ARCADIS

COG (ConocoPhillips)

2023 Soil Assessment Summary and Closure Request Report

Big Papi Federal Com #002H

Incident # NAB1707232069

October 2023

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October 2023

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Task Manager

Scott Foord, PG
Certified Project Manager

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1 Introduction

Arcadis U.S., Inc. (Arcadis) has prepared this Soil Assessment Summary and Closure Request Report (Report), on behalf of Concho Operating, LLC (COG – now ConocoPhillips), for the release site known as the Big Papi Federal Com #002H (Site). Details of the release are summarized in the New Mexico Oil Conservation Division (NMOCD) Initial C-141 Form included as **Appendix A**.

2 Project Summary

The Site is located approximately 18-miles southwest of the City of Malaga in Unit C, Section 04, Township 26 South, Range 29 East, Eddy County, New Mexico. A Site Location Map is included as **Figure 1**.

2.1 Incident # NAB1707232069

According to the Initial C-141 Form, on February 28, 2017, a check valve failure at the Site resulted in the release of approximately 30 barrels (bbls) of produced water to ground surface. A vacuum truck recovered approximately 0 bbls of produced water. The Initial C-141 Form was submitted to the NMOCD on March 7, 2017 and assigned Incident ID number NAB1707232069. The Initial C-141 Form is included as **Appendix A** and the Final C-141 Form is included in **Appendix B.**

3 Initial Site Characterization and Remediation Activities Summary (2017/2018)

Soil assessment activities were performed at the Site on July 16, 2017 by American Safety Services Inc. (ASSI) to determine the horizontal and vertical extent of the release area. Assessment activities included advancement of two soil borings (Soil Bore – 1 and Soil Bore - 2) with an air rotary drill rig. Soil Bore – 1 was completed to approximately 20 feet below ground surface (bgs) and Soil Bore -2 was completed to approximately 15 feet bgs. Six soil samples were collected from Soil Bore - 1 and five soil samples were collected from Soil Bore - 2. All soil samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), total petroleum hydrocarbons (TPH), and chloride.

Soil sample analytical results for the two borings confirmed no BTEX or TPH constituent concentrations were present in soil above current (2023) applicable NMOCD screening levels for the Site. Chloride concentrations in soil were not reported above current NMOCD screening levels at depths greater than 4-feet bgs for a site with depth to groundwater greater than 50-feet bgs. Chloride was detected in soil at concentrations above the reclamation standard of 600 milligrams per kilogram (mg/kg) at depths ranging from the ground surface to 4-feet bgs.

The assessment activities associated analytical soil sample results and the initial proposed remediation/reclamation activities for the impacted area are detailed in the 2017 Work Plan submitted previously by ASSI and approved by the NMOCD and Bureau of Land Management (BLM) (see **Appendix C**).

Initial soil remediation activities were initiated by ASSI in December 2017. Bedrock refusal was encountered across the excavation area at depths ranging from 3-feet to 4-feet bgs. ASSI requested approval from NMOCD

and BLM to cease excavation activities and to line and backfill the excavation area. NMOCD approved the request on April 11, 2018, with the stipulation that five-point composite samples would be collected from the base of the excavation.

A second site assessment was conducted by TRC on August 8, 2018. Assessment activities included the collection of six soil samples from the sidewalls of the excavation area for laboratory analysis to confirm in-situ chloride concentrations. Horizontal delineation of chloride impacted soil to concentrations less than 600 mg/kg was confirmed within the excavated area.

TRC conducted a subsequent soil sampling event at the Site on August 28, 2018. Two composite soil samples (NFL Comp and SFL Comp) were collected from the base of the excavated area and analyzed for chloride. Chloride concentrations were reported at 36,300 mg/kg (NFL Comp) and 52.8 mg/kg (SFL Comp). Details from these assessment activities are provided within the Site Assessment Summary and Proposed Remediation Plan dated November 9, 2018, submitted by TRC (see **Appendix D**). No information associated with additional historical assessment or remediation activities is available.

On April 13, 2023, the NMOCD rejected the Site Assessment Summary and Proposed Remediation Plan submitted by TRC.

4 Current Closure Criteria for Soils Impacted by a Release

Per Table I of NMAC part 19.15.29.12, the following closure criteria apply to a Site with depth to ground water greater than 51 feet bgs, but less than 100 feet bgs:

Constituent	Limit (mg/kg)
Chloride	10,000 mg/kg
TPH – Gasoline Range Organics (GRO) Diesel Range Organics (DRO) and Oil Range Organics (ORO)	2,500 mg/kg
TPH – GRO and DRO	1,000 mg/kg
BTEX	50 mg/kg
Benzene	10 mg/kg

5 2023 Soil Assessment Summary

5.1 Historical Excavation Area Assessment Activities (2023)

Arcadis began subsequent soil assessment activities at the Site on September 30, 2023, to determine current chloride concentrations remaining in soil within the excavation area. A backhoe was utilized to install four test trenches (NFL-1, NFL-2, NFL-3, and SFL-1) from the current ground surface of the excavation base to

approximately 2 feet below the current ground surface material. Base rock refusal was encountered at all test trench locations at a depth of approximately 2 feet below the surface within the excavation area. It is unknown if the excavation area was partially backfilled prior to the recent soil assessment activities conducted by Arcadis.

Soil grab samples were collected at 0-1 feet bgs and at 1-2 feet bgs (top of the base rock) from each excavation base test trench location. Four excavation area sidewall locations (N-1, W-1, E-1, and S-1) were also sampled (grab samples) at a depth of approximately 1-foot bgs. Sidewall soil sample locations are depicted in **Figure 2** and excavation base soil sample locations are depicted in **Figure 3**.

The soil samples were collected in 4-oz jars provided by Eurofins Xenco Analytical Laboratory (Xenco) located in Midland, Texas, then placed on ice and shipped to Xenco for analysis of chloride by United States Environmental Protection Agency (USEPA) Method 300; TPH by Method 8015 M for GRO, DRO, and ORO; and BTEX by USEPA Methods 8015/8021. Analytical results are shown in **Table 1**. Laboratory analytical reports are included in **Appendix E**.

5.2 Chloride

All soil samples collected were below the NMOCD reclamation limit of 600 mg/kg.

5.3 TPH

TPH concentrations were reported below the NMOCD reclamation limit of 100 mg/kg at all sample locations for GRO, DRO, and ORO in all soil samples collected.

5.4 BTEX

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

6 Restoration, Reclamation, and Re-Vegetation Plan

Upon receiving laboratory analytical results from recent soil samples confirming impacted soil over the applicable NMOCD restoration limits are no longer present or have been removed, the excavated area was backfilled with locally sourced, non-impacted "like" material placed at or near the original relative positions. The affected area was contoured and/or compacted to achieve erosion control, stability, and preservation of surface water flow to the extent practicable. Excavated areas were topped with a topsoil similar to native the surrounding pasture material. The backfilled area will be reseeded with a BLM approved seed mixture following abandonment of associated production facilities adjacent to the Site.

7 Summary

Analytical results associated with recent assessment activities conducted in 2023 indicate that concentrations of chloride, TPH, and BTEX in soil above NMAC screening standards are not currently present within the historical excavation area.

8 Soil Closure Request

Based on laboratory analytical results and field activities conducted to date, no additional soil assessment or remediation activities are recommended at this time for TPH, BTEX, or chloride impacts in soil at the Site.

Arcadis requests closure be granted to the Big Papi Federal Com #002H site for Incident ID number NAB1707232069. The Final C-141 Form is included as **Appendix B.**

Tables

Table 1
2023 Soil Sample Analytical Results
Big Papi
COG (ConocoPhillips)

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					BTEX		TPH				Cl Method
Location ID	Depth (Feet)	Date Collected	Sample Name	Soil Status	Benzene mg/kg	Total BTEX mg/kg	Gasoline Range Organics (GRO)-C6-C10 mg/kg	Diesel Range Organics (Over C10-C28) mg/kg	Oil Range Organics (Over C28-C36) mg/kg	Total TPH mg/kg	Chloride, Dissolved mg/kg
NMOCD					**10**	**50**	- -	- -	- -	**100**	**600**
N-1	1	6/30/2023	N-1-S-1'	In-Situ	<0.000388	<0.00102	20.5	<15.0	<15.0	20.5	120
E-1	1	6/30/2023	E-1-S-1'	In-Situ	<0.000383	<0.00100	19.7	<15.0	<15.0	19.7	402
S-1	1	6/30/2023	S-1-S-1'	In-Situ	<0.000383	<0.00101	18.0	<15.0	<15.0	18.0	126
W-1	1	6/30/2023	W-1-S-1'	In-Situ	<0.000381	<0.00100	19.4	<15.0	<15.0	19.4	163
NFL-1	0-1	6/30/2023	NFL-1-S-1'	In-Situ	<0.000389	<0.00102	21.5	<15.0	<15.0	21.5	165
	1-2	6/30/2023	NFL-1-S-2'	In-Situ	<0.000388	<0.00102	17.0	<15.0	<15.0	17.0	99.4
NFL-2	0-1	6/30/2023	NFL-2-S-1'	In-Situ	<0.000383	<0.00101	47.8	<15.0	<15.0	47.8	107
	1-2	6/30/2023	NFL-2-S-2'	In-Situ	<0.000381	<0.00100	<14.9	<14.9	<14.9	<14.9	107
NFL-3	0-1	6/30/2023	NFL-3-S-1'	In-Situ	<0.000389	<0.00102	<14.9	<14.9	<14.9	<14.9	148
	1-2	6/30/2023	NFL-3-S-2'	In-Situ	<0.000387	<0.00101	23.9	<15.0	<15.0	23.9	280
SFL-1	0-1	6/30/2023	SFL-1-S-1'	In-Situ	<0.000383	<0.00100	17.5	<15.0	<15.0	17.5	65.8
	1-2	6/30/2023	SFL-1-S-2'	In-Situ	<0.000381	<0.00100	<15.0	<15.0	<15.0	<15.0	62.4

Legend:
Analytes exceedng NMAC standards are indicated in **bold**
'<' indicates the analyte was not detected at or above the Method Detection Limit (MDL)
mg/kg: Milligram per Kilogram
NMAC : New Mexico Administration Code
bgs: Below ground surface
SFL-South base sample
NFL-North base sample
N, S, E, W : North, south, east, or west sidewall sample
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)
NMOCD: New Mexico Oild Conservation Division
--: No individual standard

Table 1
2023 Soil Sample Analytical Results
Big Papi
COG (ConocoPhillips)

Qualifier Type	Lab Qualifiers	Definition
Inorganic	J	Indicates an estimated value.
Inorganic	JB	
Inorganic	JBF	
Inorganic	U	The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

Figures

NOTES:
Datum: D_WGS_1984
Source: Bing Map
Site Location: 103.9860583°W, 32.0772828°N

LEGEND:

Site Location

0 3,000 6,000 Feet

GRAPHIC SCALE

COG (CONOCOPHILLIPS)
BIG PAPI FEDERAL COM #002H
EDDY COUNTY, NEW MEXICO

SITE LOCATION MAP

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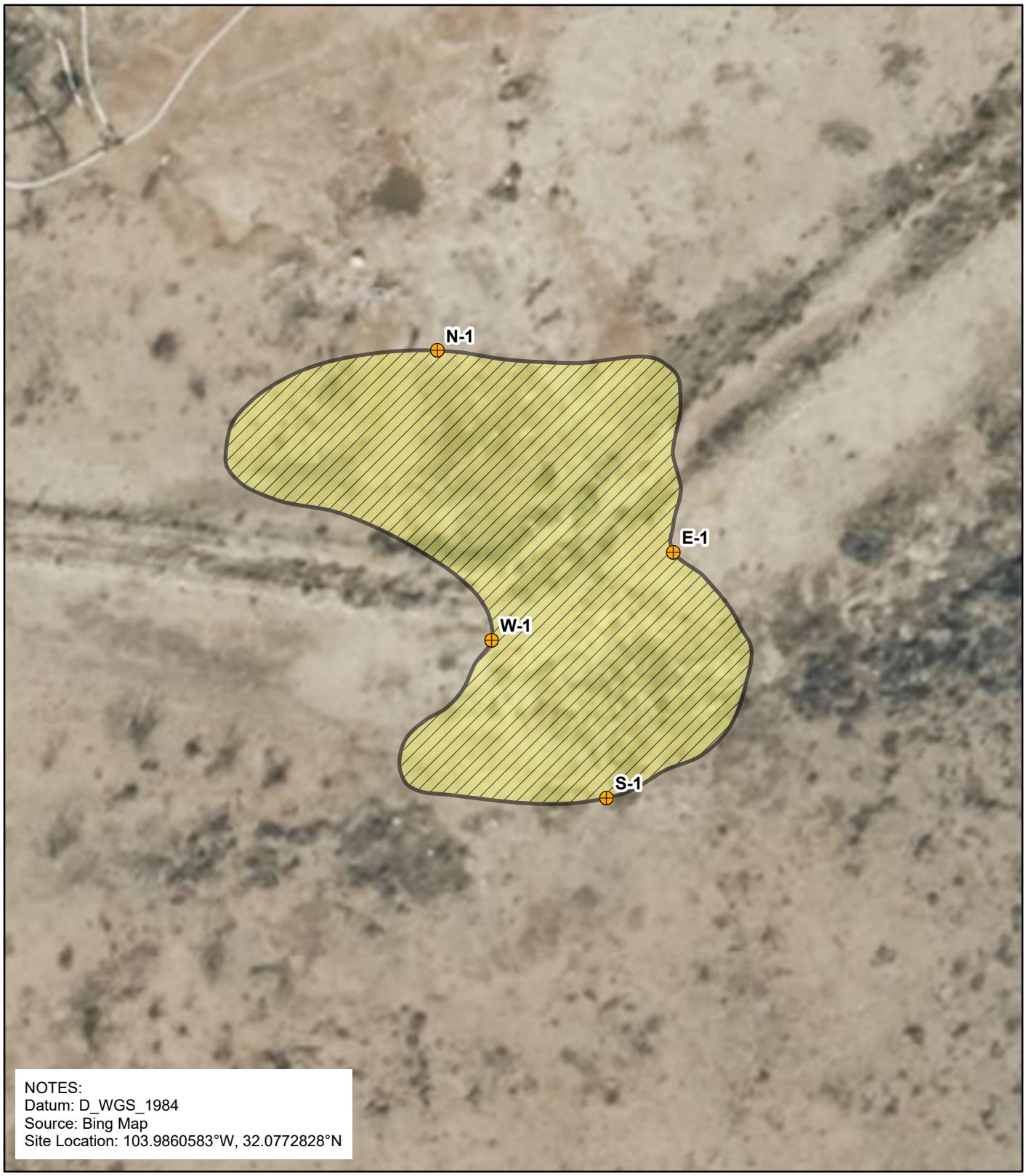
FIGURE 1

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: wberry ; Client (Project #)
T:_EHSS\ArcGIS_Pro\Land\COG\NM\Big_Papi\Big_Papi.aprx 8/16/2023 5:31 PM



NOTES:
Datum: D_WGS_1984
Source: Bing Map
Site Location: 103.9860583°W, 32.0772828°N

