SITE INFORMATION

Report Type: Work Plan

General Site Information:						
Site:	**Oxy Sand Dunes Release**					
Company:	**Solaris Water Midstream, LLC.**					
Section, Township and Range	**Unit P**	**Sec. 24**	**T 24S**	**R 29E**		
Lease Number:	**API No.**					
County:	**Eddy County**					
GPS:	**32.19851**			**-103.93148**		
Surface Owner:	**Federal**					
Mineral Owner:						
Directions:	From the intersection of McDonald Rd & Gavalin Rd, travel northeast on Gavalin Rd for approximately 0.25 miles to location on north side of lease road					

Release Data:	
Date Released:	9/12/2019
Type Release:	Produced Water
Source of Contamination:	Booster Pump
Fluid Released:	20 bbls
Fluids Recovered:	0 bbls

Official Communication:			
Name:	Rob Kirk		Clair Gonzales
Company:	Solaris Water Midstream, LLC.		Tetra Tech
Address:	907 Trandewinds Blvd, Suite B.		901 West Wall Street
			Suite 100
City:	Midland Texas, 79706		Midland, Texas
Phone number:	(432)203-9020		(432) 687-8110
Fax:			
Email:	rob.kirk@solarismidstream.com		Clair.Gonzales@tetratech.com

Site Characterization	
Depth to Groundwater:	*230'*

Recommended Remedial Action Levels (RRALs)				
Benzene	***Total BTEX***	***TPH (GRO+DRO)***	***TPH (GRO+DRO+MRO)***	***Chlorides***
10 mg/kg	*50 mg/kg*	*1,000 mg/kg*	*2,500 mg/kg*	*20,000 mg/kg*

TETRA TECH

November 14, 2019

Mr. Mike Bratcher
District Supervisor
Oil Conservation Division, District 2
811 S. First Street
Artesia, New Mexico 88210

Re: Work Plan for the Solaris Water Midstream, LLC, Oxy Sand Dunes Release, Unit P, Section 24, Township 24 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by Solaris Water Midstream, LLC (Solaris) to assess a release that occurred at the Oxy Sand Dunes Release, Unit P, Section 24, Township 24 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are 32.19851°, -103.93148°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the release was discovered on September 12, 2019, and released approximately 20 barrels of produced water due to a leak at the booster pump. None of the fluids were recovered. The release occurred in the pasture and crossed numerous pipeline right-of-ways. The release measured approximately 110' x 125' and 200' x 5'. The C-141 Forms is included in Appendix A.

Site Characterization

A site characterization was performed for the site and no lakebeds, sinkholes, playa lakes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, springs, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the specified distances. Additionally, the site is in a low karst potential area.

The nearest water well is listed on the USGS National Water Information Database in Section 19, Township 24 South, Range 30 East, approximately 1.10 miles east of the site, and has a reported depth to groundwater of 230' below surface. The site characterization data is shown in Appendix B.

Tetra Tech
901 West Wall St, Suite 100, Midland, TX 79701
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

TETRA TECH

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, updated August 14, 2018. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the site characterization, the proposed RRAL for TPH is 1,000 mg/kg (GRO + DRO) and 2,500 mg/kg (GRO + DRO + MRO). Additionally, based on the site characterization, the proposed RRAL for chlorides is 20,000 mg/kg.

Soil Assessment and Analytical Results

On September 24, 2019, Tetra Tech personnel were onsite to evaluate and sample the release area. A total of five (5) auger holes (AH-1 through AH-5) were installed in the release area to total depths ranging from surface to 3.5' below surface. Selected soil samples were collected and submitted to the laboratory for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B, and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The sample locations are shown on Figure 3.

Referring to Table 1, none of the samples analyzed showed benzene, total BTEX, or TPH concentrations above the laboratory reporting limits. Additionally, none of the samples collected showed chloride concentrations above the RRALs.

Reclamation Plan

Based on the laboratory results, Solaris proposes to excavate the areas of AH-1, AH-2, and AH-4, as shown on Figure 4 and highlighted (green) on Table 1. The area of AH-1 will be excavated to 1-1.5', the area of AH-2 will be excavated to a maximum of 4.0', and the area of AH-4 will be excavated to 2.5' below surface for reclamation purposes. Once the excavation is complete, composite confirmation samples will be collected every 500 square feet to ensure proper removal of the shallow chloride concentrations detected in the top 4.0' of the release area.

The proposed excavation depths may not be reached due to wall cave-ins and safety concerns for onsite personnel. Also, impacted soil around oil and gas equipment, structures or lines may not be viable or practicable to be removed due to safely concerns for on-site personnel. Additionally, numerous underground pipelines are in the area. As such, Solaris will excavate the impacted soils to the maximum extent practicable.

Once the excavation is complete, the areas will be backfilled with clean material to surface grade. Solaris estimates approximately 700 cubic yards will be excavated, and the remediation to be implemented 90 days after the work plan is approved.

TETRA TECH

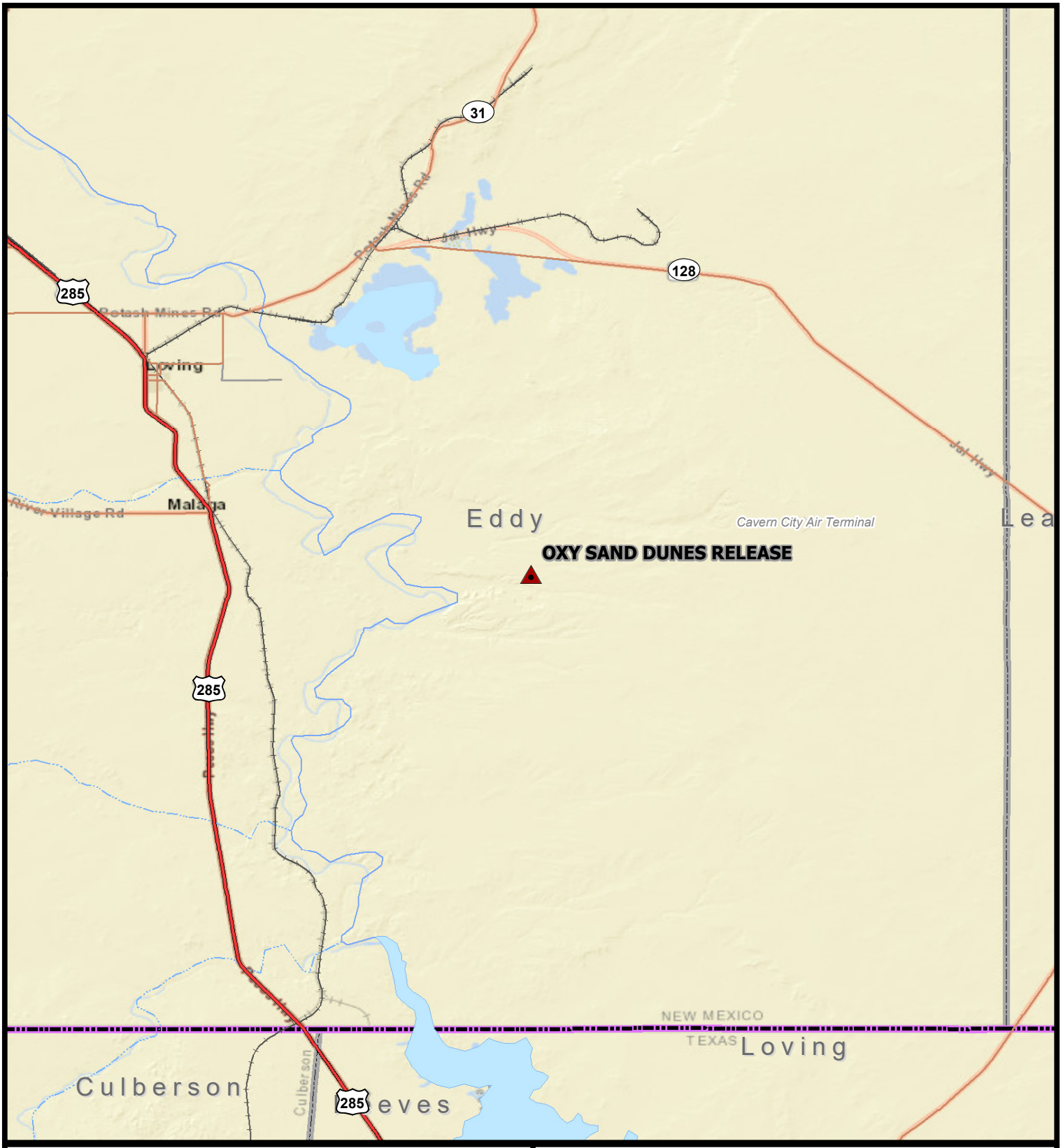
Conclusion

Once the reclamation activities have been completed, a final report will be submitted. If you have any questions or comments concerning the assessment or remediation activities for this site, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Clair Gonzales, P.G.
Project Manager

Figures



SITE LOCATION

N
W E
S

0 10,416.5 20,833

Approximate Scale in Feet

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

OVERVIEW MAP
OXY SAND DUNES RELEASE
Property Located at coordinates 32.198510°,-103.931480°
EDDY COUNTY, NEW MEXICO

SOLARIS MIDSTREAM

Project #:
212C-MD-01940
Date:011-14-2019

FIGURE
1

Document Path: H:\GIS\SOLARIS\212C-MD-01940 OXY SAND DUNES RELEASE\MXD\212C-MD-01940 OXY SAND DUNES RELEASE FIG. 1.mxd

SITE LOCATION

N
W E
S

0 1,000 2,000
Approximate Scale in Feet

Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

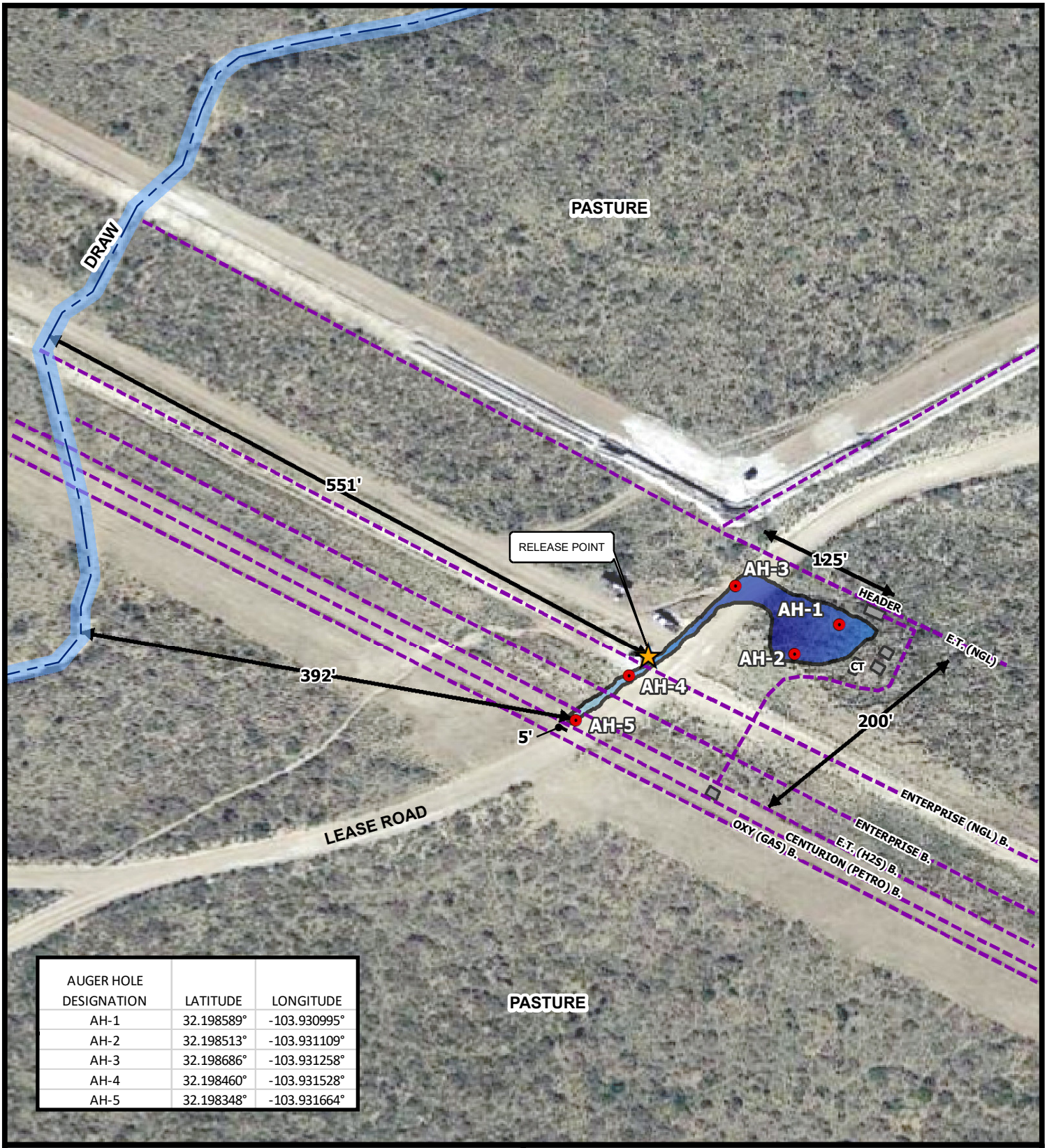
TOPOGRAPHIC MAP
OXY SAND DUNES RELEASE
Property Located at coordinates 32.198510°,-103.931480°
EDDY COUNTY, NEW MEXICO

SOLARIS MIDSTREAM

Project #:
212C-MD-01940
Date:011-14-2019

FIGURE
2

Date: 11/14/2019 Document Path: H:\GIS\SOLARIS\212C-MD-01940 OXY SAND DUNES RELEASE\MXD\212C-MD-01940 OXY SAND DUNES RELEASE FIG. 2.mxd



AUGER HOLE DESIGNATION	LATITUDE	LONGITUDE
AH-1	32.198589°	-103.930995°
AH-2	32.198513°	-103.931109°
AH-3	32.198686°	-103.931258°
AH-4	32.198460°	-103.931528°
AH-5	32.198348°	-103.931664°

AUGERHOLE SAMPLE LOCATIONS
RELEASE POINT
BUIRIED PIPELINE
EQUIPMENT
AFFECTED SPILL AREA

N
W E
S

0 60 120
Approximate Scale in Feet

Source: "New Mexico". 32°11'54.64"N, 103°55'53.33"W. **Google Earth**. February 2019 .November 14, 2019.

