

Incident ID	nMCS0124834063
District RP	
Facility ID	
Application ID	

## 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?	<u>&gt;186</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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

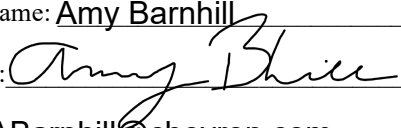
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods,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

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	nMCS0124834063
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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: Amy Barnhill Title: Water Advisor  
Signature:  Date: 8-17-22  
email: ABarnhill@chevron.com Telephone: 432-687-7108

**OCD Only**

Received by: Jocelyn Harimon Date: 08/17/2022



August 12, 2022

Robert Hamlet  
New Mexico Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, NM 87505  
PH #: 575-748-1283  
[Robert.Hamlet@state.nm.us](mailto:Robert.Hamlet@state.nm.us)

Re: Soil Remediation Workplan  
Chevron USA  
Benson Shugart Waterflood Unit #011 Release (nMCS0124834063)  
GPS: N 32.71758° W 103.93540°  
Unit Letter "I", Section 26, Township 18 South, Range 30 East  
Eddy County, New Mexico

Dear Mr. Hamlet,

Etech Environmental & Safety Solutions, Inc. (Etech), on behalf of Chevron USA (Chevron), has prepared this Soil Remediation Workplan for the Benson Shugart Waterflood Unit #011 Release Site (Release Site). The legal description of the Release Site is Unit Letter "I", Section 26, Township 18 South, Range 30 East, in Eddy County, New Mexico. The GPS coordinates for the site are N 32.71758° W 103.93540°. A Site Location Map and Aerial Proximity Map are provided as Figure 1 and Figure 2, respectively.

## INTRODUCTION

On June 4, 2001, a reportable release occurred at the Release Site. The release was the result of a leak discovered in a tee fitting. Approximately eighty (80) barrels (bbls) of crude oil and two hundred (200) bbls of produced water was released with approximately sixty (60) bbls of crude oil and one hundred twenty (120) bbls of produced water recovered via vacuum trucks, for a net loss of twenty (20) bbls of crude oil and eighty (80) bbls of produced water. The initial Form C-141 is provided in Appendix A.

## NMOCD SITE CLASSIFICATION

New Mexico Oil Conservation Division (NMOCD) assessment and cleanup levels for hydrocarbon and produced water releases are based on depth to groundwater and karst status and follow the criteria in the revised August 2018 Title 19 Chapter 15 part 29 New Mexico Administrative Code (19.15.29 NMAC) regulations. Groundwater databases maintained by the New Mexico Office of the State Engineer (NMOSE), New Mexico Bureau of Geology & Mineral Resources (NMBGMR), and United States Geological Survey (USGS) were accessed to determine if any registered water wells were located within a half-mile of the site. The databases identified three (3) water wells within a ½-mile radius. No water well is located within one thousand (1,000) feet (ft) of the release. The closest water well is USGS Well # 324244103561601 with a depth to water of one hundred eighty-six (186) feet below ground surface (bgs). The average depth to water in a half-mile radius is one hundred ninety (190) feet bgs. In addition, the site is listed as being in a medium Karst Topography region. See Appendix B for maps, along with water well data, detailing the site relative to groundwater locations. Based on the NMOCD site classification system, the following soil remediation levels were assigned to the Release Site:

- Benzene – 10 mg/Kg (ppm)
- Total BTEX – 50 mg/Kg (ppm)
- Total TPH – 100 mg/Kg (ppm)
- Chloride – 600 mg/Kg (ppm)

## INITIAL ASSESSMENT AND DELINEATION ACTIVITIES

On January 5, 2022, Etech was onsite to perform the initial assessment and delineation of the release. Two (2) auger holes (Auger Hole 1 and Auger Hole 2) were installed in the inferred spill area to depths ranging from six (6) inches bgs to forty-eight (48) inches bgs. Refusal was encountered in Auger Hole 1 (AH-1) at a depth of thirty (30) inches bgs. Samples were collected and submitted to Europhins Laboratory in Midland, Texas for analysis of Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) by EPA method 8021B, Total Petroleum Hydrocarbons (TPH) by EPA method 8015M, and chlorides by EPA method 300.0. Analytical results for TPH were above the NMOCD remediation standards in Auger Hole 2 (AH-2) in interval 42-48” with a concentration of 702 milligram per kilogram (mg/Kg). All other analysis were below both the NMOCD Closure Criteria or Reclamation Standards. See Table 1 for analytical results. See Appendix C for attached photos detailing release and impact to pad. See Figure 3 for Delineation Plat.

On April 11, 2022, Etech conducted an additional sampling event to determine the vertical and horizontal extent of the impact. AH-2 was further sampled at a depth of seventy-two (72) inches bgs, and additional three (3) boring were installed in each cardinal direction of AH-2 to a depth ranging from six (6) inches to forty-eight (48) inches bgs. Samples were submitted to Europhins in Midland, Texas to be analyzed for BTEX, TPH, and chloride concentrations. All samples were below both the NMOCD Closure Criteria or Reclamation Standards. See Table 1 for analytical results. See Appendix C for attached photos detailing release and impact to pad. See Figure 3 for Delineation Plat.

## SOIL DELINEATION AND REMEDIATION WORKPLAN

Etech proposes to complete the soil remediation in accordance with NMOCD rules and regulations which will entail the following:

- Impacted soils will be excavated to appropriate depths based on delineation data and stockpiled on plastic awaiting disposal.
- During excavation activities soils will be field screened utilizing chloride test kits and a PID meter for determination of laboratory sampling and additional excavation, if warranted.
- Upon completion of the excavation, confirmation soil samples will be collected every two hundred (200) square feet from the base and sidewalls (representing no more than 50 linear feet) of the excavated areas. Additional, discrete grab samples will be collected from wet or visibly stained areas inferred to have been affected by the release, as necessary. Samples will be submitted to Permian Basin Environmental Labs of Texas (PBELAB) for analysis of BTEX by EPA Method 8021B, TPH by EPA Method 8015M, and chlorides by EPA method 300.0.
- The impacted soils will be transported off-site for disposal at an NMOCD approved disposal facility.
- Upon completion of remediation and requisite soil sampling, the site will be backfilled with locally sourced, non-impacted “like” material from an approved off-site facility and brought back to grade.
- A closure report with final C-141 will be submitted to the NMOCD upon completion of remediation activities.

Once the soil remediation work plan has been approved by the NMOCD, Chevron will commence remediation activities. Upon completion of remediation activities, Chevron will complete the activities within ninety (90) days of approval and submit a “*Remediation Summary and Site Closure Request Report*” to the NMOCD.

If you have any questions, or if additional information is required, please feel free to call me at 432-563-2200 (office) or 432-894-6038 (cell).

Thank you,



Blake Estep  
Project Manager  
Etech Environmental & Safety Solutions, Inc.



Jeffrey Kindley, P.G.  
Senior Project Manager/Geologist  
Etech Environmental & Safety Solutions, Inc.