LEGEND

Sidewall Sample

Excavated Area

0 30 60 Feet

GRAPHIC SCALE

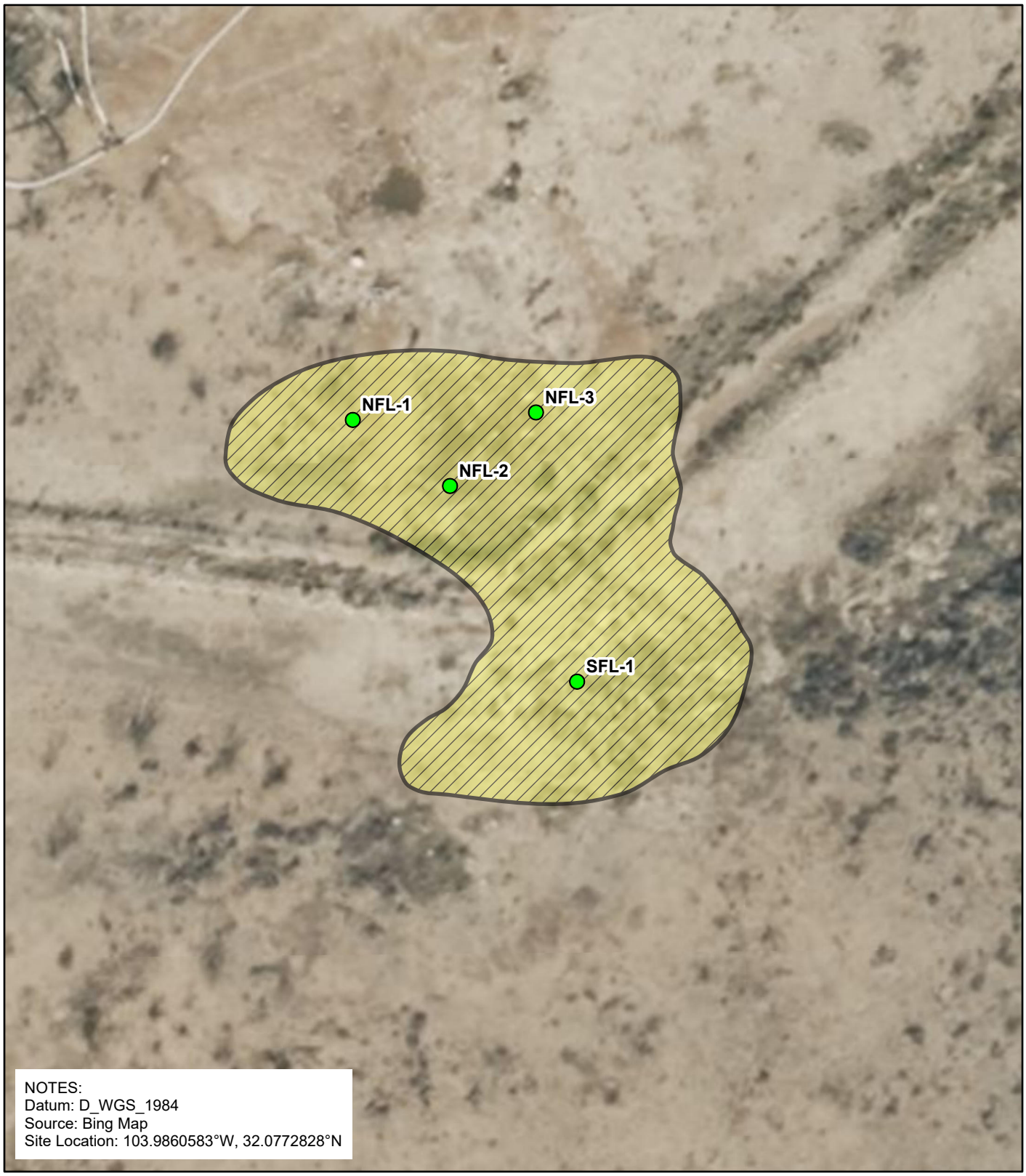
COG (CONOCOPHILLIPS)
BIG PAPI FEDERAL COM #002H
EDDY COUNTY, NEW MEXICO

EXCAVATION SIDEWALL SOIL SAMPLE LOCATIONS

ARCADIS

FIGURE 2

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: wberry ; Client (Project #)
T:_EHSS\ArcGIS_Pro\Land\COG\NM\Big_Papi\Big_Papi.aprx 8/16/2023 5:31 PM



NOTES:
Datum: D_WGS_1984
Source: Bing Map
Site Location: 103.9860583°W, 32.0772828°N

LEGEND

- Base Sample
- Excavated Area

0 30 60 Feet

GRAPHIC SCALE

COG (CONOCOPHILLIPS)
BIG PAPI FEDERAL COM #002H
EDDY COUNTY, NEW MEXICO

EXCAVATION BASE SOIL SAMPLE LOCATIONS

ARCADIS

FIGURE 3

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: wberry ; Client (Project #)
T:_EHSS\ArcGIS_Pro\Land\COG\NM\Big_Papi\Big_Papi.aprx 8/16/2023 5:31 PM

Photographic Logs

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Big Papi Fed Com #002H	Eddy County, NM 32.077566,-103.986229	NAB1707232069

Photo No.	Date:
1	08/15/2023

Direction Photo Taken:

W

Description:

NFL excavation area

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PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Big Papi Fed Com #002H	Eddy County, NM 32.077566,-103.986229	NAB1707232069

Photo No.	Date:
2	08/15/2023

Direction Photo Taken:

W

Description:

SFL Excavation area

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Big Papi Fed Com #002H	Eddy County, NM 32.077566,-103.986229	NAB1707232069

Photo No.	Date:
3	08/15/2023

Direction Photo Taken:

SE

Description:

NFL excavation backfilled.

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PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Big Papi Fed Com #002H	Eddy County, NM 32.077566,-103.986229	NAB1707232069

Photo No.	Date:
4	08/15/2023

Direction Photo Taken:

SW

Description:

SFL excavation backfilled.

Appendix A

Initial C-141 Form Incident #NAB1707232069

NM OIL CONSERVATION
ARTESIA DISTRICT

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

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

MAR 07 2017

RECEIVED

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

nAB1707232069

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC 229137	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443
Facility Name: Big Papi Federal Com #002H	Facility Type: Flowline

Surface Owner: Federal	Mineral Owner:	API No. 30-015-37833

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	04	26S	29E	330	North	1980	West	Eddy

Latitude 32.077566 **Longitude** 103.986229

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 30 bbls	Volume Recovered: 0 bbls
Source of Release: Flowline	Date and Hour of Occurrence: February 28, 2017 10:00 am	Date and Hour of Discovery: February 28, 2017 10:00 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Ms. Weaver – NMOCD / Ms. Tucker - BLM	
By Whom? Robert Grubbs	Date and Hour: February 28, 2017 12:19 ~~am~~ pm	
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.*

The release was caused by a check valve failure. The check valve was repaired.

Describe Area Affected and Cleanup Action Taken.*

The release was within a pasture. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area sampled to delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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: Rebecca Haskell	OIL CONSERVATION DIVISION	
Printed Name: Rebecca Haskell	Signed By Mike Bratcher Approved by Environmental Specialist:	
Title: Senior HSE Coordinator	Approval Date: 3/10/17	Expiration Date: N/A
E-mail Address: rhaskell@concho.com	Conditions of Approval: See Attached	Attached ☐
Date: March 7, 2017 Phone: 432-683-7443		

* Attach Additional Sheets If Necessary

2RP-4141

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 3/7/17 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4141 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

> *The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC.* [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 2 office in ARTESIA on or before 4/22/17. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.

- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C_6 thru C_{36}), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.

- Nominal detection limits for field and laboratory analyses must be provided.

- Composite sampling is not generally allowed.

- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

•Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

• If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

• Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold
OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465
jim.griswold@state.nm.us

Bratcher, Mike, EMNRD

From: Rebecca Haskell <RHaskell@concho.com>
Sent: Tuesday, March 7, 2017 9:27 AM
To: Weaver, Crystal, EMNRD; stucker@blm.gov
Cc: Bratcher, Mike, EMNRD; Jim Amos (jamos@blm.gov)
Subject: (C-141 Initial) BIG PAPI FEDERAL COM #002H 2/28/17 (30-015-37833)
Attachments: Big Papi Federal Com #002H Initial C-141 2-28-17 (30-015-37833).pdf

Ms. Weaver / Ms. Tucker,

Attached is a C-141 for your consideration. If you have any additional questions please feel free to contact me.

Thank You,

Becky Haskell
Senior HSE Coordinator
COG Operating LLC
600 W Illinois Avenue | Midland, TX 79701
Direct: 432-818-2372 | Main: 432.683.7443
Cell: 432-556-5130
rhaskell@concho.com

CONCHO

From: Robert Grubbs
Sent: Tuesday, February 28, 2017 1:19 PM
To: 'stucker@blm.gov'; Amos, James <jamos@blm.gov> (jamos@blm.gov); Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us> (Crystal.Weaver@state.nm.us); Mike Bratcher (mike.bratcher@state.nm.us) (mike.bratcher@state.nm.us)
Subject: (Notification) BIG PAPI FEDERAL COM #002H (30-015-37833)

MS. TUCKER AND MS. WEAVER,

COG OPERATING LLC IS REPORTING A RELEASE ON THE BIG PAPI FEDERAL COM #002H (30-015-37832)
UNIT C SECTION 04 TOWNSHIP 26S RANGE 29E
THE RELEASE OCCURRED AT APPROXIMATELY 10:00 AM ON 2-28-2017
ESTIMATED RELEASED: APPROX. 50 BBLS PRODUCED WATER
ESTIMATED RECOVERED: APPROX. ? BBLS PRODUCED WATER (IN THE PROCESS OF RECOVERING THE FREE FLUID)

THE RELEASE WAS DUE TO A CHECK VALVE THAT FAILED. THE RELEASE OCCURRED IN THE PASTURE. A SUNDRY WILL FOLLOW. IF YOU HAVE ANY ADDITIONAL QUESTIONS PLEASE FEEL FREE TO CONTACT ME.

THANK YOU,

ROBERT GRUBBS JR.
SR. HSE COORDINATOR
432.683.7443 (MAIN)
432.818.2369 (DIRECT)
432.661.6601 (CELL)
432.221.0892 (FAX)

RGRUBBS@CONCHO.COM
MAILING ADDRESS:
ONE CONCHO CENTER
600 W. ILLINOIS AVENUE
MIDLAND, TEXAS 79701

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Bratcher, Mike, EMNRD

From: Robert Grubbs <RGrubbs@concho.com>
Sent: Tuesday, February 28, 2017 12:19 PM
To: 'stucker@blm.gov'; Amos, James <jamos@blm.gov> (jamos@blm.gov); Weaver, Crystal, EMNRD; Bratcher, Mike, EMNRD
Subject: (Notification) BIG PAPI FEDERAL COM #002H (30-015-37833)

MS. TUCKER AND MS. WEAVER,

COG OPERATING LLC IS REPORTING A RELEASE ON THE BIG PAPI FEDERAL COM #002H (30-015-37832)
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ESTIMATED RECOVERED: APPROX. ? BBLS PRODUCED WATER (IN THE PROCESS OF RECOVERING THE FREE FLUID)

THE RELEASE WAS DUE TO A CHECK VALVE THAT FAILED. THE RELEASE OCCURRED IN THE PASTURE. A SUNDRY WILL FOLLOW. IF YOU HAVE ANY ADDITIONAL QUESTIONS PLEASE FEEL FREE TO CONTACT ME.

THANK YOU,

ROBERT GRUBBS JR.
SR. HSE COORDINATOR
432.683.7443 (MAIN)
432.818.2369 (DIRECT)
432.661.6601 (CELL)
432.221.0892 (FAX)
RGRUBBS@CONCHO.COM
MAILING ADDRESS:
ONE CONCHO CENTER
600 W. ILLINOIS AVENUE
MIDLAND, TEXAS 79701

Appendix B

Final C-141 Form Incident #NAB1707232069

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	NAB1707232069
District RP	N/A
Facility ID	N/A
Application ID	N/A

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?	120 (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
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

State of New Mexico
Oil Conservation Division

Incident ID	NAB1707232069
District RP	N/A
Facility ID	N/A
Application ID	N/A

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.

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: ____Ike Tavarez Title: _____Project Manager RM&R_____

Signature:_ Ike Tavarez Date: __08/24/2023_____

email: ___ike.tavarez@conocophillips.com_____ Telephone: _432-701

8630_____

OCD Only

Received by: Shelly Wells Date: 10/23/2023

State of New Mexico
Oil Conservation Division

Incident ID	NAB1707232069
District RP	N/A
Facility ID	N/A
Application ID	N/A

Closure

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 (electronic submittals in .pdf format are preferred) 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.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

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.

Printed Name: Ike Tavarez Title: Project Manager

Signature: Ike Tavarez Date: 09/18/2023

email: ike.tavarez@conocophillips.com Telephone: 432-701-8630

OCD Only

Received by: Shelly Wells Date: 10/23/2023

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Ashley Maxwell Date: 11/03/2023

Printed Name: Ashley Maxwell Title: Environmental Specialist

Appendix C

Work Plan

REMEDIATION WORK PLAN

Property:

Concho Operating, LLC.
Big Papi Federal Com #002H
Eddy County, New Mexico
Unit Letter "C", Section 04, Township 26 South, Range 29 East
Latitude 32.077566, Longitude -103.986229
2RP-4141

September 2017

Prepared for:

Concho Operating, LLC.
600 West Illinois Avenue
Midland, TX 79701
Attn: **Mrs. Rebecca Haskell**

Prepared by:

Ryan Reich
Environmental Project Manager

Jack Zimmerman, P.G., C.P.G
Senior Geologist

Table of Contents

APPENDICES

WORK PLAN

Concho Operating, LLC.
Big Papi Federal Com #002H
Eddy County, New Mexico
Unit Letter "C", Section 04, Township 26 South, Range 29 East
Latitude 32.077566, Longitude -103.986229
2RP-4141

September 2017

1.0 INTRODUCTION

1.1 Site Description & Background

American Safety Services Inc. (ASSI) has prepared this Work Plan for the Concho Operating, LLC. (COG) Big Papi Federal Com #002H (referred to hereinafter as the "Site" or "subject Site"). This Work Plan is based upon the interpretation of the data collected by ASSI.

The Big Papi Federal #002H is located in Unit Letter "C", Section 04, Township 26 South, Range 29 East, Eddy County, New Mexico (GPS 32.077566N, -103.986229W).

Remedial actions were conducted by ASSI in accordance with New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division (NMOCD) rules (*NMAC 19.15.29 Release Notification*) and the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases* as guidance.

1.2 Project Objective

The objective of the Work Plan is to present documentation of the activities that were performed to date and to request an effective means to remediate the Site.

1.3 Standard of Care

ASSI's services are performed in accordance with standards provided by a firm rendering the same or similar services in the area during the same time period. ASSI makes no warranties, express or implied, as to the services performed hereunder. Additionally, ASSI does not warranty the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties). This scope of services will be performed in accordance with the scope of work agreed with the client.

1.4 Reliance

This report has been prepared for the exclusive use of COG, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization of COG and ASSI. Any unauthorized distribution or reuse is at the sole risk of COG. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal, the report, and ASSI's Agreement. The limitation of liability defined in the agreement is the aggregate limit of ASSI's liability to the client.

2.0 SITE RANKING & PROPOSED REMEDIAL ACTION GOALS

The Site is subject to regulatory oversight by the NMOCD. To address activities related to releases, the NMOCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the NMOCD rules, specifically NMAC 19.15.29 *Release Notification*. These documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

In accordance with the NMOCD's *Guidelines for Remediation of Leaks, Spills and Releases*, ASSI utilized the general site characteristics to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the table below:

Ranking Criteria			Ranking Score
Depth to Groundwater	<50 feet	20	**0**
	50 to 99 feet	10	
	>100 feet	0	
Wellhead Protection Area, <1,000 feet from a water source, or; <200 feet from private domestic water source.	Yes	20	**0**
	No	0	
Distance to Surface Water Body	<200 feet	20	**0**
	200 to 1,000 feet	10	
	>1,000 feet	0	
Total Ranking Score			**0**

Based on ASSI's evaluation of the scoring criteria, the Site would have a Total Ranking Score of 0. This ranking is based on the following:

- The depth to the initial groundwater-bearing zone is 100 to 150 feet at the Site.
- The impacted area is greater than 200 feet from a private domestic water source.
- Distance to the nearest surface water body is greater than 1,000 ft.

Based on a Total Ranking Score of 0, cleanup goals for soils remaining in place include: 10 milligrams per kilogram (mg/Kg) for Benzene, 50 mg/Kg for Total Benzene, Toluene,

Ethylbenzene, and Xylene (BTEX), 5,000 mg/Kg for Total Petroleum Hydrocarbons (TPH), and 600 mg/Kg for Chloride.

Figures 1 and 2 show the location of COG's Big Papi Federal Com #002H facility in Eddy County, New Mexico and surrounding topography.

3.0 INITIAL RESPONSE & ACTIVITIES

3.1 Initial Response

On July 26, 2017, ASSI personnel completed drilling and sampling activities utilizing air rotary drilling techniques at the Big Papi Federal Com #002H facility. This action was in response to a reportable release that occurred on February 28, 2017. Thirty (30) barrels (bbls) of produced water was released directly to the ground. None of the fluids were recovered. The release impacted approximately eight thousand (8,000) square feet of pasture area (Figure 3).