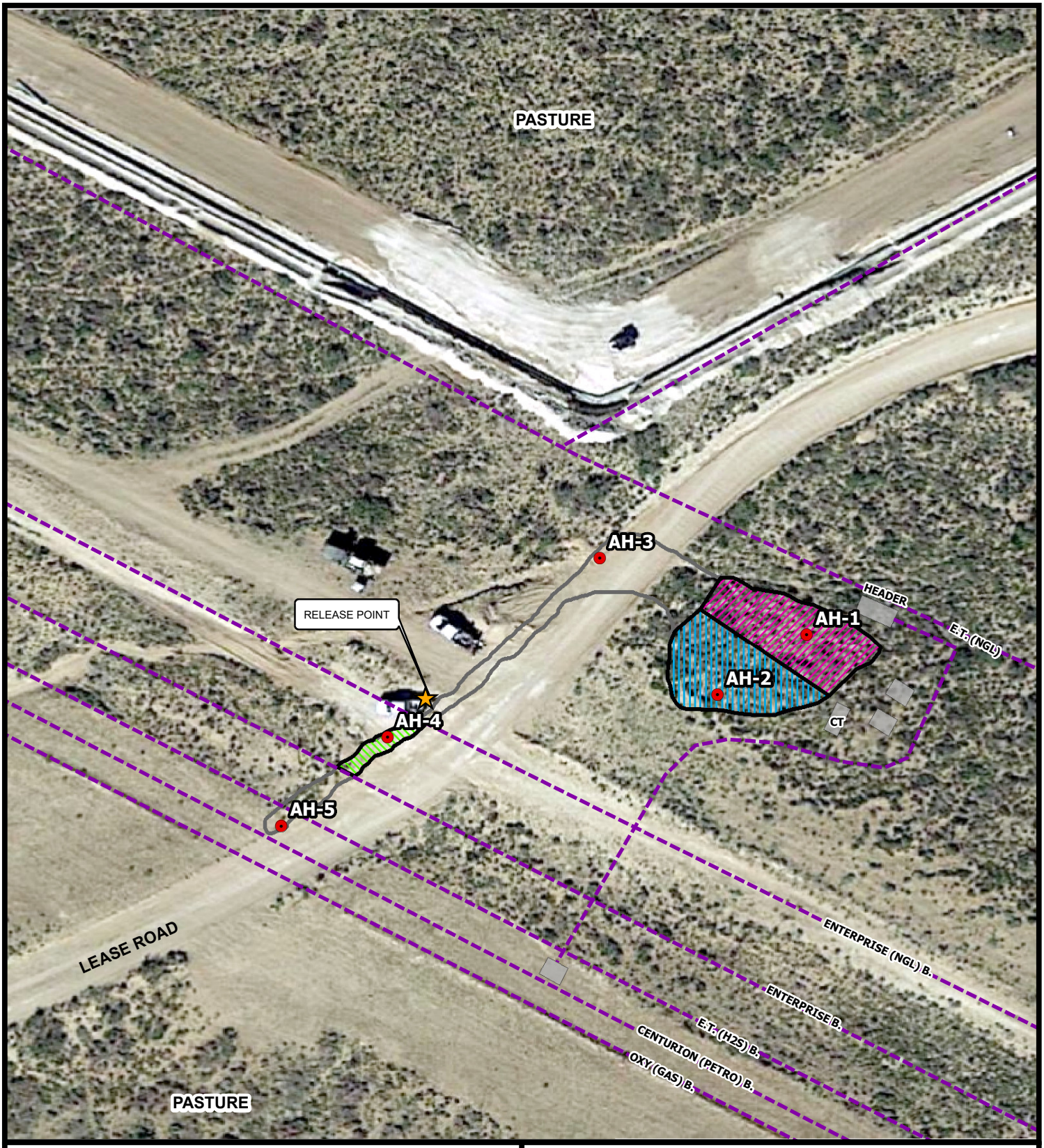
SPILL ASSESSMENT MAP
OXY SAND DUNES RELEASE
Property Located at coordinates 32.198510°,-103.931480°
EDDY COUNTY, NEW MEXICO

SOLARIS MIDSTREAM

Project #: 212C-MD-01940
Date:011-14-2019

FIGURE 3

Date: 11/15/2019 Document Path: H:\GIS\SOLARIS\212C-MD-01940 OXY SAND DUNES RELEASE\MXD\212C-MD-01940 OXY SAND DUNES RELEASE FIG. 3.mxd



AUGERHOLE SAMPLE LOCATIONS
RELEASE POINT
BURIED PIPELINE
1.0'-1.5' DEPTH
2.5' DEPTH
UP TO 4.0' DEPTH
EQUIPMENT
SPILL OUTLINE

N
W E
S

0 30 60
Approximate Scale in Feet

Source: "New Mexico". 32°11'54.64"N, 103°55'53.33"W. **Google Earth**. February 2019 .November 14, 2019.

PROPOSED EXCAVATION AREA & DEPTH MAP
OXY SAND DUNES RELEASE
Property Located at coordinates 32.198510°,-103.931480°
EDDY COUNTY, NEW MEXICO

SOLARIS MIDSTREAM

Project #:
212C-MD-01940
Date:011-14-2019

FIGURE
4

Date: 11/14/2019 Document Path: H:\GIS\SOLARIS\212C-MD-01940 OXY SAND DUNES RELEASE\MXD\212C-MD-01940 OXY SAND DUNES RELEASE FIG. 4.mxd

Tables

Table 1
Solaris
Oxy Sand Dunes Release
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	ORO	Total						
AH-1	9/24/2019	0-1	-	X		<24.9	<24.9	<24.9	<24.9	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	3,040
	"	1-1.5	-	X		<25.1	<25.1	<25.1	<25.1	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	38.5
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	19.0
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	184
AH-2	9/24/2019	0-1	-	X		<25.0	<25.0	<25.0	<25.0	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	4,580
	"	1-1.5	-	X		<25.1	<25.1	<25.1	<25.1	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	3,740
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	1,990
AH-3	9/24/2019	0-1	-	X		<25.0	<25.0	<25.0	<25.0	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	39.2
AH-4	9/24/2019	0-1	-	X		<25.1	<25.1	<25.1	<25.1	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	401
	"	1-1.5	-	X		<25.1	<25.1	<25.1	<25.1	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	1,420
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	1,900
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	248
AH-5	9/24/2019	0-1	-	X		<25.0	<25.0	<25.0	<25.0	<0.00101	<0.00101	<0.00101	<0.00101	<0.00101	377

(-) Not Analyzed

Proposed Excavation Depths

Photos

Solaris Water Midstream, LLC.
Oxy Sand Dunes
Eddy County, New Mexico

View East – Areas of AH-1 and AH-2

View North – Area of AH-3

Solaris Water Midstream, LLC.
Oxy Sand Dunes
Eddy County, New Mexico

TETRA TECH

View South – Area of AH-4

View North – Area of AH-5

Appendix A

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	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Solaris Water Midstream, LLC	OGRID 371643
Contact Name Rob Kirk	Contact Telephone O 432-203-9020 C 469-978-5620
Contact email rob.kirk@solarismidstream.com	Incident # *(assigned by OCD)*
Contact mailing address 907 Tradewinds Blvd, Ste B, Midland, TX 79706	

Location of Release Source

Latitude 32.19851 Longitude -103.93148
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Oxy Sand Dunes Line	Site Type Booster pump
Date Release Discovered 09/12/2019	API# *(if applicable)*

Unit Letter	Section	Township	Range	County
P	24	24S	29E	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)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☑ Produced Water	Volume Released (bbls) 20	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☑ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

A leak developed on a booster pump at the discharge of a valve set. Our customer shut down their transfer pump without alerting us. We got high pressure shut down alarms. Our field team responded, and as they were in route, the leak occurred resulting in a 4" connection failure at the pump discharge at the valve. The failed connection was repaired immediately. Based on the size of the line and volume held, turning off the system quickly, the duration of the leak, and the area of soil impacted of approximately of 5 feet wide by 90 feet long or 450 sq. feet, the amount of produced water/recycled water released was 20 bbls.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

Initial Response

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

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

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

Intital observations indicate that residual surface stains remain as released liquids were absorbed into the surface soils along the area described.

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: Rob Kirk Title: General Manager, HSE and Compliance

Signature: Date: 09/24/2019

email: rob.kirk@solarismidstream.com Telephone: 432-203-9020

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

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

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

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

- ☐ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☐ Field data
- ☐ Data table of soil contaminant concentration data
- ☐ Depth to water determination
- ☐ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☐ Photographs including date and GIS information
- ☐ Topographic/Aerial maps
- ☐ Laboratory data including chain of custody

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.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Form C-141
Page 5

State of New Mexico
Oil Conservation Division

Incident ID	NAB1928444103
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: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: Victoria Venegas Date: 12/03/2019

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

Signature: _____ Date: 02/19/2020

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
Solaris - Oxy Sand Dunes
Eddy County, New Mexico

23 South 28 East

6 16.5	5 Maljamar	4	3	2	1
7 26.5	8	9	10	11 30.5	12 20
18 63	17	16	15 14	14	13 12 33
19	20 56	21	22 39	23 22'	24 36
30	29 28.7	28	27	26	25 44
31	32	33	34	35	36

23 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18 10	17 65	16	15	14	13
19 28	20	21	22	23	24
30 35	29	28	27	26	25
31	32	33	34	35	36

23 South 30 East

6 110	5	4	3	2 250	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34 440	35	36

24 South 28 East

6 70	5 30	4 30	3	2 55	1 60
7	8 50	9	10 17	11 20	12 73
18	17 42	16 29	15 18	14 52	13 34
19	20 48	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

24 South 29 East

6	5	4	3	2	1
7 160	8	9	10	11	12
18	17 4	16 18	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

24 South 30 East

6	5	4	3	2	1
7	8 186	9	10	11	12
18	17	16	15	14	13
19 231 150	20	21	22	23 400	24
30	29	28	27	26	25
31	32	33	34	35	36

25 South 28 East

6	5 59	4 35	3 32	2	1 Site
7	8	9	10	11	12
18 67	17	16	15 48 49	14	13
19	20 96	21	22	23	24
30	29 15	28 90	27	26 40	25
31	32	33	34	35	36 40

25 South 29 East

6 40	5	4	3	2	1
7	8	9	10 40	11	12
18	17	16	15 60	14	13
19	20	21	22	23	24
30 30	29	28	27	26	25
31	32 115	33	34	35	36

25 South 30 East

6	5	4	3	2 295	1
7 264	8	9 295	10	11	12 390
18	17	16	15	14	13
19	20	21 265 268	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)

90 Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed temporary wells and field water level

143 NMOCD Groundwater map well location


Solaris - Oxy Sand Dunes
Karst Potential Map
Legend
32.198517, -103.931483
High
Low
Medium
32.198517, -103.931483
Google Earth
©2018 Google
N
2 mi

USGS science for a changing world

National Water Information System: Mapper

Sites | Map

Search

Search by Street Address:
32.198517, -103.931483

Search by Place Name:
Enter Place Name

Search by Site Number(s):
Enter Site Number(s)

Search by State/Territory:
Select an Area

Search by Watershed Region:
Select a Region

Surface-Water Sites

Groundwater Sites

Springs

Atmospheric Sites

Other Sites

Site Information

National Water Information System: Web Interface

Click to hideNews Bulletins

- Introducing The Next Generation of USGS Water Data for the Nation
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 321205103544701

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

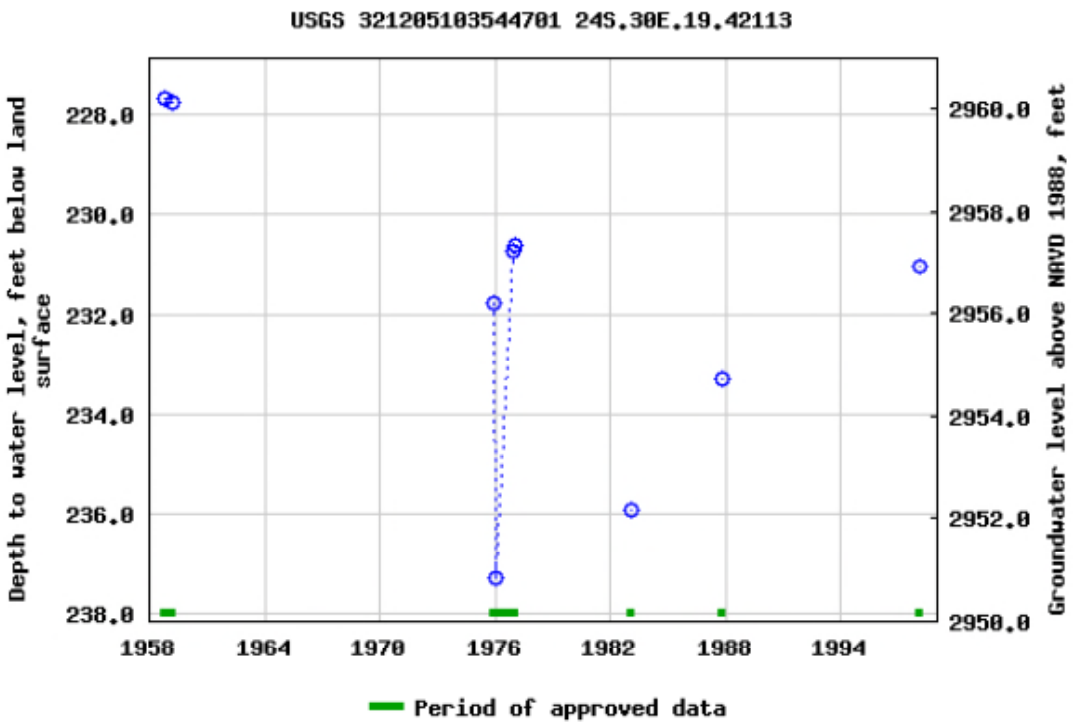
USGS 321205103544701 24S.30E.19.42113

Available data for this site Groundwater: Field measurements | GO

Eddy County, New Mexico
Hydrologic Unit Code 13060011
Latitude 32°12'05", Longitude 103°54'47" NAD27
Land-surface elevation 3,188 feet above NAVD88
The depth of the well is 452 feet below land surface.
This well is completed in the Rustler Formation (312RSLR) 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.
Download a presentation-quality graph

