deliverable Requested I II III IV Other (specify)

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
	10/16/23 1100	Arcadis		10/17/23	
Relinquished by	Date/Time	Company	Received by	Date/Time 1107	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 01/16/2019
		2.3/2.5	

Login Sample Receipt Checklist

Client: ARCADIS US Inc

Job Number: 880-34522-1
SDG Number: Lea County, NM

Login Number: 34522
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

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

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ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Morgan Jordan
ARCADIS US Inc
98 San Jacinto Blvd.
Suite 414
Austin, Texas 78701

Generated 10/23/2023 11:13:16 PM

JOB DESCRIPTION

Bass 4 Site
SDG NUMBER Lea County, NM

JOB NUMBER

880-34738-1

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
10/23/2023 11:13:16 PM

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

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Laboratory Job ID: 880-34738-1
SDG: Lea County, NM

Table of Contents

Definitions/Glossary

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34738-1
SDG: Lea County, NM

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Case Narrative

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34738-1
SDG: Lea County, NM

Job ID: 880-34738-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-34738-1

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 10/23/2023 8:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.5°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: B-1A-S-1'-101923 (880-34738-1), B-2A-S-1'-101923 (880-34738-2), B-4A-S-1'-101923 (880-34738-3), SW-1A-S-0-9"-101923 (880-34738-4) and SW-2A-S-0-9"-101923 (880-34738-5).

GC VOA
Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-65275 and analytical batch 880-65322 was outside the upper control limits.

Method 8021B: Surrogate recovery for the following sample was outside control limits: B-1A-S-1'-101923 (880-34738-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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

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

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34738-1
SDG: Lea County, NM

Client Sample ID: B-1A-S-1'-101923

Lab Sample ID: 880-34738-1

Date Collected: 10/19/23 10:30

Matrix: Solid

Date Received: 10/23/23 08:40

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		10/23/23 11:00	10/23/23 17:34	1
Toluene	<0.000453	U	0.00199	0.000453	mg/Kg		10/23/23 11:00	10/23/23 17:34	1
Ethylbenzene	**0.000879**	**J**	0.00199	0.000562	mg/Kg		10/23/23 11:00	10/23/23 17:34	1
m-Xylene & p-Xylene	<0.00100	U	0.00398	0.00100	mg/Kg		10/23/23 11:00	10/23/23 17:34	1
o-Xylene	<0.000342	U	0.00199	0.000342	mg/Kg		10/23/23 11:00	10/23/23 17:34	1
Xylenes, Total	<0.00100	U	0.00398	0.00100	mg/Kg		10/23/23 11:00	10/23/23 17:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*232*	*S1+*	*70 - 130*	*10/23/23 11:00*	*10/23/23 17:34*	*1*
1,4-Difluorobenzene (Surr)	*205*	*S1+*	*70 - 130*	*10/23/23 11:00*	*10/23/23 17:34*	*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			10/23/23 17:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**93.4**		49.9	15.0	mg/Kg			10/23/23 17:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**18.7**	**J**	49.9	15.0	mg/Kg		10/23/23 09:31	10/23/23 17:46	1
Diesel Range Organics (Over C10-C28)	**74.7**		49.9	15.0	mg/Kg		10/23/23 09:31	10/23/23 17:46	1
OII Range Organics (Over C28-C36)	<15.0	U	49.9	15.0	mg/Kg		10/23/23 09:31	10/23/23 17:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*77*		*70 - 130*	*10/23/23 09:31*	*10/23/23 17:46*	*1*
o-Terphenyl	*87*		*70 - 130*	*10/23/23 09:31*	*10/23/23 17:46*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**81.8**		5.04	0.398	mg/Kg			10/23/23 12:24	1