**Attachments:**

Figure 1 – Topographic Map

Figure 2 – Aerial Proximity Map

Figure 3 – Delineation Plat

Table 1 – Concentrations of BTEX, TPH, and Chloride in Soil - Delineation

Appendix A: Initial Release Notification and Corrective Action Form C-141

Appendix B: Groundwater Data Maps and Supporting Water Well Data

Appendix C: Photographic Documentation

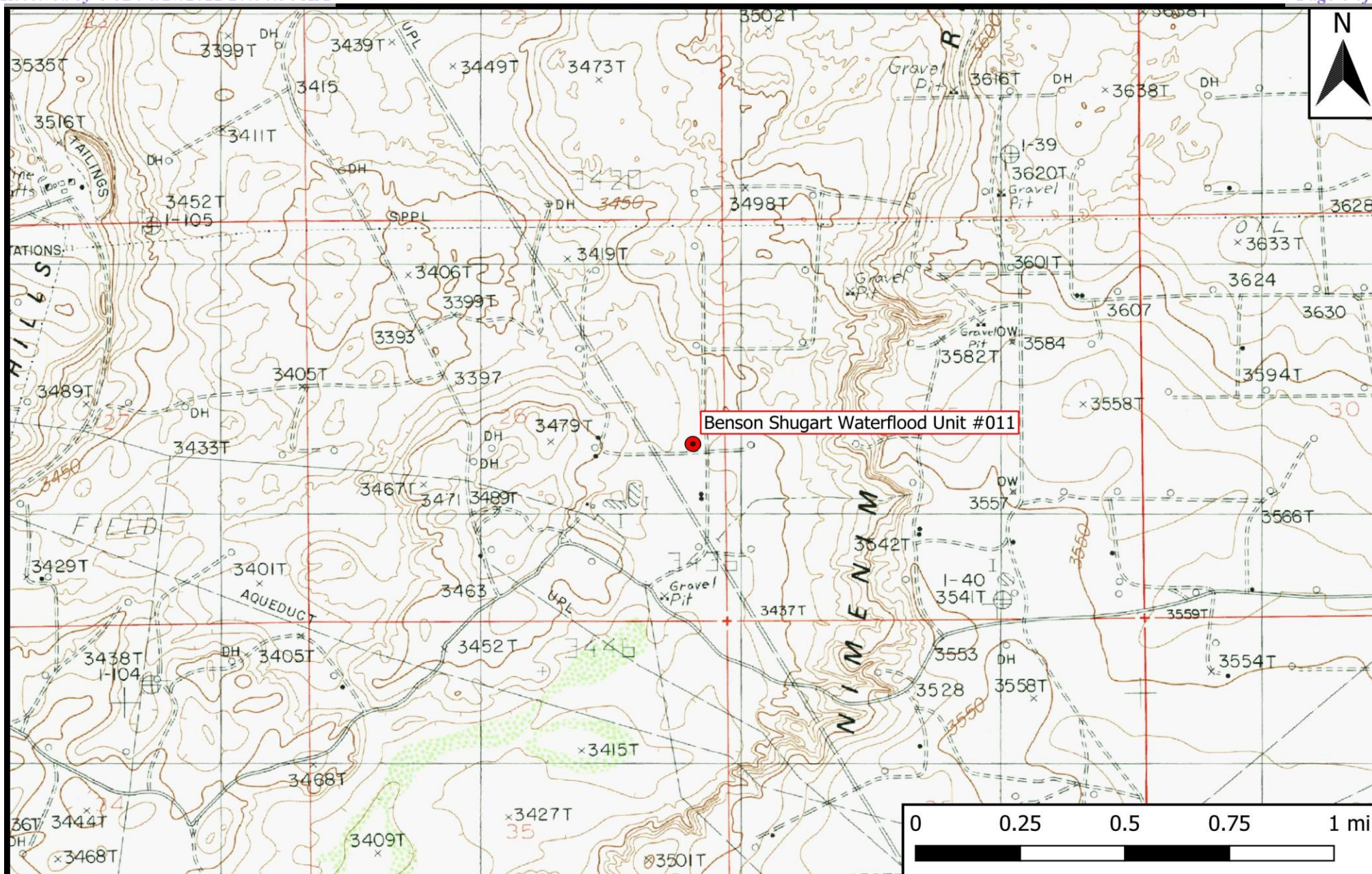
Appendix D: Laboratory Analytical

cc: File

# **Figure 1**

## **Topographic Map**





## Legend

- Site Location

## Figure 1

Topographic Map  
Chevron USA

Benson Shugart Waterflood Unit #011

GPS: 32.71758, -103.935401

Eddy County

**ETECH**  
Environmental & Safety Solutions, Inc.

Drafted: mag

Checked: be

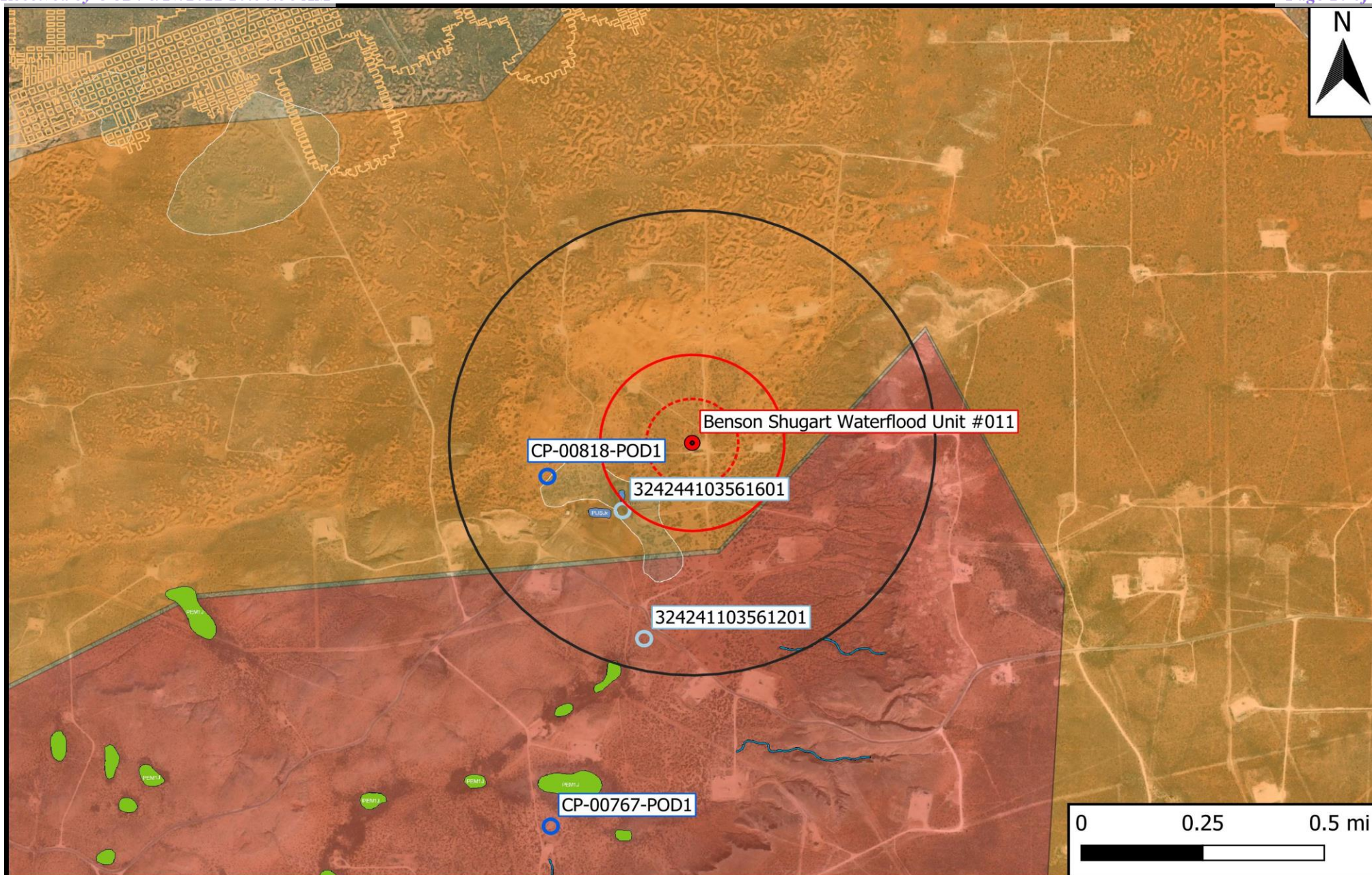
Date:

8/4/22



## **Figure 2**

### **Aerial Proximity Map**



## Legend

- Site Location
- Well - NMOSE
- Well - USGS
- Potash Mine Workings
- Medium/High Karst
- ⋯ 500 Ft Radius
- ⊠ 1000 Ft Radius
- 0.5 Mi Radius
- 1% Annual Flood Chance
- Lake/Freshwater Pond
- Emergent/Forested Wetlands
- Riverine

Figure 2

Aerial Proximity Map

Chevron USA

Benson Shugart Waterflood Unit #011

GPS: 32.71758, -103.935401

Eddy County

eTECH

Environmental &amp; Safety Solutions, Inc.



Drafted: mag

Checked: be

Date:

8/4/22

## **Figure 3**

### **Site and Sample Location Map**



Figure 3  
Delineation Plat

Project Name:	Benson Shugart Waterflood Unit #011	Project No.:	15304	Page 12 of 80
Date Sampled:	January 5, 2022	GPS:	32.717583, -103.935400	



**Table 1**  
**Concentrations of BTEX, TPH, and Chloride in Soil**



TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDE IN SOIL - Delineation

## CHEVRON USA

## BENSON SHUGART WATERFLOOD UNIT #011

EDDY COUNTY, NEW MEXICO

All concentrations are reported in mg/Kg

SAMPLE LOCATION	DEPTH	SAMPLE DATE	METHODS: SW 846-8021B						METHOD: SW 8015M					E 300.0
			BENZENE	TOLUENE	ETHYL-BENZENE	m, p - XYLENES	o - XYLENE	TOTAL XYLENES	TOTAL BTEX	TPH GRO C <sub>6</sub> -C <sub>12</sub>	TPH DRO C <sub>12</sub> -C <sub>28</sub>	TPH ORO C <sub>28</sub> -C <sub>35</sub>	TOTAL TPH C <sub>6</sub> -C <sub>35</sub>	CHLORIDE
Limits			10 mg/Kg						50 mg/Kg				100 mg/Kg	600 mg/Kg
Bottom Hole Sample Results														
Auger Hole 1	0-6"	1/5/2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	162
Auger Hole 1	27-30"	1/5/2022	ND	ND	ND	ND	0.00306	ND	ND	ND	ND	ND	ND	46.9
Auger Hole 2	0-6"	1/5/2022	ND	ND	ND	ND	ND	ND	ND	ND	79.7	ND	79.7	13
Auger Hole 2	42-48"	1/5/2022	ND	ND	ND	ND	ND	ND	ND	ND	702	ND	702	48.3
Auger Hole 2	66-72"	4/11/2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	19.6
South Auger Hole	0-6"	4/11/2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	51.1
South Auger Hole	42-48"	4/11/2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	95.8
East Auger Hole	0-6"	4/11/2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.32
East Auger Hole	42-48"	4/11/2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
West Auger Hole	0-6"	4/11/2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	71.4
West Auger Hole	42-48"	4/11/2022	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	85.1

Bold and Yellow Highlighted indicates Analyte Above NMOCD Regulatory Limit

ND - Analyte Not Detected at or above the laboratory reporting limit

\* - Due to safety concerns regarding the production equipment, sample areas will be addressed at the time of permanent abandonment of the facility.

\*\* - Sample area was eliminated during further excavation activities.

## **Appendix A**

### **Initial Release Notification and Corrective Action Form C-141**

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	NMCS0124834063
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party: Chevron USA	OGRID: 4323
Contact Name: Amy Barnhill	Contact Telephone: 432-687-7108
Contact email: ABarnhill@chevron.com	Incident # (assigned by OCD)
Contact mailing address: 6301 Deauville Blvd Midland, Tx 79706	

### Location of Release Source

Latitude 32.7175636 \_\_\_\_\_ Longitude -103.935173 \_\_\_\_\_  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Benson Shugart Waterflood Unit #11	Site Type: Oil
Date Release Discovered: 6-4-01	API# (if applicable)

Unit Letter	Section	Township	Range	County
I	26	18S	30E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

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

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 80	Volume Recovered (bbls) 60
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)


Cause of Release: Equipment failure, hole in T

Incident ID	NMCS0124834063
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Over 25 bbls
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? This is an old Chesapeake spill, we are assuming it was reported in a timely manner.	

### Initial Response

*The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury*

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: Amy Barnhill	Title: Water Advisor
Signature: 	Date: 8-9-22
email: ABarnhill@chevron.com	Telephone: 432-687-7108
<b><u>OCD Only</u></b>	
Received by: Jocelyn Harimon	Date: 08/17/2022

Incident ID	nMCS0124834063
District RP	
Facility ID	
Application ID	

## Remediation Plan

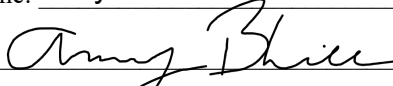
**Remediation Plan Checklist:** *Each of the following items must be included in the plan.*

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

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

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Amy Barnhill Title: Water Advisor  
Signature:  Date: 8-17-22  
email: ABarnhill@chevron.com Telephone: 432-687-7108

**OCD Only**

Received by: Jocelyn Harimon Date: 08/17/2022

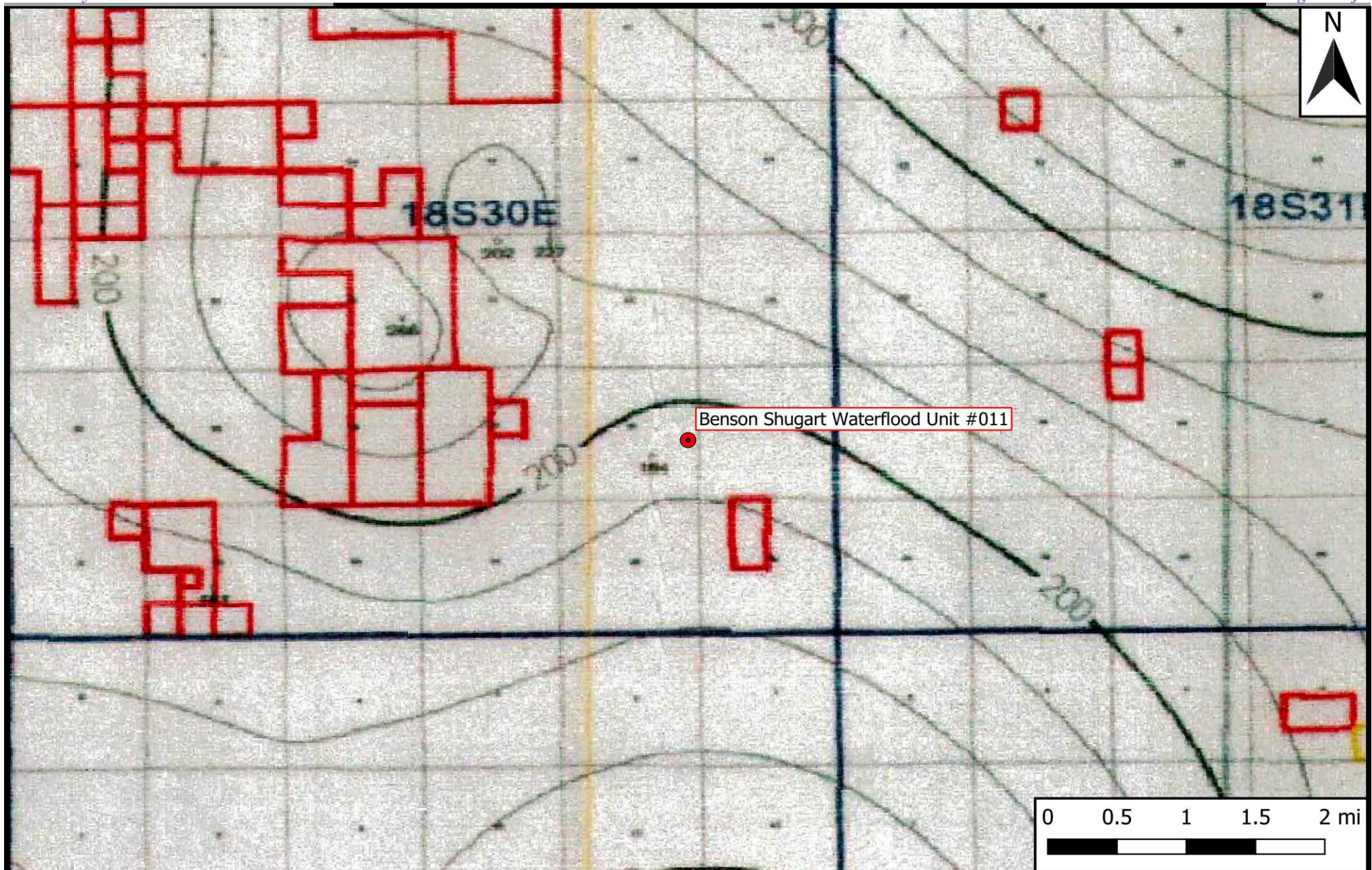
☒ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature:  Date: 12/8/2022



## **Appendix B**

### **Groundwater Data Maps and Supporting Water Well Data**

**Legend**

- Site Location

**Figure 4**

Inferred Depth to Groundwater Trend Map  
Chevron USA  
Benson Shugart Waterflood Unit #011  
GPS: 32.71758, -103.935401  
Eddy County



Drafted: mag

Checked: be

Date: 8/4/22





# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

(A CLW##### in the  
POD suffix indicates the  
POD has been replaced  
& no longer serves a  
water right file.)