Questions about sites/data?
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Data Tips
Explanation of terms
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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: 2019-09-24 14:22:19 EDT
1.04 0.89 nadww01

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	Depth Well	Depth Water	Water Column
C 00349	C	CUB	ED		1	3	18	24S	29E	591401	3564773*	2734		
C 00381	C	CUB	ED	3	2	3	07	24S	29E	591682	3566297*	2797		
C 00463		C	ED	4	4	4	17	24S	29E	594332	3564282*	260	4	256
C 00856		CUB	ED	1	2	4	30	24S	29E	592538	3561644*	380		
C 00857		CUB	ED	3	1	4	30	24S	29E	592135	3561440*	306		
C 00862		CUB	ED	1	2	4	30	24S	29E	592538	3561644*	155		
C 00863		CUB	ED	3	3	1	16	24S	29E	594524	3565091*	220		
C 00863 CLW199506	O	CUB	ED	3	3	1	16	24S	29E	594524	3565091*	220		
C 02713		CUB	ED	4	4	1	16	24S	29E	591633	3565944	230	18	212
C 03615 POD1		CUB	ED	1	3	2	06	24S	29E	591964	3568500	60	36	24
C 03615 POD2		CUB	ED	4	2	4	06	24S	29E	592661	3568013	60	26	34

Average Depth to Water: **21 feet**

Minimum Depth: **4 feet**

Maximum Depth: **36 feet**

Record Count: 11

PLSS Search:

Township: 24S **Range:** 29E

***UTM location was derived from PLSS - see Help**

Appendix C

Analytical Report 637840

for

Tetra Tech- Midland

Project Manager: Clair Gonzales

Solaris Oxy Sand Dunes Release

30-SEP-19

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142), North Carolina (681)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-21), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

30-SEP-19

Project Manager: **Clair Gonzales**
Tetra Tech- Midland
901 West Wall ST
Midland, TX 79701

Reference: XENCO Report No(s): **637840**
Solaris Oxy Sand Dunes Release
Project Address: Eddy Co, NM

Clair Gonzales:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 637840. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 637840 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH#1 (0-1')	S	09-24-19 00:00	0 - 1 ft	637840-001
AH#1 (1-1.5')	S	09-24-19 00:00	1 - 1.5 ft	637840-002
AH#1 (2-2.5')	S	09-24-19 00:00	2 - 2.5 ft	637840-003
AH#1 (3-3.5')	S	09-24-19 00:00	3 - 3.5 ft	637840-004
AH#2 (0-1')	S	09-24-19 00:00	0 - 1 ft	637840-005
AH#2 (1-1.5')	S	09-24-19 00:00	1 - 1.5 ft	637840-006
AH#2 (2-2.5')	S	09-24-19 00:00	2 - 2.5 ft	637840-007
AH#3 (0-1')	S	09-24-19 00:00	0 - 1 ft	637840-008
AH#4 (0-1')	S	09-24-19 00:00	0 - 1 ft	637840-009
AH#4 (1-1.5')	S	09-24-19 00:00	1 - 1.5 ft	637840-010
AH#4 (2-2.5')	S	09-24-19 00:00	2 - 2.5 ft	637840-011
AH#4 (3-3.5')	S	09-24-19 00:00	3 - 3.5 ft	637840-012
AH#5 (0-1')	S	09-24-19 00:00	0 - 1 ft	637840-013

CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: Solaris Oxy Sand Dunes Release

Project ID:
Work Order Number(s): *637840*

Report Date: *30-SEP-19*
Date Received: *09/24/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3102365 Chloride by EPA 300
Lab Sample ID 637840-010 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 637840-001, -002, -003, -004, -005, -006, -007, -008, -009, -010.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3102367 Chloride by EPA 300
Lab Sample ID 637840-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 637840-011, -012, -013.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3102377 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3102566 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#1 (0-1')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-001	Date Collected:	09.24.19 00.00	Sample Depth:	0 - 1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	09.24.19 14.50	Basis:	Wet Weight
Seq Number:	3102365				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3040**	202	mg/kg	09.25.19 14.55		20

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	09.24.19 14.15	Basis:	Wet Weight
Seq Number:	3102389				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<24.9	24.9	mg/kg	09.24.19 16.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<24.9	24.9	mg/kg	09.24.19 16.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<24.9	24.9	mg/kg	09.24.19 16.32	U	1
Total TPH	PHC635	<24.9	24.9	mg/kg	09.24.19 16.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	09.24.19 16.32	
o-Terphenyl	84-15-1	91	%	70-135	09.24.19 16.32	

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#1 (0-1')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-001	Date Collected:	09.24.19 00.00	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	DTH	Date Prep:	09.24.19 13.00	Basis:	Wet Weight
Seq Number:	3102377				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.24.19 16.50	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.24.19 16.50	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.24.19 16.50	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.24.19 16.50	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.24.19 16.50	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.24.19 16.50	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.24.19 16.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	70-130	09.24.19 16.50	
1,4-Difluorobenzene	540-36-3	101	%	70-130	09.24.19 16.50	

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#1 (1-1.5')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-002	Date Collected:	09.24.19 00.00	Sample Depth:	1 - 1.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	09.24.19 14.50	Basis:	Wet Weight
Seq Number:	3102365				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**38.5**	10.1	mg/kg	09.24.19 18.53		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	09.24.19 14.15	Basis:	Wet Weight
Seq Number:	3102389				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.24.19 16.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.24.19 16.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.24.19 16.53	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.24.19 16.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	09.24.19 16.53	
o-Terphenyl	84-15-1	94	%	70-135	09.24.19 16.53	

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#1 (1-1.5')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-002	Date Collected:	09.24.19 00.00	Sample Depth:	1 - 1.5 ft
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	DTH	Date Prep:	09.24.19 13.00	Basis:	Wet Weight
Seq Number:	3102377				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.24.19 17.10	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.24.19 17.10	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.24.19 17.10	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.24.19 17.10	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.24.19 17.10	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.24.19 17.10	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.24.19 17.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	109	%	70-130	09.24.19 17.10	
4-Bromofluorobenzene	460-00-4	108	%	70-130	09.24.19 17.10	

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#1 (2-2.5')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-003	Date Collected:	09.24.19 00.00	Sample Depth:	2 - 2.5 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	09.24.19 14.50	Basis:	Wet Weight
Seq Number:	3102365				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**19.0**	10.0	mg/kg	09.24.19 18.59		1

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#1 (3-3.5')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-004	Date Collected:	09.24.19 00.00	Sample Depth:	3 - 3.5 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	09.24.19 14.50	Basis:	Wet Weight
Seq Number:	3102365				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**184**	10.1	mg/kg	09.24.19 19.05		1

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#2 (0-1')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-005	Date Collected:	09.24.19 00.00	Sample Depth:	0 - 1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	09.24.19 14.50	Basis:	Wet Weight
Seq Number:	3102365				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4580**	200	mg/kg	09.25.19 15.08		20

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	09.24.19 14.15	Basis:	Wet Weight
Seq Number:	3102389				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.24.19 17.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.24.19 17.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.24.19 17.13	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.24.19 17.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	09.24.19 17.13	
o-Terphenyl	84-15-1	103	%	70-135	09.24.19 17.13	

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#2 (0-1')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-005	Date Collected:	09.24.19 00.00	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	DTH	Date Prep:	09.24.19 13.00	Basis:	Wet Weight
Seq Number:	3102377				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	09.24.19 17.30	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	09.24.19 17.30	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	09.24.19 17.30	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	09.24.19 17.30	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	09.24.19 17.30	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	09.24.19 17.30	U	1
Total BTEX		<0.00100	0.00100	mg/kg	09.24.19 17.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	70-130	09.24.19 17.30	
4-Bromofluorobenzene	460-00-4	95	%	70-130	09.24.19 17.30	

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#2 (1-1.5')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-006	Date Collected:	09.24.19 00.00	Sample Depth:	1 - 1.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	09.24.19 14.50	Basis:	Wet Weight
Seq Number:	3102365				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3740**	201	mg/kg	09.25.19 15.15		20

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	09.24.19 14.15	Basis:	Wet Weight
Seq Number:	3102389				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.24.19 17.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.24.19 17.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.24.19 17.34	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.24.19 17.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	09.24.19 17.34	
o-Terphenyl	84-15-1	96	%	70-135	09.24.19 17.34	

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#2 (1-1.5')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-006	Date Collected:	09.24.19 00.00	Sample Depth:	1 - 1.5 ft
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	DTH	Date Prep:	09.24.19 13.00	Basis:	Wet Weight
Seq Number:	3102377				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.24.19 17.50	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.24.19 17.50	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.24.19 17.50	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.24.19 17.50	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.24.19 17.50	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.24.19 17.50	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.24.19 17.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	70-130	09.24.19 17.50	
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.24.19 17.50	

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#2 (2-2.5')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-007	Date Collected:	09.24.19 00.00	Sample Depth:	2 - 2.5 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	09.24.19 14.50	Basis:	Wet Weight
Seq Number:	3102365				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1990**	99.2	mg/kg	09.25.19 15.22		10

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#3 (0-1')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-008	Date Collected:	09.24.19 00.00	Sample Depth:	0 - 1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	09.24.19 14.50	Basis:	Wet Weight
Seq Number:	3102365				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**39.2**	10.0	mg/kg	09.24.19 19.43		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	09.24.19 14.15	Basis:	Wet Weight
Seq Number:	3102389				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.24.19 17.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.24.19 17.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.24.19 17.55	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.24.19 17.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	09.24.19 17.55	
o-Terphenyl	84-15-1	101	%	70-135	09.24.19 17.55	

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#3 (0-1')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-008	Date Collected:	09.24.19 00.00	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	DTH	Date Prep:	09.24.19 13.00	Basis:	Wet Weight
Seq Number:	3102377				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.24.19 18.10	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.24.19 18.10	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.24.19 18.10	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	09.24.19 18.10	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.24.19 18.10	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.24.19 18.10	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.24.19 18.10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	70-130	09.24.19 18.10	
1,4-Difluorobenzene	540-36-3	107	%	70-130	09.24.19 18.10	

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#4 (0-1')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-009	Date Collected:	09.24.19 00.00	Sample Depth:	0 - 1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	09.24.19 14.50	Basis:	Wet Weight
Seq Number:	3102365				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**401**	10.1	mg/kg	09.24.19 19.49		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	09.24.19 14.15	Basis:	Wet Weight
Seq Number:	3102389				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.24.19 18.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.24.19 18.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.24.19 18.15	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.24.19 18.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	09.24.19 18.15	
o-Terphenyl	84-15-1	93	%	70-135	09.24.19 18.15	

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#4 (0-1')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-009	Date Collected:	09.24.19 00.00	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	DTH	Date Prep:	09.24.19 13.00	Basis:	Wet Weight
Seq Number:	3102377				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.24.19 18.30	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.24.19 18.30	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.24.19 18.30	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.24.19 18.30	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.24.19 18.30	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.24.19 18.30	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.24.19 18.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94	%	70-130	09.24.19 18.30	
1,4-Difluorobenzene	540-36-3	109	%	70-130	09.24.19 18.30	

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#4 (1-1.5')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-010	Date Collected:	09.24.19 00.00	Sample Depth:	1 - 1.5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	09.24.19 14.50	Basis:	Wet Weight
Seq Number:	3102365				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1420**	50.1	mg/kg	09.24.19 19.56		5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	09.24.19 14.15	Basis:	Wet Weight
Seq Number:	3102389				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.1	25.1	mg/kg	09.24.19 18.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.1	25.1	mg/kg	09.24.19 18.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.1	25.1	mg/kg	09.24.19 18.36	U	1
Total TPH	PHC635	<25.1	25.1	mg/kg	09.24.19 18.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	09.24.19 18.36	
o-Terphenyl	84-15-1	101	%	70-135	09.24.19 18.36	

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#4 (1-1.5')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-010	Date Collected:	09.24.19 00.00	Sample Depth:	1 - 1.5 ft
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	DTH	Date Prep:	09.24.19 13.00	Basis:	Wet Weight
Seq Number:	3102377				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.24.19 18.49	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.24.19 18.49	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.24.19 18.49	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.24.19 18.49	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.24.19 18.49	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.24.19 18.49	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.24.19 18.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	70-130	09.24.19 18.49	
1,4-Difluorobenzene	540-36-3	107	%	70-130	09.24.19 18.49	

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#4 (2-2.5')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-011	Date Collected:	09.24.19 00.00	Sample Depth:	2 - 2.5 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	09.24.19 15.09	Basis:	Wet Weight
Seq Number:	3102367				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1900**	201	mg/kg	09.25.19 15.29	D	20

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#4 (3-3.5')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-012	Date Collected:	09.24.19 00.00	Sample Depth:	3 - 3.5 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	09.24.19 15.09	Basis:	Wet Weight
Seq Number:	3102367				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**248**	10.1	mg/kg	09.24.19 21.11		1

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#5 (0-1')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-013	Date Collected:	09.24.19 00.00	Sample Depth:	0 - 1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	09.24.19 15.09	Basis:	Wet Weight
Seq Number:	3102367				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**377**	50.0	mg/kg	09.25.19 15.42	D	5

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	09.25.19 10.40	Basis:	Wet Weight
Seq Number:	3102569				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<25.0	25.0	mg/kg	09.25.19 12.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<25.0	25.0	mg/kg	09.25.19 12.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<25.0	25.0	mg/kg	09.25.19 12.42	U	1
Total TPH	PHC635	<25.0	25.0	mg/kg	09.25.19 12.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-135	09.25.19 12.42	
o-Terphenyl	84-15-1	99	%	70-135	09.25.19 12.42	