Client Sample ID: B-2A-S-1'-101923

Lab Sample ID: 880-34738-2

Date Collected: 10/19/23 10:45

Matrix: Solid

Date Received: 10/23/23 08:40

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		10/23/23 11:00	10/23/23 17:55	1
Toluene	<0.000455	U	0.00200	0.000455	mg/Kg		10/23/23 11:00	10/23/23 17:55	1
Ethylbenzene	<0.000564	U	0.00200	0.000564	mg/Kg		10/23/23 11:00	10/23/23 17:55	1
m-Xylene & p-Xylene	<0.00101	U	0.00399	0.00101	mg/Kg		10/23/23 11:00	10/23/23 17:55	1
o-Xylene	**0.000425**	**J**	0.00200	0.000343	mg/Kg		10/23/23 11:00	10/23/23 17:55	1
Xylenes, Total	<0.00101	U	0.00399	0.00101	mg/Kg		10/23/23 11:00	10/23/23 17:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*	*10/23/23 11:00*	*10/23/23 17:55*	*1*
1,4-Difluorobenzene (Surr)	*112*		*70 - 130*	*10/23/23 11:00*	*10/23/23 17:55*	*1*

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34738-1
SDG: Lea County, NM

Client Sample ID: B-2A-S-1'-101923

Lab Sample ID: 880-34738-2
Matrix: Solid
Date Collected: 10/19/23 10:45
Date Received: 10/23/23 08:40

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			10/23/23 17:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**69.4**		50.1	15.0	mg/Kg			10/23/23 18:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**25.9**	**J**	50.1	15.0	mg/Kg		10/23/23 09:31	10/23/23 18:07	1
Diesel Range Organics (Over C10-C28)	**43.5**	**J**	50.1	15.0	mg/Kg		10/23/23 09:31	10/23/23 18:07	1
OII Range Organics (Over C28-C36)	<15.0	U	50.1	15.0	mg/Kg		10/23/23 09:31	10/23/23 18:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*87*		*70 - 130*	*10/23/23 09:31*	*10/23/23 18:07*	*1*
o-Terphenyl	*99*		*70 - 130*	*10/23/23 09:31*	*10/23/23 18:07*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**86.3**		5.02	0.397	mg/Kg			10/23/23 12:30	1

Client Sample ID: B-4A-S-1'-101923

Lab Sample ID: 880-34738-3
Matrix: Solid
Date Collected: 10/19/23 14:00
Date Received: 10/23/23 08:40

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		10/23/23 11:00	10/23/23 18:15	1
Toluene	<0.000457	U	0.00200	0.000457	mg/Kg		10/23/23 11:00	10/23/23 18:15	1
Ethylbenzene	<0.000566	U	0.00200	0.000566	mg/Kg		10/23/23 11:00	10/23/23 18:15	1
m-Xylene & p-Xylene	<0.00101	U	0.00401	0.00101	mg/Kg		10/23/23 11:00	10/23/23 18:15	1
o-Xylene	**0.000406**	**J**	0.00200	0.000345	mg/Kg		10/23/23 11:00	10/23/23 18:15	1
Xylenes, Total	<0.00101	U	0.00401	0.00101	mg/Kg		10/23/23 11:00	10/23/23 18:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*	*10/23/23 11:00*	*10/23/23 18:15*	*1*
1,4-Difluorobenzene (Surr)	*112*		*70 - 130*	*10/23/23 11:00*	*10/23/23 18:15*	*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			10/23/23 18:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**20.6**	**J**	50.0	15.0	mg/Kg			10/23/23 18:28	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**20.6**	**J**	50.0	15.0	mg/Kg		10/23/23 09:31	10/23/23 18:28	1
Diesel Range Organics (Over C10-C28)	<15.0	U	50.0	15.0	mg/Kg		10/23/23 09:31	10/23/23 18:28	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34738-1
SDG: Lea County, NM

Client Sample ID: B-4A-S-1'-101923

Lab Sample ID: 880-34738-3
Matrix: Solid
Date Collected: 10/19/23 14:00
Date Received: 10/23/23 08:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
OII Range Organics (Over C28-C36)	<15.0	U	50.0	15.0	mg/Kg		10/23/23 09:31	10/23/23 18:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*73*		*70 - 130*	*10/23/23 09:31*	*10/23/23 18:28*	*1*
o-Terphenyl	*85*		*70 - 130*	*10/23/23 09:31*	*10/23/23 18:28*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**62.2**		5.03	0.397	mg/Kg			10/23/23 12:37	1

Client Sample ID: SW-1A-S-0-9"-101923

Lab Sample ID: 880-34738-4
Matrix: Solid
Date Collected: 10/19/23 11:00
Date Received: 10/23/23 08:40