(R=POD has  
been replaced,  
O=orphaned,  
C=the file is  
closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth	Well	Depth	Water Column
<a href="#">CP 00818 POD1</a>		CP	LE	1	4	26	18S	30E		599289	3620364*	493		240		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

**Record Count:** 1

### UTMNAD83 Radius Search (in meters):

**Easting (X):** 599768.44

**Northing (Y):** 3620479.56

**Radius:** 804.67

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

8/4/22 8:40 AM

WATER COLUMN/ AVERAGE DEPTH TO  
WATER



# New Mexico Office of the State Engineer

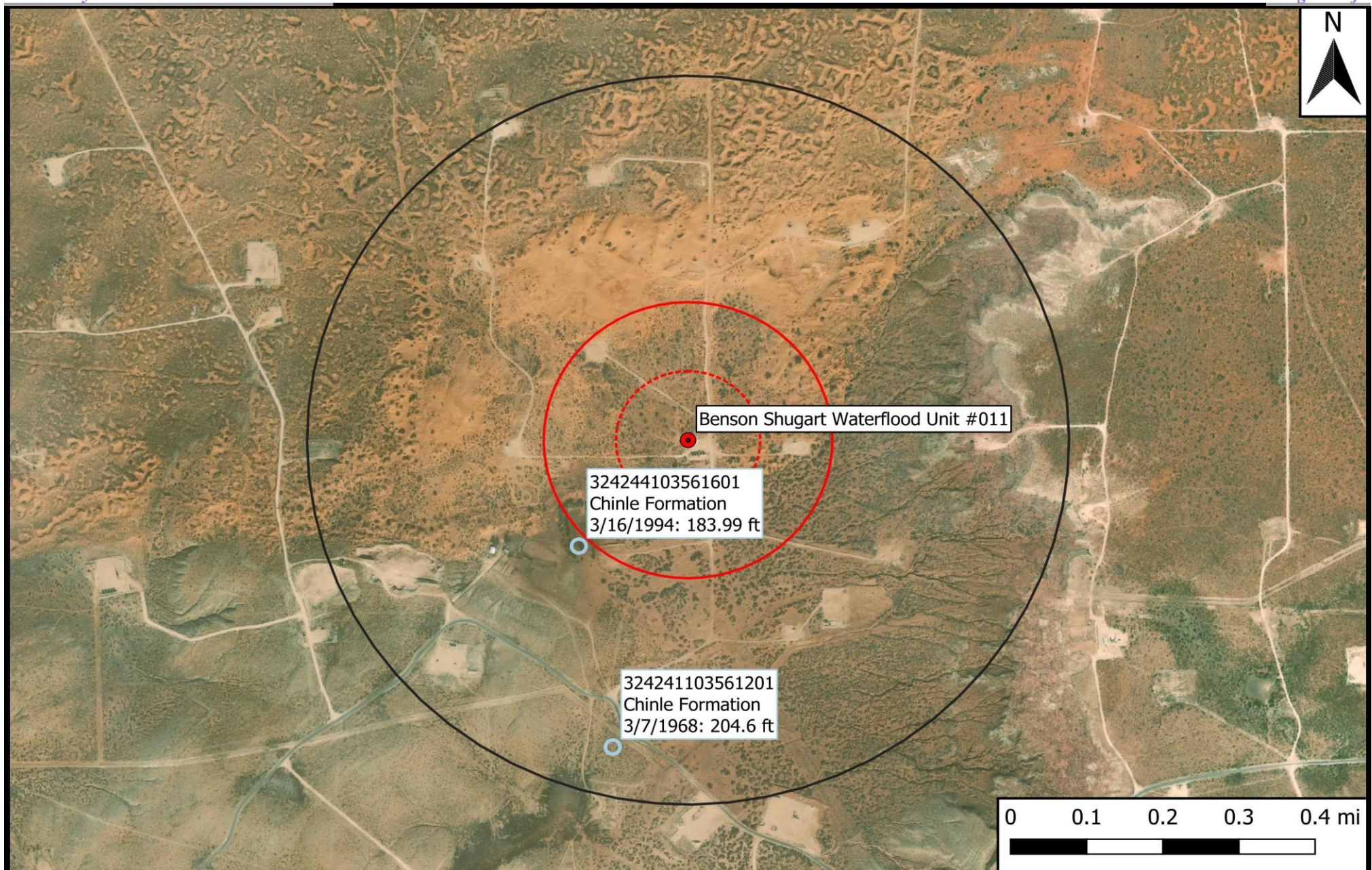
## Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)				(NAD83 UTM in meters)	
		(quarters are smallest to largest)				X	Y
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tw	Rng
	CP 00818 POD1	1	4	26	18S	30E	599289 3620364*
Driller License: 122		Driller Company: UNKNOWN					
Driller Name:							
Drill Start Date:		Drill Finish Date:		Plug Date:			
Log File Date:		PCW Rcv Date:		Source:		Shallow	
Pump Type:		Pipe Discharge Size:		Estimated Yield:		20 GPM	
Casing Size: 7.00		Depth Well:		240 feet		Depth Water:	

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.





## Legend

- Site Location
- Well - USGS
- 500 Ft Radius
- 1000 Ft Radius
- 0.5 Mi Radius

## Figure 5

USGS Well Proximity Map  
Chevron USA  
Benson Shugart Waterflood Unit #011  
GPS: 32.71758, -103.935401  
Eddy County



Drafted: mag

Checked: be

Date: 8/4/22





[USGS Home](#)  
[Contact USGS](#)  
[Search USGS](#)

## National Water Information System: Web Interface

USGS Water Resources

Data Category:

Groundwater

Geographic Area:

United States

GO

[Click for News Bulletins](#)

[Groundwater levels for the Nation](#)

**!** Important: [Next Generation Monitoring Location Page](#)

### Search Results -- 1 sites found

Agency code = usgs

site\_no list =

- 324241103561201

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

### USGS 324241103561201 18S.30E.26.4140

Available data for this site

Groundwater: Field measurements

GO

Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°42'41", Longitude 103°56'12" NAD27

Land-surface elevation 3,432 feet above NAVD88

The depth of the well is 230 feet below land surface.

This well is completed in the Other aquifers (N9999OTHER) national aquifer.

This well is completed in the Chinle Formation (231CHNL) local aquifer.

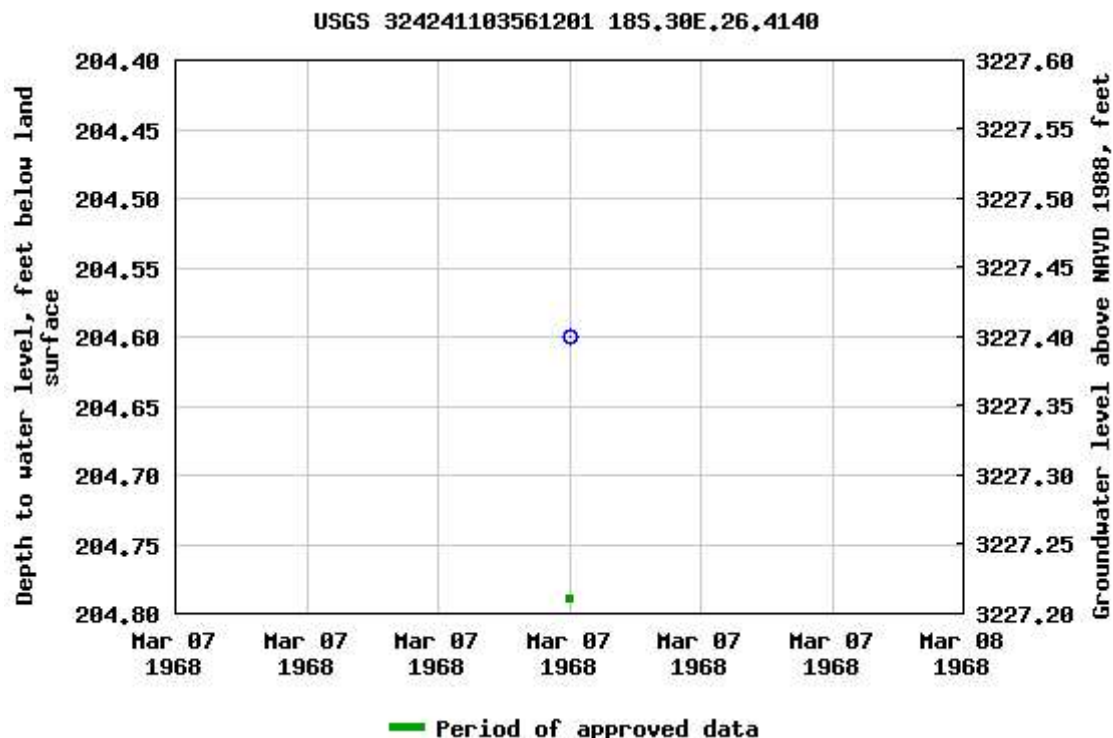
#### Output formats

[Table of data](#)

[Tab-separated data](#)

[Graph of data](#)

[Reselect period](#)



Breaks in the plot represent a gap of at least one year between field measurements.

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**Title: Groundwater for USA: Water Levels**

**URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>**

Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2022-08-04 10:37:40 EDT

0.55 0.48 nadww01





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## National Water Information System: Web Interface

USGS Water Resources

Data Category:

Groundwater

Geographic Area:

United States

GO

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### Search Results -- 1 sites found

Agency code = usgs

site\_no list =

- 324244103561601

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

### USGS 324244103561601 18S.30E.26.414144

Available data for this site

Groundwater: Field measurements

GO

Eddy County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°42'55.8", Longitude 103°56'16.4" NAD83

Land-surface elevation 3,431 feet above NAVD88

This well is completed in the Other aquifers (N9999OTHER) national aquifer.

This well is completed in the Chinle Formation (231CHNL) local aquifer.

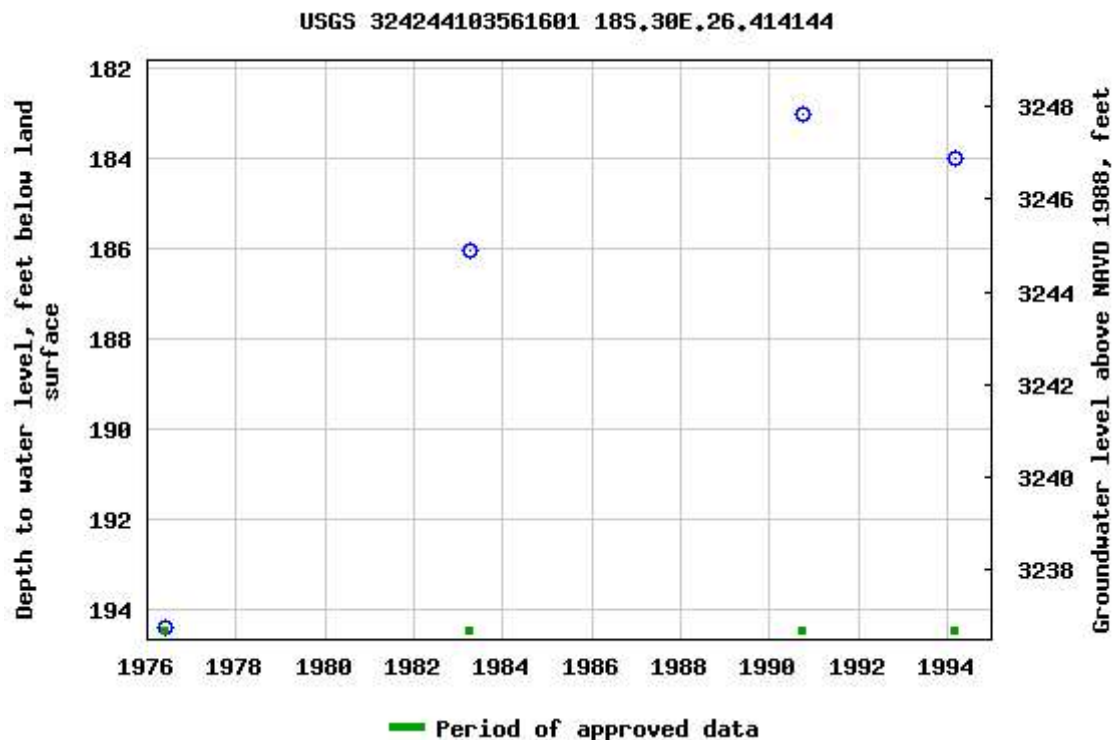
#### Output formats

[Table of data](#)

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[Graph of data](#)

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Breaks in the plot represent a gap of at least one year between field measurements.