3.2 Drilling Activities

On July 26th ASSI and COG personnel along with Scarborough Drilling were present to collect delineation samples utilizing air rotary drilling techniques. Mr. Ryan Reich, an ASSI environmental professional, was present to document onsite activities (written and photographic).

A total of seventeen (17) samples were collected, however, only eleven (11) samples were analyzed. Six (6) samples were analyzed from Soil Bore-1 and five (5) samples were analyzed from Soil Bore-2 for BTEX, TPH, and Chloride (Table 1).

Two (2) soil borings (i.e., Soil Bore-1 and Soil Bore-2), were advanced to delineate Chloride at depth. Soil boring locations are shown on Figure 4. Discrete samples were collected from Soil Bore-1 at the following depths: 1', 3', 5', 7', 10', and 20', below ground surface (bgs). At Soil Bore-2 discrete samples were collected at the following depths: 1', 3', 5' 7' and 15' bgs. Soil was field screened for Chloride utilizing electro conductivity during drilling operations.

3.3 Soil Sampling Analytical Results

Analytical results were compared to the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases* (Section VI A. Contaminated Soils) and show Chloride exceedances exist in soil above the NMOCD clean-up goals as discussed in Section 2.0 at both sample locations. However, at location Soil Bore-1 vertical delineation was achieved at a depth of nine (9) feet bgs with a Chloride concentration of 190 mg/Kg. At location Soil Bore-2 vertical delineation was achieved at a depth of seven (7) feet bgs with a Chloride concentration of 120 mg/Kg. Each location meets the NMOCD's threshold of 600 mg/Kg satisfying clean-up goal criteria.

4.0 LABORATORY ANALYTICAL METHODS

The samples were analyzed for TPH GRO/DRO utilizing EPA method SW-846 8015, BTEX using EPA method SW-846 8021B, and Chloride utilizing EPA method SW-846 300.1. Copies of the laboratory analysis are provided in Appendix D.

Soil was collected in laboratory prepared glassware, placed on ice, and packed in a cooler. The sample coolers and completed chain-of-custody forms were relinquished to Xenco Laboratories in Midland, Texas for normal turn-around time.

Figure 4 shows the approximate location of the sampling (i.e., Soil Bore) locations and dimensions of the proposed excavation area in relation to pertinent land features and general Site boundaries, which is included in Appendix A.

5.0 WORK PLAN

Based upon the data collected and the work completed by ASSI, the constituent of concern (COC) has been vertically delineated at both sample locations. Furthermore, laboratory analysis shows that TPH and BTEX concentrations are below the NMOCD clean-up goals.

Based on the analytical data presented in Table 1, COG and ASSI propose to complete a removal action of the impacted material. The area adjacent to and around Soil Bore-1 will be excavated to a depth of approximately four (4) feet bgs. The area adjacent to and around Soil Bore-2 will be excavated to a depth of approximately three (3) feet bgs (Figure 4). All material will be removed by mechanical means, be temporarily stockpiled onsite and subsequently removed (hauled away) offsite to a proper disposal facility under appropriate manifest. Prior to beginning backfilling operations, sidewall samples will be collected from each excavation in their prospective cardinal direction for Chloride only and submitted for laboratory analysis. The excavated areas will be backfilled to grade with clean imported material and the surface grade contoured to the surrounding landscape.

APPENDIX A

Figures

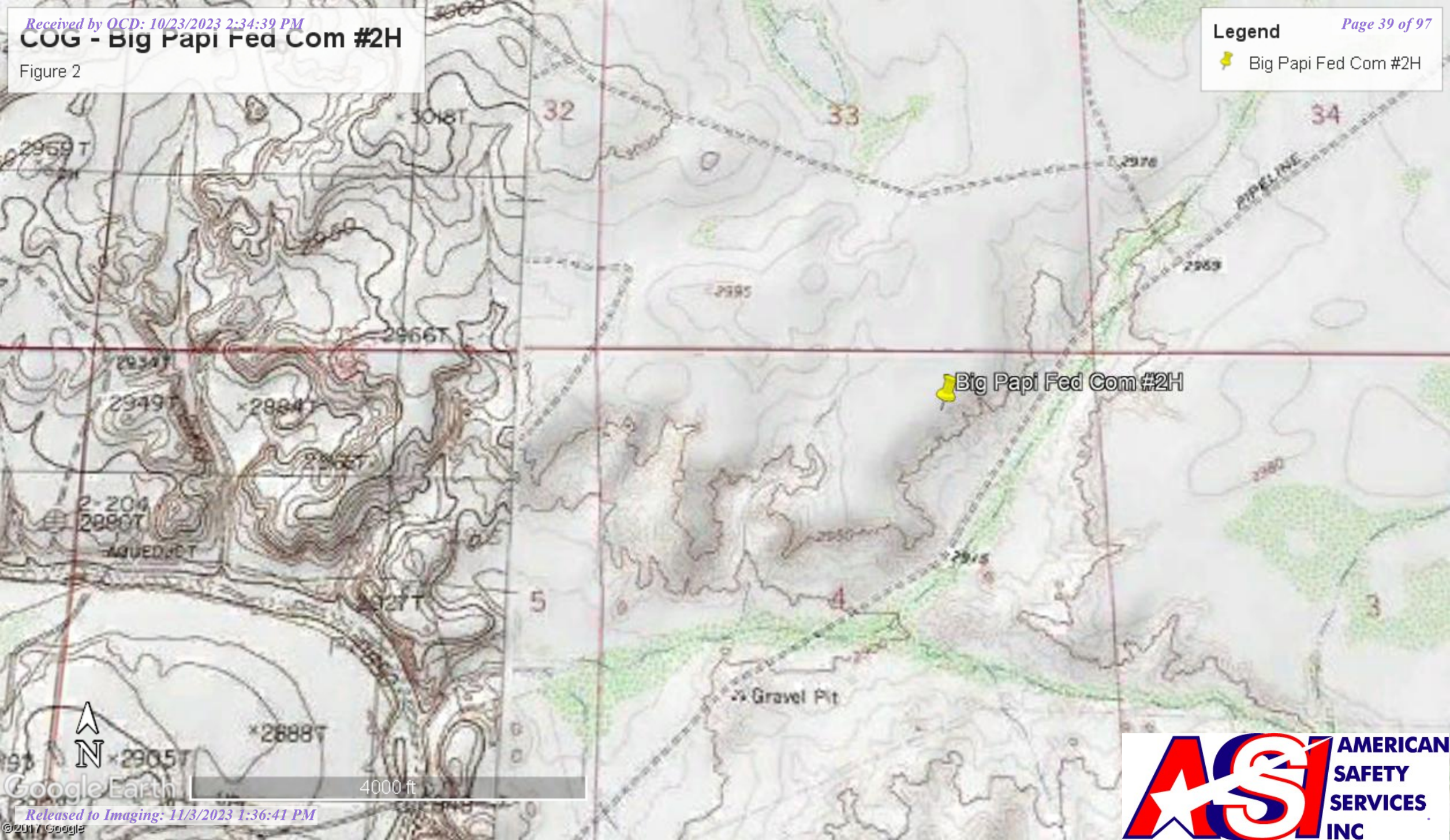
COG - Big Papi Fed Com #2H

Figure 1

AMERICAN SAFETY SERVICES INC

COG - Big Papi Fed Com #2H

Figure 2

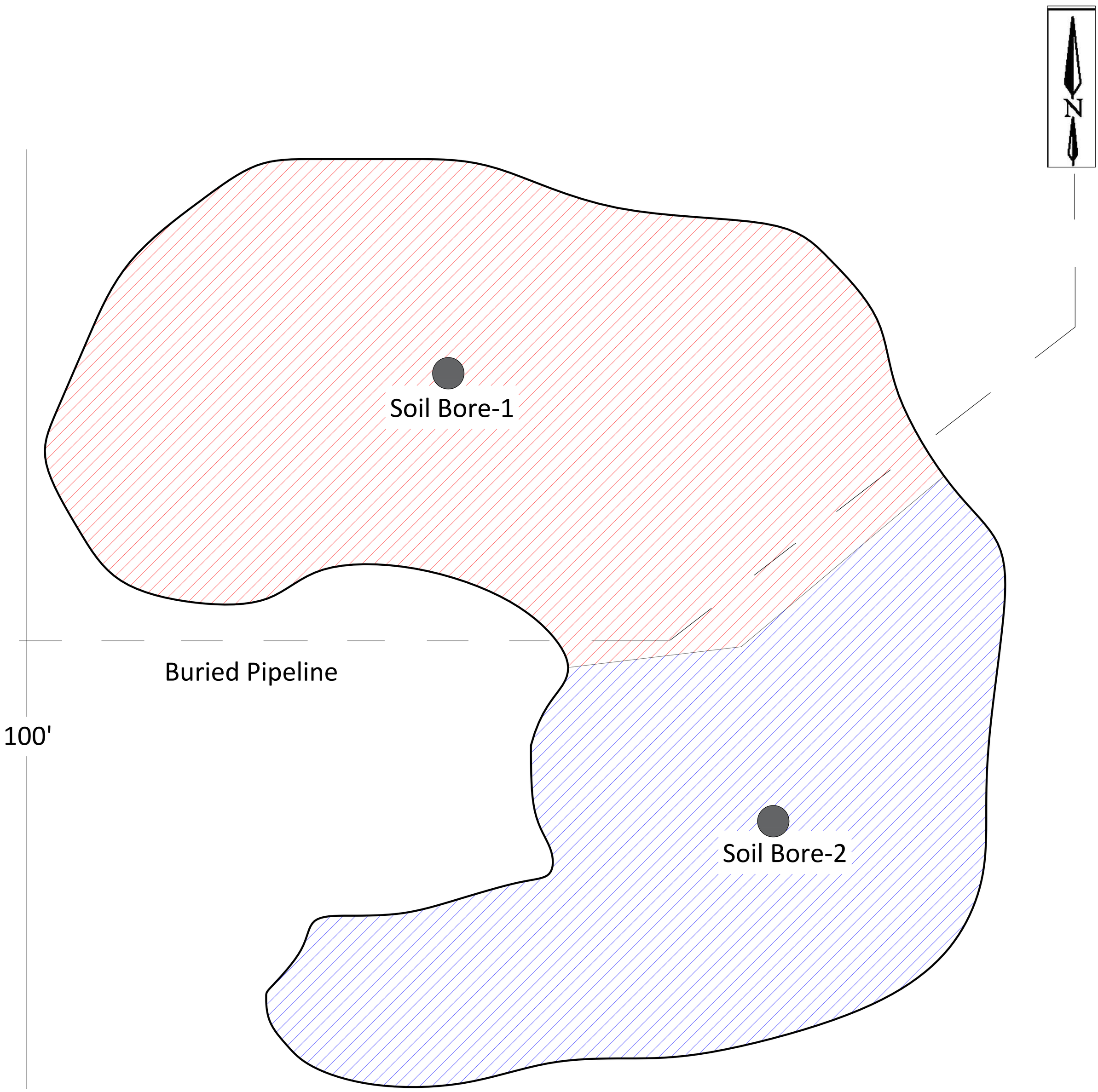


AMERICAN SAFETY SERVICES INC

COG - Big Papi Fed Com #2H

Figure 3

AMERICAN SAFETY SERVICES INC



Legend

- 4' Excavation
- 3' Excavation
- Sample Point

Concho-
Big Papi Federal Com #002H
Eddy Co, New Mexico
32.0775N, -103.9862W

American Safety Services, Inc
8715 Andrews Hwy
Odessa, TX 79765
Phone: (432) 552-7625

FIGURE 4

Proposed Excavation Depths

APPENDIX B

Table 1

TABLE 1
Summary of Delineation Sampling Analytical Results
Concentrations of Benzene, BTEX, TPH & Chloride in Soil
Concho Operating, LLC
Big Papi Federal Com #002H
Eddy County, New Mexico
NMOCD REF: 2RP-4141

SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	SOIL STATUS	8021B					8015M				300.0
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYLBENZENE (mg/Kg)	XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	ORO (mg/Kg)	Total TPH (mg/Kg)	CHLORIDE (mg/Kg)
NMOCD - Guidelines for Remediation of Leaks, Spills and Releases				10	NE	NE	NE	50	NE	NE	NE	5,000	600
Vertical Delination Sampling													
Soil Bore-1	0'-1'	7/26/2017	In-Situ	<0.00200	<0.00200	<0.00200	<0.002	<0.002	<15.0	21.5	<15.0	21.5	**44,500**
Soil Bore-1	2'-3'	7/26/2017	In-Situ	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	27.2	<15.0	27.2	**3,840**
Soil Bore-1	4'-5'	7/26/2017	In-Situ	-	-	-	-	-	-	-	-	-	**1,610**
Soil Bore-1	6'-7'	7/26/2017	In-Situ	-	-	-	-	-	-	-	-	-	**1,080**
Soil Bore-1	9'-10'	7/26/2017	In-Situ	-	-	-	-	-	-	-	-	-	190
Soil Bore-1	19'-20'	7/26/2017	In-Situ	-	-	-	-	-	-	-	-	-	187
Soil Bore-2	0'-1'	7/26/2017	In-Situ	<0.00200	<0.00200	<0.00200	<0.002	<0.002	<15.0	<15.0	<15.0	<15	**12,200**
Soil Bore-2	2'-3'	7/26/2017	In-Situ	-	-	-	-	-	-	-	-	-	**3,160**
Soil Bore-2	4'-5'	7/26/2017	In-Situ	-	-	-	-	-	-	-	-	-	**785**
Soil Bore-2	6'-7'	7/26/2017	In-Situ	-	-	-	-	-	-	-	-	-	120
Soil Bore-2	14'-15'	7/26/2017	In-Situ	-	-	-	-	-	-	-	-	-	231

mg/Kg - milligrams per Kilogram
— = Not Established
Concentrations in **BOLD** exceed the NMOCD Guidelines
Proposed excavted area

$'

APPENDIX C

Laboratory Analysis

Certificate of Analysis Summary 558748

American Safety Services, Odessa, TX

Project Name: Big Papi Fed #2

Project Id:
Contact: Thomas Franklin
Project Location: Eddy Co.NM

Date Received in Lab: Thu Jul-27-17 08:50 am
Report Date: 31-AUG-17
Project Manager: Brandi Ritcherson

Analysis Requested													
	Lab Id:	558748-001		558748-002		558748-003		558748-004		558748-005		558748-007	
	Field Id:	Soil Bore-1		Soil Bore-1		Soil Bore-1		Soil Bore-1		Soil Bore-1		Soil Bore-1	
	Depth:	0-1		2-3		4-5		6-7		9-10		19-20	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-26-17 11:25		Jul-26-17 11:30		Jul-26-17 11:35		Jul-26-17 11:40		Jul-26-17 11:45		Jul-26-17 11:55	
BTEX by EPA 8021B	***Extracted:***	Jul-31-17 14:00		Jul-31-17 14:00									
	Analyzed:	Jul-31-17 23:10		Jul-31-17 23:29									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Benzene		<0.00200	0.00200	<0.00201	0.00201								
Toluene		<0.00200	0.00200	<0.00201	0.00201								
Ethylbenzene		<0.00200	0.00200	<0.00201	0.00201								
m,p-Xylenes		<0.00399	0.00399	<0.00402	0.00402								
o-Xylene		<0.00200	0.00200	<0.00201	0.00201								
Total Xylenes		<0.002	0.002	<0.00201	0.00201								
Total BTEX		<0.002	0.002	<0.00201	0.00201								
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jul-31-17 15:22		Jul-31-17 15:22		Jul-31-17 15:22		Jul-31-17 15:22		Jul-31-17 15:22		Jul-31-17 15:22	
	Analyzed:	Jul-31-17 15:52		Jul-31-17 16:00		Jul-31-17 16:08		Jul-31-17 16:15		Jul-31-17 15:29		Jul-31-17 16:38	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		44500	248	3840	49.6	1610	24.7	1080	24.9	190	4.98	187	4.91
TPH By SW8015 Mod	***Extracted:***	Jul-28-17 17:00		Jul-28-17 17:00									
	Analyzed:	Jul-29-17 06:42		Jul-29-17 07:03									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0								
Diesel Range Organics (DRO)		21.5	15.0	27.2	15.0								
Oil Range Hydrocarbons (ORO)		<15.0	15.0	<15.0	15.0								
Total TPH		21.5	15	27.2	15								

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Brandi Ritcherson
Project Manager