Certificate of Analytical Results 637840

Tetra Tech- Midland, Midland, TX

Solaris Oxy Sand Dunes Release

Sample Id:	**AH#5 (0-1')**	Matrix:	Soil	Date Received:	09.24.19 12.25
Lab Sample Id:	637840-013	Date Collected:	09.24.19 00.00	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	09.25.19 11.00	Basis:	Wet Weight
Seq Number:	3102566				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	09.25.19 14.57	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	09.25.19 14.57	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	09.25.19 14.57	U	1
m,p-Xylenes	179601-23-1	<0.00202	0.00202	mg/kg	09.25.19 14.57	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	09.25.19 14.57	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	09.25.19 14.57	U	1
Total BTEX		<0.00101	0.00101	mg/kg	09.25.19 14.57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	09.25.19 14.57	
4-Bromofluorobenzene	460-00-4	93	%	70-130	09.25.19 14.57	

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 637840

Tetra Tech- Midland

Solaris Oxy Sand Dunes Release

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Seq Number: 3102365 Matrix: Solid Date Prep: 09.24.19
MB Sample Id: 7686757-1-BLK LCS Sample Id: 7686757-1-BKS LCSD Sample Id: 7686757-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	258	103	259	104	90-110	0	20	mg/kg	09.24.19 16:24	

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Seq Number: 3102367 Matrix: Solid Date Prep: 09.24.19
MB Sample Id: 7686798-1-BLK LCS Sample Id: 7686798-1-BKS LCSD Sample Id: 7686798-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	261	104	262	105	90-110	0	20	mg/kg	09.24.19 20:39	

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Seq Number: 3102365 Matrix: Soil Date Prep: 09.24.19
Parent Sample Id: 637782-001 MS Sample Id: 637782-001 S MSD Sample Id: 637782-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	11.6	200	214	101	215	102	90-110	0	20	mg/kg	09.24.19 17:25	

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Seq Number: 3102365 Matrix: Solid Date Prep: 09.24.19
Parent Sample Id: 637840-010 MS Sample Id: 637840-010 S MSD Sample Id: 637840-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1420	1000	2710	129	2690	127	90-110	1	20	mg/kg	09.24.19 20:02	X

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Seq Number: 3102367 Matrix: Soil Date Prep: 09.24.19
Parent Sample Id: 637840-011 MS Sample Id: 637840-011 S MSD Sample Id: 637840-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1900	998	3600	170	3610	172	90-110	0	20	mg/kg	09.24.19 20:58	X

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

QC Summary 637840

Tetra Tech- Midland

Solaris Oxy Sand Dunes Release

Analytical Method: TPH by SW8015 Mod | Prep Method: SW8015P
Seq Number: 3102389 | Matrix: Solid | Date Prep: 09.24.19
MB Sample Id: 7686820-1-BLK | LCS Sample Id: 7686820-1-BKS | LCSD Sample Id: 7686820-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<25.0	1000	1070	107	1090	109	70-135	2	35	mg/kg	09.24.19 10:12	
Diesel Range Organics (DRO)	<25.0	1000	1200	120	1210	121	70-135	1	35	mg/kg	09.24.19 10:12	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		112		117		70-135	%	09.24.19 10:12
o-Terphenyl	93		101		115		70-135	%	09.24.19 10:12

Analytical Method: TPH by SW8015 Mod | Prep Method: SW8015P
Seq Number: 3102569 | Matrix: Solid | Date Prep: 09.25.19
MB Sample Id: 7686881-1-BLK | LCS Sample Id: 7686881-1-BKS | LCSD Sample Id: 7686881-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<25.0	1000	1110	111	1160	116	70-135	4	35	mg/kg	09.25.19 12:01	
Diesel Range Organics (DRO)	<25.0	1000	1220	122	1340	134	70-135	9	35	mg/kg	09.25.19 12:01	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		120		114		70-135	%	09.25.19 12:01
o-Terphenyl	94		118		117		70-135	%	09.25.19 12:01

Analytical Method: TPH by SW8015 Mod | Prep Method: SW8015P
Seq Number: 3102389 | Matrix: Soil | Date Prep: 09.24.19
Parent Sample Id: 637785-001 | MS Sample Id: 637785-001 S | MSD Sample Id: 637785-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<25.0	1000	1220	122	1290	129	70-135	6	35	mg/kg	09.24.19 12:24	
Diesel Range Organics (DRO)	<25.0	1000	1380	138	1480	148	70-135	7	35	mg/kg	09.24.19 12:24	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	127		126		70-135	%	09.24.19 12:24
o-Terphenyl	117		122		70-135	%	09.24.19 12:24

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

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

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

QC Summary 637840

Tetra Tech- Midland

Solaris Oxy Sand Dunes Release

Analytical Method: TPH by SW8015 Mod | Prep Method: SW8015P
Seq Number: 3102569 | Matrix: Soil | Date Prep: 09.25.19
Parent Sample Id: 637840-013 | MS Sample Id: 637840-013 S | MSD Sample Id: 637840-013 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<25.1	1010	984	97	976	98	70-135	1	35	mg/kg	09.25.19 13:03	
Diesel Range Organics (DRO)	<25.1	1010	1130	112	1130	113	70-135	0	35	mg/kg	09.25.19 13:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	107		110		70-135	%	09.25.19 13:03
o-Terphenyl	111		111		70-135	%	09.25.19 13:03

Analytical Method: BTEX by EPA 8021 | Prep Method: SW5030B
Seq Number: 3102377 | Matrix: Solid | Date Prep: 09.24.19
MB Sample Id: 7686809-1-BLK | LCS Sample Id: 7686809-1-BKS | LCSD Sample Id: 7686809-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0850	85	0.0801	79	70-130	6	35	mg/kg	09.24.19 10:29	
Toluene	<0.00100	0.100	0.0918	92	0.102	101	70-130	11	35	mg/kg	09.24.19 10:29	
Ethylbenzene	<0.00100	0.100	0.104	104	0.118	117	71-129	13	35	mg/kg	09.24.19 10:29	
m,p-Xylenes	<0.00200	0.200	0.207	104	0.236	117	70-135	13	35	mg/kg	09.24.19 10:29	
o-Xylene	<0.00100	0.100	0.106	106	0.120	119	71-133	12	35	mg/kg	09.24.19 10:29	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		115		108		70-130	%	09.24.19 10:29
4-Bromofluorobenzene	94		119		117		70-130	%	09.24.19 10:29

Analytical Method: BTEX by EPA 8021 | Prep Method: SW5030B
Seq Number: 3102566 | Matrix: Solid | Date Prep: 09.25.19
MB Sample Id: 7686884-1-BLK | LCS Sample Id: 7686884-1-BKS | LCSD Sample Id: 7686884-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0817	82	0.0903	90	70-130	10	35	mg/kg	09.25.19 13:58	
Toluene	<0.00100	0.100	0.0864	86	0.0960	96	70-130	11	35	mg/kg	09.25.19 13:58	
Ethylbenzene	<0.00100	0.100	0.101	101	0.114	114	71-129	12	35	mg/kg	09.25.19 13:58	
m,p-Xylenes	<0.00200	0.200	0.207	104	0.232	116	70-135	11	35	mg/kg	09.25.19 13:58	
o-Xylene	<0.00100	0.100	0.103	103	0.116	116	71-133	12	35	mg/kg	09.25.19 13:58	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		101		100		70-130	%	09.25.19 13:58
4-Bromofluorobenzene	100		108		108		70-130	%	09.25.19 13:58

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

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

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

QC Summary 637840

Tetra Tech- Midland

Solaris Oxy Sand Dunes Release

Analytical Method: BTEX by EPA 8021 Prep Method: SW5030B
Seq Number: 3102377 Matrix: Solid Date Prep: 09.24.19
Parent Sample Id: 637785-001 MS Sample Id: 637785-001 S MSD Sample Id: 637785-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.103	103	0.107	106	70-130	4	35	mg/kg	09.24.19 11:49	
Toluene	<0.00100	0.100	0.124	124	0.100	99	70-130	21	35	mg/kg	09.24.19 11:49	
Ethylbenzene	<0.00100	0.100	0.130	130	0.118	117	71-129	10	35	mg/kg	09.24.19 11:49	X
m,p-Xylenes	<0.00201	0.201	0.256	127	0.246	122	70-135	4	35	mg/kg	09.24.19 11:49	
o-Xylene	<0.00100	0.100	0.136	136	0.118	117	71-133	14	35	mg/kg	09.24.19 11:49	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	84		116		70-130	%	09.24.19 11:49
4-Bromofluorobenzene	94		126		70-130	%	09.24.19 11:49

Analytical Method: BTEX by EPA 8021 Prep Method: SW5030B
Seq Number: 3102566 Matrix: Solid Date Prep: 09.25.19
Parent Sample Id: 637840-013 MS Sample Id: 637840-013 S MSD Sample Id: 637840-013 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00101	0.101	0.0780	77	0.0826	82	70-130	6	35	mg/kg	09.25.19 15:17	
Toluene	<0.00101	0.101	0.0808	80	0.0824	82	70-130	2	35	mg/kg	09.25.19 15:17	
Ethylbenzene	<0.00101	0.101	0.0974	96	0.0988	98	71-129	1	35	mg/kg	09.25.19 15:17	
m,p-Xylenes	<0.00202	0.202	0.196	97	0.200	99	70-135	2	35	mg/kg	09.25.19 15:17	
o-Xylene	<0.00101	0.101	0.0981	97	0.100	99	71-133	2	35	mg/kg	09.25.19 15:17	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	110		106		70-130	%	09.25.19 15:17
4-Bromofluorobenzene	115		111		70-130	%	09.25.19 15:17

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

637840

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: Solaris	**Site Manager:** Clair Gonzales
Project Name: Oxy Sand Dunes Release	
Project Location: (county, state) Eddy Co, NM	**Project #:** Pending
Invoice to: Tetra Tech, Inc.	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold
	~~AH#1 (0-1')~~	9/24/19			X			X		1	2	X		X											X					
	AH#1 (1-1.5')	9/24/19			X			X		1	2	X		X											X					
	AH#1 (2-2.5')	9/24/19			X			X		1	2														X					
	AH#1 (3-3.5')	9/24/19			X			X		1	2														X					
	AH#2 (0-1')	9/24/19			X			X		1	2	X		X											X					
	AH#2 (1-1.5')	9/24/19			X			X		1	2	X		X											X					
	AH#2 (2-2.5')	9/24/19			X			X		1	2														X					
	AH#3 (0-1')	9/24/19			X			X		1	2	X		X											X					
	AH#4 (0-1')	9/24/19			X			X		1	2	X		X											X					
	AH#4 (1-1.5')	9/24/19			X			X		1	2	X		X											X					

Relinquished by: Conner Moehring	Date: 9/24/19	Time: 12:25	Received by: Cartlo
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Date: 9/24/19 Time: 12:25

LAB USE ONLY

Sample Temperature: 4.2°C

REMARKS:

- ☒ STANDARD
- ☐ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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637840

Page 2 of 2

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland, Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: Solaris	**Site Manager:** Clair Gonzales
Project Name: Oxy Sand Dunes Release	
Project Location (county, state): Eddy Co, NM	**Project #:** Pending
Invoice to: Tetra Tech, Inc.	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Sulfate	TDS	Chloride	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold
	AH #4 (2-2.5')	9/24/19			X			X		1	N															X						
	AH #4 (3-3.5')	9/24/19			X			X		1	N															X						
	AH #5 (0-1')	9/24/19			X			X		1	N	X		X												X						

Relinquished by: Conner Moehring	Date: 9/24/19	Time: 12:25	Received by: [signature]
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

	Date: 9/24/19	Time: 12:25	
	Date:	Time:	
	Date:	Time:	

LAB USE ONLY

Sample Temperature: 4.2°C

REMARKS:

- [X] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 09/24/2019 12:25:00 PM

Work Order #: 637840

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

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6*Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 09/24/2019

Checklist reviewed by: Jessica Kramer Date: 09/25/2019

Jessica Kramer

Analytical Report 625280

for

Tetra Tech- Midland

Project Manager: Mike Carmona

White Federal 1H Flowline (5-13-19)

212C-MD-01765

30-MAY-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

30-MAY-19

Project Manager: **Mike Carmona**
Tetra Tech- Midland
901 West Wall ST
Midland, TX 79701

Reference: XENCO Report No(s): **625280**
White Federal 1H Flowline (5-13-19)
Project Address: Eddy County, New Mexcio

Mike Carmona:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 625280. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 625280 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 625280

Tetra Tech- Midland, Midland, TX

White Federal 1H Flowline (5-13-19)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH-1 (0-1')	S	05-21-19 00:00		625280-001
AH-1 (1'-1.5')	S	05-21-19 00:00		625280-002
AH-1 (2'-2.5')	S	05-21-19 00:00		625280-003
AH-1 (2.5'-3')	S	05-21-19 00:00		625280-004
AH-2 (0-1')	S	05-21-19 00:00		625280-005
AH-2 (1-1.5')	S	05-21-19 00:00		625280-006
AH-2 (2-2.5')	S	05-21-19 00:00		625280-007
AH-3 (0-1')	S	05-21-19 00:00		625280-008
AH-3 (1'-1.5')	S	05-21-19 00:00		625280-009
AH-4 (0-1')	S	05-21-19 00:00		625280-010
AH-4 (1'-1.5')	S	05-21-19 00:00		625280-011
AH-4 (2'-2.5')	S	05-21-19 00:00		625280-012
AH-4 (3'-3.5')	S	05-21-19 00:00		625280-013
AH-5 (0-1')	S	05-21-19 00:00		625280-014
AH-5 (1'-1.5')	S	05-21-19 00:00		625280-015
AH-5 (2'-2.5')	S	05-21-19 00:00		625280-016
AH-5 (3'-3.5')	S	05-22-19 00:00		625280-017
AH-6 (0-1')	S	05-22-19 00:00		625280-018
AH-6 (1'-1.5')	S	05-22-19 00:00		625280-019
AH-6 (2'-2.5')	S	05-22-19 00:00		625280-020
AH-6 (3'-3.5')	S	05-22-19 00:00		625280-021
AH-6 (4-4.5')	S	05-22-19 00:00		625280-022
AH-7 (0-1')	S	05-22-19 00:00		625280-023
AH-7 (1'-1.5')	S	05-22-19 00:00		625280-024
AH-7 (2'-2.5')	S	05-22-19 00:00		625280-025
AH-8 (0-1')	S	05-22-19 00:00		625280-026
AH-8 (1'-1.5')	S	05-22-19 00:00		625280-027
AH-8 (2'-2.5')	S	05-22-19 00:00		625280-028
AH-8 (3'-3.5')	S	05-22-19 00:00		625280-029
AH-8 (4-4.5')	S	05-22-19 00:00		625280-030
AH-9 (0-1')	S	05-22-19 00:00		625280-031
AH-9 (1'-1.5')	S	05-22-19 00:00		625280-032
AH-9 (2'-2.5')	S	05-22-19 00:00		625280-033
AH-9 (3'-3.5')	S	05-22-19 00:00		625280-034
AH-10 (0-1')	S	05-22-19 00:00		625280-035
AH-10 (1'-1.5')	S	05-22-19 00:00		625280-036
AH-10 (2'-2.5')	S	05-22-19 00:00		625280-037
AH-11 (0-1')	S	05-22-19 00:00		625280-038
AH-11 (1'-1.5')	S	05-22-19 00:00		625280-039
AH-11 (2'-2.5')	S	05-22-19 00:00		625280-040
AH-11 (3'-3.5')	S	05-22-19 00:00		625280-041
AH-12 (0-1')	S	05-21-19 00:00		625280-042
AH-12 (1'-1.5')	S	05-22-19 00:00		625280-043