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		10/23/23 11:00	10/23/23 18:35	1
Toluene	<0.000454	U	0.00199	0.000454	mg/Kg		10/23/23 11:00	10/23/23 18:35	1
Ethylbenzene	<0.000563	U	0.00199	0.000563	mg/Kg		10/23/23 11:00	10/23/23 18:35	1
m-Xylene & p-Xylene	<0.00101	U	0.00398	0.00101	mg/Kg		10/23/23 11:00	10/23/23 18:35	1
o-Xylene	<0.000343	U	0.00199	0.000343	mg/Kg		10/23/23 11:00	10/23/23 18:35	1
Xylenes, Total	<0.00101	U	0.00398	0.00101	mg/Kg		10/23/23 11:00	10/23/23 18:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*	*10/23/23 11:00*	*10/23/23 18:35*	*1*
1,4-Difluorobenzene (Surr)	*109*		*70 - 130*	*10/23/23 11:00*	*10/23/23 18:35*	*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			10/23/23 18:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**66.1**		50.5	15.1	mg/Kg			10/23/23 18:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**30.0**	**J**	50.5	15.1	mg/Kg		10/23/23 09:31	10/23/23 18:49	1
Diesel Range Organics (Over C10-C28)	**36.1**	**J**	50.5	15.1	mg/Kg		10/23/23 09:31	10/23/23 18:49	1
OII Range Organics (Over C28-C36)	<15.1	U	50.5	15.1	mg/Kg		10/23/23 09:31	10/23/23 18:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*77*		*70 - 130*	*10/23/23 09:31*	*10/23/23 18:49*	*1*
o-Terphenyl	*88*		*70 - 130*	*10/23/23 09:31*	*10/23/23 18:49*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**95.8**		5.03	0.397	mg/Kg			10/23/23 12:44	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34738-1
SDG: Lea County, NM

Client Sample ID: SW-2A-S-0-9"-101923

Lab Sample ID: 880-34738-5

Date Collected: 10/19/23 11:30
Matrix: Solid
Date Received: 10/23/23 08:40

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		10/23/23 11:00	10/23/23 18:56	1
Toluene	<0.000453	U	0.00199	0.000453	mg/Kg		10/23/23 11:00	10/23/23 18:56	1
Ethylbenzene	<0.000562	U	0.00199	0.000562	mg/Kg		10/23/23 11:00	10/23/23 18:56	1
m-Xylene & p-Xylene	<0.00100	U	0.00398	0.00100	mg/Kg		10/23/23 11:00	10/23/23 18:56	1
o-Xylene	<0.000342	U	0.00199	0.000342	mg/Kg		10/23/23 11:00	10/23/23 18:56	1
Xylenes, Total	<0.00100	U	0.00398	0.00100	mg/Kg		10/23/23 11:00	10/23/23 18:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*	*10/23/23 11:00*	*10/23/23 18:56*	*1*
1,4-Difluorobenzene (Surr)	*115*		*70 - 130*	*10/23/23 11:00*	*10/23/23 18:56*	*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			10/23/23 18:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<15.2	U	50.5	15.2	mg/Kg			10/23/23 19:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<15.2	U	50.5	15.2	mg/Kg		10/23/23 09:31	10/23/23 19:30	1
Diesel Range Organics (Over C10-C28)	<15.2	U	50.5	15.2	mg/Kg		10/23/23 09:31	10/23/23 19:30	1
OII Range Organics (Over C28-C36)	<15.2	U	50.5	15.2	mg/Kg		10/23/23 09:31	10/23/23 19:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*75*		*70 - 130*	*10/23/23 09:31*	*10/23/23 19:30*	*1*
o-Terphenyl	*84*		*70 - 130*	*10/23/23 09:31*	*10/23/23 19:30*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**31.2**		5.00	0.395	mg/Kg			10/23/23 13:04	1

Surrogate Summary

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34738-1
SDG: Lea County, 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)								
880-34738-1	B-1A-S-1'-101923	232 S1+	205 S1+								
880-34738-2	B-2A-S-1'-101923	90	112								
880-34738-3	B-4A-S-1'-101923	100	112								
880-34738-4	SW-1A-S-0-9"-101923	91	109								
880-34738-5	SW-2A-S-0-9"-101923	92	115								
LCS 880-65275/1-A	Lab Control Sample	100	100								
LCSD 880-65275/2-A	Lab Control Sample Dup	106	101								
MB 880-65275/5-A	Method Blank	105	132 S1+								