Certificate of Analysis Summary 558748

American Safety Services, Odessa, TX

Project Name: Big Papi Fed #2

Project Id:
Contact: Thomas Franklin
Project Location: Eddy Co.NM

Date Received in Lab: Thu Jul-27-17 08:50 am
Report Date: 31-AUG-17
Project Manager: Brandi Ritcherson

Analysis Requested											
	Lab Id:	558748-010		558748-011		558748-012		558748-013		558748-015	
	Field Id:	Soil Bore-2		Soil Bore-2		Soil Bore-2		Soil Bore-2		Soil Bore-2	
	Depth:	0-1		2-3		4-5		6-7		14-15	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-26-17 12:15		Jul-26-17 12:20		Jul-26-17 12:25		Jul-26-17 12:27		Jul-26-17 12:32	
BTEX by EPA 8021B	***Extracted:***	Jul-31-17 14:00									
	Analyzed:	Jul-31-17 23:47									
	Units/RL:	mg/kg	RL								
Benzene		<0.00200	0.00200								
Toluene		<0.00200	0.00200								
Ethylbenzene		<0.00200	0.00200								
m,p-Xylenes		<0.00401	0.00401								
o-Xylene		<0.00200	0.00200								
Total Xylenes		<0.002	0.002								
Total BTEX		<0.002	0.002								
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jul-31-17 15:22		Jul-31-17 15:22		Jul-31-17 15:22		Jul-31-17 15:22		Jul-31-17 15:22	
	Analyzed:	Jul-31-17 16:46		Jul-31-17 16:54		Jul-31-17 17:01		Jul-31-17 17:09		Jul-31-17 17:17	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		12200	98.2	3160	24.9	785	4.92	120	4.92	231	4.95
TPH By SW8015 Mod	***Extracted:***	Jul-31-17 11:00									
	Analyzed:	Jul-31-17 13:58									
	Units/RL:	mg/kg	RL								
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0								
Diesel Range Organics (DRO)		<15.0	15.0								
Oil Range Hydrocarbons (ORO)		<15.0	15.0								
Total TPH		<15	15								

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Brandi Ritcherson
Project Manager

Analytical Report 558748

for

American Safety Services

Project Manager: Thomas Franklin

Big Papi Fed #2

31-AUG-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

31-AUG-17

Project Manager: **Thomas Franklin**
American Safety Services
8715 Andrews Hwy
Odessa, TX 79765

Reference: XENCO Report No(s): **558748**
Big Papi Fed #2
Project Address: Eddy Co.NM

Thomas Franklin:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 558748. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 558748 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Brandi Ritcherson
Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

CHAIN OF CUSTODY

Page 1 Of 2

XENCO LABORATORIES
Setting the Standard since 1990

Stafford,Texas (281-240-4200)
Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Quote #
Xenco Job # 558748

Client / Reporting Information

Company Name / Branch: American Safety Services Inc.
Company Address: 8715 Andrews Hwy, Odessa Tx 79765
Email: tfranklin@americansafety.net, jzimmerman@americansafety.net (Email only)
Phone No: 432-557-9868
Project Contact: Thomas Franklin
Samplers's Name: Ryan Reich / Mike Dial

Project Information

Project Name/Number: Big Papi Fed #2
Project Location: Eddy Co. NM
Invoice To: COG - ATTN: Becky Haskell
PO Number:

Analytical Information

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Chloride (Method 300)	BTEX 8021B	TPH 8015 (Ext C35)	Hold	Field Comments
1	Soil Bore -1	0-1	7/26/17	1125	S	1									X	X	X		On Ice
2		2-3	7/26/17	1130	S	1									X	X	X		
3		4-5	7/26/17	1135	S	1									X				
4		6-7	7/26/17	1140	S	1									X				
5		9-10	7/26/17	1145	S	1									X				
6		14-15	7/26/17	1150	S	1												X	
7		19-20	7/26/17	1155	S	1									X				
8		24-25	7/26/17	1200	S	1												X	
9		29-30	7/26/17	1205	S	1												X	
10	Soil Bore-2	0-1	7/26/17	1215	S	1									X	X	X		

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [x] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

If TPH exceeds 5,000 mg/kg, or if Benzene exceeds 10 mg/kg or if Total BTEX exceeds 50 run deeper samples on Hold. or if Chloride exceeds 600 mg/kg run deeper samples

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		7/25/17 0930		2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice
			5			[x]

Temp: 5.9 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 5.7

XENCO LABORATORIES

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San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

CHAIN OF CUSTODY

Page 2 Of 2

Xenco Quote #

Xenco Job # 558748

Client / Reporting Information

Company Name / Branch: American Safety Services Inc.
Company Address: 8715 Andrews Hwy, Odessa Tx 79765
Email: tfranklin@americansafety.net; jzimmerman@americansafety.net — Email only
Phone No: 432-557-9868
Project Contact: Thomas Franklin
Samplers's Name: Bryan Rench / Mike Dial

Project Information

Project Name/Number: Big Papi Fed #2
Project Location: Eddy co. NM
Invoice To: COG. ATTN Becky Haskell
PO Number:

Analytical Information

Chloride (Method 300)
BTEX 8021B
TPH 8015 (Ext to C35)
Metal

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Chloride	BTEX	TPH	Metal	Field Comments
1	Soil Bore -2	2-3	7/26/17	1220	S	1									X				on Ice
2		4-5	7/26/17	1225	S	1									X				
3		6-7	7/26/17	1227	S	1									X				
4		9-10	7/26/17	1230	S	1												X	
5		14-15	7/26/17	1232	S	1									X				
6		19-20	7/26/17	1237	S	1												X	
7		24-25	7/26/17	1242	S	1												X	
8	NFE																		
9																			
10																			

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [x] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes: See PS 1

FED-EX / UPS: T

Temp: 5.9 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 5.7

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		7/27/17 0830		2		2
2	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3			3	4		4
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
			5			X

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: American Safety Services

Date/ Time Received: 07/27/2017 08:50:00 AM

Work Order #: 558748

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5.7
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**N/A**
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**
#6 Custody Seals intact on sample bottles?	**N/A**
#7 *Custody Seals Signed and dated?	**N/A**
#8 *Chain of Custody present?	**Yes**
#9 Sample instructions complete on Chain of Custody?	**Yes**
#10 Any missing/extra samples?	**No**
#11 Chain of Custody signed when relinquished/ received?	**Yes**
#12 Chain of Custody agrees with sample label(s)?	**Yes**
#13 Container label(s) legible and intact?	**Yes**
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#15 Samples in proper container/ bottle?	**Yes**
#16 Samples properly preserved?	**Yes**
#17 Sample container(s) intact?	**Yes**
#18 Sufficient sample amount for indicated test(s)?	**Yes**
#19 All samples received within hold time?	**Yes**
#20 Subcontract of sample(s)?	**No**
#21 VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Shawnee Smith Date: 07/28/2017

Shawnee Smith

Checklist reviewed by: Brandi Ritcherson Date: 07/28/2017

Brandi Ritcherson

APPENDIX D

Initial C-141

NM OIL CONSERVATION
ARTESIA DISTRICT
MAR 07 2017
RECEIVED

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

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

nAB1707232069

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC 229137	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443
Facility Name: Big Papi Federal Com #002H	Facility Type: Flowline

Surface Owner: Federal	Mineral Owner:	API No. 30-015-37833

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	04	26S	29E	330	North	1980	West	Eddy

Latitude 32.077566 **Longitude** 103.986229

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 30 bbls	Volume Recovered: 0 bbls
Source of Release: Flowline	Date and Hour of Occurrence: February 28, 2017 10:00 am	Date and Hour of Discovery: February 28, 2017 10:00 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Ms. Weaver – NMOCD / Ms. Tucker - BLM	
By Whom? Robert Grubbs	Date and Hour: February 28, 2017 12:19 ~~am~~ pm	
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.*

The release was caused by a check valve failure. The check valve was repaired.

Describe Area Affected and Cleanup Action Taken.*

The release was within a pasture. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area sampled to delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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: Rebecca Haskell	**OIL CONSERVATION DIVISION**	
Printed Name: Rebecca Haskell	Signed By Mike Bratcher Approved by Environmental Specialist:	
Title: Senior HSE Coordinator	Approval Date: 3/10/17	Expiration Date: N/A
E-mail Address: rhaskell@concho.com	Conditions of Approval: See Attached	Attached ☐
Date: March 7, 2017 Phone: 432-683-7443		