Sample Cross Reference 625280

Tetra Tech- Midland, Midland, TX

White Federal 1H Flowline (5-13-19)

AH-12 (2'-2.5')	S	05-22-19 00:00	625280-044
AH-13 (0-1')	S	05-22-19 00:00	625280-045
AH-13 (1'-1.5')	S	05-22-19 00:00	625280-046
AH-14 (0-1')	S	05-22-19 00:00	625280-047
BG-1 (0-1')	S	05-22-19 00:00	625280-048
BG-2 (0-1')	S	05-22-19 00:00	625280-049
BG-3 (0-1')	S	05-22-19 00:00	625280-050
BG-4 (0-1')	S	05-22-19 00:00	625280-051

CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: White Federal 1H Flowline (5-13-19)

Project ID:	*212C-MD-01765*	Report Date:	*30-MAY-19*
Work Order Number(s):	*625280*	Date Received:	*05/23/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3090079 Inorganic Anions by EPA 300
Lab Sample ID 625334-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 625280-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3090083 Chloride by EPA 300
Lab Sample ID 625280-041 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 625280-034, -035, -036, -037, -038, -039, -040, -041, -042, -043, -044, -045, -046, -047, -048, -049, -050, -051.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3090390 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3090399 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3090434 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 625280

Tetra Tech- Midland, Midland, TX

Project Name: White Federal 1H Flowline (5-13-19)

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy County, New Mexcio

Date Received in Lab: Thu May-23-19 10:48 am
Report Date: 30-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	625280-001		625280-002		625280-003		625280-004		625280-005		625280-006	
	Field Id:	AH-1 (0-1')		AH-1 (1'-1.5')		AH-1 (2'-2.5')		AH-1 (2.5'-3')		AH-2 (0-1')		AH-2 (1-1.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-21-19 00:00		May-21-19 00:00		May-21-19 00:00		May-21-19 00:00		May-21-19 00:00		May-21-19 00:00	
BTEX by EPA 8021B	***Extracted:***	May-28-19 15:00								May-28-19 15:00			
	Analyzed:	May-28-19 17:35								May-28-19 21:23			
	Units/RL:	mg/kg	RL							mg/kg	RL		
Benzene		<0.00200	0.00200							<0.00201	0.00201		
Toluene		<0.00200	0.00200							<0.00201	0.00201		
Ethylbenzene		<0.00200	0.00200							<0.00201	0.00201		
m,p-Xylenes		<0.00400	0.00400							<0.00402	0.00402		
o-Xylene		<0.00200	0.00200							<0.00201	0.00201		
Total Xylenes		<0.00200	0.00200							<0.00201	0.00201		
Total BTEX		<0.00200	0.00200							<0.00201	0.00201		
Chloride by EPA 300	***Extracted:***	May-23-19 14:15		May-23-19 14:15		May-23-19 14:15		May-23-19 14:15		May-23-19 14:15		May-23-19 14:15	
	Analyzed:	May-23-19 23:22		May-23-19 23:30		May-23-19 23:37		May-23-19 23:44		May-23-19 23:52		May-24-19 00:21	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4280	25.2	4890	49.6	5600	49.9	7320	50.1	13800	99.6	17600	100
TPH by SW8015 Mod	***Extracted:***	May-26-19 10:00								May-26-19 10:00			
	Analyzed:	May-26-19 12:25								May-26-19 13:23			
	Units/RL:	mg/kg	RL							mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0							<15.0	15.0		
Diesel Range Organics (DRO)		<15.0	15.0							<15.0	15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0							<15.0	15.0		
Total TPH		<15.0	15.0							<15.0	15.0		

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 625280

Tetra Tech- Midland, Midland, TX

Project Name: White Federal 1H Flowline (5-13-19)

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy County, New Mexcio

Date Received in Lab: Thu May-23-19 10:48 am
Report Date: 30-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	625280-007		625280-008		625280-009		625280-010		625280-011		625280-012	
	Field Id:	AH-2 (2-2.5')		AH-3 (0-1')		AH-3 (1'-1.5')		AH-4 (0-1')		AH-4 (1'-1.5')		AH-4 (2'-2.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-21-19 00:00		May-21-19 00:00		May-21-19 00:00		May-21-19 00:00		May-21-19 00:00		May-21-19 00:00	
BTEX by EPA 8021B	***Extracted:***			May-28-19 15:00				May-28-19 15:00					
	Analyzed:			May-28-19 21:42				May-28-19 22:01					
	Units/RL:			mg/kg	RL			mg/kg	RL				
Benzene				<0.00200	0.00200			<0.00201	0.00201				
Toluene				<0.00200	0.00200			<0.00201	0.00201				
Ethylbenzene				<0.00200	0.00200			<0.00201	0.00201				
m,p-Xylenes				<0.00400	0.00400			<0.00402	0.00402				
o-Xylene				<0.00200	0.00200			<0.00201	0.00201				
Total Xylenes				<0.00200	0.00200			<0.00201	0.00201				
Total BTEX				<0.00200	0.00200			<0.00201	0.00201				
Chloride by EPA 300	***Extracted:***	May-23-19 14:15		May-23-19 14:15		May-23-19 14:15		May-23-19 14:15		May-23-19 14:15		May-23-19 14:15	
	Analyzed:	May-24-19 00:28		May-24-19 00:50		May-24-19 00:57		May-24-19 01:04		May-23-19 23:59		May-24-19 01:11	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		10200	49.9	11400	99.0	11800	101	5220	49.8	526	4.95	582	5.05
TPH by SW8015 Mod	***Extracted:***			May-26-19 10:00				May-26-19 10:00					
	Analyzed:			May-26-19 13:43				May-26-19 14:02					
	Units/RL:			mg/kg	RL			mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)				<15.0	15.0			<15.0	15.0				
Diesel Range Organics (DRO)				<15.0	15.0			<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)				<15.0	15.0			<15.0	15.0				
Total TPH				<15.0	15.0			<15.0	15.0				

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 625280

Tetra Tech- Midland, Midland, TX

Project Name: White Federal 1H Flowline (5-13-19)

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy County, New Mexcio

Date Received in Lab: Thu May-23-19 10:48 am
Report Date: 30-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	625280-013		625280-014		625280-015		625280-016		625280-017		625280-018	
	Field Id:	AH-4 (3'-3.5')		AH-5 (0-1')		AH-5 (1'-1.5')		AH-5 (2'-2.5')		AH-5 (3'-3.5')		AH-6 (0-1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-21-19 00:00		May-21-19 00:00		May-21-19 00:00		May-21-19 00:00		May-22-19 00:00		May-22-19 00:00	
BTEX by EPA 8021B	***Extracted:***			May-28-19 15:00								May-28-19 15:00	
	Analyzed:			May-28-19 22:20								May-28-19 22:39	
	Units/RL:			mg/kg	RL							mg/kg	RL
Benzene				<0.00199	0.00199							<0.00202	0.00202
Toluene				<0.00199	0.00199							<0.00202	0.00202
Ethylbenzene				<0.00199	0.00199							<0.00202	0.00202
m,p-Xylenes				<0.00398	0.00398							<0.00403	0.00403
o-Xylene				<0.00199	0.00199							<0.00202	0.00202
Total Xylenes				<0.00199	0.00199							<0.00202	0.00202
Total BTEX				<0.00199	0.00199							<0.00202	0.00202
Chloride by EPA 300	***Extracted:***	May-23-19 14:15		May-23-19 14:15		May-23-19 14:15		May-23-19 15:00		May-23-19 15:00		May-23-19 15:00	
	Analyzed:	May-24-19 01:19		May-24-19 01:26		May-24-19 01:33		May-24-19 02:38		May-24-19 02:46		May-24-19 02:53	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		338	4.96	17800	100	15600	100	8170	49.5	1450	5.02	15100	99.6
TPH by SW8015 Mod	***Extracted:***			May-26-19 10:00								May-26-19 10:00	
	Analyzed:			May-26-19 14:21								May-26-19 14:41	
	Units/RL:			mg/kg	RL							mg/kg	RL
Gasoline Range Hydrocarbons (GRO)				<15.0	15.0							<15.0	15.0
Diesel Range Organics (DRO)				<15.0	15.0							<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)				<15.0	15.0							<15.0	15.0
Total TPH				<15.0	15.0							<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 625280

Tetra Tech- Midland, Midland, TX

Project Name: White Federal 1H Flowline (5-13-19)

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy County, New Mexcio

Date Received in Lab: Thu May-23-19 10:48 am
Report Date: 30-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	625280-019		625280-020		625280-021		625280-022		625280-023		625280-024	
	Field Id:	AH-6 (1'-1.5')		AH-6 (2'-2.5')		AH-6 (3'-3.5')		AH-6 (4-4.5')		AH-7 (0-1')		AH-7 (1'-1.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-22-19 00:00		May-22-19 00:00		May-22-19 00:00		May-22-19 00:00		May-22-19 00:00		May-22-19 00:00	
BTEX by EPA 8021B	***Extracted:***									May-28-19 15:00			
	Analyzed:									May-28-19 22:58			
	Units/RL:									mg/kg	RL		
Benzene										<0.00199	0.00199		
Toluene										<0.00199	0.00199		
Ethylbenzene										<0.00199	0.00199		
m,p-Xylenes										<0.00398	0.00398		
o-Xylene										<0.00199	0.00199		
Total Xylenes										<0.00199	0.00199		
Total BTEX										<0.00199	0.00199		
Chloride by EPA 300	***Extracted:***	May-23-19 15:00		May-23-19 15:00		May-23-19 15:00		May-23-19 15:00		May-23-19 15:00		May-23-19 15:00	
	Analyzed:	May-24-19 03:00		May-24-19 03:22		May-24-19 03:29		May-24-19 03:36		May-24-19 03:44		May-24-19 03:51	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		947	5.05	19000	100	20100	101	16600	99.6	19900	251	12500	99.0
TPH by SW8015 Mod	***Extracted:***									May-26-19 10:00			
	Analyzed:									May-26-19 15:02			
	Units/RL:									mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)										<15.0	15.0		
Diesel Range Organics (DRO)										<15.0	15.0		
Motor Oil Range Hydrocarbons (MRO)										<15.0	15.0		
Total TPH										<15.0	15.0		

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 625280

Tetra Tech- Midland, Midland, TX

Project Name: White Federal 1H Flowline (5-13-19)

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy County, New Mexcio

Date Received in Lab: Thu May-23-19 10:48 am
Report Date: 30-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	625280-025		625280-026		625280-027		625280-028		625280-029		625280-030	
	Field Id:	AH-7 (2'-2.5')		AH-8 (0-1')		AH-8 (1'-1.5')		AH-8 (2'-2.5')		AH-8 (3'-3.5')		AH-8 (4-4.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-22-19 00:00		May-22-19 00:00		May-22-19 00:00		May-22-19 00:00		May-22-19 00:00		May-22-19 00:00	
BTEX by EPA 8021B	***Extracted:***			May-28-19 15:00									
	Analyzed:			May-28-19 23:17									
	Units/RL:			mg/kg	RL								
Benzene				<0.00199	0.00199								
Toluene				<0.00199	0.00199								
Ethylbenzene				<0.00199	0.00199								
m,p-Xylenes				<0.00398	0.00398								
o-Xylene				<0.00199	0.00199								
Total Xylenes				<0.00199	0.00199								
Total BTEX				<0.00199	0.00199								
Chloride by EPA 300	***Extracted:***	May-23-19 15:00		May-23-19 15:00		May-23-19 15:00		May-23-19 15:00		May-23-19 15:00		May-23-19 15:00	
	Analyzed:	May-24-19 04:20		May-24-19 04:27		May-24-19 04:49		May-24-19 04:56		May-24-19 05:03		May-24-19 05:11	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		12100	99.6	18800	252	22300	248	1400	25.0	5010	24.9	3180	25.1
TPH by SW8015 Mod	***Extracted:***			May-26-19 10:00									
	Analyzed:			May-26-19 15:23									
	Units/RL:			mg/kg	RL								
Gasoline Range Hydrocarbons (GRO)				<15.0	15.0								
Diesel Range Organics (DRO)				21.1	15.0								
Motor Oil Range Hydrocarbons (MRO)				<15.0	15.0								
Total TPH				21.1	15.0								

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 625280

Tetra Tech- Midland, Midland, TX

Project Name: White Federal 1H Flowline (5-13-19)