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)								
880-34738-1	B-1A-S-1'-101923	77	87								
880-34738-2	B-2A-S-1'-101923	87	99								
880-34738-3	B-4A-S-1'-101923	73	85								
880-34738-4	SW-1A-S-0-9"-101923	77	88								
880-34738-5	SW-2A-S-0-9"-101923	75	84								
LCS 880-65337/2-A	Lab Control Sample	90	100								
LCSD 880-65337/3-A	Lab Control Sample Dup	89	97								
MB 880-65337/1-A	Method Blank	107	126								

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34738-1
SDG: Lea County, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-65275/5-A
Matrix: Solid
Analysis Batch: 65322

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 65275

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		10/21/23 15:12	10/23/23 12:11	1
Toluene	<0.000456	U	0.00200	0.000456	mg/Kg		10/21/23 15:12	10/23/23 12:11	1
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		10/21/23 15:12	10/23/23 12:11	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		10/21/23 15:12	10/23/23 12:11	1
o-Xylene	<0.000344	U	0.00200	0.000344	mg/Kg		10/21/23 15:12	10/23/23 12:11	1
Xylenes, Total	<0.00101	U	0.00400	0.00101	mg/Kg		10/21/23 15:12	10/23/23 12:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*	*10/21/23 15:12*	*10/23/23 12:11*	*1*
1,4-Difluorobenzene (Surr)	*132*	*S1+*	*70 - 130*	*10/21/23 15:12*	*10/23/23 12:11*	*1*

Lab Sample ID: LCS 880-65275/1-A
Matrix: Solid
Analysis Batch: 65322

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 65275

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.08759		mg/Kg		88	70 - 130		
Toluene			0.100	0.07851		mg/Kg		79	70 - 130		
Ethylbenzene			0.100	0.08016		mg/Kg		80	70 - 130		
m-Xylene & p-Xylene			0.200	0.1842		mg/Kg		92	70 - 130		
o-Xylene			0.100	0.08963		mg/Kg		90	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 880-65275/2-A
Matrix: Solid
Analysis Batch: 65322

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 65275

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.09701		mg/Kg		97	70 - 130	10	35
Toluene			0.100	0.08247		mg/Kg		82	70 - 130	5	35
Ethylbenzene			0.100	0.08707		mg/Kg		87	70 - 130	8	35
m-Xylene & p-Xylene			0.200	0.1945		mg/Kg		97	70 - 130	5	35
o-Xylene			0.100	0.09524		mg/Kg		95	70 - 130	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34738-1
SDG: Lea County, NM

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

Lab Sample ID: MB 880-65337/1-A
Matrix: Solid
Analysis Batch: 65295

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 65337

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		10/23/23 07:31	10/23/23 07:59	1
Diesel Range Organics (Over C10-C28)	<15.0	U	50.0	15.0	mg/Kg		10/23/23 07:31	10/23/23 07:59	1
Oil Range Organics (Over C28-C36)	<15.0	U	50.0	15.0	mg/Kg		10/23/23 07:31	10/23/23 07:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*107*		*70 - 130*	*10/23/23 07:31*	*10/23/23 07:59*	*1*
o-Terphenyl	*126*		*70 - 130*	*10/23/23 07:31*	*10/23/23 07:59*	*1*

Lab Sample ID: LCS 880-65337/2-A
Matrix: Solid
Analysis Batch: 65295

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 65337

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	843.5		mg/Kg		84	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	843.8		mg/Kg		84	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*90*		*70 - 130*
o-Terphenyl	*100*		*70 - 130*

Lab Sample ID: LCSD 880-65337/3-A
Matrix: Solid
Analysis Batch: 65295

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 65337

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	862.0		mg/Kg		86	70 - 130	2	20
Diesel Range Organics (Over C10-C28)			1000	865.3		mg/Kg		87	70 - 130	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*89*		*70 - 130*
o-Terphenyl	*97*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-65339/1-A
Matrix: Solid
Analysis Batch: 65345

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			10/23/23 11:44	1

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34738-1
SDG: Lea County, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-65339/2-A
Matrix: Solid
Analysis Batch: 65345