* Attach Additional Sheets If Necessary

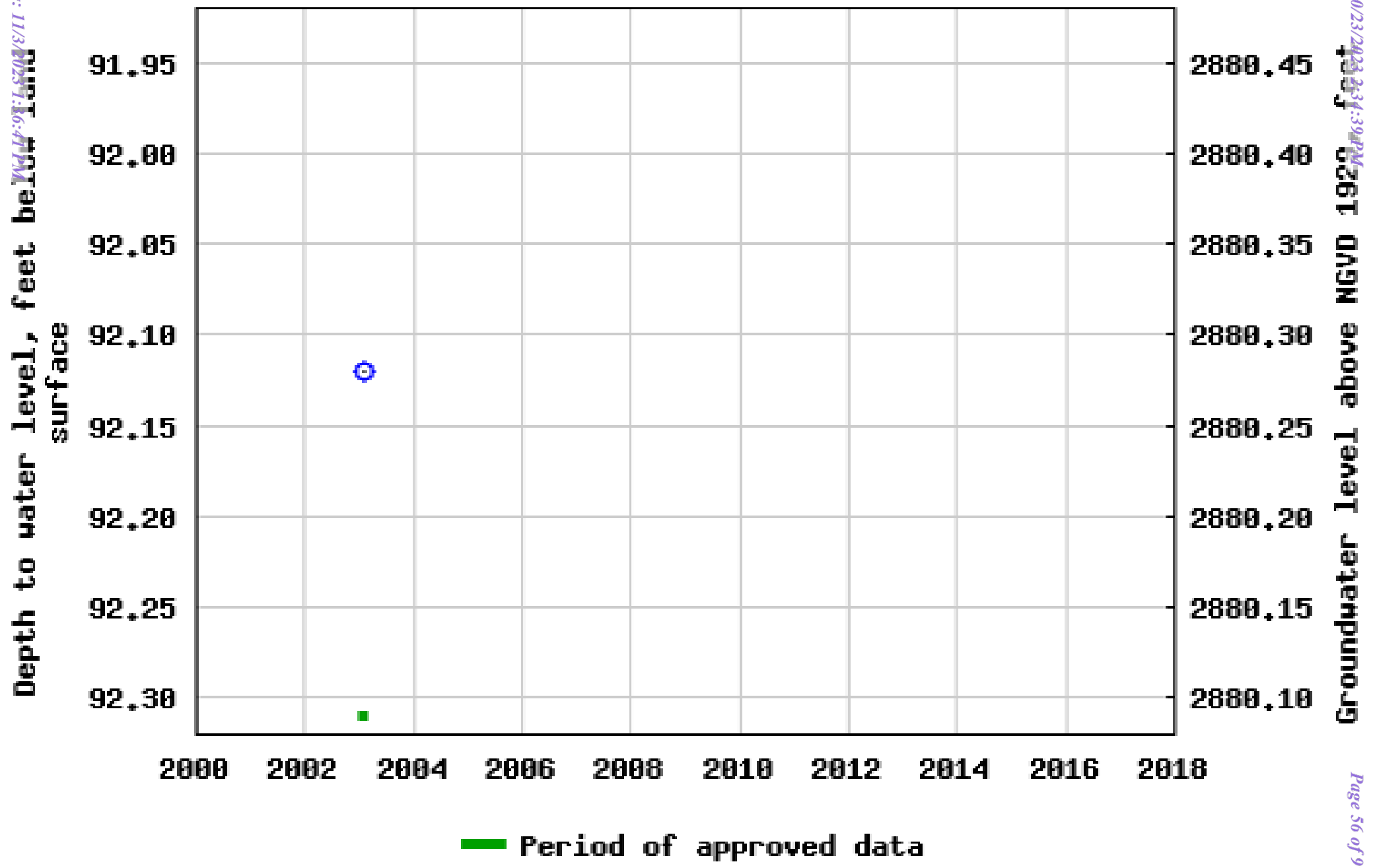
2RP-4141

APPENDIX E

Groundwater Data

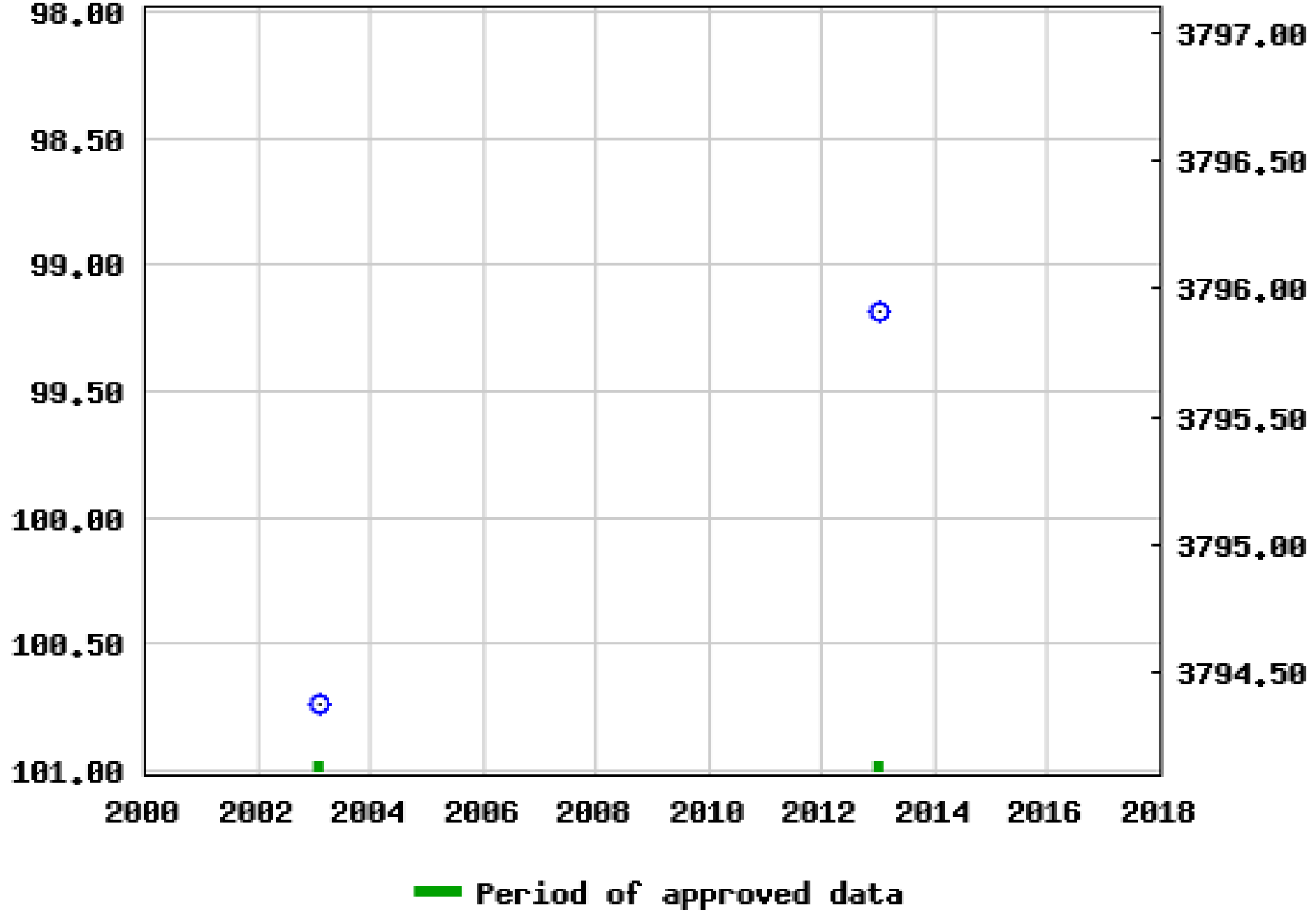
USGS

USGS 320303104012301 26S.28E.14.21412



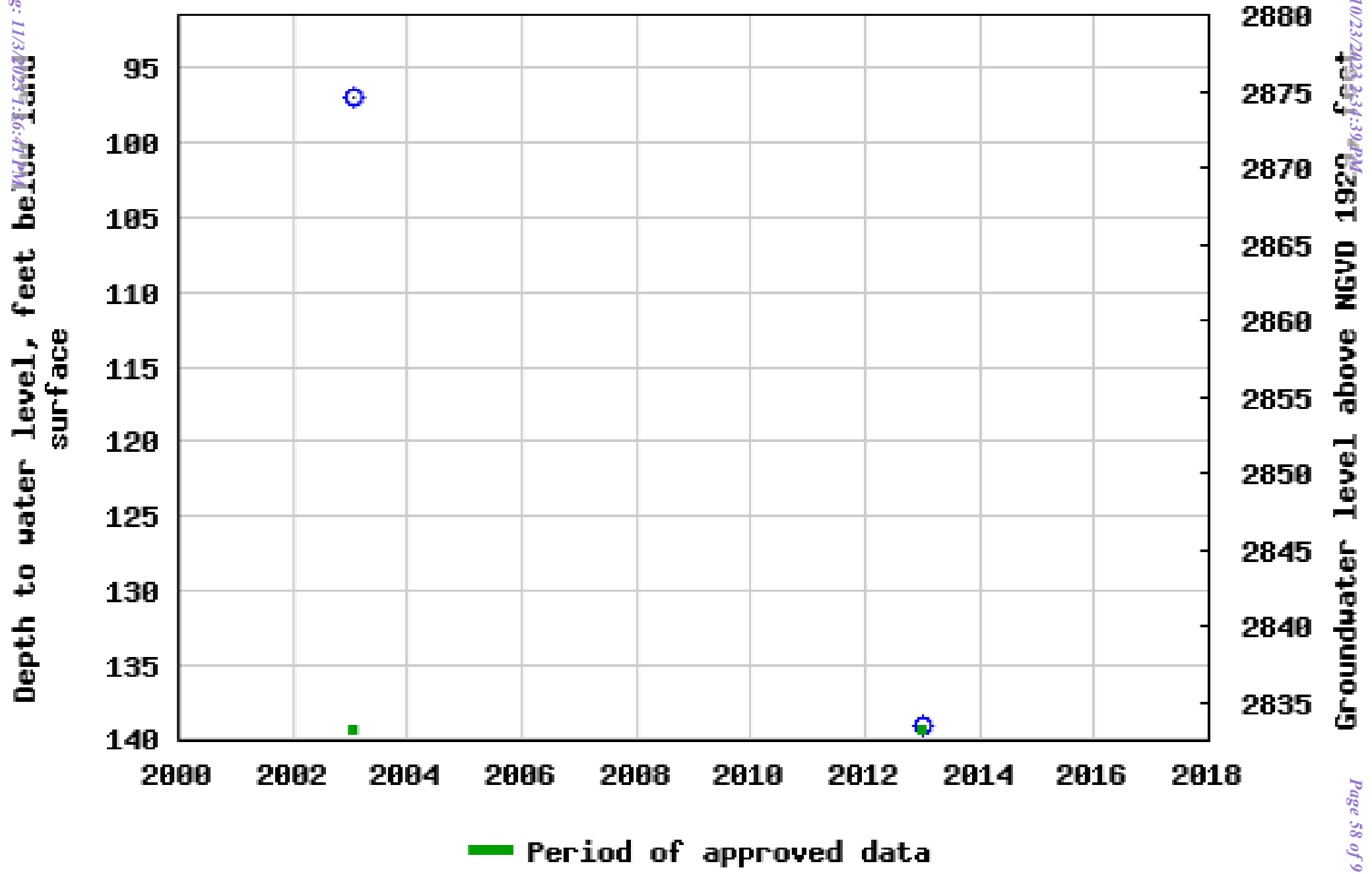
USGS

USGS 320138104320001 26S.24E.19.43111



USGS

USGS 320309104020401 26S.28E.14.11111



Appendix D

Laboratory Analytical Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Justin Nixon
ARCADIS US Inc
1004 North Big Spring
Suite 300
Midland, Texas 79701

Generated 7/3/2023 4:20:11 PM

JOB DESCRIPTION

Big Papi Fed Com 002H
SDG NUMBER Eddy County, NM

JOB NUMBER

880-30229-1

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
7/3/2023 4:20:11 PM

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

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Laboratory Job ID: 880-30229-1
SDG: Eddy County, NM

Table of Contents

Definitions/Glossary

Client: ARCADIS US Inc Job ID: 880-30229-1
Project/Site: Big Papi Fed Com 002H SDG: Eddy County, NM

Qualifiers

GC VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
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.

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: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Job ID: 880-30229-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-30229-1

Receipt
The samples were received on 6/30/2023 11:30 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 5.0°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: N-1-S-1' (880-30229-1), E-1-S-1' (880-30229-2), S-1-S-1' (880-30229-3), W-1-S-1' (880-30229-4), NFL-1-S-1' (880-30229-5), NFL-1-S-2' (880-30229-6), NFL-2-S-1' (880-30229-7), NFL-2-S-2' (880-30229-8), NFL-3-S-1' (880-30229-9), NFL-3-S-2' (880-30229-10), SFL-1-S-1' (880-30229-11) and SFL-1-S-2' (880-30229-12).

GC VOA
Method 8021B: Surrogate recovery for the following samples were outside control limits: S-1-S-1' (880-30229-3), W-1-S-1' (880-30229-4) and (880-30229-A-1-A MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following samples were outside control limits: NFL-1-S-2' (880-30229-6), NFL-2-S-1' (880-30229-7), NFL-2-S-2' (880-30229-8), NFL-3-S-1' (880-30229-9) and NFL-3-S-2' (880-30229-10). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: Surrogate recovery for the following samples were outside control limits: SFL-1-S-1' (880-30229-11) and SFL-1-S-2' (880-30229-12). 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 method blank for preparation batch 880-56757 and analytical batch 880-56779 contained Gasoline Range Organics (GRO)-C6-C10 above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-56757 and analytical batch 880-56779 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-56816/20), (CCV 880-56816/5) and (LCS 880-56820/2-A). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: The method blank for preparation batch 880-56820 and analytical batch 880-56816 contained Gasoline Range Organics (GRO)-C6-C10 and OII Range Organics (Over C28-C36) above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

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: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Client Sample ID: N-1-S-1'

Date Collected: 06/28/23 09:00
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-1

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000388	U	0.00202	0.000388	mg/Kg		06/30/23 12:25	07/01/23 03:20	1
Toluene	<0.000460	U	0.00202	0.000460	mg/Kg		06/30/23 12:25	07/01/23 03:20	1
Ethylbenzene	<0.000570	U	0.00202	0.000570	mg/Kg		06/30/23 12:25	07/01/23 03:20	1
m-Xylene & p-Xylene	<0.00102	U	0.00403	0.00102	mg/Kg		06/30/23 12:25	07/01/23 03:20	1
o-Xylene	<0.000347	U	0.00202	0.000347	mg/Kg		06/30/23 12:25	07/01/23 03:20	1
Xylenes, Total	<0.00102	U	0.00403	0.00102	mg/Kg		06/30/23 12:25	07/01/23 03:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*	*06/30/23 12:25*	*07/01/23 03:20*	*1*
1,4-Difluorobenzene (Surr)	*80*		*70 - 130*	*06/30/23 12:25*	*07/01/23 03:20*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00102	U	0.00403	0.00102	mg/Kg			07/03/23 01:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**20.5**	**J**	49.9	15.0	mg/Kg			07/03/23 16:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**20.5**	**J B**	49.9	15.0	mg/Kg		07/03/23 08:26	07/03/23 14:43	1
Diesel Range Organics (Over C10-C28)	<15.0	U	49.9	15.0	mg/Kg		07/03/23 08:26	07/03/23 14:43	1
OII Range Organics (Over C28-C36)	<15.0	U	49.9	15.0	mg/Kg		07/03/23 08:26	07/03/23 14:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*85*		*70 - 130*	*07/03/23 08:26*	*07/03/23 14:43*	*1*
o-Terphenyl	*91*		*70 - 130*	*07/03/23 08:26*	*07/03/23 14:43*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**120**		5.02	0.397	mg/Kg			06/30/23 18:02	1

Client Sample ID: E-1-S-1'

Date Collected: 06/28/23 09:30
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-2

Matrix: Solid

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		06/30/23 12:25	07/01/23 03:46	1
Toluene	<0.000453	U	0.00199	0.000453	mg/Kg		06/30/23 12:25	07/01/23 03:46	1
Ethylbenzene	<0.000562	U	0.00199	0.000562	mg/Kg		06/30/23 12:25	07/01/23 03:46	1
m-Xylene & p-Xylene	<0.00100	U	0.00398	0.00100	mg/Kg		06/30/23 12:25	07/01/23 03:46	1
o-Xylene	<0.000342	U	0.00199	0.000342	mg/Kg		06/30/23 12:25	07/01/23 03:46	1
Xylenes, Total	<0.00100	U	0.00398	0.00100	mg/Kg		06/30/23 12:25	07/01/23 03:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*128*		*70 - 130*	*06/30/23 12:25*	*07/01/23 03:46*	*1*
1,4-Difluorobenzene (Surr)	*79*		*70 - 130*	*06/30/23 12:25*	*07/01/23 03:46*	*1*

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Client Sample ID: E-1-S-1'

Date Collected: 06/28/23 09:30
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-2

Matrix: Solid

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			07/03/23 01:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**19.7**	**J**	50.0	15.0	mg/Kg			07/03/23 16:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**19.7**	**J B**	50.0	15.0	mg/Kg		07/03/23 08:26	07/03/23 15:06	1
Diesel Range Organics (Over C10-C28)	<15.0	U	50.0	15.0	mg/Kg		07/03/23 08:26	07/03/23 15:06	1
OII Range Organics (Over C28-C36)	<15.0	U	50.0	15.0	mg/Kg		07/03/23 08:26	07/03/23 15:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*78*		*70 - 130*	*07/03/23 08:26*	*07/03/23 15:06*	*1*
o-Terphenyl	*83*		*70 - 130*	*07/03/23 08:26*	*07/03/23 15:06*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**402**		5.03	0.397	mg/Kg			06/30/23 18:20	1

Client Sample ID: S-1-S-1'

Date Collected: 06/28/23 10:00
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-3

Matrix: Solid

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		06/30/23 12:25	07/01/23 04:13	1
Toluene	<0.000454	U	0.00199	0.000454	mg/Kg		06/30/23 12:25	07/01/23 04:13	1
Ethylbenzene	<0.000563	U	0.00199	0.000563	mg/Kg		06/30/23 12:25	07/01/23 04:13	1
m-Xylene & p-Xylene	<0.00101	U	0.00398	0.00101	mg/Kg		06/30/23 12:25	07/01/23 04:13	1
o-Xylene	<0.000343	U	0.00199	0.000343	mg/Kg		06/30/23 12:25	07/01/23 04:13	1
Xylenes, Total	<0.00101	U	0.00398	0.00101	mg/Kg		06/30/23 12:25	07/01/23 04:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*138*	*S1+*	*70 - 130*	*06/30/23 12:25*	*07/01/23 04:13*	*1*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*06/30/23 12:25*	*07/01/23 04:13*	*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			07/03/23 01:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**18.0**	**J**	50.0	15.0	mg/Kg			07/03/23 11:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**18.0**	**J F1 F2 *1 B**	50.0	15.0	mg/Kg		07/01/23 10:26	07/02/23 14:01	1
Diesel Range Organics (Over C10-C28)	<15.0	U F1	50.0	15.0	mg/Kg		07/01/23 10:26	07/02/23 14:01	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Client Sample ID: S-1-S-1'

Date Collected: 06/28/23 10:00
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-3
Matrix: Solid

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		07/01/23 10:26	07/02/23 14:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*121*		*70 - 130*	*07/01/23 10:26*	*07/02/23 14:01*	*1*
o-Terphenyl	*107*		*70 - 130*	*07/01/23 10:26*	*07/02/23 14:01*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**126**		4.98	0.393	mg/Kg			06/30/23 18:26	1

Client Sample ID: W-1-S-1'

Date Collected: 06/28/23 10:30
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-4
Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000381	U	0.00198	0.000381	mg/Kg		06/30/23 12:25	07/01/23 04:39	1
Toluene	<0.000451	U	0.00198	0.000451	mg/Kg		06/30/23 12:25	07/01/23 04:39	1
Ethylbenzene	<0.000559	U	0.00198	0.000559	mg/Kg		06/30/23 12:25	07/01/23 04:39	1
m-Xylene & p-Xylene	<0.00100	U	0.00396	0.00100	mg/Kg		06/30/23 12:25	07/01/23 04:39	1
o-Xylene	<0.000341	U	0.00198	0.000341	mg/Kg		06/30/23 12:25	07/01/23 04:39	1
Xylenes, Total	<0.00100	U	0.00396	0.00100	mg/Kg		06/30/23 12:25	07/01/23 04:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*150*	*S1+*	*70 - 130*	*06/30/23 12:25*	*07/01/23 04:39*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*	*06/30/23 12:25*	*07/01/23 04:39*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00100	U	0.00396	0.00100	mg/Kg			07/03/23 01:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**19.4**	**J**	49.9	15.0	mg/Kg			07/03/23 11:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**19.4**	**J *1 B**	49.9	15.0	mg/Kg		07/01/23 10:26	07/02/23 15:07	1
Diesel Range Organics (Over C10-C28)	<15.0	U	49.9	15.0	mg/Kg		07/01/23 10:26	07/02/23 15:07	1
OII Range Organics (Over C28-C36)	<15.0	U	49.9	15.0	mg/Kg		07/01/23 10:26	07/02/23 15:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*129*		*70 - 130*	*07/01/23 10:26*	*07/02/23 15:07*	*1*
o-Terphenyl	*115*		*70 - 130*	*07/01/23 10:26*	*07/02/23 15:07*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**163**		4.95	0.391	mg/Kg			06/30/23 18:31	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Client Sample ID: NFL-1-S-1'

Date Collected: 06/28/23 11:00
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-5

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000389	U	0.00202	0.000389	mg/Kg		06/30/23 12:25	07/01/23 05:05	1
Toluene	<0.000461	U	0.00202	0.000461	mg/Kg		06/30/23 12:25	07/01/23 05:05	1
Ethylbenzene	<0.000571	U	0.00202	0.000571	mg/Kg		06/30/23 12:25	07/01/23 05:05	1
m-Xylene & p-Xylene	<0.00102	U	0.00404	0.00102	mg/Kg		06/30/23 12:25	07/01/23 05:05	1
o-Xylene	<0.000347	U	0.00202	0.000347	mg/Kg		06/30/23 12:25	07/01/23 05:05	1
Xylenes, Total	<0.00102	U	0.00404	0.00102	mg/Kg		06/30/23 12:25	07/01/23 05:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*126*		*70 - 130*	*06/30/23 12:25*	*07/01/23 05:05*	*1*
1,4-Difluorobenzene (Surr)	*79*		*70 - 130*	*06/30/23 12:25*	*07/01/23 05:05*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00102	U	0.00404	0.00102	mg/Kg			07/03/23 01:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**21.5**	**J**	49.9	15.0	mg/Kg			07/03/23 11:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**21.5**	**J *1 B**	49.9	15.0	mg/Kg		07/01/23 10:26	07/02/23 15:30	1
Diesel Range Organics (Over C10-C28)	<15.0	U	49.9	15.0	mg/Kg		07/01/23 10:26	07/02/23 15:30	1
OII Range Organics (Over C28-C36)	<15.0	U	49.9	15.0	mg/Kg		07/01/23 10:26	07/02/23 15:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*126*		*70 - 130*	*07/01/23 10:26*	*07/02/23 15:30*	*1*
o-Terphenyl	*111*		*70 - 130*	*07/01/23 10:26*	*07/02/23 15:30*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**165**		25.0	1.98	mg/Kg			06/30/23 18:37	5

Client Sample ID: NFL-1-S-2'

Date Collected: 06/28/23 11:30
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-6

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000388	U	0.00202	0.000388	mg/Kg		06/30/23 12:25	07/01/23 05:31	1
Toluene	<0.000460	U	0.00202	0.000460	mg/Kg		06/30/23 12:25	07/01/23 05:31	1
Ethylbenzene	<0.000570	U	0.00202	0.000570	mg/Kg		06/30/23 12:25	07/01/23 05:31	1
m-Xylene & p-Xylene	<0.00102	U	0.00403	0.00102	mg/Kg		06/30/23 12:25	07/01/23 05:31	1
o-Xylene	<0.000347	U	0.00202	0.000347	mg/Kg		06/30/23 12:25	07/01/23 05:31	1
Xylenes, Total	<0.00102	U	0.00403	0.00102	mg/Kg		06/30/23 12:25	07/01/23 05:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*131*	*S1+*	*70 - 130*	*06/30/23 12:25*	*07/01/23 05:31*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*06/30/23 12:25*	*07/01/23 05:31*	*1*