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**Title: Groundwater for USA: Water Levels**

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Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2022-08-04 10:37:41 EDT

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## **Appendix C**

### **Photographic Documentation**



**Project Name:** Benson Shugart Waterflood Unit #011  
**Project No:** 15304

**Photographic Documentation**



**Project Name:** Benson Shugart Waterflood Unit #011  
**Project No:** 15304

**Photographic Documentation**

<b>Photo No:</b> <b>3.</b>	
<b>Direction Taken:</b>  North	
<b>Description:</b>  View of the impacted area.	

## **Appendix D**

### **Laboratory Analytical**



## Environment Testing America

### ANALYTICAL REPORT

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

Laboratory Job ID: 880-9970-1

Client Project/Site: Benson Shugart Waterflood unit #011

**For:**

Etech Environmental & Safety Solutions  
PO BOX 62228  
Midland, Texas 79711

Attn: Brandon Wilson

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:  
1/13/2022 8:35:36 PM

Jessica Kramer, Project Manager  
(432)704-5440  
[jessica.kramer@eurofinset.com](mailto:jessica.kramer@eurofinset.com)

#### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Laboratory Job ID: 880-9970-1

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## Definitions/Glossary

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

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



**Case Narrative**

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

**Job ID: 880-9970-1****Laboratory: Eurofins Midland****Narrative****Job Narrative  
880-9970-1****Receipt**

The samples were received on 1/7/2022 1:05 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.4°C

**GC VOA**

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

**GC Semi VOA**

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

**HPLC/IC**

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

## Client Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

## Client Sample ID: Auger Hole 1

Lab Sample ID: 880-9970-1

Date Collected: 01/05/22 11:10

Matrix: Solid

Date Received: 01/07/22 13:05

Sample Depth: 0-6"

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:37	01/10/22 23:14	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:37	01/10/22 23:14	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:37	01/10/22 23:14	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		01/07/22 14:37	01/10/22 23:14	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:37	01/10/22 23:14	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		01/07/22 14:37	01/10/22 23:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	123		70 - 130	01/07/22 14:37	01/10/22 23:14	1
1,4-Difluorobenzene (Surr)	103		70 - 130	01/07/22 14:37	01/10/22 23:14	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			01/12/22 13:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			01/12/22 14:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/07/22 15:26	01/08/22 17:52	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/07/22 15:26	01/08/22 17:52	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/07/22 15:26	01/08/22 17:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	71		70 - 130	01/07/22 15:26	01/08/22 17:52	1
o-Terphenyl	76		70 - 130	01/07/22 15:26	01/08/22 17:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	162		4.99		mg/Kg			01/13/22 10:24	1

## Client Sample ID: Auger Hole 1

Lab Sample ID: 880-9970-2

Date Collected: 01/05/22 11:12

Matrix: Solid

Date Received: 01/07/22 13:05

Sample Depth: 27-30"

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:37	01/10/22 23:35	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:37	01/10/22 23:35	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:37	01/10/22 23:35	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		01/07/22 14:37	01/10/22 23:35	1
o-Xylene	0.00306		0.00200		mg/Kg		01/07/22 14:37	01/10/22 23:35	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		01/07/22 14:37	01/10/22 23:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	120		70 - 130	01/07/22 14:37	01/10/22 23:35	1

Eurofins Midland

## Client Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

## Client Sample ID: Auger Hole 1

Lab Sample ID: 880-9970-2

Date Collected: 01/05/22 11:12

Matrix: Solid

Date Received: 01/07/22 13:05

Sample Depth: 27-30"

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	95		70 - 130	01/07/22 14:37	01/10/22 23:35	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			01/12/22 13:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			01/12/22 14:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/07/22 15:26	01/08/22 18:12	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/07/22 15:26	01/08/22 18:12	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/07/22 15:26	01/08/22 18:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	71		70 - 130				01/07/22 15:26	01/08/22 18:12	1
o-Terphenyl	75		70 - 130				01/07/22 15:26	01/08/22 18:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	46.9		4.97		mg/Kg			01/13/22 10:36	1

## Client Sample ID: Auger Hole 2

Lab Sample ID: 880-9970-3

Date Collected: 01/05/22 11:14

Matrix: Solid

Date Received: 01/07/22 13:05

Sample Depth: 0-6"

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		01/07/22 14:37	01/10/22 23:55	1
Toluene	<0.00199	U	0.00199		mg/Kg		01/07/22 14:37	01/10/22 23:55	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		01/07/22 14:37	01/10/22 23:55	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		01/07/22 14:37	01/10/22 23:55	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		01/07/22 14:37	01/10/22 23:55	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		01/07/22 14:37	01/10/22 23:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130	01/07/22 14:37	01/10/22 23:55	1
1,4-Difluorobenzene (Surr)	90		70 - 130	01/07/22 14:37	01/10/22 23:55	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			01/12/22 13:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	79.7		49.9		mg/Kg			01/12/22 14:00	1

Eurofins Midland

## Client Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

## Client Sample ID: Auger Hole 2

Lab Sample ID: 880-9970-3

Date Collected: 01/05/22 11:14

Matrix: Solid

Date Received: 01/07/22 13:05

Sample Depth: 0-6"

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/07/22 15:26	01/08/22 18:53	1
Diesel Range Organics (Over C10-C28)	79.7		49.9		mg/Kg		01/07/22 15:26	01/08/22 18:53	1
OII Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/07/22 15:26	01/08/22 18:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	71		70 - 130				01/07/22 15:26	01/08/22 18:53	1
o-Terphenyl	76		70 - 130				01/07/22 15:26	01/08/22 18:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13.0		4.95		mg/Kg			01/13/22 10:54	1

## Client Sample ID: Auger Hole 2

Lab Sample ID: 880-9970-4

Date Collected: 01/05/22 11:16

Matrix: Solid

Date Received: 01/07/22 13:05

Sample Depth: 42-48"

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:37	01/11/22 00:16	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:37	01/11/22 00:16	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:37	01/11/22 00:16	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		01/07/22 14:37	01/11/22 00:16	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:37	01/11/22 00:16	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		01/07/22 14:37	01/11/22 00:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	148	S1+	70 - 130				01/07/22 14:37	01/11/22 00:16	1
1,4-Difluorobenzene (Surr)	81		70 - 130				01/07/22 14:37	01/11/22 00:16	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			01/12/22 13:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	702		50.0		mg/Kg			01/12/22 14:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/07/22 15:26	01/08/22 19:13	1
Diesel Range Organics (Over C10-C28)	702		50.0		mg/Kg		01/07/22 15:26	01/08/22 19:13	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/07/22 15:26	01/08/22 19:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	74		70 - 130				01/07/22 15:26	01/08/22 19:13	1
o-Terphenyl	76		70 - 130				01/07/22 15:26	01/08/22 19:13	1

Eurofins Midland

Client Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

**Client Sample ID: Auger Hole 2**  
Date Collected: 01/05/22 11:16  
Date Received: 01/07/22 13:05  
Sample Depth: 42-48"

**Lab Sample ID: 880-9970-4**  
Matrix: Solid

Method: 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	48.3		5.05		mg/Kg			01/13/22 11:05	1

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



## Surrogate Summary

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-9970-1	Auger Hole 1	123	103
880-9970-1 MS	Auger Hole 1	103	94
880-9970-1 MSD	Auger Hole 1	106	95
880-9970-2	Auger Hole 1	120	95
880-9970-3	Auger Hole 2	109	90
880-9970-4	Auger Hole 2	148 S1+	81
LCS 880-16282/1-A	Lab Control Sample	102	98
LCSD 880-16282/2-A	Lab Control Sample Dup	107	100
MB 880-16273/5-A	Method Blank	120	108
MB 880-16282/5-A	Method Blank	120	106

## 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)
880-9968-A-1-C MS	Matrix Spike	76	73
880-9968-A-1-D MSD	Matrix Spike Duplicate	78	74
880-9970-1	Auger Hole 1	71	76
880-9970-2	Auger Hole 1	71	75
880-9970-3	Auger Hole 2	71	76
880-9970-4	Auger Hole 2	74	76
LCS 880-16294/2-A	Lab Control Sample	112	113
LCSD 880-16294/3-A	Lab Control Sample Dup	112	111
MB 880-16294/1-A	Method Blank	75	82

## Surrogate Legend

1CO = 1-Chlorooctane

OTPH = o-Terphenyl

## QC Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

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

Lab Sample ID: MB 880-16273/5-A

Matrix: Solid

Analysis Batch: 16341

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 16273

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:21	01/10/22 10:50	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:21	01/10/22 10:50	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:21	01/10/22 10:50	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		01/07/22 14:21	01/10/22 10:50	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:21	01/10/22 10:50	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		01/07/22 14:21	01/10/22 10:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	120		70 - 130	01/07/22 14:21	01/10/22 10:50	1
1,4-Difluorobenzene (Surr)	108		70 - 130	01/07/22 14:21	01/10/22 10:50	1

Lab Sample ID: MB 880-16282/5-A

Matrix: Solid

Analysis Batch: 16341

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 16282

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:37	01/10/22 22:45	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:37	01/10/22 22:45	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:37	01/10/22 22:45	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		01/07/22 14:37	01/10/22 22:45	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/07/22 14:37	01/10/22 22:45	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		01/07/22 14:37	01/10/22 22:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	120		70 - 130	01/07/22 14:37	01/10/22 22:45	1
1,4-Difluorobenzene (Surr)	106		70 - 130	01/07/22 14:37	01/10/22 22:45	1

Lab Sample ID: LCS 880-16282/1-A

Matrix: Solid

Analysis Batch: 16341

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 16282

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.09284		mg/Kg		93	70 - 130
Toluene	0.100	0.09530		mg/Kg		95	70 - 130
Ethylbenzene	0.100	0.09449		mg/Kg		94	70 - 130
m-Xylene & p-Xylene	0.200	0.1883		mg/Kg		94	70 - 130
o-Xylene	0.100	0.08928		mg/Kg		89	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: LCSD 880-16282/2-A

Matrix: Solid

Analysis Batch: 16341

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 16282

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.100	0.09551		mg/Kg		96	70 - 130	3	35

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## QC Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

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

Lab Sample ID: LCSD 880-16282/2-A

Matrix: Solid

Analysis Batch: 16341

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 16282

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Toluene	0.100	0.09452		mg/Kg		95	70 - 130	1	35
Ethylbenzene	0.100	0.09939		mg/Kg		99	70 - 130	5	35
m-Xylene & p-Xylene	0.200	0.1946		mg/Kg		97	70 - 130	3	35
o-Xylene	0.100	0.09623		mg/Kg		96	70 - 130	7	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 880-9970-1 MS

Matrix: Solid

Analysis Batch: 16341

Client Sample ID: Auger Hole 1

Prep Type: Total/NA

Prep Batch: 16282

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<0.00200	U	0.0998	0.07914		mg/Kg		79	70 - 130
Toluene	<0.00200	U	0.0998	0.08145		mg/Kg		82	70 - 130
Ethylbenzene	<0.00200	U	0.0998	0.08486		mg/Kg		85	70 - 130
m-Xylene & p-Xylene	<0.00399	U	0.200	0.1614		mg/Kg		81	70 - 130
o-Xylene	<0.00200	U	0.0998	0.08289		mg/Kg		83	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: 880-9970-1 MSD

Matrix: Solid

Analysis Batch: 16341

Client Sample ID: Auger Hole 1

Prep Type: Total/NA

Prep Batch: 16282

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.100	0.07850		mg/Kg		79	70 - 130	1	35
Toluene	<0.00200	U	0.100	0.08377		mg/Kg		84	70 - 130	3	35
Ethylbenzene	<0.00200	U	0.100	0.08307		mg/Kg		83	70 - 130	2	35
m-Xylene & p-Xylene	<0.00399	U	0.200	0.1604		mg/Kg		80	70 - 130	1	35
o-Xylene	<0.00200	U	0.100	0.08218		mg/Kg		82	70 - 130	1	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