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	241.1		mg/Kg		96	90 - 110

Lab Sample ID: LCSD 880-65339/3-A
Matrix: Solid
Analysis Batch: 65345

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	241.7		mg/Kg		97	90 - 110	0	20

QC Association Summary

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34738-1
SDG: Lea County, NM

GC VOA

Prep Batch: 65275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34738-1	B-1A-S-1'-101923	Total/NA	Solid	5030B	
880-34738-2	B-2A-S-1'-101923	Total/NA	Solid	5030B	
880-34738-3	B-4A-S-1'-101923	Total/NA	Solid	5030B	
880-34738-4	SW-1A-S-0-9"-101923	Total/NA	Solid	5030B	
880-34738-5	SW-2A-S-0-9"-101923	Total/NA	Solid	5030B	
MB 880-65275/5-A	Method Blank	Total/NA	Solid	5030B	
LCS 880-65275/1-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 880-65275/2-A	Lab Control Sample Dup	Total/NA	Solid	5030B	

Analysis Batch: 65322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34738-1	B-1A-S-1'-101923	Total/NA	Solid	8021B	65275
880-34738-2	B-2A-S-1'-101923	Total/NA	Solid	8021B	65275
880-34738-3	B-4A-S-1'-101923	Total/NA	Solid	8021B	65275
880-34738-4	SW-1A-S-0-9"-101923	Total/NA	Solid	8021B	65275
880-34738-5	SW-2A-S-0-9"-101923	Total/NA	Solid	8021B	65275
MB 880-65275/5-A	Method Blank	Total/NA	Solid	8021B	65275
LCS 880-65275/1-A	Lab Control Sample	Total/NA	Solid	8021B	65275
LCSD 880-65275/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	65275

Analysis Batch: 65428

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34738-1	B-1A-S-1'-101923	Total/NA	Solid	Total BTEX	
880-34738-2	B-2A-S-1'-101923	Total/NA	Solid	Total BTEX	
880-34738-3	B-4A-S-1'-101923	Total/NA	Solid	Total BTEX	
880-34738-4	SW-1A-S-0-9"-101923	Total/NA	Solid	Total BTEX	
880-34738-5	SW-2A-S-0-9"-101923	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 65295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34738-1	B-1A-S-1'-101923	Total/NA	Solid	8015B NM	65337
880-34738-2	B-2A-S-1'-101923	Total/NA	Solid	8015B NM	65337
880-34738-3	B-4A-S-1'-101923	Total/NA	Solid	8015B NM	65337
880-34738-4	SW-1A-S-0-9"-101923	Total/NA	Solid	8015B NM	65337
880-34738-5	SW-2A-S-0-9"-101923	Total/NA	Solid	8015B NM	65337
MB 880-65337/1-A	Method Blank	Total/NA	Solid	8015B NM	65337
LCS 880-65337/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	65337
LCSD 880-65337/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	65337

Prep Batch: 65337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34738-1	B-1A-S-1'-101923	Total/NA	Solid	8015NM Prep	
880-34738-2	B-2A-S-1'-101923	Total/NA	Solid	8015NM Prep	
880-34738-3	B-4A-S-1'-101923	Total/NA	Solid	8015NM Prep	
880-34738-4	SW-1A-S-0-9"-101923	Total/NA	Solid	8015NM Prep	
880-34738-5	SW-2A-S-0-9"-101923	Total/NA	Solid	8015NM Prep	
MB 880-65337/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-65337/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-65337/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

QC Association Summary

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34738-1
SDG: Lea County, NM

GC Semi VOA

Analysis Batch: 65433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34738-1	B-1A-S-1'-101923	Total/NA	Solid	8015 NM	
880-34738-2	B-2A-S-1'-101923	Total/NA	Solid	8015 NM	
880-34738-3	B-4A-S-1'-101923	Total/NA	Solid	8015 NM	
880-34738-4	SW-1A-S-0-9"-101923	Total/NA	Solid	8015 NM	
880-34738-5	SW-2A-S-0-9"-101923	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 65339