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Client Sample ID: NFL-1-S-2'

Date Collected: 06/28/23 11:30
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-6

Matrix: Solid

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00102	U	0.00403	0.00102	mg/Kg			07/03/23 01:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**17.0**	**J**	50.0	15.0	mg/Kg			07/03/23 11:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**17.0**	**J *1 B**	50.0	15.0	mg/Kg		07/01/23 10:26	07/02/23 15:54	1
Diesel Range Organics (Over C10-C28)	<15.0	U	50.0	15.0	mg/Kg		07/01/23 10:26	07/02/23 15:54	1
OII Range Organics (Over C28-C36)	<15.0	U	50.0	15.0	mg/Kg		07/01/23 10:26	07/02/23 15:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*126*		*70 - 130*	*07/01/23 10:26*	*07/02/23 15:54*	*1*
o-Terphenyl	*112*		*70 - 130*	*07/01/23 10:26*	*07/02/23 15:54*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**99.4**		4.97	0.393	mg/Kg			06/30/23 18:55	1

Client Sample ID: NFL-2-S-1'

Date Collected: 06/28/23 12:00
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-7

Matrix: Solid

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		06/30/23 12:25	07/01/23 05:57	1
Toluene	<0.000454	U	0.00199	0.000454	mg/Kg		06/30/23 12:25	07/01/23 05:57	1
Ethylbenzene	<0.000563	U	0.00199	0.000563	mg/Kg		06/30/23 12:25	07/01/23 05:57	1
m-Xylene & p-Xylene	<0.00101	U	0.00398	0.00101	mg/Kg		06/30/23 12:25	07/01/23 05:57	1
o-Xylene	<0.000343	U	0.00199	0.000343	mg/Kg		06/30/23 12:25	07/01/23 05:57	1
Xylenes, Total	<0.00101	U	0.00398	0.00101	mg/Kg		06/30/23 12:25	07/01/23 05:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*133*	*S1+*	*70 - 130*	*06/30/23 12:25*	*07/01/23 05:57*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*	*06/30/23 12:25*	*07/01/23 05:57*	*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			07/03/23 01:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**47.8**	**J**	49.9	15.0	mg/Kg			07/03/23 11:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**47.8**	**J *1 B**	49.9	15.0	mg/Kg		07/01/23 10:26	07/02/23 16:18	1
Diesel Range Organics (Over C10-C28)	<15.0	U	49.9	15.0	mg/Kg		07/01/23 10:26	07/02/23 16:18	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Client Sample ID: NFL-2-S-1'

Date Collected: 06/28/23 12:00
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-7

Matrix: Solid

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	49.9	15.0	mg/Kg		07/01/23 10:26	07/02/23 16:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*126*		*70 - 130*	*07/01/23 10:26*	*07/02/23 16:18*	*1*
o-Terphenyl	*109*		*70 - 130*	*07/01/23 10:26*	*07/02/23 16:18*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**107**		4.98	0.393	mg/Kg			06/30/23 19:01	1

Client Sample ID: NFL-2-S-2'

Date Collected: 06/28/23 12:30
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-8

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000381	U	0.00198	0.000381	mg/Kg		06/30/23 12:25	07/01/23 06:23	1
Toluene	<0.000451	U	0.00198	0.000451	mg/Kg		06/30/23 12:25	07/01/23 06:23	1
Ethylbenzene	<0.000559	U	0.00198	0.000559	mg/Kg		06/30/23 12:25	07/01/23 06:23	1
m-Xylene & p-Xylene	<0.00100	U	0.00396	0.00100	mg/Kg		06/30/23 12:25	07/01/23 06:23	1
o-Xylene	<0.000341	U	0.00198	0.000341	mg/Kg		06/30/23 12:25	07/01/23 06:23	1
Xylenes, Total	<0.00100	U	0.00396	0.00100	mg/Kg		06/30/23 12:25	07/01/23 06:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*144*	*S1+*	*70 - 130*	*06/30/23 12:25*	*07/01/23 06:23*	*1*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*06/30/23 12:25*	*07/01/23 06:23*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00100	U	0.00396	0.00100	mg/Kg			07/03/23 01:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<14.9	U	49.8	14.9	mg/Kg			07/03/23 11:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<14.9	U *1	49.8	14.9	mg/Kg		07/01/23 10:26	07/02/23 16:41	1
Diesel Range Organics (Over C10-C28)	<14.9	U	49.8	14.9	mg/Kg		07/01/23 10:26	07/02/23 16:41	1
OII Range Organics (Over C28-C36)	<14.9	U	49.8	14.9	mg/Kg		07/01/23 10:26	07/02/23 16:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*127*		*70 - 130*	*07/01/23 10:26*	*07/02/23 16:41*	*1*
o-Terphenyl	*111*		*70 - 130*	*07/01/23 10:26*	*07/02/23 16:41*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**107**		4.99	0.394	mg/Kg			06/30/23 19:06	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Client Sample ID: NFL-3-S-1'

Date Collected: 06/28/23 13:00
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-9

Matrix: Solid

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000389	U	0.00202	0.000389	mg/Kg		06/30/23 12:25	07/01/23 06:50	1
Toluene	<0.000461	U	0.00202	0.000461	mg/Kg		06/30/23 12:25	07/01/23 06:50	1
Ethylbenzene	<0.000571	U	0.00202	0.000571	mg/Kg		06/30/23 12:25	07/01/23 06:50	1
m-Xylene & p-Xylene	<0.00102	U	0.00404	0.00102	mg/Kg		06/30/23 12:25	07/01/23 06:50	1
o-Xylene	<0.000347	U	0.00202	0.000347	mg/Kg		06/30/23 12:25	07/01/23 06:50	1
Xylenes, Total	<0.00102	U	0.00404	0.00102	mg/Kg		06/30/23 12:25	07/01/23 06:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*140*	*S1+*	*70 - 130*	*06/30/23 12:25*	*07/01/23 06:50*	*1*
1,4-Difluorobenzene (Surr)	*77*		*70 - 130*	*06/30/23 12:25*	*07/01/23 06:50*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00102	U	0.00404	0.00102	mg/Kg			07/03/23 01:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<14.9	U	49.8	14.9	mg/Kg			07/03/23 11:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<14.9	U *1	49.8	14.9	mg/Kg		07/01/23 10:26	07/02/23 17:05	1
Diesel Range Organics (Over C10-C28)	<14.9	U	49.8	14.9	mg/Kg		07/01/23 10:26	07/02/23 17:05	1
OII Range Organics (Over C28-C36)	<14.9	U	49.8	14.9	mg/Kg		07/01/23 10:26	07/02/23 17:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*119*		*70 - 130*	*07/01/23 10:26*	*07/02/23 17:05*	*1*
o-Terphenyl	*105*		*70 - 130*	*07/01/23 10:26*	*07/02/23 17:05*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**148**		5.04	0.398	mg/Kg			06/30/23 19:12	1

Client Sample ID: NFL-3-S-2'

Date Collected: 06/28/23 13:30
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-10

Matrix: Solid

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		06/30/23 12:25	07/01/23 07:16	1
Toluene	<0.000458	U	0.00201	0.000458	mg/Kg		06/30/23 12:25	07/01/23 07:16	1
Ethylbenzene	<0.000567	U	0.00201	0.000567	mg/Kg		06/30/23 12:25	07/01/23 07:16	1
m-Xylene & p-Xylene	<0.00101	U	0.00402	0.00101	mg/Kg		06/30/23 12:25	07/01/23 07:16	1
o-Xylene	<0.000345	U	0.00201	0.000345	mg/Kg		06/30/23 12:25	07/01/23 07:16	1
Xylenes, Total	<0.00101	U	0.00402	0.00101	mg/Kg		06/30/23 12:25	07/01/23 07:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*135*	*S1+*	*70 - 130*	*06/30/23 12:25*	*07/01/23 07:16*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*06/30/23 12:25*	*07/01/23 07:16*	*1*

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Client Sample ID: NFL-3-S-2'

Date Collected: 06/28/23 13:30
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-10

Matrix: Solid

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00101	U	0.00402	0.00101	mg/Kg			07/03/23 01:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**23.9**	**J**	50.0	15.0	mg/Kg			07/03/23 11:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**23.9**	**J *1 B**	50.0	15.0	mg/Kg		07/01/23 10:26	07/02/23 17:29	1
Diesel Range Organics (Over C10-C28)	<15.0	U	50.0	15.0	mg/Kg		07/01/23 10:26	07/02/23 17:29	1
OII Range Organics (Over C28-C36)	<15.0	U	50.0	15.0	mg/Kg		07/01/23 10:26	07/02/23 17:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*127*		*70 - 130*	*07/01/23 10:26*	*07/02/23 17:29*	*1*
o-Terphenyl	*111*		*70 - 130*	*07/01/23 10:26*	*07/02/23 17:29*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**280**		5.04	0.398	mg/Kg			06/30/23 19:18	1

Client Sample ID: SFL-1-S-1'

Date Collected: 06/28/23 14:00
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-11

Matrix: Solid

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		06/30/23 12:25	07/01/23 09:03	1
Toluene	<0.000453	U	0.00199	0.000453	mg/Kg		06/30/23 12:25	07/01/23 09:03	1
Ethylbenzene	<0.000562	U	0.00199	0.000562	mg/Kg		06/30/23 12:25	07/01/23 09:03	1
m-Xylene & p-Xylene	<0.00100	U	0.00398	0.00100	mg/Kg		06/30/23 12:25	07/01/23 09:03	1
o-Xylene	<0.000342	U	0.00199	0.000342	mg/Kg		06/30/23 12:25	07/01/23 09:03	1
Xylenes, Total	<0.00100	U	0.00398	0.00100	mg/Kg		06/30/23 12:25	07/01/23 09:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*141*	*S1+*	*70 - 130*	*06/30/23 12:25*	*07/01/23 09:03*	*1*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*	*06/30/23 12:25*	*07/01/23 09:03*	*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			07/03/23 01:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**17.5**	**J**	49.9	15.0	mg/Kg			07/03/23 11:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	**17.5**	**J *1 B**	49.9	15.0	mg/Kg		07/01/23 10:26	07/02/23 17:51	1
Diesel Range Organics (Over C10-C28)	<15.0	U	49.9	15.0	mg/Kg		07/01/23 10:26	07/02/23 17:51	1

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Client Sample ID: SFL-1-S-1'

Lab Sample ID: 880-30229-11
Matrix: Solid
Date Collected: 06/28/23 14:00
Date Received: 06/30/23 11:30

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	49.9	15.0	mg/Kg		07/01/23 10:26	07/02/23 17:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*123*		*70 - 130*	*07/01/23 10:26*	*07/02/23 17:51*	*1*
o-Terphenyl	*108*		*70 - 130*	*07/01/23 10:26*	*07/02/23 17:51*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**65.8**		5.00	0.395	mg/Kg			06/30/23 19:24	1

Client Sample ID: SFL-1-S-2'

Lab Sample ID: 880-30229-12
Matrix: Solid
Date Collected: 06/28/23 14:30
Date Received: 06/30/23 11:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000381	U	0.00198	0.000381	mg/Kg		06/30/23 12:25	07/01/23 09:29	1
Toluene	<0.000451	U	0.00198	0.000451	mg/Kg		06/30/23 12:25	07/01/23 09:29	1
Ethylbenzene	<0.000559	U	0.00198	0.000559	mg/Kg		06/30/23 12:25	07/01/23 09:29	1
m-Xylene & p-Xylene	<0.00100	U	0.00396	0.00100	mg/Kg		06/30/23 12:25	07/01/23 09:29	1
o-Xylene	<0.000341	U	0.00198	0.000341	mg/Kg		06/30/23 12:25	07/01/23 09:29	1
Xylenes, Total	<0.00100	U	0.00396	0.00100	mg/Kg		06/30/23 12:25	07/01/23 09:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*145*	*S1+*	*70 - 130*	*06/30/23 12:25*	*07/01/23 09:29*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*	*06/30/23 12:25*	*07/01/23 09:29*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00100	U	0.00396	0.00100	mg/Kg			07/03/23 01:44	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<15.0	U	49.9	15.0	mg/Kg			07/03/23 11:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<15.0	U *1	49.9	15.0	mg/Kg		07/01/23 10:26	07/02/23 18:16	1
Diesel Range Organics (Over C10-C28)	<15.0	U	49.9	15.0	mg/Kg		07/01/23 10:26	07/02/23 18:16	1
OII Range Organics (Over C28-C36)	<15.0	U	49.9	15.0	mg/Kg		07/01/23 10:26	07/02/23 18:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*129*		*70 - 130*	*07/01/23 10:26*	*07/02/23 18:16*	*1*
o-Terphenyl	*114*		*70 - 130*	*07/01/23 10:26*	*07/02/23 18:16*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**62.4**		4.95	0.391	mg/Kg			06/30/23 19:41	1

Surrogate Summary

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Method: 8021B - Volatile Organic Compounds (GC)

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-30229-1	N-1-S-1'	115	80
880-30229-1 MS	N-1-S-1'	137 S1+	108
880-30229-1 MSD	N-1-S-1'	122	83
880-30229-2	E-1-S-1'	128	79
880-30229-3	S-1-S-1'	138 S1+	86
880-30229-4	W-1-S-1'	150 S1+	90
880-30229-5	NFL-1-S-1'	126	79
880-30229-6	NFL-1-S-2'	131 S1+	89
880-30229-7	NFL-2-S-1'	133 S1+	88
880-30229-8	NFL-2-S-2'	144 S1+	86
880-30229-9	NFL-3-S-1'	140 S1+	77
880-30229-10	NFL-3-S-2'	135 S1+	87
880-30229-11	SFL-1-S-1'	141 S1+	86
880-30229-12	SFL-1-S-2'	145 S1+	89
LCS 880-56697/1-A	Lab Control Sample	109	84
LCSD 880-56697/2-A	Lab Control Sample Dup	116	80
MB 880-56654/5-A	Method Blank	71	87
MB 880-56697/5-A	Method Blank	75	80

Surrogate Legend

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

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

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

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-30229-1	N-1-S-1'	85	91
880-30229-2	E-1-S-1'	78	83
880-30229-3	S-1-S-1'	121	107
880-30229-3 MS	S-1-S-1'	129	101
880-30229-3 MSD	S-1-S-1'	122	98
880-30229-4	W-1-S-1'	129	115
880-30229-5	NFL-1-S-1'	126	111
880-30229-6	NFL-1-S-2'	126	112
880-30229-7	NFL-2-S-1'	126	109
880-30229-8	NFL-2-S-2'	127	111
880-30229-9	NFL-3-S-1'	119	105
880-30229-10	NFL-3-S-2'	127	111
880-30229-11	SFL-1-S-1'	123	108
880-30229-12	SFL-1-S-2'	129	114
LCS 880-56757/2-A	Lab Control Sample	98	87
LCS 880-56820/2-A	Lab Control Sample	66 S1-	74
LCSD 880-56757/3-A	Lab Control Sample Dup	121	108
LCSD 880-56820/3-A	Lab Control Sample Dup	79	90
MB 880-56757/1-A	Method Blank	119	109
MB 880-56820/1-A	Method Blank	110	120

Surrogate Legend

Surrogate Summary

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-56654/5-A
Matrix: Solid
Analysis Batch: 56649

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 56654

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		06/30/23 08:34	06/30/23 12:27	1
Toluene	<0.000456	U	0.00200	0.000456	mg/Kg		06/30/23 08:34	06/30/23 12:27	1
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		06/30/23 08:34	06/30/23 12:27	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		06/30/23 08:34	06/30/23 12:27	1
o-Xylene	<0.000344	U	0.00200	0.000344	mg/Kg		06/30/23 08:34	06/30/23 12:27	1
Xylenes, Total	<0.00101	U	0.00400	0.00101	mg/Kg		06/30/23 08:34	06/30/23 12:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*71*		*70 - 130*	*06/30/23 08:34*	*06/30/23 12:27*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*	*06/30/23 08:34*	*06/30/23 12:27*	*1*