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy County, New Mexcio

Date Received in Lab: Thu May-23-19 10:48 am
Report Date: 30-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	625280-031		625280-032		625280-033		625280-034		625280-035		625280-036	
	Field Id:	AH-9 (0-1')		AH-9 (1'-1.5')		AH-9 (2'-2.5')		AH-9 (3'-3.5')		AH-10 (0-1')		AH-10 (1'-1.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-22-19 00:00		May-22-19 00:00		May-22-19 00:00		May-22-19 00:00		May-22-19 00:00		May-22-19 00:00	
BTEX by EPA 8021B	***Extracted:***	May-28-19 15:00								May-28-19 15:00			
	Analyzed:	May-28-19 23:36								May-28-19 23:55			
	Units/RL:	mg/kg	RL							mg/kg	RL		
Benzene		<0.00200	0.00200							<0.00201	0.00201		
Toluene		<0.00200	0.00200							<0.00201	0.00201		
Ethylbenzene		<0.00200	0.00200							<0.00201	0.00201		
m,p-Xylenes		<0.00400	0.00400							<0.00402	0.00402		
o-Xylene		<0.00200	0.00200							<0.00201	0.00201		
Total Xylenes		<0.00200	0.00200							<0.00201	0.00201		
Total BTEX		<0.00200	0.00200							<0.00201	0.00201		
Chloride by EPA 300	***Extracted:***	May-23-19 15:00		May-23-19 15:00		May-23-19 15:00		May-23-19 15:30		May-23-19 15:30		May-23-19 15:30	
	Analyzed:	May-24-19 05:18		May-24-19 05:25		May-24-19 05:32		May-23-19 19:29		May-23-19 19:34		May-23-19 19:39	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		6250	50.0	19100	100	19600	100	9250	50.4	8560	49.6	17500	99.8
TPH by SW8015 Mod	***Extracted:***	May-26-19 10:00								May-26-19 10:00			
	Analyzed:	May-26-19 15:43								May-26-19 16:03			
	Units/RL:	mg/kg	RL							mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0							<15.0	15.0		
Diesel Range Organics (DRO)		36.8	15.0							<15.0	15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0							<15.0	15.0		
Total TPH		36.8	15.0							<15.0	15.0		

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 625280

Tetra Tech- Midland, Midland, TX

Project Name: White Federal 1H Flowline (5-13-19)

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy County, New Mexcio

Date Received in Lab: Thu May-23-19 10:48 am
Report Date: 30-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	625280-037		625280-038		625280-039		625280-040		625280-041		625280-042	
	Field Id:	AH-10 (2'-2.5')		AH-11 (0-1')		AH-11 (1'-1.5')		AH-11 (2'-2.5')		AH-11 (3'-3.5')		AH-12 (0-1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-22-19 00:00		May-22-19 00:00		May-22-19 00:00		May-22-19 00:00		May-22-19 00:00		May-21-19 00:00	
BTEX by EPA 8021B	***Extracted:***			May-28-19 15:00								May-28-19 16:00	
	Analyzed:			May-29-19 00:14								May-29-19 03:22	
	Units/RL:			mg/kg	RL							mg/kg	RL
Benzene				<0.00200	0.00200							<0.00201	0.00201
Toluene				<0.00200	0.00200							<0.00201	0.00201
Ethylbenzene				<0.00200	0.00200							<0.00201	0.00201
m,p-Xylenes				<0.00399	0.00399							<0.00402	0.00402
o-Xylene				<0.00200	0.00200							<0.00201	0.00201
Total Xylenes				<0.00200	0.00200							<0.00201	0.00201
Total BTEX				<0.00200	0.00200							<0.00201	0.00201
Chloride by EPA 300	***Extracted:***	May-23-19 15:30		May-23-19 15:30		May-23-19 15:30		May-23-19 15:30		May-23-19 15:30		May-23-19 15:30	
	Analyzed:	May-23-19 19:14		May-23-19 19:44		May-23-19 19:59		May-23-19 20:04		May-23-19 20:24		May-23-19 20:09	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		564	5.02	6730	49.7	3020	25.2	190	4.99	1120	4.99	6230	50.3
TPH by SW8015 Mod	***Extracted:***			May-26-19 10:00								May-26-19 10:00	
	Analyzed:			May-26-19 16:43								May-26-19 17:03	
	Units/RL:			mg/kg	RL							mg/kg	RL
Gasoline Range Hydrocarbons (GRO)				<15.0	15.0							<15.0	15.0
Diesel Range Organics (DRO)				20.5	15.0							15.7	15.0
Motor Oil Range Hydrocarbons (MRO)				<15.0	15.0							<15.0	15.0
Total TPH				20.5	15.0							15.7	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 625280

Tetra Tech- Midland, Midland, TX

Project Name: White Federal 1H Flowline (5-13-19)

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy County, New Mexcio

Date Received in Lab: Thu May-23-19 10:48 am
Report Date: 30-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	625280-043		625280-044		625280-045		625280-046		625280-047		625280-048	
	Field Id:	AH-12 (1'-1.5')		AH-12 (2'-2.5')		AH-13 (0-1')		AH-13 (1'-1.5')		AH-14 (0-1')		BG-1 (0-1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-22-19 00:00		May-22-19 00:00		May-22-19 00:00		May-22-19 00:00		May-22-19 00:00		May-22-19 00:00	
BTEX by EPA 8021B	***Extracted:***					May-28-19 16:00				May-28-19 16:00		May-28-19 15:15	
	Analyzed:					May-29-19 03:41				May-29-19 04:00		May-28-19 17:27	
	Units/RL:					mg/kg	RL			mg/kg	RL	mg/kg	RL
Benzene						<0.00200	0.00200			<0.00201	0.00201	<0.00198	0.00198
Toluene						<0.00200	0.00200			<0.00201	0.00201	<0.00198	0.00198
Ethylbenzene						<0.00200	0.00200			<0.00201	0.00201	<0.00198	0.00198
m,p-Xylenes						<0.00399	0.00399			<0.00402	0.00402	<0.00397	0.00397
o-Xylene						<0.00200	0.00200			<0.00201	0.00201	<0.00198	0.00198
Total Xylenes						<0.00200	0.00200			<0.00201	0.00201	<0.00198	0.00198
Total BTEX						<0.00200	0.00200			<0.00201	0.00201	<0.00198	0.00198
Chloride by EPA 300	***Extracted:***	May-23-19 15:30		May-23-19 15:30		May-23-19 15:30		May-23-19 15:30		May-23-19 15:30		May-23-19 15:30	
	Analyzed:	May-23-19 20:14		May-23-19 20:19		May-25-19 11:53		May-23-19 20:43		May-23-19 20:58		May-23-19 21:03	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		7010	49.8	6030	50.0	6090	25.0	8470	50.3	2730	24.8	213	4.97
TPH by SW8015 Mod	***Extracted:***					May-26-19 10:00				May-26-19 10:00		May-26-19 10:00	
	Analyzed:					May-26-19 17:23				May-26-19 17:42		May-26-19 18:03	
	Units/RL:					mg/kg	RL			mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)						<15.0	15.0			<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)						17.9	15.0			34.7	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)						<15.0	15.0			<15.0	15.0	<15.0	15.0
Total TPH						17.9	15.0			34.7	15.0	<15.0	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 625280

Tetra Tech- Midland, Midland, TX

Project Name: White Federal 1H Flowline (5-13-19)

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy County, New Mexcio

Date Received in Lab: Thu May-23-19 10:48 am
Report Date: 30-MAY-19
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	625280-049		625280-050		625280-051					
	Field Id:	BG-2 (0-1')		BG-3 (0-1')		BG-4 (0-1')					
	Depth:										
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	May-22-19 00:00		May-22-19 00:00		May-22-19 00:00					
BTEX by EPA 8021B	***Extracted:***	May-28-19 15:15		May-28-19 15:15		May-28-19 15:15					
	Analyzed:	May-28-19 17:46		May-28-19 21:13		May-28-19 21:32					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202				
Toluene		<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202				
Ethylbenzene		<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202				
m,p-Xylenes		<0.00402	0.00402	<0.00398	0.00398	<0.00404	0.00404				
o-Xylene		<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202				
Total Xylenes		<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202				
Total BTEX		<0.00201	0.00201	<0.00199	0.00199	<0.00202	0.00202				
Chloride by EPA 300	***Extracted:***	May-23-19 15:30		May-23-19 15:30		May-23-19 15:30					
	Analyzed:	May-23-19 21:08		May-23-19 21:13		May-23-19 21:18					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		138	4.95	153	4.95	24.3	4.95				
TPH by SW8015 Mod	***Extracted:***	May-26-19 10:00		May-26-19 10:00		May-29-19 11:00					
	Analyzed:	May-26-19 18:22		May-26-19 18:42		May-29-19 20:28					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0				
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0				

Jessica Kramer
Project Assistant

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625280, **Project ID:** 212C-MD-01765

Lab Batch #: 3090431 **Sample:** 625280-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 12:25

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.0	99.8	90	70-135	
o-Terphenyl	44.0	49.9	88	70-135	

Lab Batch #: 3090431 **Sample:** 625280-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 13:23

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.2	99.7	94	70-135	
o-Terphenyl	46.3	49.9	93	70-135	

Lab Batch #: 3090431 **Sample:** 625280-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 13:43

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.0	99.8	93	70-135	
o-Terphenyl	46.2	49.9	93	70-135	

Lab Batch #: 3090431 **Sample:** 625280-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 14:02

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.4	99.9	91	70-135	
o-Terphenyl	44.8	50.0	90	70-135	

Lab Batch #: 3090431 **Sample:** 625280-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 14:21

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.5	99.9	92	70-135	
o-Terphenyl	45.2	50.0	90	70-135	

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

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625280, **Project ID:** 212C-MD-01765

Lab Batch #: 3090431 **Sample:** 625280-018 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 14:41

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.4	100	88	70-135	
o-Terphenyl	43.7	50.0	87	70-135	

Lab Batch #: 3090431 **Sample:** 625280-023 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 15:02

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.4	99.8	92	70-135	
o-Terphenyl	45.0	49.9	90	70-135	

Lab Batch #: 3090431 **Sample:** 625280-026 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 15:23

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.3	99.7	88	70-135	
o-Terphenyl	43.0	49.9	86	70-135	

Lab Batch #: 3090431 **Sample:** 625280-031 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 15:43

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.5	99.7	91	70-135	
o-Terphenyl	44.6	49.9	89	70-135	

Lab Batch #: 3090431 **Sample:** 625280-035 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 16:03

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.4	99.9	91	70-135	
o-Terphenyl	44.4	50.0	89	70-135	

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

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625280, **Project ID:** 212C-MD-01765

Lab Batch #: 3090431 **Sample:** 625280-038 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 16:43

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.2	99.9	92	70-135	
o-Terphenyl	45.1	50.0	90	70-135	

Lab Batch #: 3090431 **Sample:** 625280-042 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 17:03

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.9	99.8	93	70-135	
o-Terphenyl	45.9	49.9	92	70-135	

Lab Batch #: 3090431 **Sample:** 625280-045 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 17:23

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.2	100	93	70-135	
o-Terphenyl	46.1	50.0	92	70-135	

Lab Batch #: 3090431 **Sample:** 625280-047 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 17:42

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.2	100	92	70-135	
o-Terphenyl	45.4	50.0	91	70-135	

Lab Batch #: 3090431 **Sample:** 625280-048 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 18:03

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.6	99.7	93	70-135	
o-Terphenyl	45.5	49.9	91	70-135	

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

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625280, **Project ID:** 212C-MD-01765

Lab Batch #: 3090431 **Sample:** 625280-049 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 18:22

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.2	99.9	92	70-135	
o-Terphenyl	44.4	50.0	89	70-135	

Lab Batch #: 3090431 **Sample:** 625280-050 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 18:42

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.1	99.8	93	70-135	
o-Terphenyl	45.1	49.9	90	70-135	

Lab Batch #: 3090399 **Sample:** 625280-048 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 17:27

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	70-130	
4-Bromofluorobenzene	0.0342	0.0300	114	70-130	

Lab Batch #: 3090390 **Sample:** 625280-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 17:35

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	70-130	
4-Bromofluorobenzene	0.0277	0.0300	92	70-130	

Lab Batch #: 3090399 **Sample:** 625280-049 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 17:46

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	70-130	
4-Bromofluorobenzene	0.0345	0.0300	115	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625280, **Project ID:** 212C-MD-01765

Lab Batch #: 3090399 **Sample:** 625280-050 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 21:13

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	70-130	
4-Bromofluorobenzene	0.0338	0.0300	113	70-130	

Lab Batch #: 3090390 **Sample:** 625280-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 21:23

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	70-130	
4-Bromofluorobenzene	0.0288	0.0300	96	70-130	

Lab Batch #: 3090399 **Sample:** 625280-051 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 21:32

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	70-130	
4-Bromofluorobenzene	0.0351	0.0300	117	70-130	

Lab Batch #: 3090390 **Sample:** 625280-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 21:42

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	70-130	
4-Bromofluorobenzene	0.0281	0.0300	94	70-130	

Lab Batch #: 3090390 **Sample:** 625280-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 22:01

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	70-130	
4-Bromofluorobenzene	0.0292	0.0300	97	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625280, **Project ID:** 212C-MD-01765

Lab Batch #: 3090390 **Sample:** 625280-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 22:20

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0318	0.0300	106	70-130	
4-Bromofluorobenzene	0.0315	0.0300	105	70-130	

Lab Batch #: 3090390 **Sample:** 625280-018 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 22:39

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	70-130	
4-Bromofluorobenzene	0.0304	0.0300	101	70-130	

Lab Batch #: 3090390 **Sample:** 625280-023 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 22:58

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	70-130	
4-Bromofluorobenzene	0.0305	0.0300	102	70-130	

Lab Batch #: 3090390 **Sample:** 625280-026 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 23:17

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0312	0.0300	104	70-130	
4-Bromofluorobenzene	0.0288	0.0300	96	70-130	

Lab Batch #: 3090390 **Sample:** 625280-031 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 23:36

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	70-130	
4-Bromofluorobenzene	0.0298	0.0300	99	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625280, **Project ID:** 212C-MD-01765

Lab Batch #: 3090390 **Sample:** 625280-035 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 23:55

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	70-130	
4-Bromofluorobenzene	0.0303	0.0300	101	70-130	

Lab Batch #: 3090390 **Sample:** 625280-038 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/29/19 00:14