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34738-1	B-1A-S-1'-101923	Soluble	Solid	DI Leach	
880-34738-2	B-2A-S-1'-101923	Soluble	Solid	DI Leach	
880-34738-3	B-4A-S-1'-101923	Soluble	Solid	DI Leach	
880-34738-4	SW-1A-S-0-9"-101923	Soluble	Solid	DI Leach	
880-34738-5	SW-2A-S-0-9"-101923	Soluble	Solid	DI Leach	
MB 880-65339/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-65339/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-65339/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 65345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-34738-1	B-1A-S-1'-101923	Soluble	Solid	300.0	65339
880-34738-2	B-2A-S-1'-101923	Soluble	Solid	300.0	65339
880-34738-3	B-4A-S-1'-101923	Soluble	Solid	300.0	65339
880-34738-4	SW-1A-S-0-9"-101923	Soluble	Solid	300.0	65339
880-34738-5	SW-2A-S-0-9"-101923	Soluble	Solid	300.0	65339
MB 880-65339/1-A	Method Blank	Soluble	Solid	300.0	65339
LCS 880-65339/2-A	Lab Control Sample	Soluble	Solid	300.0	65339
LCSD 880-65339/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	65339

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34738-1
SDG: Lea County, NM

Client Sample ID: B-1A-S-1'-101923

Lab Sample ID: 880-34738-1

Date Collected: 10/19/23 10:30

Matrix: Solid

Date Received: 10/23/23 08:40

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	65275	10/23/23 11:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	65322	10/23/23 17:34	SM	EET MID
Total/NA	Analysis	Total BTEX		1			65428	10/23/23 17:34	SM	EET MID
Total/NA	Analysis	8015 NM		1			65433	10/23/23 17:46	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	65337	10/23/23 09:31	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	65295	10/23/23 17:46	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	65339	10/23/23 09:33	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	65345	10/23/23 12:24	CH	EET MID

Client Sample ID: B-2A-S-1'-101923

Lab Sample ID: 880-34738-2

Date Collected: 10/19/23 10:45

Matrix: Solid

Date Received: 10/23/23 08:40

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	65275	10/23/23 11:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	65322	10/23/23 17:55	SM	EET MID
Total/NA	Analysis	Total BTEX		1			65428	10/23/23 17:55	SM	EET MID
Total/NA	Analysis	8015 NM		1			65433	10/23/23 18:07	SM	EET MID
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	65337	10/23/23 09:31	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	65295	10/23/23 18:07	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	65339	10/23/23 09:33	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	65345	10/23/23 12:30	CH	EET MID

Client Sample ID: B-4A-S-1'-101923

Lab Sample ID: 880-34738-3

Date Collected: 10/19/23 14:00

Matrix: Solid

Date Received: 10/23/23 08:40

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	65275	10/23/23 11:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	65322	10/23/23 18:15	SM	EET MID
Total/NA	Analysis	Total BTEX		1			65428	10/23/23 18:15	SM	EET MID
Total/NA	Analysis	8015 NM		1			65433	10/23/23 18:28	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	65337	10/23/23 09:31	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	65295	10/23/23 18:28	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	65339	10/23/23 09:33	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	65345	10/23/23 12:37	CH	EET MID

Client Sample ID: SW-1A-S-0-9"-101923

Lab Sample ID: 880-34738-4

Date Collected: 10/19/23 11:00

Matrix: Solid

Date Received: 10/23/23 08:40

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	65275	10/23/23 11:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	65322	10/23/23 18:35	SM	EET MID
Total/NA	Analysis	Total BTEX		1			65428	10/23/23 18:35	SM	EET MID

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34738-1
SDG: Lea County, NM

Client Sample ID: SW-1A-S-0-9"-101923

Lab Sample ID: 880-34738-4
Matrix: Solid
Date Collected: 10/19/23 11:00
Date Received: 10/23/23 08:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			65433	10/23/23 18:49	SM	EET MID
Total/NA	Prep	8015NM Prep			9.91 g	10 mL	65337	10/23/23 09:31	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	65295	10/23/23 18:49	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	65339	10/23/23 09:33	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	65345	10/23/23 12:44	CH	EET MID

Client Sample ID: SW-2A-S-0-9"-101923

Lab Sample ID: 880-34738-5
Matrix: Solid
Date Collected: 10/19/23 11:30
Date Received: 10/23/23 08:40

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	65275	10/23/23 11:00	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	65322	10/23/23 18:56	SM	EET MID
Total/NA	Analysis	Total BTEX		1			65428	10/23/23 18:56	SM	EET MID
Total/NA	Analysis	8015 NM		1			65433	10/23/23 19:30	SM	EET MID
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	65337	10/23/23 09:31	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	65295	10/23/23 19:30	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	65339	10/23/23 09:33	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	65345	10/23/23 13:04	CH	EET MID