Lab Sample ID: MB 880-56697/5-A
Matrix: Solid
Analysis Batch: 56649

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 56697

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.000385	U	0.00200	0.000385	mg/Kg		06/30/23 12:25	07/01/23 02:53	1
Toluene	<0.000456	U	0.00200	0.000456	mg/Kg		06/30/23 12:25	07/01/23 02:53	1
Ethylbenzene	<0.000565	U	0.00200	0.000565	mg/Kg		06/30/23 12:25	07/01/23 02:53	1
m-Xylene & p-Xylene	<0.00101	U	0.00400	0.00101	mg/Kg		06/30/23 12:25	07/01/23 02:53	1
o-Xylene	<0.000344	U	0.00200	0.000344	mg/Kg		06/30/23 12:25	07/01/23 02:53	1
Xylenes, Total	<0.00101	U	0.00400	0.00101	mg/Kg		06/30/23 12:25	07/01/23 02:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*75*		*70 - 130*	*06/30/23 12:25*	*07/01/23 02:53*	*1*
1,4-Difluorobenzene (Surr)	*80*		*70 - 130*	*06/30/23 12:25*	*07/01/23 02:53*	*1*

Lab Sample ID: LCS 880-56697/1-A
Matrix: Solid
Analysis Batch: 56649

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56697

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1055		mg/Kg		105	70 - 130
Toluene	0.100	0.1035		mg/Kg		104	70 - 130
Ethylbenzene	0.100	0.1006		mg/Kg		101	70 - 130
m-Xylene & p-Xylene	0.200	0.1958		mg/Kg		98	70 - 130
o-Xylene	0.100	0.1026		mg/Kg		103	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*
1,4-Difluorobenzene (Surr)	*84*		*70 - 130*

Lab Sample ID: LCSD 880-56697/2-A
Matrix: Solid
Analysis Batch: 56649

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 56697

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1244		mg/Kg		124	70 - 130	16	35

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

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

Lab Sample ID: LCSD 880-56697/2-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 56649 — **Prep Batch: 56697**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.1184		mg/Kg		118	70 - 130	13	35
Ethylbenzene			0.100	0.1189		mg/Kg		119	70 - 130	17	35
m-Xylene & p-Xylene			0.200	0.2332		mg/Kg		117	70 - 130	17	35
o-Xylene			0.100	0.1185		mg/Kg		118	70 - 130	14	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*
1,4-Difluorobenzene (Surr)	*80*		*70 - 130*

Lab Sample ID: 880-30229-1 MS — **Client Sample ID: N-1-S-1'**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 56649 — **Prep Batch: 56697**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.000388	U	0.0996	0.1250		mg/Kg		125	70 - 130
Toluene	<0.000460	U	0.0996	0.1209		mg/Kg		121	70 - 130
Ethylbenzene	<0.000570	U	0.0996	0.1138		mg/Kg		114	70 - 130
m-Xylene & p-Xylene	<0.00102	U	0.199	0.2210		mg/Kg		111	70 - 130
o-Xylene	<0.000347	U	0.0996	0.1148		mg/Kg		115	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*137*	*S1+*	*70 - 130*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*

Lab Sample ID: 880-30229-1 MSD — **Client Sample ID: N-1-S-1'**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 56649 — **Prep Batch: 56697**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.000388	U	0.0990	0.1225		mg/Kg		124	70 - 130	2	35
Toluene	<0.000460	U	0.0990	0.1183		mg/Kg		119	70 - 130	2	35
Ethylbenzene	<0.000570	U	0.0990	0.1165		mg/Kg		118	70 - 130	2	35
m-Xylene & p-Xylene	<0.00102	U	0.198	0.2273		mg/Kg		115	70 - 130	3	35
o-Xylene	<0.000347	U	0.0990	0.1150		mg/Kg		116	70 - 130	0	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*122*		*70 - 130*
1,4-Difluorobenzene (Surr)	*83*		*70 - 130*

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

Lab Sample ID: MB 880-56757/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 56779 — **Prep Batch: 56757**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	16.02	J	50.0	15.0	mg/Kg		07/01/23 10:26	07/02/23 11:26	1

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

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

Lab Sample ID: MB 880-56757/1-A
Matrix: Solid
Analysis Batch: 56779

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 56757

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<15.0	U	50.0	15.0	mg/Kg		07/01/23 10:26	07/02/23 11:26	1
OII Range Organics (Over C28-C36)	<15.0	U	50.0	15.0	mg/Kg		07/01/23 10:26	07/02/23 11:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*119*		*70 - 130*	*07/01/23 10:26*	*07/02/23 11:26*	*1*
o-Terphenyl	*109*		*70 - 130*	*07/01/23 10:26*	*07/02/23 11:26*	*1*

Lab Sample ID: LCS 880-56757/2-A
Matrix: Solid
Analysis Batch: 56779

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56757

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	1015		mg/Kg		102	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	995.4		mg/Kg		100	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*98*		*70 - 130*
o-Terphenyl	*87*		*70 - 130*

Lab Sample ID: LCSD 880-56757/3-A
Matrix: Solid
Analysis Batch: 56779

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 56757

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	728.5	*1	mg/Kg		73	70 - 130	33	20
Diesel Range Organics (Over C10-C28)			1000	1138		mg/Kg		114	70 - 130	13	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1-Chlorooctane	*121*		*70 - 130*
o-Terphenyl	*108*		*70 - 130*

Lab Sample ID: 880-30229-3 MS
Matrix: Solid
Analysis Batch: 56779

Client Sample ID: S-1-S-1'
Prep Type: Total/NA
Prep Batch: 56757

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10	18.0	J F1 F2 *1 B	999	1332	F1	mg/Kg		131	70 - 130		
Diesel Range Organics (Over C10-C28)	<15.0	U F1	999	1325	F1	mg/Kg		133	70 - 130		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1-Chlorooctane	*129*		*70 - 130*
o-Terphenyl	*101*		*70 - 130*

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

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

Lab Sample ID: 880-30229-3 MSD
Matrix: Solid
Analysis Batch: 56779

Client Sample ID: S-1-S-1'
Prep Type: Total/NA
Prep Batch: 56757

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	18.0	J F1 F2 *1 B	999	997.2	F2	mg/Kg		98	70 - 130	29	20
Diesel Range Organics (Over C10-C28)	<15.0	U F1	999	1241		mg/Kg		124	70 - 130	7	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*122*		*70 - 130*
o-Terphenyl	*98*		*70 - 130*

Lab Sample ID: MB 880-56820/1-A
Matrix: Solid
Analysis Batch: 56816

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 56820

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	19.57	J	50.0	15.0	mg/Kg		07/03/23 08:00	07/03/23 08:16	1
Diesel Range Organics (Over C10-C28)	<15.0	U	50.0	15.0	mg/Kg		07/03/23 08:00	07/03/23 08:16	1
OII Range Organics (Over C28-C36)	19.88	J	50.0	15.0	mg/Kg		07/03/23 08:00	07/03/23 08:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*110*		*70 - 130*	*07/03/23 08:00*	*07/03/23 08:16*	*1*
o-Terphenyl	*120*		*70 - 130*	*07/03/23 08:00*	*07/03/23 08:16*	*1*

Lab Sample ID: LCS 880-56820/2-A
Matrix: Solid
Analysis Batch: 56816

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 56820

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	820.5		mg/Kg		82	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	895.9		mg/Kg		90	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1-Chlorooctane	*66*	*S1-*	*70 - 130*
o-Terphenyl	*74*		*70 - 130*

Lab Sample ID: LCSD 880-56820/3-A
Matrix: Solid
Analysis Batch: 56816

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 56820

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	821.8		mg/Kg		82	70 - 130	0	20
Diesel Range Organics (Over C10-C28)			1000	951.4		mg/Kg		95	70 - 130	6	20

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

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

Lab Sample ID: LCSD 880-56820/3-A
Matrix: Solid
Analysis Batch: 56816

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 56820

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	79		70 - 130
o-Terphenyl	90		70 - 130

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-56704/1-A
Matrix: Solid
Analysis Batch: 56713

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			06/30/23 17:45	1

Lab Sample ID: LCS 880-56704/2-A
Matrix: Solid
Analysis Batch: 56713

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			250	242.9		mg/Kg		97	90 - 110		

Lab Sample ID: LCSD 880-56704/3-A
Matrix: Solid
Analysis Batch: 56713

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	243.7		mg/Kg		97	90 - 110	0	20

Lab Sample ID: 880-30229-1 MS
Matrix: Solid
Analysis Batch: 56713

Client Sample ID: N-1-S-1'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	120		251	357.7		mg/Kg		95	90 - 110		

Lab Sample ID: 880-30229-1 MSD
Matrix: Solid
Analysis Batch: 56713

Client Sample ID: N-1-S-1'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	120		251	357.5		mg/Kg		94	90 - 110	0	20

Lab Sample ID: 880-30229-11 MS
Matrix: Solid
Analysis Batch: 56713

Client Sample ID: SFL-1-S-1'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	65.8		250	309.6		mg/Kg		98	90 - 110		

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-30229-11 MSD
Matrix: Solid
Analysis Batch: 56713

Client Sample ID: SFL-1-S-1'
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	65.8		250	310.2		mg/Kg		98	90 - 110	0	20

QC Association Summary

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

GC VOA

Analysis Batch: 56649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-30229-1	N-1-S-1'	Total/NA	Solid	8021B	56697
880-30229-2	E-1-S-1'	Total/NA	Solid	8021B	56697
880-30229-3	S-1-S-1'	Total/NA	Solid	8021B	56697
880-30229-4	W-1-S-1'	Total/NA	Solid	8021B	56697
880-30229-5	NFL-1-S-1'	Total/NA	Solid	8021B	56697
880-30229-6	NFL-1-S-2'	Total/NA	Solid	8021B	56697
880-30229-7	NFL-2-S-1'	Total/NA	Solid	8021B	56697
880-30229-8	NFL-2-S-2'	Total/NA	Solid	8021B	56697
880-30229-9	NFL-3-S-1'	Total/NA	Solid	8021B	56697
880-30229-10	NFL-3-S-2'	Total/NA	Solid	8021B	56697
880-30229-11	SFL-1-S-1'	Total/NA	Solid	8021B	56697
880-30229-12	SFL-1-S-2'	Total/NA	Solid	8021B	56697
MB 880-56654/5-A	Method Blank	Total/NA	Solid	8021B	56654
MB 880-56697/5-A	Method Blank	Total/NA	Solid	8021B	56697
LCS 880-56697/1-A	Lab Control Sample	Total/NA	Solid	8021B	56697
LCSD 880-56697/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	56697
880-30229-1 MS	N-1-S-1'	Total/NA	Solid	8021B	56697
880-30229-1 MSD	N-1-S-1'	Total/NA	Solid	8021B	56697

Prep Batch: 56654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-56654/5-A	Method Blank	Total/NA	Solid	5035	

Prep Batch: 56697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-30229-1	N-1-S-1'	Total/NA	Solid	5030B	
880-30229-2	E-1-S-1'	Total/NA	Solid	5030B	
880-30229-3	S-1-S-1'	Total/NA	Solid	5030B	
880-30229-4	W-1-S-1'	Total/NA	Solid	5030B	
880-30229-5	NFL-1-S-1'	Total/NA	Solid	5030B	
880-30229-6	NFL-1-S-2'	Total/NA	Solid	5030B	
880-30229-7	NFL-2-S-1'	Total/NA	Solid	5030B	
880-30229-8	NFL-2-S-2'	Total/NA	Solid	5030B	
880-30229-9	NFL-3-S-1'	Total/NA	Solid	5030B	
880-30229-10	NFL-3-S-2'	Total/NA	Solid	5030B	
880-30229-11	SFL-1-S-1'	Total/NA	Solid	5030B	
880-30229-12	SFL-1-S-2'	Total/NA	Solid	5030B	
MB 880-56697/5-A	Method Blank	Total/NA	Solid	5030B	
LCS 880-56697/1-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 880-56697/2-A	Lab Control Sample Dup	Total/NA	Solid	5030B	
880-30229-1 MS	N-1-S-1'	Total/NA	Solid	5030B	
880-30229-1 MSD	N-1-S-1'	Total/NA	Solid	5030B	

Analysis Batch: 56811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-30229-1	N-1-S-1'	Total/NA	Solid	Total BTEX	
880-30229-2	E-1-S-1'	Total/NA	Solid	Total BTEX	
880-30229-3	S-1-S-1'	Total/NA	Solid	Total BTEX	
880-30229-4	W-1-S-1'	Total/NA	Solid	Total BTEX	
880-30229-5	NFL-1-S-1'	Total/NA	Solid	Total BTEX	
880-30229-6	NFL-1-S-2'	Total/NA	Solid	Total BTEX	

QC Association Summary

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

GC VOA (Continued)

Analysis Batch: 56811 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-30229-7	NFL-2-S-1'	Total/NA	Solid	Total BTEX	
880-30229-8	NFL-2-S-2'	Total/NA	Solid	Total BTEX	
880-30229-9	NFL-3-S-1'	Total/NA	Solid	Total BTEX	
880-30229-10	NFL-3-S-2'	Total/NA	Solid	Total BTEX	
880-30229-11	SFL-1-S-1'	Total/NA	Solid	Total BTEX	
880-30229-12	SFL-1-S-2'	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 56757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-30229-3	S-1-S-1'	Total/NA	Solid	8015NM Prep	
880-30229-4	W-1-S-1'	Total/NA	Solid	8015NM Prep	
880-30229-5	NFL-1-S-1'	Total/NA	Solid	8015NM Prep	
880-30229-6	NFL-1-S-2'	Total/NA	Solid	8015NM Prep	
880-30229-7	NFL-2-S-1'	Total/NA	Solid	8015NM Prep	
880-30229-8	NFL-2-S-2'	Total/NA	Solid	8015NM Prep	
880-30229-9	NFL-3-S-1'	Total/NA	Solid	8015NM Prep	
880-30229-10	NFL-3-S-2'	Total/NA	Solid	8015NM Prep	
880-30229-11	SFL-1-S-1'	Total/NA	Solid	8015NM Prep	
880-30229-12	SFL-1-S-2'	Total/NA	Solid	8015NM Prep	
MB 880-56757/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-56757/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-56757/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-30229-3 MS	S-1-S-1'	Total/NA	Solid	8015NM Prep	
880-30229-3 MSD	S-1-S-1'	Total/NA	Solid	8015NM Prep	

Analysis Batch: 56779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-30229-3	S-1-S-1'	Total/NA	Solid	8015B NM	56757
880-30229-4	W-1-S-1'	Total/NA	Solid	8015B NM	56757
880-30229-5	NFL-1-S-1'	Total/NA	Solid	8015B NM	56757
880-30229-6	NFL-1-S-2'	Total/NA	Solid	8015B NM	56757
880-30229-7	NFL-2-S-1'	Total/NA	Solid	8015B NM	56757
880-30229-8	NFL-2-S-2'	Total/NA	Solid	8015B NM	56757
880-30229-9	NFL-3-S-1'	Total/NA	Solid	8015B NM	56757
880-30229-10	NFL-3-S-2'	Total/NA	Solid	8015B NM	56757
880-30229-11	SFL-1-S-1'	Total/NA	Solid	8015B NM	56757
880-30229-12	SFL-1-S-2'	Total/NA	Solid	8015B NM	56757
MB 880-56757/1-A	Method Blank	Total/NA	Solid	8015B NM	56757
LCS 880-56757/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	56757
LCSD 880-56757/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	56757
880-30229-3 MS	S-1-S-1'	Total/NA	Solid	8015B NM	56757
880-30229-3 MSD	S-1-S-1'	Total/NA	Solid	8015B NM	56757

Analysis Batch: 56816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-30229-1	N-1-S-1'	Total/NA	Solid	8015B NM	56820
880-30229-2	E-1-S-1'	Total/NA	Solid	8015B NM	56820
MB 880-56820/1-A	Method Blank	Total/NA	Solid	8015B NM	56820
LCS 880-56820/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	56820

QC Association Summary

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

GC Semi VOA (Continued)

Analysis Batch: 56816 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-56820/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	56820