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	70-130	
4-Bromofluorobenzene	0.0308	0.0300	103	70-130	

Lab Batch #: 3090434 **Sample:** 625280-042 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/29/19 03:22

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	70-130	
4-Bromofluorobenzene	0.0279	0.0300	93	70-130	

Lab Batch #: 3090434 **Sample:** 625280-045 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/29/19 03:41

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	70-130	
4-Bromofluorobenzene	0.0304	0.0300	101	70-130	

Lab Batch #: 3090434 **Sample:** 625280-047 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/29/19 04:00

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	70-130	
4-Bromofluorobenzene	0.0306	0.0300	102	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625280, **Project ID:** 212C-MD-01765

Lab Batch #: 3090586 **Sample:** 625280-051 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/29/19 20:28

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.4	99.9	91	70-135	
o-Terphenyl	44.1	50.0	88	70-135	

Lab Batch #: 3090431 **Sample:** 7678725-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/26/19 11:26

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.6	100	93	70-135	
o-Terphenyl	46.4	50.0	93	70-135	

Lab Batch #: 3090399 **Sample:** 7678713-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/28/19 16:50

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	70-130	
4-Bromofluorobenzene	0.0313	0.0300	104	70-130	

Lab Batch #: 3090390 **Sample:** 7678711-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/28/19 16:56

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	70-130	
4-Bromofluorobenzene	0.0241	0.0300	80	70-130	

Lab Batch #: 3090434 **Sample:** 7678719-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/29/19 02:44

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	70-130	
4-Bromofluorobenzene	0.0246	0.0300	82	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625280, **Project ID:** 212C-MD-01765

Lab Batch #: 3090586 **Sample:** 7678857-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/29/19 12:43

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.1	100	95	70-135	
o-Terphenyl	47.9	50.0	96	70-135	

Lab Batch #: 3090431 **Sample:** 7678725-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/26/19 11:45

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	62.2	50.0	124	70-135	

Lab Batch #: 3090399 **Sample:** 7678713-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/28/19 15:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	70-130	
4-Bromofluorobenzene	0.0302	0.0300	101	70-130	

Lab Batch #: 3090390 **Sample:** 7678711-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/28/19 15:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0317	0.0300	106	70-130	
4-Bromofluorobenzene	0.0283	0.0300	94	70-130	

Lab Batch #: 3090434 **Sample:** 7678719-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/29/19 01:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	70-130	
4-Bromofluorobenzene	0.0281	0.0300	94	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625280, **Project ID:** 212C-MD-01765

Lab Batch #: 3090586 **Sample:** 7678857-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/29/19 13:02

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	100	119	70-135	
o-Terphenyl	52.2	50.0	104	70-135	

Lab Batch #: 3090431 **Sample:** 7678725-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/26/19 12:05

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	100	126	70-135	
o-Terphenyl	63.2	50.0	126	70-135	

Lab Batch #: 3090399 **Sample:** 7678713-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/28/19 15:35

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	70-130	
4-Bromofluorobenzene	0.0302	0.0300	101	70-130	

Lab Batch #: 3090390 **Sample:** 7678711-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/28/19 15:38

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0318	0.0300	106	70-130	
4-Bromofluorobenzene	0.0294	0.0300	98	70-130	

Lab Batch #: 3090434 **Sample:** 7678719-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/29/19 01:29

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	70-130	
4-Bromofluorobenzene	0.0292	0.0300	97	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625280, **Project ID:** 212C-MD-01765

Lab Batch #: 3090586 **Sample:** 7678857-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/29/19 13:22

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	57.1	50.0	114	70-135	

Lab Batch #: 3090431 **Sample:** 625280-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 12:44

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	99.8	113	70-135	
o-Terphenyl	45.6	49.9	91	70-135	

Lab Batch #: 3090399 **Sample:** 625614-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 15:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	70-130	
4-Bromofluorobenzene	0.0311	0.0300	104	70-130	

Lab Batch #: 3090390 **Sample:** 625613-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 15:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0318	0.0300	106	70-130	
4-Bromofluorobenzene	0.0299	0.0300	100	70-130	

Lab Batch #: 3090434 **Sample:** 625615-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/29/19 01:48

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	70-130	
4-Bromofluorobenzene	0.0296	0.0300	99	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625280, **Project ID:** 212C-MD-01765

Lab Batch #: 3090586 **Sample:** 625759-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/29/19 14:01

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	99.8	117	70-135	
o-Terphenyl	53.1	49.9	106	70-135	

Lab Batch #: 3090431 **Sample:** 625280-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/26/19 13:04

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	52.7	50.0	105	70-135	

Lab Batch #: 3090399 **Sample:** 625614-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 16:13

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	70-130	
4-Bromofluorobenzene	0.0332	0.0300	111	70-130	

Lab Batch #: 3090390 **Sample:** 625613-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 16:17

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0327	0.0300	109	70-130	
4-Bromofluorobenzene	0.0271	0.0300	90	70-130	

Lab Batch #: 3090434 **Sample:** 625615-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/29/19 02:07

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	70-130	
4-Bromofluorobenzene	0.0270	0.0300	90	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625280, **Project ID:** 212C-MD-01765

Lab Batch #: 3090586 **Sample:** 625759-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/29/19 14:20

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.9	119	70-135	
o-Terphenyl	53.1	50.0	106	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Order #: 625280 **Project ID:** 212C-MD-01765

Analyst: SCM **Date Prepared:** 05/28/2019 **Date Analyzed:** 05/28/2019

Lab Batch ID: 3090390 **Sample:** 7678711-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000383	0.0996	0.107	107	0.101	0.120	119	11	70-130	35	
Toluene	<0.000454	0.0996	0.0996	100	0.101	0.111	110	11	70-130	35	
Ethylbenzene	<0.000563	0.0996	0.106	106	0.101	0.118	117	11	70-130	35	
m,p-Xylenes	<0.00101	0.199	0.220	111	0.202	0.246	122	11	70-130	35	
o-Xylene	<0.000343	0.0996	0.108	108	0.101	0.121	120	11	70-130	35	

Analyst: SCM **Date Prepared:** 05/28/2019 **Date Analyzed:** 05/28/2019

Lab Batch ID: 3090399 **Sample:** 7678713-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.0998	0.101	101	0.100	0.103	103	2	70-130	35	
Toluene	<0.00200	0.0998	0.102	102	0.100	0.101	101	1	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.115	115	0.100	0.114	114	1	70-130	35	
m,p-Xylenes	<0.00399	0.200	0.241	121	0.201	0.236	117	2	70-130	35	
o-Xylene	<0.00200	0.0998	0.114	114	0.100	0.113	113	1	70-130	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Order #: 625280 **Project ID:** 212C-MD-01765

Analyst: SCM **Date Prepared:** 05/28/2019 **Date Analyzed:** 05/29/2019

Lab Batch ID: 3090434 **Sample:** 7678719-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000383	0.0996	0.103	103	0.0994	0.0997	100	3	70-130	35	
Toluene	<0.000454	0.0996	0.0954	96	0.0994	0.0915	92	4	70-130	35	
Ethylbenzene	<0.000563	0.0996	0.101	101	0.0994	0.0956	96	5	70-130	35	
m,p-Xylenes	<0.00101	0.199	0.207	104	0.199	0.198	99	4	70-130	35	
o-Xylene	<0.000343	0.0996	0.102	102	0.0994	0.0998	100	2	70-130	35	

Analyst: CHE **Date Prepared:** 05/23/2019 **Date Analyzed:** 05/23/2019

Lab Batch ID: 3090079 **Sample:** 7678489-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.858	250	243	97	250	243	97	0	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Order #: 625280 **Project ID:** 212C-MD-01765

Analyst: CHE **Date Prepared:** 05/23/2019 **Date Analyzed:** 05/24/2019

Lab Batch ID: 3090081 **Sample:** 7678490-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	246	98	250	246	98	0	90-110	20	

Analyst: CHE **Date Prepared:** 05/23/2019 **Date Analyzed:** 05/23/2019

Lab Batch ID: 3090083 **Sample:** 7678491-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	258	103	250	259	104	0	90-110	20	

Analyst: ARM **Date Prepared:** 05/26/2019 **Date Analyzed:** 05/26/2019

Lab Batch ID: 3090431 **Sample:** 7678725-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1120	112	1000	1120	112	0	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1040	104	1000	1040	104	0	70-135	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Order #: 625280 **Project ID:** 212C-MD-01765

Analyst: ARM **Date Prepared:** 05/29/2019 **Date Analyzed:** 05/29/2019

Lab Batch ID: 3090586 **Sample:** 7678857-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1070	107	1000	1060	106	1	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1010	101	1000	1020	102	1	70-135	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Order # : 625280 **Project ID:** 212C-MD-01765

Lab Batch ID: 3090390 **QC- Sample ID:** 625613-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/28/2019 **Date Prepared:** 05/28/2019 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000384	0.0998	0.110	110	0.100	0.0909	91	19	70-130	35	
Toluene	<0.000455	0.0998	0.102	102	0.100	0.0826	83	21	70-130	35	
Ethylbenzene	<0.000564	0.0998	0.109	109	0.100	0.0849	85	25	70-130	35	
m,p-Xylenes	<0.00101	0.200	0.227	114	0.200	0.174	87	26	70-130	35	
o-Xylene	0.000451	0.0998	0.110	110	0.100	0.0837	83	27	70-130	35	

Lab Batch ID: 3090399 **QC- Sample ID:** 625614-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/28/2019 **Date Prepared:** 05/28/2019 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.100	0.0761	76	0.101	0.0652	65	15	70-130	35	X
Toluene	<0.00200	0.100	0.0766	77	0.101	0.0741	73	3	70-130	35	
Ethylbenzene	<0.00200	0.100	0.0856	86	0.101	0.0751	74	13	70-130	35	
m,p-Xylenes	<0.00401	0.200	0.180	90	0.201	0.136	68	28	70-130	35	X
o-Xylene	<0.00200	0.100	0.0855	86	0.101	0.0629	62	30	70-130	35	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Order # : 625280 **Project ID:** 212C-MD-01765

Lab Batch ID: 3090434 **QC- Sample ID:** 625615-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/29/2019 **Date Prepared:** 05/28/2019 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000386	0.100	0.101	101	0.0992	0.106	107	5	70-130	35	
Toluene	<0.000457	0.100	0.0928	93	0.0992	0.0970	98	4	70-130	35	
Ethylbenzene	<0.000566	0.100	0.0967	97	0.0992	0.102	103	5	70-130	35	
m,p-Xylenes	<0.00102	0.200	0.200	100	0.198	0.208	105	4	70-130	35	
o-Xylene	0.000360	0.100	0.0987	98	0.0992	0.100	100	1	70-130	35	

Lab Batch ID: 3090079 **QC- Sample ID:** 625280-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/24/2019 **Date Prepared:** 05/23/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	526	248	661	54	248	734	84	10	90-110	20	X

Lab Batch ID: 3090079 **QC- Sample ID:** 625334-001 S **Batch #:** 1 **Matrix:** Sludge

Date Analyzed: 05/23/2019 **Date Prepared:** 05/23/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	109	250	355	98	250	353	98	1	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Order # : 625280 **Project ID:** 212C-MD-01765

Lab Batch ID: 3090081 **QC- Sample ID:** 625281-012 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/24/2019 **Date Prepared:** 05/23/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	71.1	250	317	98	250	320	100	1	90-110	20	

Lab Batch ID: 3090081 **QC- Sample ID:** 625281-013 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/24/2019 **Date Prepared:** 05/23/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	48.2	248	274	91	248	292	98	6	90-110	20	

Lab Batch ID: 3090083 **QC- Sample ID:** 625280-037 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/23/2019 **Date Prepared:** 05/23/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	564	251	810	98	251	807	97	0	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Order # : 625280 **Project ID:** 212C-MD-01765

Lab Batch ID: 3090083 **QC- Sample ID:** 625280-041 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/23/2019 **Date Prepared:** 05/23/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1120	250	1320	80	250	1320	80	0	90-110	20	X

Lab Batch ID: 3090431 **QC- Sample ID:** 625280-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/26/2019 **Date Prepared:** 05/26/2019 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	1060	106	1000	1080	108	2	70-135	20	
Diesel Range Organics (DRO)	8.92	998	1020	101	1000	1030	102	1	70-135	20	

Lab Batch ID: 3090586 **QC- Sample ID:** 625759-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/29/2019 **Date Prepared:** 05/29/2019 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	1070	107	999	1080	108	1	70-135	20	
Diesel Range Organics (DRO)	<8.11	998	1020	102	999	1060	106	4	70-135	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Analysis Request of Chain of Custody Record

lf5280

Tetra Tech, Inc.

900 West Wall Street, Ste 100
Midland,Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name:	COG	**Site Manager:**	Mike Carmona
Project Name:	White Federal 1H Flowline (5-13-19)		
Project Location: (county, state)	Eddy County, New Mexico	**Project #:**	212C-MD-01765
Invoice to:	Ike Tavarez		
Receiving Laboratory:	Xenco	**Sampler Signature:**	Devin Dominguez

Comments: Run deeper samples if TPH (GRO + DRO + MRO) exceeds 1,000 mg/kg. run deeper samples if benzene exceeds 10 mg/kg or Total BTEX exceeds 50 mg/kg.

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	TPH 8015R			Hold
	AH-1 (0-1')	5/21/2019			X				X			1	N	X		X												X							
	AH-1 (1'-1.5')	5/21/2019			X				X			1	N															X							
	AH-1 (2'-2.5')	5/21/2019			X				X			1	N															X							
	AH-1 (2.5'-3')	5/21/2019			X				X			1	N															X							
	AH-2 (0-1')	5/21/2019			X				X			1	N	X		X												X							
	AH-2 (1'-1.5')	5/21/2019			X				X			1	N															X							
	AH-2 (2'-2.5')	5/21/2019			X				X			1	N															X							
	AH-3 (0-1')	5/21/2019			X				X			1	N	X		X												X							
	AH-3 (1'-1.5')	5/21/2019			X				X			1	N															X							
	AH-4 (0-1')	5/21/2019			X				X			1	N	X		X												X							

Relinquished by:	Date: 5.23.19	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Date: 5/23/19 Time: 1048

LAB USE ONLY

Sample Temperature 3.3/3.1

REMARKS:

- ☐ STANDARD
- ☒ RUSH: Same Day 24 hr 48 hr (72 hr)
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

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Analysis Request of Chain of Custody Record

Page 2 of 5

Tetra Tech, Inc.