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

Lab Sample ID: MB 880-16294/1-A

Matrix: Solid

Analysis Batch: 16326

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 16294

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/07/22 15:26	01/08/22 13:27	1

Eurofins Midland

## QC Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

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

Lab Sample ID: MB 880-16294/1-A

Matrix: Solid

Analysis Batch: 16326

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 16294

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/07/22 15:26	01/08/22 13:27	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/07/22 15:26	01/08/22 13:27	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	75		70 - 130				01/07/22 15:26	01/08/22 13:27	1
o-Terphenyl	82		70 - 130				01/07/22 15:26	01/08/22 13:27	1

Lab Sample ID: LCS 880-16294/2-A

Matrix: Solid

Analysis Batch: 16326

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 16294

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	869.2		mg/Kg		87	70 - 130
Diesel Range Organics (Over C10-C28)	1000	908.2		mg/Kg		91	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	112		70 - 130				
o-Terphenyl	113		70 - 130				

Lab Sample ID: LCSD 880-16294/3-A

Matrix: Solid

Analysis Batch: 16326

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 16294

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	850.2		mg/Kg		85	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	1000	861.0		mg/Kg		86	70 - 130	5	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	112		70 - 130						
o-Terphenyl	111		70 - 130						

Lab Sample ID: 880-9968-A-1-C MS

Matrix: Solid

Analysis Batch: 16326

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 16294

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	996	952.2		mg/Kg		96	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U	996	849.7		mg/Kg		81	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	76		70 - 130						
o-Terphenyl	73		70 - 130						

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## QC Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

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

Lab Sample ID: 880-9968-A-1-D MSD

Matrix: Solid

Analysis Batch: 16326

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 16294

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	936.4		mg/Kg		94	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<49.9	U	999	869.7		mg/Kg		83	70 - 130	2	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	78		70 - 130								
o-Terphenyl	74		70 - 130								

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-16443/1-A

Matrix: Solid

Analysis Batch: 16558

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			01/13/22 08:45	1

Lab Sample ID: LCS 880-16443/2-A

Matrix: Solid

Analysis Batch: 16558

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	250	243.0		mg/Kg		97	90 - 110		

Lab Sample ID: LCSD 880-16443/3-A

Matrix: Solid

Analysis Batch: 16558

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	246.7		mg/Kg		99	90 - 110	2	20

Lab Sample ID: 880-9969-A-4-D MS

Matrix: Solid

Analysis Batch: 16558

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	211		251	464.1		mg/Kg		101	90 - 110		

Lab Sample ID: 880-9969-A-4-E MSD

Matrix: Solid

Analysis Batch: 16558

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	211		251	456.4		mg/Kg		98	90 - 110	2	20

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## QC Association Summary

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

## GC VOA

## Prep Batch: 16273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-16273/5-A	Method Blank	Total/NA	Solid	5035	

## Prep Batch: 16282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-9970-1	Auger Hole 1	Total/NA	Solid	5035	
880-9970-2	Auger Hole 1	Total/NA	Solid	5035	
880-9970-3	Auger Hole 2	Total/NA	Solid	5035	
880-9970-4	Auger Hole 2	Total/NA	Solid	5035	
MB 880-16282/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-16282/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-16282/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-9970-1 MS	Auger Hole 1	Total/NA	Solid	5035	
880-9970-1 MSD	Auger Hole 1	Total/NA	Solid	5035	

## Analysis Batch: 16341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-9970-1	Auger Hole 1	Total/NA	Solid	8021B	16282
880-9970-2	Auger Hole 1	Total/NA	Solid	8021B	16282
880-9970-3	Auger Hole 2	Total/NA	Solid	8021B	16282
880-9970-4	Auger Hole 2	Total/NA	Solid	8021B	16282
MB 880-16273/5-A	Method Blank	Total/NA	Solid	8021B	16273
MB 880-16282/5-A	Method Blank	Total/NA	Solid	8021B	16282
LCS 880-16282/1-A	Lab Control Sample	Total/NA	Solid	8021B	16282
LCSD 880-16282/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	16282
880-9970-1 MS	Auger Hole 1	Total/NA	Solid	8021B	16282
880-9970-1 MSD	Auger Hole 1	Total/NA	Solid	8021B	16282

## Analysis Batch: 16668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-9970-1	Auger Hole 1	Total/NA	Solid	Total BTEX	
880-9970-2	Auger Hole 1	Total/NA	Solid	Total BTEX	
880-9970-3	Auger Hole 2	Total/NA	Solid	Total BTEX	
880-9970-4	Auger Hole 2	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Prep Batch: 16294

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-9970-1	Auger Hole 1	Total/NA	Solid	8015NM Prep	
880-9970-2	Auger Hole 1	Total/NA	Solid	8015NM Prep	
880-9970-3	Auger Hole 2	Total/NA	Solid	8015NM Prep	
880-9970-4	Auger Hole 2	Total/NA	Solid	8015NM Prep	
MB 880-16294/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-16294/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-16294/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-9968-A-1-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-9968-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 16326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-9970-1	Auger Hole 1	Total/NA	Solid	8015B NM	16294

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## QC Association Summary

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

## GC Semi VOA (Continued)

## Analysis Batch: 16326 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-9970-2	Auger Hole 1	Total/NA	Solid	8015B NM	16294
880-9970-3	Auger Hole 2	Total/NA	Solid	8015B NM	16294
880-9970-4	Auger Hole 2	Total/NA	Solid	8015B NM	16294
MB 880-16294/1-A	Method Blank	Total/NA	Solid	8015B NM	16294
LCS 880-16294/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	16294
LCSD 880-16294/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	16294
880-9968-A-1-C MS	Matrix Spike	Total/NA	Solid	8015B NM	16294
880-9968-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	16294

## Analysis Batch: 16554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-9970-1	Auger Hole 1	Total/NA	Solid	8015 NM	
880-9970-2	Auger Hole 1	Total/NA	Solid	8015 NM	
880-9970-3	Auger Hole 2	Total/NA	Solid	8015 NM	
880-9970-4	Auger Hole 2	Total/NA	Solid	8015 NM	

## HPLC/IC

## Leach Batch: 16443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-9970-1	Auger Hole 1	Soluble	Solid	DI Leach	
880-9970-2	Auger Hole 1	Soluble	Solid	DI Leach	
880-9970-3	Auger Hole 2	Soluble	Solid	DI Leach	
880-9970-4	Auger Hole 2	Soluble	Solid	DI Leach	
MB 880-16443/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-16443/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-16443/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-9969-A-4-D MS	Matrix Spike	Soluble	Solid	DI Leach	
880-9969-A-4-E MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## Analysis Batch: 16558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-9970-1	Auger Hole 1	Soluble	Solid	300.0	16443
880-9970-2	Auger Hole 1	Soluble	Solid	300.0	16443
880-9970-3	Auger Hole 2	Soluble	Solid	300.0	16443
880-9970-4	Auger Hole 2	Soluble	Solid	300.0	16443
MB 880-16443/1-A	Method Blank	Soluble	Solid	300.0	16443
LCS 880-16443/2-A	Lab Control Sample	Soluble	Solid	300.0	16443
LCSD 880-16443/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	16443
880-9969-A-4-D MS	Matrix Spike	Soluble	Solid	300.0	16443
880-9969-A-4-E MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	16443

Eurofins Midland

## Lab Chronicle

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

## Client Sample ID: Auger Hole 1

Lab Sample ID: 880-9970-1

Date Collected: 01/05/22 11:10

Matrix: Solid

Date Received: 01/07/22 13:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	16282	01/07/22 14:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16341	01/10/22 23:14	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			16668	01/12/22 13:10	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			16554	01/12/22 14:00	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	16294	01/07/22 15:26	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16326	01/08/22 17:52	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	16443	01/10/22 13:40	CH	XEN MID
Soluble	Analysis	300.0		1			16558	01/13/22 10:24	SC	XEN MID

## Client Sample ID: Auger Hole 1

Lab Sample ID: 880-9970-2

Date Collected: 01/05/22 11:12

Matrix: Solid

Date Received: 01/07/22 13:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	16282	01/07/22 14:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16341	01/10/22 23:35	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			16668	01/12/22 13:10	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			16554	01/12/22 14:00	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	16294	01/07/22 15:26	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16326	01/08/22 18:12	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	16443	01/10/22 13:40	CH	XEN MID
Soluble	Analysis	300.0		1			16558	01/13/22 10:36	SC	XEN MID

## Client Sample ID: Auger Hole 2

Lab Sample ID: 880-9970-3

Date Collected: 01/05/22 11:14

Matrix: Solid

Date Received: 01/07/22 13:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	16282	01/07/22 14:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16341	01/10/22 23:55	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			16668	01/12/22 13:10	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			16554	01/12/22 14:00	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	16294	01/07/22 15:26	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16326	01/08/22 18:53	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	16443	01/10/22 13:40	CH	XEN MID
Soluble	Analysis	300.0		1			16558	01/13/22 10:54	SC	XEN MID

## Client Sample ID: Auger Hole 2

Lab Sample ID: 880-9970-4

Date Collected: 01/05/22 11:16

Matrix: Solid

Date Received: 01/07/22 13:05

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	16282	01/07/22 14:37	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16341	01/11/22 00:16	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			16668	01/12/22 13:10	AJ	XEN MID

Eurofins Midland

Lab Chronicle

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

Client Sample ID: Auger Hole 2

Lab Sample ID: 880-9970-4

Date Collected: 01/05/22 11:16

Matrix: Solid

Date Received: 01/07/22 13:05

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			16554	01/12/22 14:00	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	16294	01/07/22 15:26	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16326	01/08/22 19:13	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	16443	01/10/22 13:40	CH	XEN MID
Soluble	Analysis	300.0		1			16558	01/13/22 11:05	SC	XEN MID

Laboratory References:  
XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440



Accreditation/Certification Summary

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

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: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
Total BTEX	Total BTEX Calculation	TAL SOP	XEN MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5035	Closed System Purge and Trap	SW846	XEN MID
8015NM Prep	Microextraction	SW846	XEN MID
DI Leach	Deionized Water Leaching Procedure	ASTM	XEN MID

**Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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:**

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

Eurofins Midland

## Sample Summary

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood unit #011

Job ID: 880-9970-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-9970-1	Auger Hole 1	Solid	01/05/22 11:10	01/07/22 13:05	0-6"
880-9970-2	Auger Hole 1	Solid	01/05/22 11:12	01/07/22 13:05	27-30"
880-9970-3	Auger Hole 2	Solid	01/05/22 11:14	01/07/22 13:05	0-6"
880-9970-4	Auger Hole 2	Solid	01/05/22 11:16	01/07/22 13:05	42-48"



## Chain of Custody

Houston TX (281) 240-4200 Dallas TX (214) 902-0300 San Antonio TX (210) 509-3334  
Midland TX (432-704-5440) EL Paso TX (915)585-3443 Lubbock TX (806)794-1296  
Phoenix, AZ (480-335-0900) Atlanta GA (770-449-8800) Tampa FL (813-575-392-7550) Hobbs NM (575-392-7550)

Work Order No: 9970

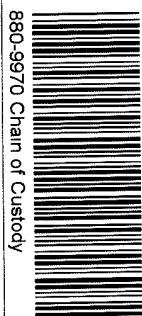
1/13/2022

Project Manager	Brandon Wilson	Bill to (if different)	
Company Name	Etech Environmental	Company Name	
Address	13000 W CR 100	Address	
City, State ZIP	Odessa, Tx 79765	City, State ZIP	
Phone	432-563-2200	Email	brandon@etecheny.com, blake@etecheny.com

Work Order Comments				
Program: UST/PST	<input type="checkbox"/> PPR	<input type="checkbox"/> Brownfields	<input type="checkbox"/> RC	<input type="checkbox"/> Superfund
State of Project:				
Reporting Level II	<input type="checkbox"/> Level III	<input type="checkbox"/> PST/UST	<input type="checkbox"/> RRP	<input type="checkbox"/> Level IV
Deliverables	EDD <input type="checkbox"/>	Adapt <input type="checkbox"/>	Other	

Project Name	Benson Shugart Waterflood Unit #011	Turn Around
Project Number	15304	Routine <input checked="" type="checkbox"/>
P O Number	15304	Rush
Sampler's Name	Blake Estep	Due Date