Prep Batch: 56820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-30229-1	N-1-S-1'	Total/NA	Solid	8015NM Prep	
880-30229-2	E-1-S-1'	Total/NA	Solid	8015NM Prep	
MB 880-56820/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-56820/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-56820/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Analysis Batch: 56892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-30229-1	N-1-S-1'	Total/NA	Solid	8015 NM	
880-30229-2	E-1-S-1'	Total/NA	Solid	8015 NM	
880-30229-3	S-1-S-1'	Total/NA	Solid	8015 NM	
880-30229-4	W-1-S-1'	Total/NA	Solid	8015 NM	
880-30229-5	NFL-1-S-1'	Total/NA	Solid	8015 NM	
880-30229-6	NFL-1-S-2'	Total/NA	Solid	8015 NM	
880-30229-7	NFL-2-S-1'	Total/NA	Solid	8015 NM	
880-30229-8	NFL-2-S-2'	Total/NA	Solid	8015 NM	
880-30229-9	NFL-3-S-1'	Total/NA	Solid	8015 NM	
880-30229-10	NFL-3-S-2'	Total/NA	Solid	8015 NM	
880-30229-11	SFL-1-S-1'	Total/NA	Solid	8015 NM	
880-30229-12	SFL-1-S-2'	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 56704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-30229-1	N-1-S-1'	Soluble	Solid	DI Leach	
880-30229-2	E-1-S-1'	Soluble	Solid	DI Leach	
880-30229-3	S-1-S-1'	Soluble	Solid	DI Leach	
880-30229-4	W-1-S-1'	Soluble	Solid	DI Leach	
880-30229-5	NFL-1-S-1'	Soluble	Solid	DI Leach	
880-30229-6	NFL-1-S-2'	Soluble	Solid	DI Leach	
880-30229-7	NFL-2-S-1'	Soluble	Solid	DI Leach	
880-30229-8	NFL-2-S-2'	Soluble	Solid	DI Leach	
880-30229-9	NFL-3-S-1'	Soluble	Solid	DI Leach	
880-30229-10	NFL-3-S-2'	Soluble	Solid	DI Leach	
880-30229-11	SFL-1-S-1'	Soluble	Solid	DI Leach	
880-30229-12	SFL-1-S-2'	Soluble	Solid	DI Leach	
MB 880-56704/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-56704/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-56704/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-30229-1 MS	N-1-S-1'	Soluble	Solid	DI Leach	
880-30229-1 MSD	N-1-S-1'	Soluble	Solid	DI Leach	
880-30229-11 MS	SFL-1-S-1'	Soluble	Solid	DI Leach	
880-30229-11 MSD	SFL-1-S-1'	Soluble	Solid	DI Leach	

QC Association Summary

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

HPLC/IC

Analysis Batch: 56713

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-30229-1	N-1-S-1'	Soluble	Solid	300.0	56704
880-30229-2	E-1-S-1'	Soluble	Solid	300.0	56704
880-30229-3	S-1-S-1'	Soluble	Solid	300.0	56704
880-30229-4	W-1-S-1'	Soluble	Solid	300.0	56704
880-30229-5	NFL-1-S-1'	Soluble	Solid	300.0	56704
880-30229-6	NFL-1-S-2'	Soluble	Solid	300.0	56704
880-30229-7	NFL-2-S-1'	Soluble	Solid	300.0	56704
880-30229-8	NFL-2-S-2'	Soluble	Solid	300.0	56704
880-30229-9	NFL-3-S-1'	Soluble	Solid	300.0	56704
880-30229-10	NFL-3-S-2'	Soluble	Solid	300.0	56704
880-30229-11	SFL-1-S-1'	Soluble	Solid	300.0	56704
880-30229-12	SFL-1-S-2'	Soluble	Solid	300.0	56704
MB 880-56704/1-A	Method Blank	Soluble	Solid	300.0	56704
LCS 880-56704/2-A	Lab Control Sample	Soluble	Solid	300.0	56704
LCSD 880-56704/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	56704
880-30229-1 MS	N-1-S-1'	Soluble	Solid	300.0	56704
880-30229-1 MSD	N-1-S-1'	Soluble	Solid	300.0	56704
880-30229-11 MS	SFL-1-S-1'	Soluble	Solid	300.0	56704
880-30229-11 MSD	SFL-1-S-1'	Soluble	Solid	300.0	56704

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Client Sample ID: N-1-S-1'
Date Collected: 06/28/23 09:00
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.96 g	5 mL	56697	06/30/23 12:25	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	56649	07/01/23 03:20	SM	EET MID
Total/NA	Analysis	Total BTEX		1			56811	07/03/23 01:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			56892	07/03/23 16:54	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	56820	07/03/23 08:26	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	56816	07/03/23 14:43	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	56704	06/30/23 13:23	KS	EET MID
Soluble	Analysis	300.0		1			56713	06/30/23 18:02	CH	EET MID

Client Sample ID: E-1-S-1'
Date Collected: 06/28/23 09:30
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.03 g	5 mL	56697	06/30/23 12:25	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	56649	07/01/23 03:46	SM	EET MID
Total/NA	Analysis	Total BTEX		1			56811	07/03/23 01:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			56892	07/03/23 16:54	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	56820	07/03/23 08:26	AM	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	56816	07/03/23 15:06	SM	EET MID
Soluble	Leach	DI Leach			4.97 g	50 mL	56704	06/30/23 13:23	KS	EET MID
Soluble	Analysis	300.0		1			56713	06/30/23 18:20	CH	EET MID

Client Sample ID: S-1-S-1'
Date Collected: 06/28/23 10:00
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.02 g	5 mL	56697	06/30/23 12:25	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	56649	07/01/23 04:13	SM	EET MID
Total/NA	Analysis	Total BTEX		1			56811	07/03/23 01:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			56892	07/03/23 11:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	56757	07/01/23 10:26	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	56779	07/02/23 14:01	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	56704	06/30/23 13:23	KS	EET MID
Soluble	Analysis	300.0		1			56713	06/30/23 18:26	CH	EET MID

Client Sample ID: W-1-S-1'
Date Collected: 06/28/23 10:30
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.05 g	5 mL	56697	06/30/23 12:25	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	56649	07/01/23 04:39	SM	EET MID
Total/NA	Analysis	Total BTEX		1			56811	07/03/23 01:44	SM	EET MID

Eurofins Midland

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Client Sample ID: W-1-S-1'
Date Collected: 06/28/23 10:30
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			56892	07/03/23 11:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	56757	07/01/23 10:26	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	56779	07/02/23 15:07	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	56704	06/30/23 13:23	KS	EET MID
Soluble	Analysis	300.0		1			56713	06/30/23 18:31	CH	EET MID

Client Sample ID: NFL-1-S-1'
Date Collected: 06/28/23 11:00
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.95 g	5 mL	56697	06/30/23 12:25	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	56649	07/01/23 05:05	SM	EET MID
Total/NA	Analysis	Total BTEX		1			56811	07/03/23 01:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			56892	07/03/23 11:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	56757	07/01/23 10:26	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	56779	07/02/23 15:30	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	56704	06/30/23 13:23	KS	EET MID
Soluble	Analysis	300.0		5			56713	06/30/23 18:37	CH	EET MID

Client Sample ID: NFL-1-S-2'
Date Collected: 06/28/23 11:30
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.96 g	5 mL	56697	06/30/23 12:25	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	56649	07/01/23 05:31	SM	EET MID
Total/NA	Analysis	Total BTEX		1			56811	07/03/23 01:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			56892	07/03/23 11:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	56757	07/01/23 10:26	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	56779	07/02/23 15:54	SM	EET MID
Soluble	Leach	DI Leach			5.03 g	50 mL	56704	06/30/23 13:23	KS	EET MID
Soluble	Analysis	300.0		1			56713	06/30/23 18:55	CH	EET MID

Client Sample ID: NFL-2-S-1'
Date Collected: 06/28/23 12:00
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.02 g	5 mL	56697	06/30/23 12:25	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	56649	07/01/23 05:57	SM	EET MID
Total/NA	Analysis	Total BTEX		1			56811	07/03/23 01:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			56892	07/03/23 11:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	56757	07/01/23 10:26	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	56779	07/02/23 16:18	SM	EET MID

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Client Sample ID: NFL-2-S-1'

Lab Sample ID: 880-30229-7
Matrix: Solid
Date Collected: 06/28/23 12:00
Date Received: 06/30/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.02 g	50 mL	56704	06/30/23 13:23	KS	EET MID
Soluble	Analysis	300.0		1			56713	06/30/23 19:01	CH	EET MID

Client Sample ID: NFL-2-S-2'

Lab Sample ID: 880-30229-8
Matrix: Solid
Date Collected: 06/28/23 12:30
Date Received: 06/30/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.05 g	5 mL	56697	06/30/23 12:25	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	56649	07/01/23 06:23	SM	EET MID
Total/NA	Analysis	Total BTEX		1			56811	07/03/23 01:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			56892	07/03/23 11:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.05 g	10 mL	56757	07/01/23 10:26	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	56779	07/02/23 16:41	SM	EET MID
Soluble	Leach	DI Leach			5.01 g	50 mL	56704	06/30/23 13:23	KS	EET MID
Soluble	Analysis	300.0		1			56713	06/30/23 19:06	CH	EET MID

Client Sample ID: NFL-3-S-1'

Lab Sample ID: 880-30229-9
Matrix: Solid
Date Collected: 06/28/23 13:00
Date Received: 06/30/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.95 g	5 mL	56697	06/30/23 12:25	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	56649	07/01/23 06:50	SM	EET MID
Total/NA	Analysis	Total BTEX		1			56811	07/03/23 01:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			56892	07/03/23 11:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	56757	07/01/23 10:26	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	56779	07/02/23 17:05	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	56704	06/30/23 13:23	KS	EET MID
Soluble	Analysis	300.0		1			56713	06/30/23 19:12	CH	EET MID

Client Sample ID: NFL-3-S-2'

Lab Sample ID: 880-30229-10
Matrix: Solid
Date Collected: 06/28/23 13:30
Date Received: 06/30/23 11:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.98 g	5 mL	56697	06/30/23 12:25	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	56649	07/01/23 07:16	SM	EET MID
Total/NA	Analysis	Total BTEX		1			56811	07/03/23 01:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			56892	07/03/23 11:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	56757	07/01/23 10:26	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	56779	07/02/23 17:29	SM	EET MID
Soluble	Leach	DI Leach			4.96 g	50 mL	56704	06/30/23 13:23	KS	EET MID
Soluble	Analysis	300.0		1			56713	06/30/23 19:18	CH	EET MID

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Client Sample ID: SFL-1-S-1'

Date Collected: 06/28/23 14:00
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-11

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.03 g	5 mL	56697	06/30/23 12:25	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	56649	07/01/23 09:03	SM	EET MID
Total/NA	Analysis	Total BTEX		1			56811	07/03/23 01:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			56892	07/03/23 11:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	56757	07/01/23 10:26	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	56779	07/02/23 17:51	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	56704	06/30/23 13:23	KS	EET MID
Soluble	Analysis	300.0		1			56713	06/30/23 19:24	CH	EET MID

Client Sample ID: SFL-1-S-2'

Date Collected: 06/28/23 14:30
Date Received: 06/30/23 11:30

Lab Sample ID: 880-30229-12

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.05 g	5 mL	56697	06/30/23 12:25	EL	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	56649	07/01/23 09:29	SM	EET MID
Total/NA	Analysis	Total BTEX		1			56811	07/03/23 01:44	SM	EET MID
Total/NA	Analysis	8015 NM		1			56892	07/03/23 11:34	SM	EET MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	56757	07/01/23 10:26	AJ	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	56779	07/02/23 18:16	SM	EET MID
Soluble	Leach	DI Leach			5.05 g	50 mL	56704	06/30/23 13:23	KS	EET MID
Soluble	Analysis	300.0		1			56713	06/30/23 19:41	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: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	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: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
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: Big Papi Fed Com 002H

Job ID: 880-30229-1
SDG: Eddy County, NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-30229-1	N-1-S-1'	Solid	06/28/23 09:00	06/30/23 11:30
880-30229-2	E-1-S-1'	Solid	06/28/23 09:30	06/30/23 11:30
880-30229-3	S-1-S-1'	Solid	06/28/23 10:00	06/30/23 11:30
880-30229-4	W-1-S-1'	Solid	06/28/23 10:30	06/30/23 11:30
880-30229-5	NFL-1-S-1'	Solid	06/28/23 11:00	06/30/23 11:30
880-30229-6	NFL-1-S-2'	Solid	06/28/23 11:30	06/30/23 11:30
880-30229-7	NFL-2-S-1'	Solid	06/28/23 12:00	06/30/23 11:30
880-30229-8	NFL-2-S-2'	Solid	06/28/23 12:30	06/30/23 11:30
880-30229-9	NFL-3-S-1'	Solid	06/28/23 13:00	06/30/23 11:30
880-30229-10	NFL-3-S-2'	Solid	06/28/23 13:30	06/30/23 11:30
880-30229-11	SFL-1-S-1'	Solid	06/28/23 14:00	06/30/23 11:30
880-30229-12	SFL-1-S-2'	Solid	06/28/23 14:30	06/30/23 11:30

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

Chain of Custody Record

eurofins | Environment Testing

30229

Client Information	Sampler: Heath Boyd	Lab PM: Builes John	Carrier Tracking No(s):	COC No: 880-6222-859.1
Client Contact: Justin Nixon	Phone: 575-942-0292	E-Mail: John.Builes@et.eurofinsus.com	State of Origin: NM	Page: Page 1 of 2
Company: ARCADIS US Inc	PWSID:			Job #:
Address: 1004 North Big Spring Suite 300	Due Date Requested:			
City: Midland	TAT Requested (days): 3 Day - All			
State, Zip: TX, 79701	Compliance Project: Δ Yes Δ No			
Phone: 432-296-9547(Tel)	PO #: Purchase Order Requested			
Email: Justin Nixon@arcadis.com	WO #:			
Project Name: Big Papi Fed Com 002H	Project #: 88001808			
Site: Eddy 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		
N-1-S-1'	6/28/23	900	C	Solid			X		402
E-1-S-1'		930		Solid			X		
S-1-S-1'		1000		Solid			X		
W-1-S-1'		1030		Solid			X		
NFL-1-S-1'		1100		Solid			X		
NFL-1-S-2'		1130		Solid			X		
NFL-2-S-1'		1200		Solid			X		
NFL-2-S-2'		1230		Solid			X		
NFL-3-S-1		1300		Solid			X		
NFL-3-S-2'		1330		Solid			X		
SFL-1-S-1'	X	1400	X	Solid			X		

880-30229 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: 6/28/23 1730	Company: Arcadis	Received by:	Date/Time: 6-28-23 5 24	Company
Relinquished by: Ryan Carrillo	Date/Time: 6/29/23	Company	Received by:	Date/Time: 6/30/23	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 1130	Company

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

Cooler Temperature(s) oC and Other Remarks: 5.3/5.0

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

Chain of Custody Record

eurofins Environment Testing

30229

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Client Contact: Justin Nixon	Phone: 575-942-0292	E-Mail: John.Builes@et.eurofinsus.com	State of Origin: NM	Page: Page 1 of 2
Company: ARCADIS US Inc	PWSID:			Job #:
Address: 1004 North Big Spring Suite 300	Due Date Requested:			
City: Midland	TAT Requested (days): 3 Day - All -			
State, Zip: TX, 79701	Compliance Project: Δ Yes Δ No			
Phone: 432-296-9547(Tel)	PO #: Purchase Order Requested			
Email: Justin.Nixon@arcadis.com	WO #:			
Project Name: Big Papi Fed Com 002H	Project #: 88001808			
Site: Eddy 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		
SFL-1-S-2'	6/28/23	1430	C	Solid			X		
				Solid					
				Solid					
				Solid					
				Solid					
				Solid					
				Solid					
				Solid					
				Solid					
				Solid					
				Solid					
				Solid					

Loc: 880
30229

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

Deliverable Requested: I, II, III, IV, Other (specify)

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

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:				
Relinquished by:	Date/Time: 6/28/23 1730	Company: Arcadis	Received by:	Date/Time: 6-28-23 5:24	Company		
Relinquished by: Espera Carrillo	Date/Time: 6/29/23	Company	Received by:	Date/Time: 6/30/23	Company		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 1130	Company		

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

Cooler Temperature(s) oC and Other Remarks.

Login Sample Receipt Checklist

Client: ARCADIS US Inc

Job Number: 880-30229-1
SDG Number: Eddy County, NM

Login Number: 30229
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

CONDITIONS

Action 278484

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 278484
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	11/3/2023