Laboratory References:

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

Accreditation/Certification Summary

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34738-1
SDG: Lea County, NM

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

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

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34738-1
SDG: Lea County, NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
5030B	Purge and Trap	SW846	EET MID
8015NM Prep	Microextraction	SW846	EET MID
DI Leach	Deionized Water Leaching Procedure	ASTM	EET MID

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: ARCADIS US Inc
Project/Site: Bass 4 Site

Job ID: 880-34738-1
SDG: Lea County, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-34738-1	B-1A-S-1'-101923	Solid	10/19/23 10:30	10/23/23 08:40
880-34738-2	B-2A-S-1'-101923	Solid	10/19/23 10:45	10/23/23 08:40
880-34738-3	B-4A-S-1'-101923	Solid	10/19/23 14:00	10/23/23 08:40
880-34738-4	SW-1A-S-0-9"-101923	Solid	10/19/23 11:00	10/23/23 08:40
880-34738-5	SW-2A-S-0-9"-101923	Solid	10/19/23 11:30	10/23/23 08:40

fins Midland
Florida Ave
, TX 79701
Phone (432) 704-5440

Chain of Custody Record

eurofins | Environment Testing

34738

Client Information	Sampler: Heath Boyd	Lab PM: Builes, John	Carrier Tracking No(s):	COC No.: 880-7043-1002 2
Client Contact: Mr Morgan Jordan	Phone: 575-390-4618	E-Mail: John Builes@et.eurofinsus com	State of Origin: NM	Page: Page ~~2 of 3~~ 1 of 1
Company: ARCADIS US Inc	PWSID:			Job #:
Address: 98 San Jacinto Blvd Suite 414	Due Date Requested			
City: Austin	TAT Requested (days): 24 hr Rush			
State, Zip: TX, 78701	Compliance Project: Δ Yes Δ No			
Phone: 281-644-9437(Tel)	PO #: 30196891-0004			
Email: douglas jordan@arcadis com	WO #:			
Project Name: Bass 4 Site	Project #: 88001925			
Site: Lea County, Nm	SSOW#:			

Analysis Requested

Preservation Codes

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_ORGFM_28D, 8015MOD_NM, 8021B	Total Number of containers	Special Instructions/Note.
			Preservation Code:				N		
B-1A-S-1'-101923	10/19/23	1030	C	Solid			X		
B-2A-S-1'-101923	"	1045	"	Solid			X		
B-4A-S-1'-101923	"	1400	"	Solid			X		
SW-1A-S-0-9"-101923	"	1100	"	Solid			X		
SW-2A-S-0-9"-101923	X	1130	X	Solid			X		
				Solid					
				Solid					
				Solid					
				Solid					
				Solid					
				Solid					

880-34738 Chain of Custody

Possible Hazard Identification

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

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

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

Deliverable Requested I II III IV, Other (specify)

Special Instructions/QC Requirements

Empty Kit Relinquished by	Date	Time	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		10/20/23 930	Arcadis	Marcruz Carrillo	10/20/23 9:30	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 10/23/23	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 840	Company

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

Cooler Temperature(s) °C and Other Remarks. 2.3 | 2.5

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: ARCADIS US Inc

Job Number: 880-34738-1
SDG Number: Lea County, NM

Login Number: 34738
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	

Arcadis U.S., Inc.
10205 Westheimer Road, Suite 800
Houston
Texas 77042
Phone: 713 953 4800
Fax: 713 977 4620
www.arcadis.com

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

QUESTIONS

Action 364363

QUESTIONS

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 364363
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	**nPAC0704334283**
Incident Name	**NPAC0704334283 BASS #4 @ 0**
Incident Type	**Oil Release**
Incident Status	**Remediation Closure Report Received**
Incident Facility	**[fPAC0704334209] CHEVRON BASS #4**

Location of Release Source	
Please answer all the questions in this group.	
Site Name	BASS #4
Date Release Discovered	01/27/2007
Surface Owner	State