SAMPLE RECEIPT		Temp Blank	Yes	No	Wet Ice	Yes	No
Temperature (°C)	53/54				Thermometer ID		
Received Intact.	Yes	No			IT23		
Cooler Custody Seals	Yes	No	N/A		Correction Factor		.10
Sample Custody Seals	Yes	No	N/A		Total Containers		

[illegible]

880-9970 Chain of Custody

<b>Total</b>	<b>200.7 / 6010</b>	<b>200.8 6020:</b>	8RCRA	13PPM	Texas	11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO2	Na	Sr	Ti	Sn	U	V	Zn
<i>Circle Method(s) and Metal(s) to be analyzed</i>			TCLP / SPLP	6010	8RCRA		Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U												
<p>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 losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.</p>																																		
<p>1631 / 245.1 / 7470 / 7471 Hg</p>																																		

Relinquished by (Signature)	Received by (Signature)	Date/Time	Relinquished by (Signature)	Received by (Signature)	Date/Time
1 <i>Balch</i>	<i>[Signature]</i>	1-7-22 1305	2		
3			4		
5			6		

## Login Sample Receipt Checklist

Client: Etech Environmental &amp; Safety Solutions

Job Number: 880-9970-1

Login Number: 9970

List Source: Eurofins Midland

List Number: 1

Creator: Rodriguez, Leticia

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





## Environment Testing America

### ANALYTICAL REPORT

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

Laboratory Job ID: 880-13746-1

Laboratory Sample Delivery Group: 15304

Client Project/Site: Benson Shugart Waterflood Unit #011

For:

Etech Environmental & Safety Solutions  
PO BOX 62228  
Midland, Texas 79711

Attn: Brandon Wilson

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:  
4/21/2022 10:18:28 AM

Jessica Kramer, Project Manager  
(432)704-5440  
[Jessica.Kramer@et.eurofinsus.com](mailto:Jessica.Kramer@et.eurofinsus.com)

#### LINKS

Review your project  
results through

TotalAccess

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[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Laboratory Job ID: 880-13746-1  
SDG: 15304

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## Definitions/Glossary

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

## Qualifiers

## GC VOA

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

## GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

## HPLC/IC

Qualifier	Qualifier Description
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.
α	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: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

**Job ID: 880-13746-1**

**Laboratory: Eurofins Midland**

**Narrative****Job Narrative  
880-13746-1****Receipt**

The samples were received on 4/14/2022 4:29 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.2°C

**GC VOA**

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

**GC Semi VOA**

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-23575 and analytical batch 880-23584 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

**HPLC/IC**

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

## Client Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

## Client Sample ID: South Auger Hole

Lab Sample ID: 880-13746-1

Date Collected: 04/11/22 12:00

Matrix: Solid

Date Received: 04/14/22 16:29

Sample Depth: 0 - 6"

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		04/19/22 17:00	04/20/22 16:46	1
Toluene	<0.00199	U	0.00199		mg/Kg		04/19/22 17:00	04/20/22 16:46	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		04/19/22 17:00	04/20/22 16:46	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		04/19/22 17:00	04/20/22 16:46	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		04/19/22 17:00	04/20/22 16:46	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		04/19/22 17:00	04/20/22 16:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130	04/19/22 17:00	04/20/22 16:46	1
1,4-Difluorobenzene (Surr)	99		70 - 130	04/19/22 17:00	04/20/22 16:46	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			04/21/22 11:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			04/15/22 15:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F1	49.9		mg/Kg		04/15/22 08:43	04/15/22 11:27	1
Diesel Range Organics (Over C10-C28)	<49.9	U F1	49.9		mg/Kg		04/15/22 08:43	04/15/22 11:27	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		04/15/22 08:43	04/15/22 11:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	71		70 - 130	04/15/22 08:43	04/15/22 11:27	1
o-Terphenyl	73		70 - 130	04/15/22 08:43	04/15/22 11:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	51.1		4.98		mg/Kg			04/19/22 14:04	1

## Client Sample ID: South Auger Hole

Lab Sample ID: 880-13746-2

Date Collected: 04/11/22 12:02

Matrix: Solid

Date Received: 04/14/22 16:29

Sample Depth: 42 - 48"

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		04/19/22 17:00	04/20/22 17:23	1
Toluene	<0.00200	U	0.00200		mg/Kg		04/19/22 17:00	04/20/22 17:23	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		04/19/22 17:00	04/20/22 17:23	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		04/19/22 17:00	04/20/22 17:23	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		04/19/22 17:00	04/20/22 17:23	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		04/19/22 17:00	04/20/22 17:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	04/19/22 17:00	04/20/22 17:23	1

Eurofins Midland



## Client Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

## Client Sample ID: South Auger Hole

Lab Sample ID: 880-13746-2

Date Collected: 04/11/22 12:02

Matrix: Solid

Date Received: 04/14/22 16:29

Sample Depth: 42 - 48"

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	97		70 - 130	04/19/22 17:00	04/20/22 17:23	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			04/21/22 11:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			04/15/22 15:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		04/15/22 08:43	04/15/22 13:33	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		04/15/22 08:43	04/15/22 13:33	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		04/15/22 08:43	04/15/22 13:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	71		70 - 130				04/15/22 08:43	04/15/22 13:33	1
o-Terphenyl	77		70 - 130				04/15/22 08:43	04/15/22 13:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	95.8		4.99		mg/Kg			04/19/22 14:11	1

## Client Sample ID: East Auger Hole

Lab Sample ID: 880-13746-3

Date Collected: 04/11/22 12:04

Matrix: Solid

Date Received: 04/14/22 16:29

Sample Depth: 0 - 6"

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		04/19/22 17:00	04/20/22 17:43	1
Toluene	<0.00199	U	0.00199		mg/Kg		04/19/22 17:00	04/20/22 17:43	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		04/19/22 17:00	04/20/22 17:43	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		04/19/22 17:00	04/20/22 17:43	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		04/19/22 17:00	04/20/22 17:43	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		04/19/22 17:00	04/20/22 17:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130	04/19/22 17:00	04/20/22 17:43	1
1,4-Difluorobenzene (Surr)	99		70 - 130	04/19/22 17:00	04/20/22 17:43	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			04/21/22 11:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			04/15/22 15:35	1

Eurofins Midland

## Client Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

## Client Sample ID: East Auger Hole

Lab Sample ID: 880-13746-3

Date Collected: 04/11/22 12:04

Matrix: Solid

Date Received: 04/14/22 16:29

Sample Depth: 0 - 6"

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		04/15/22 08:43	04/15/22 13:54	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		04/15/22 08:43	04/15/22 13:54	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		04/15/22 08:43	04/15/22 13:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	71		70 - 130				04/15/22 08:43	04/15/22 13:54	1
o-Terphenyl	78		70 - 130				04/15/22 08:43	04/15/22 13:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.32		4.95		mg/Kg			04/19/22 14:17	1

## Client Sample ID: East Auger Hole

Lab Sample ID: 880-13746-4

Date Collected: 04/11/22 12:06

Matrix: Solid

Date Received: 04/14/22 16:29

Sample Depth: 42 - 48"

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		04/19/22 17:00	04/20/22 18:04	1
Toluene	<0.00198	U	0.00198		mg/Kg		04/19/22 17:00	04/20/22 18:04	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		04/19/22 17:00	04/20/22 18:04	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		04/19/22 17:00	04/20/22 18:04	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		04/19/22 17:00	04/20/22 18:04	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		04/19/22 17:00	04/20/22 18:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130				04/19/22 17:00	04/20/22 18:04	1
1,4-Difluorobenzene (Surr)	98		70 - 130				04/19/22 17:00	04/20/22 18:04	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			04/21/22 11:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			04/15/22 15:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		04/15/22 08:43	04/15/22 14:15	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		04/15/22 08:43	04/15/22 14:15	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		04/15/22 08:43	04/15/22 14:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	70		70 - 130				04/15/22 08:43	04/15/22 14:15	1
o-Terphenyl	76		70 - 130				04/15/22 08:43	04/15/22 14:15	1

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## Client Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

## Client Sample ID: East Auger Hole

Lab Sample ID: 880-13746-4

Date Collected: 04/11/22 12:06

Matrix: Solid

Date Received: 04/14/22 16:29

Sample Depth: 42 - 48"

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.01	U	5.01		mg/Kg			04/19/22 14:36	1

## Client Sample ID: West Auger Hole

Lab Sample ID: 880-13746-5

Date Collected: 04/11/22 12:08

Matrix: Solid

Date Received: 04/14/22 16:29

Sample Depth: 0 - 6"

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		04/19/22 17:00	04/20/22 18:24	1
Toluene	<0.00202	U	0.00202		mg/Kg		04/19/22 17:00	04/20/22 18:24	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		04/19/22 17:00	04/20/22 18:24	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		04/19/22 17:00	04/20/22 18:24	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		04/19/22 17:00	04/20/22 18:24	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		04/19/22 17:00	04/20/22 18:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130				04/19/22 17:00	04/20/22 18:24	1
1,4-Difluorobenzene (Surr)	98		70 - 130				04/19/22 17:00	04/20/22 18:24	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404		mg/Kg			04/21/22 11:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			04/15/22 15:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		04/15/22 08:43	04/15/22 14:36	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		04/15/22 08:43	04/15/22 14:36	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		04/15/22 08:43	04/15/22 14:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	75		70 - 130				04/15/22 08:43	04/15/22 14:36	1
o-Terphenyl	82		70 - 130				04/15/22 08:43	04/15/22 14:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	71.4		4.98		mg/Kg			04/19/22 14:42	1

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## Client Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

## Client Sample ID: West Auger Hole

Lab Sample ID: 880-13746-6

Date Collected: 04/11/22 12:10

Matrix: Solid

Date Received: 04/14/22 16:29

Sample Depth: 42 - 48"

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		04/19/22 17:00	04/20/22 18:45	1
Toluene	<0.00202	U	0.00202		mg/Kg		04/19/22 17:00	04/20/22 18:45	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		04/19/22 17:00	04/20/22 18:45	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		04/19/22 17:00	04/20/22 18:45	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		04/19/22 17:00	04/20/22 18:45	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		04/19/22 17:00	04/20/22 18:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130	04/19/22 17:00	04/20/22 18:45	1
1,4-Difluorobenzene (Surr)	100		70 - 130	04/19/22 17:00	04/20/22 18:45	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			04/21/22 11:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			04/15/22 15:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		04/15/22 08:43	04/15/22 14:57	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		04/15/22 08:43	04/15/22 14:57	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		04/15/22 08:43	04/15/22 14:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	73		70 - 130	04/15/22 08:43	04/15/22 14:57	1
o-Terphenyl	82		70 - 130	04/15/22 08:43	04/15/22 14:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	85.1		5.04		mg/Kg			04/19/22 14:48	1

## Client Sample ID: Auger Hole 2

Lab Sample ID: 880-13746-7

Date Collected: 04/11/22 12:12

Matrix: Solid

Date Received: 04/14/22 16:29

Sample Depth: 66 - 72"

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		04/19/22 17:00	04/20/22 19:05	1
Toluene	<0.00200	U	0.00200		mg/Kg		04/19/22 17:00	04/20/22 19:05	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		04/19/22 17:00	04/20/22 19:05	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		04/19/22 17:00	04/20/22 19:05	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		04/19/22 17:00	04/20/22 19:05	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		04/19/22 17:00	04/20/22 19:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130	04/19/22 17:00	04/20/22 19:05	1

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## Client Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

## Client Sample ID: Auger Hole 2

Lab Sample ID: 880-13746-7

Date Collected: 04/11/22 12:12

Matrix: Solid

Date Received: 04/14/22 16:29

Sample Depth: 66 - 72"

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	87		70 - 130	04/19/22 17:00	04/20/22 19:05	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			04/21/22 11:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			04/15/22 15:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		04/15/22 08:43	04/15/22 15:18	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		04/15/22 08:43	04/15/22 15:18	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		04/15/22 08:43	04/15/22 15:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	72		70 - 130				04/15/22 08:43	04/15/22 15:18	1
o-Terphenyl	79		70 - 130				04/15/22 08:43	04/15/22 15:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19.6		5.01		mg/Kg			04/19/22 14:55	1



## Surrogate Summary

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	BFB1	DFBZ1				
		(70-130)	(70-130)				
880-13746-1	South Auger Hole	105	99				
880-13746-2	South Auger Hole	100	97				
880-13746-3	East Auger Hole	102	99				
880-13746-4	East Auger Hole	104	98				
880-13746-5	West Auger Hole	105	98				
880-13746-6	West Auger Hole	106	100				
880-13746-7	Auger Hole 2	103	87				
890-2197-A-5-D MS	Matrix Spike	104	103				
890-2197-A-5-E MSD	Matrix Spike Duplicate	101	102				
LCS 880-23750/1-B	Lab Control Sample	99	101				
LCSD 880-23750/2-B	Lab Control Sample Dup	103	103				
MB 880-23750/5-B	Method Blank	101	92				
<b>Surrogate Legend</b>							
BFB = 4-Bromofluorobenzene (Surr)							
DFBZ = 1,4-Difluorobenzene (Surr)							

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	1CO1	OTPH1				
		(70-130)	(70-130)				
880-13746-1	South Auger Hole	71	73				
880-13746-1 MS	South Auger Hole	67 S1-	69 S1-				
880-13746-1 MSD	South Auger Hole	71	75				
880-13746-2	South Auger Hole	71	77				
880-13746-3	East Auger Hole	71	78				
880-13746-4	East Auger Hole	70	76				
880-13746-5	West Auger Hole	75	82				
880-13746-6	West Auger Hole	73	82				
880-13746-7	Auger Hole 2	72	79				
Surrogate Legend							
1CO = 1-Chlorooctane							
OTPH = o-Terphenyl							

## 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	1CO2	OTPH2				
		(70-130)	(70-130)				
LCS 880-23575/2-A	Lab Control Sample	113	132 S1+				
LCSD 880-23575/3-A	Lab Control Sample Dup	100	118				
MB 880-23575/1-A	Method Blank	80	96				
<b>Surrogate Legend</b>							
1CO = 1-Chlorooctane							
OTPH = o-Terphenyl							

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## QC Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

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

Lab Sample ID: MB 880-23750/5-B

Matrix: Solid

Analysis Batch: 23819

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 23750

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		04/19/22 17:00	04/20/22 11:37	1
Toluene	<0.00200	U	0.00200		mg/Kg		04/19/22 17:00	04/20/22 11:37	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		04/19/22 17:00	04/20/22 11:37	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		04/19/22 17:00	04/20/22 11:37	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		04/19/22 17:00	04/20/22 11:37	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		04/19/22 17:00	04/20/22 11:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		70 - 130	04/19/22 17:00	04/20/22 11:37	1
1,4-Difluorobenzene (Surr)	92		70 - 130	04/19/22 17:00	04/20/22 11:37	1

Lab Sample ID: LCS 880-23750/1-B

Matrix: Solid

Analysis Batch: 23819

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 23750

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1169		mg/Kg		117	70 - 130
Toluene	0.100	0.1265		mg/Kg		127	70 - 130
Ethylbenzene	0.100	0.1142		mg/Kg		114	70 - 130
m-Xylene & p-Xylene	0.200	0.2390		mg/Kg		119	70 - 130
o-Xylene	0.100	0.1126		mg/Kg		113	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

Lab Sample ID: LCSD 880-23750/2-B

Matrix: Solid

Analysis Batch: 23819

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 23750

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Benzene	0.100	0.1144		mg/Kg		114	70 - 130	2	35
Toluene	0.100	0.1246		mg/Kg		125	70 - 130	2	35
Ethylbenzene	0.100	0.1118		mg/Kg		112	70 - 130	2	35
m-Xylene & p-Xylene	0.200	0.2343		mg/Kg		117	70 - 130	2	35
o-Xylene	0.100	0.1111		mg/Kg		111	70 - 130	1	35

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

Lab Sample ID: 890-2197-A-5-D MS

Matrix: Solid

Analysis Batch: 23819

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 23750

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00202	U	0.100	0.1146		mg/Kg		114	70 - 130
Toluene	<0.00202	U	0.100	0.1225		mg/Kg		122	70 - 130

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## QC Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

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

Lab Sample ID: 890-2197-A-5-D MS

Matrix: Solid

Analysis Batch: 23819

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 23750

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00202	U	0.100	0.1095		mg/Kg		109	70 - 130
m-Xylene & p-Xylene	<0.00403	U	0.201	0.2298		mg/Kg		114	70 - 130
o-Xylene	<0.00202	U	0.100	0.1089		mg/Kg		108	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

Lab Sample ID: 890-2197-A-5-E MSD

Matrix: Solid

Analysis Batch: 23819

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 23750

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00202	U	0.0996	0.1280		mg/Kg		129	70 - 130	11	35
Toluene	<0.00202	U	0.0996	0.1162		mg/Kg		117	70 - 130	5	35
Ethylbenzene	<0.00202	U	0.0996	0.1045		mg/Kg		105	70 - 130	5	35
m-Xylene & p-Xylene	<0.00403	U	0.199	0.2200		mg/Kg		110	70 - 130	4	35
o-Xylene	<0.00202	U	0.0996	0.1046		mg/Kg		105	70 - 130	4	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

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

Lab Sample ID: MB 880-23575/1-A

Matrix: Solid

Analysis Batch: 23584

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 23575

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		04/15/22 08:43	04/15/22 10:24	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		04/15/22 08:43	04/15/22 10:24	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		04/15/22 08:43	04/15/22 10:24	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	80		70 - 130	04/15/22 08:43	04/15/22 10:24	1
o-Terphenyl	96		70 - 130	04/15/22 08:43	04/15/22 10:24	1

Lab Sample ID: LCS 880-23575/2-A

Matrix: Solid

Analysis Batch: 23584

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 23575

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	977.3		mg/Kg		98	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1032		mg/Kg		103	70 - 130

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## QC Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

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

Lab Sample ID: LCS 880-23575/2-A

Matrix: Solid

Analysis Batch: 23584

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 23575

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	113		70 - 130
o-Terphenyl	132	S1+	70 - 130

Lab Sample ID: LCSD 880-23575/3-A

Matrix: Solid

Analysis Batch: 23584

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 23575

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1072		mg/Kg		107	70 - 130	9	20
Diesel Range Organics (Over C10-C28)	1000	910.6		mg/Kg		91	70 - 130	13	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	100		70 - 130
o-Terphenyl	118		70 - 130

Lab Sample ID: 880-13746-1 MS

Matrix: Solid

Analysis Batch: 23584

Client Sample ID: South Auger Hole

Prep Type: Total/NA

Prep Batch: 23575

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F1	1000	694.8	F1	mg/Kg		67	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U F1	1000	596.9	F1	mg/Kg		58	70 - 130

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	67	S1-	70 - 130
o-Terphenyl	69	S1-	70 - 130

Lab Sample ID: 880-13746-1 MSD

Matrix: Solid

Analysis Batch: 23584

Client Sample ID: South Auger Hole

Prep Type: Total/NA

Prep Batch: 23575

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F1	998	734.2		mg/Kg		72	70 - 130	6	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	998	657.3	F1	mg/Kg		64	70 - 130	10	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	71		70 - 130
o-Terphenyl	75		70 - 130

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## QC Sample Results

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-23643/1-A

Matrix: Solid

Analysis Batch: 23776

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			04/19/22 13:20	1

Lab Sample ID: LCS 880-23643/2-A

Matrix: Solid

Analysis Batch: 23776

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	228.6		mg/Kg		91	90 - 110

Lab Sample ID: LCSD 880-23643/3-A

Matrix: Solid

Analysis Batch: 23776

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	233.3		mg/Kg		93	90 - 110	2	20

Lab Sample ID: 880-13750-A-2-E MS

Matrix: Solid

Analysis Batch: 23776

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	99.5		250	350.4		mg/Kg		100	90 - 110

Lab Sample ID: 880-13750-A-2-F MSD

Matrix: Solid

Analysis Batch: 23776

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	99.5		250	332.0		mg/Kg		93	90 - 110	5	20



## QC Association Summary

Client: Etech Environmental & Safety Solutions  
 Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
 SDG: 15304

## GC VOA

## Prep Batch: 23750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13746-1	South Auger Hole	Total/NA	Solid	5035	
880-13746-2	South Auger Hole	Total/NA	Solid	5035	
880-13746-3	East Auger Hole	Total/NA	Solid	5035	
880-13746-4	East Auger Hole	Total/NA	Solid	5035	
880-13746-5	West Auger Hole	Total/NA	Solid	5035	
880-13746-6	West Auger Hole	Total/NA	Solid	5035	
880-13746-7	Auger Hole 2	Total/NA	Solid	5035	
MB 880-23750/5-B	Method Blank	Total/NA	Solid	5035	
LCS 880-23750/1-B	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-23750/2-B	Lab Control Sample Dup	Total/NA	Solid	5035	
890-2197-A-5-D MS	Matrix Spike	Total/NA	Solid	5035	
890-2197-A-5-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## Analysis Batch: 23819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13746-1	South Auger Hole	Total/NA	Solid	8021B	23750
880-13746-2	South Auger Hole	Total/NA	Solid	8021B	23750
880-13746-3	East Auger Hole	Total/NA	Solid	8021B	23750
880-13746-4	East Auger Hole	Total/NA	Solid	8021B	23750
880-13746-5	West Auger Hole	Total/NA	Solid	8021B	23750
880-13746-6	West Auger Hole	Total/NA	Solid	8021B	23750
880-13746-7	Auger Hole 2	Total/NA	Solid	8021B	23750
MB 880-23750/5-B	Method Blank	Total/NA	Solid	8021B	23750
LCS 880-23750/1-B	Lab Control Sample	Total/NA	Solid	8021B	23750
LCSD 880-23750/2-B	Lab Control Sample Dup	Total/NA	Solid	8021B	23750
890-2197-A-5-D MS	Matrix Spike	Total/NA	Solid	8021B	23750
890-2197-A-5-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	23750

## Analysis Batch: 23933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13746-1	South Auger Hole	Total/NA	Solid	Total BTEX	
880-13746-2	South Auger Hole	Total/NA	Solid	Total BTEX	
880-13746-3	East Auger Hole	Total/NA	Solid	Total BTEX	
880-13746-4	East Auger Hole	Total/NA	Solid	Total BTEX	
880-13746-5	West Auger Hole	Total/NA	Solid	Total BTEX	
880-13746-6	West Auger Hole	Total/NA	Solid	Total BTEX	
880-13746-7	Auger Hole 2	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Prep Batch: 23575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13746-1	South Auger Hole	Total/NA	Solid	8015NM Prep	
880-13746-2	South Auger Hole	Total/NA	Solid	8015NM Prep	
880-13746-3	East Auger Hole	Total/NA	Solid	8015NM Prep	
880-13746-4	East Auger Hole	Total/NA	Solid	8015NM Prep	
880-13746-5	West Auger Hole	Total/NA	Solid	8015NM Prep	
880-13746-6	West Auger Hole	Total/NA	Solid	8015NM Prep	
880-13746-7	Auger Hole 2	Total/NA	Solid	8015NM Prep	
MB 880-23575/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-23575/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	

Eurofins Midland

## QC Association Summary

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

## GC Semi VOA (Continued)

## Prep Batch: 23575 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-23575/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-13746-1 MS	South Auger Hole	Total/NA	Solid	8015NM Prep	
880-13746-1 MSD	South Auger Hole	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 23584

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13746-1	South Auger Hole	Total/NA	Solid	8015B NM	23575
880-13746-2	South Auger Hole	Total/NA	Solid	8015B NM	23575
880-13746-3	East Auger Hole	Total/NA	Solid	8015B NM	23575
880-13746-4	East Auger Hole	Total/NA	Solid	8015B NM	23575
880-13746-5	West Auger Hole	Total/NA	Solid	8015B NM	23575
880-13746-6	West Auger Hole	Total/NA	Solid	8015B NM	23575
880-13746-7	Auger Hole 2	Total/NA	Solid	8015B NM	23575
MB 880-23575/1-A	Method Blank	Total/NA	Solid	8015B NM	23575
LCS 880-23575/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	23575
LCSD 880-23575/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	23575
880-13746-1 MS	South Auger Hole	Total/NA	Solid	8015B NM	23575
880-13746-1 MSD	South Auger Hole	Total/NA	Solid	8015B NM	23575