Incident Details	
Please answer all the questions in this group.	
Incident Type	Oil Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Cause: Equipment Failure | Pump | Crude Oil | Released: 6 BBL | Recovered: 5 BBL | Lost: 1 BBL.
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	*Not answered.*
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	*Not answered.*

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
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1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

QUESTIONS (continued)

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 364363
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	**No, according to supplied volumes this does not appear to be a "gas only" report.**
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	**No**
Reasons why this would be considered a submission for a notification of a major release	*Unavailable.*
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response	
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	*Not answered.*
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: Amy Barnhill Title: Waste & Water Specialist Email: ABarnhill@chevron.com Date: 07/16/2024

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1220 S. St Francis Dr., Santa Fe, NM 87505
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QUESTIONS (continued)

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 364363
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Site Characterization	
Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.	
What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 51 and 75 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Greater than 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (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	Greater than 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1000 (ft.) and ½ (mi.)
A subsurface mine	Between 1 and 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan	
Please answer all the questions that apply or 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)	244
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	570
GRO+DRO (EPA SW-846 Method 8015M)	570
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	10/16/2023
On what date will (or did) the final sampling or liner inspection occur	10/16/2023
On what date will (or was) the remediation complete(d)	10/25/2023
What is the estimated surface area (in square feet) that will be reclaimed	555
What is the estimated volume (in cubic yards) that will be reclaimed	18
What is the estimated surface area (in square feet) that will be remediated	555
What is the estimated volume (in cubic yards) that will be remediated	18
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)

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 364363
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

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	LEA LAND LANDFILL [fEEM0112342028]
OR which OCD approved well (API) will be used for **off-site** disposal	*Not answered.*
OR is the **off-site** disposal site, to be used, out-of-state	*Not answered.*
OR is the **off-site** disposal site, to be used, an NMED facility	*Not answered.*
(Ex Situ) Excavation and **on-site** remediation (i.e. On-Site Land Farms)	*Not answered.*
(In Situ) Soil Vapor Extraction	*Not answered.*
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	*Not answered.*
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	*Not answered.*
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	*Not answered.*
Ground Water Abatement pursuant to 19.15.30 NMAC	*Not answered.*
OTHER (Non-listed remedial process)	*Not answered.*
Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
I hereby agree and sign off to the above statement	Name: Amy Barnhill Title: Waste & Water Specialist Email: ABarnhill@chevron.com Date: 07/16/2024
The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.	

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QUESTIONS (continued)

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 364363
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

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

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QUESTIONS (continued)

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 364363
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	**294604**
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	**10/16/2023**
What was the (estimated) number of samples that were to be gathered	**7**
What was the sampling surface area in square feet	**555**

Remediation Closure Request	
Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.	
Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	**Yes**
Was this release entirely contained within a lined containment area	**No**
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	555
What was the total volume (cubic yards) remediated	18
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	0
What was the total volume (in cubic yards) reclaimed	0
Summarize any additional remediation activities not included by answers (above)	Still active tank battery. Restored, backfilled with local sourced, like material.

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (in .pdf format) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

I hereby agree and sign off to the above statement	Name: Amy Barnhill Title: Waste & Water Specialist Email: ABarnhill@chevron.com Date: 07/16/2024

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QUESTIONS (continued)

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	Action Number: 364363
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

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CONDITIONS

Action 364363

CONDITIONS

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
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CONDITIONS

Created By	Condition	Condition Date
amaxwell	Remediation closure approved.	7/29/2024
amaxwell	A reclamation report will not be accepted until reclamation of the release area, including areas reasonably needed for production or drilling activities, is complete and meet the requirements of 19.15.29.13 NMAC. Areas not reasonably needed for production or drilling activities will still need to be reclaimed and revegetated as early as practicable.	7/29/2024
amaxwell	The reclamation report will need to include: Executive Summary of the reclamation activities; Scaled Site Map including sampling locations; Analytical results including, but not limited to, results showing that any remaining impacts meet the reclamation standards and results to prove the backfill is non-waste containing; At least one (1) representative 5-point composite sample will need to be collected from the backfill material that will be used for the reclamation of the top four feet of the excavation. OCD reserves the right to request additional sampling if needed; pictures of the backfilled areas showing that the area is back, as nearly as practical, to the original condition or the final land use and maintain those areas to control dust and minimize erosion to the extent practical; pictures of the top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater; and a revegetation plan.	7/29/2024