## Analysis Batch: 23657

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13746-1	South Auger Hole	Total/NA	Solid	8015 NM	
880-13746-2	South Auger Hole	Total/NA	Solid	8015 NM	
880-13746-3	East Auger Hole	Total/NA	Solid	8015 NM	
880-13746-4	East Auger Hole	Total/NA	Solid	8015 NM	
880-13746-5	West Auger Hole	Total/NA	Solid	8015 NM	
880-13746-6	West Auger Hole	Total/NA	Solid	8015 NM	
880-13746-7	Auger Hole 2	Total/NA	Solid	8015 NM	

## HPLC/IC

## Leach Batch: 23643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13746-1	South Auger Hole	Soluble	Solid	DI Leach	
880-13746-2	South Auger Hole	Soluble	Solid	DI Leach	
880-13746-3	East Auger Hole	Soluble	Solid	DI Leach	
880-13746-4	East Auger Hole	Soluble	Solid	DI Leach	
880-13746-5	West Auger Hole	Soluble	Solid	DI Leach	
880-13746-6	West Auger Hole	Soluble	Solid	DI Leach	
880-13746-7	Auger Hole 2	Soluble	Solid	DI Leach	
MB 880-23643/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-23643/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-23643/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-13750-A-2-E MS	Matrix Spike	Soluble	Solid	DI Leach	
880-13750-A-2-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## Analysis Batch: 23776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13746-1	South Auger Hole	Soluble	Solid	300.0	23643
880-13746-2	South Auger Hole	Soluble	Solid	300.0	23643
880-13746-3	East Auger Hole	Soluble	Solid	300.0	23643

Eurofins Midland

## QC Association Summary

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

## HPLC/IC (Continued)

## Analysis Batch: 23776 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-13746-4	East Auger Hole	Soluble	Solid	300.0	23643
880-13746-5	West Auger Hole	Soluble	Solid	300.0	23643
880-13746-6	West Auger Hole	Soluble	Solid	300.0	23643
880-13746-7	Auger Hole 2	Soluble	Solid	300.0	23643
MB 880-23643/1-A	Method Blank	Soluble	Solid	300.0	23643
LCS 880-23643/2-A	Lab Control Sample	Soluble	Solid	300.0	23643
LCSD 880-23643/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	23643
880-13750-A-2-E MS	Matrix Spike	Soluble	Solid	300.0	23643
880-13750-A-2-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	23643

## Lab Chronicle

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

## Client Sample ID: South Auger Hole

Lab Sample ID: 880-13746-1

Date Collected: 04/11/22 12:00

Matrix: Solid

Date Received: 04/14/22 16:29

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	23750	04/19/22 17:00	MR	XEN MID
Total/NA	Analysis	8021B		1			23819	04/20/22 16:46	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			23933	04/21/22 11:09	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			23657	04/15/22 15:35	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	23575	04/15/22 08:43	DM	XEN MID
Total/NA	Analysis	8015B NM		1			23584	04/15/22 11:27	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	23643	04/15/22 11:50	SC	XEN MID
Soluble	Analysis	300.0		1			23776	04/19/22 14:04	SC	XEN MID

## Client Sample ID: South Auger Hole

Lab Sample ID: 880-13746-2

Date Collected: 04/11/22 12:02

Matrix: Solid

Date Received: 04/14/22 16:29

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	23750	04/19/22 17:00	MR	XEN MID
Total/NA	Analysis	8021B		1			23819	04/20/22 17:23	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			23933	04/21/22 11:09	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			23657	04/15/22 15:35	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	23575	04/15/22 08:43	DM	XEN MID
Total/NA	Analysis	8015B NM		1			23584	04/15/22 13:33	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	23643	04/15/22 11:50	SC	XEN MID
Soluble	Analysis	300.0		1			23776	04/19/22 14:11	SC	XEN MID

## Client Sample ID: East Auger Hole

Lab Sample ID: 880-13746-3

Date Collected: 04/11/22 12:04

Matrix: Solid

Date Received: 04/14/22 16:29

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	23750	04/19/22 17:00	MR	XEN MID
Total/NA	Analysis	8021B		1			23819	04/20/22 17:43	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			23933	04/21/22 11:09	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			23657	04/15/22 15:35	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	23575	04/15/22 08:43	DM	XEN MID
Total/NA	Analysis	8015B NM		1			23584	04/15/22 13:54	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	23643	04/15/22 11:50	SC	XEN MID
Soluble	Analysis	300.0		1			23776	04/19/22 14:17	SC	XEN MID

## Client Sample ID: East Auger Hole

Lab Sample ID: 880-13746-4

Date Collected: 04/11/22 12:06

Matrix: Solid

Date Received: 04/14/22 16:29

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	23750	04/19/22 17:00	MR	XEN MID
Total/NA	Analysis	8021B		1			23819	04/20/22 18:04	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			23933	04/21/22 11:09	AJ	XEN MID

Eurofins Midland

## Lab Chronicle

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

## Client Sample ID: East Auger Hole

Lab Sample ID: 880-13746-4

Date Collected: 04/11/22 12:06

Matrix: Solid

Date Received: 04/14/22 16:29

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			23657	04/15/22 15:35	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	23575	04/15/22 08:43	DM	XEN MID
Total/NA	Analysis	8015B NM		1			23584	04/15/22 14:15	AJ	XEN MID
Soluble	Leach	DI Leach			4.99 g	50 mL	23643	04/15/22 11:50	SC	XEN MID
Soluble	Analysis	300.0		1			23776	04/19/22 14:36	SC	XEN MID

## Client Sample ID: West Auger Hole

Lab Sample ID: 880-13746-5

Date Collected: 04/11/22 12:08

Matrix: Solid

Date Received: 04/14/22 16:29

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	23750	04/19/22 17:00	MR	XEN MID
Total/NA	Analysis	8021B		1			23819	04/20/22 18:24	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			23933	04/21/22 11:09	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			23657	04/15/22 15:35	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	23575	04/15/22 08:43	DM	XEN MID
Total/NA	Analysis	8015B NM		1			23584	04/15/22 14:36	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	23643	04/15/22 11:50	SC	XEN MID
Soluble	Analysis	300.0		1			23776	04/19/22 14:42	SC	XEN MID

## Client Sample ID: West Auger Hole

Lab Sample ID: 880-13746-6

Date Collected: 04/11/22 12:10

Matrix: Solid

Date Received: 04/14/22 16:29

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	23750	04/19/22 17:00	MR	XEN MID
Total/NA	Analysis	8021B		1			23819	04/20/22 18:45	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			23933	04/21/22 11:09	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			23657	04/15/22 15:35	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	23575	04/15/22 08:43	DM	XEN MID
Total/NA	Analysis	8015B NM		1			23584	04/15/22 14:57	AJ	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	23643	04/15/22 11:50	SC	XEN MID
Soluble	Analysis	300.0		1			23776	04/19/22 14:48	SC	XEN MID

## Client Sample ID: Auger Hole 2

Lab Sample ID: 880-13746-7

Date Collected: 04/11/22 12:12

Matrix: Solid

Date Received: 04/14/22 16:29

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	23750	04/19/22 17:00	MR	XEN MID
Total/NA	Analysis	8021B		1			23819	04/20/22 19:05	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			23933	04/21/22 11:09	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			23657	04/15/22 15:35	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	23575	04/15/22 08:43	DM	XEN MID
Total/NA	Analysis	8015B NM		1			23584	04/15/22 15:18	AJ	XEN MID

Eurofins Midland



Lab Chronicle

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

Client Sample ID: Auger Hole 2      Lab Sample ID: 880-13746-7  
Date Collected: 04/11/22 12:12      Matrix: Solid  
Date Received: 04/14/22 16:29

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.99 g	50 mL	23643	04/15/22 11:50	SC	XEN MID
Soluble	Analysis	300.0		1			23776	04/19/22 14:55	SC	XEN MID

Laboratory References:  
XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

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Accreditation/Certification Summary

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

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	T104704400-21-22	06-30-22

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: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
Total BTEX	Total BTEX Calculation	TAL SOP	XEN MID
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5035	Closed System Purge and Trap	SW846	XEN MID
8015NM Prep	Microextraction	SW846	XEN MID
DI Leach	Deionized Water Leaching Procedure	ASTM	XEN MID

**Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

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:**

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

Eurofins Midland

## Sample Summary

Client: Etech Environmental & Safety Solutions  
Project/Site: Benson Shugart Waterflood Unit #011

Job ID: 880-13746-1  
SDG: 15304

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
880-13746-1	South Auger Hole	Solid	04/11/22 12:00	04/14/22 16:29	0 - 6"
880-13746-2	South Auger Hole	Solid	04/11/22 12:02	04/14/22 16:29	42 - 48"
880-13746-3	East Auger Hole	Solid	04/11/22 12:04	04/14/22 16:29	0 - 6"
880-13746-4	East Auger Hole	Solid	04/11/22 12:06	04/14/22 16:29	42 - 48"
880-13746-5	West Auger Hole	Solid	04/11/22 12:08	04/14/22 16:29	0 - 6"
880-13746-6	West Auger Hole	Solid	04/11/22 12:10	04/14/22 16:29	42 - 48"
880-13746-7	Auger Hole 2	Solid	04/11/22 12:12	04/14/22 16:29	66 - 72"



# Chain of Custody

Houston TX (281) 240-4200 Dallas TX (214) 902-0300 San Antonio TX (210) 509-3334

Midland TX (432-704-5440) EL Paso TX (915)585-3443 Lubbock TX (806)794-1296


Hobbs NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta GA (770-449-8800) Tampa FL (813-620-2000)

Work Order No: 13740

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Project Manager	Brandon Wilson		Bill to (if different)	
Company Name	Etech Environmental		Company Name	
Address	13000 W CR 100		Address	
City, State ZIP	Odessa, Texas 79765		City, State ZIP	
Phone	432-563-2200	Email	brandon@etechenv.com, blake@etechenv.com	

Work Order Comments	
Program: UST/PST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/> State of Project: Reporting Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRRP <input type="checkbox"/> Level IV <input type="checkbox"/> Deliverables EDD <input type="checkbox"/> ADaPT <input type="checkbox"/> Other:	

Project Name	Benson Shugart Waterflood Unit #011	Turn Around	ANALYSIS REQUEST															Work Order Notes							
Project Number	15304	Routine <input type="checkbox"/>																TAT starts the day received by the lab if received by 4 30pm							
P O Number	15304	Rush																							
Sampler's Name	Blake Estep	Due Date																							
<b>SAMPLE RECEIPT</b> Temp Blank Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wet Ice Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Temperature (°C) <u>21.2</u> Thermometer ID <u>IR8</u> Received Intact Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Cooler Custody Seals Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Correction Factor <u>-0.1</u> Sample Custody Seals Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Total Containers																									
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	Chlorides	TPH 8015M	BTEX 8021B																Sample Comments	
South Auger Hole	S	4/11/2022	12 00	0-6"	1	X	X	X																	
South Auger Hole	S	4/11/2022	12 02	42-48"	1	X	X	X																	
East Auger Hole	S	4/11/2022	12 04	0-6"	1	X	X	X																	
East Auger Hole	S	4/11/2022	12 06	42-48"	1	X	X	X																	
West Auger Hole	S	4/11/2022	12 08	0-6"	1	X	X	X																	
West Auger Hole	S	4/11/2022	12 10	42-48"	1	X	X	X																	
Auger Hole 2	S	4/11/2022	12 12	66-72"	1	X	X	X																	
										 880-13746 Chain of Custody															

**Total 200.7 / 6010 200.8 / 6020:** 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn  
 Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010** 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U **1631 / 245.1 / 7470 / 7471** Hg

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 losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by (Signature)	Received by (Signature)	Date/Time	Relinquished by (Signature)	Received by (Signature)	Date/Time
1 <u>[Signature]</u>	<u>[Signature]</u>	4/14/22	2		
3		10-29	4		
5			6		



## Login Sample Receipt Checklist

Client: Etech Environmental &amp; Safety Solutions

Job Number: 880-13746-1

SDG Number: 15304

Login Number: 13746

List Number: 1

Creator: Teel, Brianna

List Source: Eurofins Midland

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

**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 134966

CONDITIONS

Operator:  CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID:  4323
	Action Number:  134966
	Action Type:  [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bhall	Submit a complete report through the OCD Permitting website by 03/10/2023.	12/8/2022