900 West Wall Street, Ste 100
Midland, Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: White Federal 1H Flowline (5-13-19)	
Project Location: (county, state) Eddy County, New Mexico	**Project #:** 212C-MD-01765
Invoice to: Ike Tavarez	
Receiving Laboratory: Xenco	**Sampler Signature:** Devin Dominguez

Comments: Run deeper samples if TPH (GRO + DRO + MRO) exceeds 1,000 mg/kg. run deeper samples if benzene exceeds 10 mg/kg or Total BTEX exceeds 50 mg/kg.

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None		# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	TPH 8015R			Hold
	AH-4 (1'-1.5')	5/21/2019			X				X			1	N															X						
	AH-4 (2'-2.5')	5/21/2019			X				X			1	N															X						
	AH-4 (3'-3.5')	5/21/2019			X				X			1	N															X						
	AH-5 (0-1')	5/22/2019			X				X			1	N	X		X												X						
	AH-5 (1'-1.5')	5/22/2019			X				X			1	N															X						
	AH-5 (2'-2.5')	5/22/2019			X				X			1	N															X						
	AH-5 (3'-3.5')	5/22/2019			X				X			1	N															X						
	AH-6 (0-1')	5/22/2019			X				X			1	N	X		X												X						
	AH-6 (1'-1.5')	5/22/2019			X				X			1	N															X						
	AH-6 (2'-2.5')	5/22/2019			X				X			1	N															X						

Relinquished by:	Date: 5-23-19	Time:	Received by: Date: 5/23/19 Time: 1218
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY

Sample Temperature 3.3/3.1

REMARKS:

- ☐ STANDARD
- ☒ RUSH: Same Day 24 hr 48 hr (72 hr)
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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W25200

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

900 West Wall Street, Ste 100
Midland,Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: White Federal 1H Flowline (5-13-19)	
Project Location: (county, state) Eddy County, New Mexico	**Project #:** 212C-MD-01765
Invoice to: Ike Tavarez	
Receiving Laboratory: Xenco	**Sampler Signature:** Devin Dominguez

Comments: Run deeper samples if TPH (GRO + DRO + MRO) exceeds 1,000 mg/kg. run deeper samples if benzene exceeds 10 mg/kg or Total BTEX exceeds 50 mg/kg.

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Sulfate	TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	TPH 8015R			Hold
	AH-6 (3'-3.5')	5/22/2019			X				X			1	N															X								
	AH-6 (4'-4.5')	5/22/2019			X				X			1	N															X								
	AH-7 (0-1')	5/22/2019			X				X			1	N	X		X												X								
	AH-7 (1'-1.5')	5/22/2019			X				X			1	N															X								
	AH-7 (2'-2.5')	5/22/2019			X				X			1	N															X								
	AH-8 (0-1')	5/22/2019			X				X			1	N	X		X												X								
	AH-8 (1'-1.5')	5/22/2019			X				X			1	N															X								
	AH-8 (2'-2.5')	5/22/2019			X				X			1	N															X								
	AH-8 (3'-3.5')	5/22/2019			X				X			1	N															X								
	AH-8 (4'-4.5')	5/22/2019			X				X			1	N															X								

Relinquished by:	Date: 5-23-19	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Received by: Date: 5/23/19 Time: 1048

LAB USE ONLY

Sample Temperature 3.3/3.1

REMARKS:

- ☐ STANDARD
- ☒ RUSH: Same Day 24 hr 48 hr (72 hr)
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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Analysis Request of Chain of Custody Record

Page 4 of 5

Tetra Tech, Inc.

900 West Wall Street, Ste 100
Midland,Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: White Federal 1H Flowline (5-13-19)	
Project Location: (county, state) Eddy County, New Mexico	**Project #:** 212C-MD-01765
Invoice to: Ike Tavarez	
Receiving Laboratory: Xenco	**Sampler Signature:** Devin Dominguez

Comments: Run deeper samples if TPH (GRO + DRO + MRO) exceeds 1,000 mg/kg. run deeper samples if benzene exceeds 10 mg/kg or Total BTEX exceeds 50 mg/kg.

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	TPH 8015R			Hold
	AH-9 (0-1')	5/22/2019			X				X			1	N	X		X												X							
	AH-9 (1'-1.5')	5/22/2019			X				X			1	N															X							
	AH-9 (2'-2.5')	5/22/2019			X				X			1	N															X							
	AH-9 (3'-3.5')	5/22/2019			X				X			1	N															X							
	AH-10 (0-1')	5/22/2019			X				X			1	N	X		X												X							
	AH-10 (1'-1.5')	5/22/2019			X				X			1	N															X							
	AH-10 (2'-2.5')	5/22/2019			X				X			1	N															X							
	AH-11 (0-1')	5/22/2019			X				X			1	N	X		X												X							
	AH-11 (1'-1.5')	5/22/2019			X				X			1	N															X							
	AH-11 (2'-2.5')	5/22/2019			X				X			1	N															X							

Relinquished by:	Date: 5-23-19	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Date: 5/23/19 Time: 1048

LAB USE ONLY

Sample Temperature 3.3/3.1

REMARKS:

- ☐ STANDARD
- ☒ RUSH: Same Day 24 hr 48 hr (72 hr)
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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Analysis Request of Chain of Custody Record

125780

Tetra Tech, Inc.

900 West Wall Street, Ste 100
Midland,Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name:	COG	**Site Manager:**	Mike Carmona
Project Name:	White Federal 1H Flowline (5-13-19)		
Project Location: (county, state)	Eddy County, New Mexico	**Project #:**	212C-MD-01765
Invoice to:	Ike Tavarez		
Receiving Laboratory:	Xenco	**Sampler Signature:**	Devin Dominguez

Comments: Run deeper samples if TPH (GRO + DRO + MRO) exceeds 1,000 mg/kg. run deeper samples if benzene exceeds 10 mg/kg or Total BTEX exceeds 50 mg/kg.

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None		# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	TPH 8015R			Hold
	AH-11 (3'-3.5')	5/22/2019			X				X			1	N															X							
	AH-12 (0'-1')	5/22/2019			X				X			1	N	X		X												X							
	AH-12 (1'-1.5')	5/22/2019			X				X			1	N															X							
	AH-12 (2'-2.5')	5/22/2019			X				X			1	N															X							
	AH-13 (0-1')	5/22/2019			X				X			1	N	X		X												X							
	AH-13 (1'-1.5')	5/22/2019			X				X			1	N															X							
	AH-14 (0-1')	5/22/2019			X				X			1	N	X		X												X							
	BG-1 (0-1')	5/22/2019			X				X			1	N	X		X												X							
	BG-2 (0-1')	5/22/2019			X				X			1	N	X		X												X							
	BG-3 (0-1')	5/22/2019			X				X			1	N	X		X												X							
	BG-4 (0-1')	5/22/2019			X				X			1	N	X		X												X							

Relinquished by: 5/23/19	Date:	Time:	Received by:	Date: 5/23/19	Time: 1040
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature 3.3 / 3.1

REMARKS:

- ☐ STANDARD
- ☒ RUSH: Same Day 24 hr 48 hr (72 hr)
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 05/23/2019 10:48:00 AM

Work Order #: 625280

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.1
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 05/23/2019
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 05/28/2019
Jessica Kramer

Analytical Report 625281

for

Tetra Tech- Midland

Project Manager: Mike Carmona

White Federal 1H Flowline (5-13-19)

212C-MD-01765

29-MAY-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

29-MAY-19

Project Manager: **Mike Carmona**
Tetra Tech- Midland
901 West Wall ST
Midland, TX 79701

Reference: XENCO Report No(s): **625281**
White Federal 1H Flowline (5-13-19)
Project Address: Eddy County, New Mexico

Mike Carmona:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 625281. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 625281 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 625281

Tetra Tech- Midland, Midland, TX

White Federal 1H Flowline (5-13-19)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Horizontal NW-1 (0-1')	S	05-21-19 00:00		625281-001
Horizontal NW-1 (1'-1.5')	S	05-21-19 00:00		625281-002
Horizontal NW-2 (0-1')	S	05-21-19 00:00		625281-003
Horizontal NW-2 (1'-1.5')	S	05-21-19 00:00		625281-004
Horizontal NW-3 (0-1')	S	05-21-19 00:00		625281-005
Horizontal NW-4 (0-1')	S	05-21-19 00:00		625281-006
Horizontal NW-5 (0-1')	S	05-21-19 00:00		625281-007
Horizontal NW-6 (0-1')	S	05-21-19 00:00		625281-008
Horizontal NW-6 (1'-1.5')	S	05-21-19 00:00		625281-009
Horizontal SE-1 (0-1')	S	05-21-19 00:00		625281-010
Horizontal SE-1 (1-1.5')	S	05-21-19 00:00		625281-011
Horizontal SE-2 (0-1')	S	05-21-19 00:00		625281-012
Horizontal SE-3 (0-1')	S	05-21-19 00:00		625281-013
Horizontal SE-4 (0-1')	S	05-21-19 00:00		625281-014
Horizontal SE-4 (1-1.5')	S	05-21-19 00:00		625281-015

CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: White Federal 1H Flowline (5-13-19)

Project ID:	*212C-MD-01765*	Report Date:	*29-MAY-19*
Work Order Number(s):	*625281*	Date Received:	*05/23/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3090088 Chloride by EPA 300
Lab Sample ID 625335-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).
Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.
Samples in the analytical batch are: 625281-003, -004, -005, -006, -007, -008, -009, -010, -011, -014.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3090331 TPH by SW8015 Mod
Surrogate o-Terphenyl recovered below QC limits. Matrix interferences is suspected.
Samples affected are: 625281-008,625281-007.

Batch: LBA-3090399 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 625281-012,625281-008.

Batch: LBA-3090434 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 625281

Tetra Tech- Midland, Midland, TX

Project Name: White Federal 1H Flowline (5-13-19)

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy County, New Mexico

Date Received in Lab: Thu May-23-19 10:48 am
Report Date: 29-MAY-19
Project Manager: Jessica Kramer

Analysis Requested		625281-001		625281-002		625281-003		625281-004		625281-005		625281-006	
	Field Id:	Horizontal NW-1 (0-1')		Horizontal NW-1 (1'-1.5')		Horizontal NW-2 (0-1')		Horizontal NW-2 (1'-1.5')		Horizontal NW-3 (0-1')		Horizontal NW-4 (0-1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-21-19 00:00		May-21-19 00:00		May-21-19 00:00		May-21-19 00:00		May-21-19 00:00		May-21-19 00:00	
BTEX by EPA 8021B	Extracted:	May-28-19 15:15				May-28-19 15:15				May-28-19 15:15		May-28-19 15:15	
	Analyzed:	May-28-19 21:51				May-28-19 22:10				May-28-19 22:29		May-28-19 22:48	
	Units/RL:	mg/kg	RL			mg/kg	RL			mg/kg	RL	mg/kg	RL
Benzene		<0.00199	0.00199			<0.00198	0.00198			<0.00201	0.00201	<0.00199	0.00199
Toluene		<0.00199	0.00199			<0.00198	0.00198			<0.00201	0.00201	<0.00199	0.00199
Ethylbenzene		<0.00199	0.00199			<0.00198	0.00198			<0.00201	0.00201	<0.00199	0.00199
m,p-Xylenes		<0.00398	0.00398			<0.00397	0.00397			<0.00402	0.00402	<0.00398	0.00398
o-Xylene		<0.00199	0.00199			<0.00198	0.00198			<0.00201	0.00201	<0.00199	0.00199
Total Xylenes		<0.00199	0.00199			<0.00198	0.00198			<0.00201	0.00201	<0.00199	0.00199
Total BTEX		<0.00199	0.00199			<0.00198	0.00198			<0.00201	0.00201	<0.00199	0.00199
Chloride by EPA 300	Extracted:	May-23-19 15:30		May-23-19 15:30		May-23-19 16:40		May-23-19 16:40		May-23-19 16:40		May-23-19 16:40	
	Analyzed:	May-23-19 21:23		May-23-19 21:28		May-24-19 06:38		May-24-19 06:16		May-24-19 06:45		May-24-19 06:52	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		6750	49.5	35.8	4.99	1460	5.03	276	4.96	217	4.99	279	4.96
TPH by SW8015 Mod	Extracted:	May-25-19 10:00				May-25-19 10:00				May-25-19 10:00		May-25-19 10:00	
	Analyzed:	May-25-19 18:40				May-25-19 19:05				May-25-19 19:29		May-25-19 20:18	
	Units/RL:	mg/kg	RL			mg/kg	RL			mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0			<14.9	14.9			<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0			<14.9	14.9			<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0			<14.9	14.9			<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0			<14.9	14.9			<15.0	15.0	<15.0	15.0

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 625281

Tetra Tech- Midland, Midland, TX

Project Name: White Federal 1H Flowline (5-13-19)

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy County, New Mexico

Date Received in Lab: Thu May-23-19 10:48 am
Report Date: 29-MAY-19
Project Manager: Jessica Kramer

Analysis Requested		625281-007		625281-008		625281-009		625281-010		625281-011		625281-012	
	Field Id:	Horizontal NW-5 (0-1')		Horizontal NW-6 (0-1')		Horizontal NW-6 (1'-1.5')		Horizontal SE-1 (0-1')		Horizontal SE-1 (1-1.5')		Horizontal SE-2 (0-1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-21-19 00:00		May-21-19 00:00		May-21-19 00:00		May-21-19 00:00		May-21-19 00:00		May-21-19 00:00	
BTEX by EPA 8021B	Extracted:	May-28-19 15:15		May-28-19 15:15				May-28-19 15:15				May-28-19 15:15	
	Analyzed:	May-28-19 23:07		May-28-19 23:26				May-28-19 23:45				May-29-19 00:04	
	Units/RL:	mg/kg	RL	mg/kg	RL			mg/kg	RL			mg/kg	RL
Benzene		<0.00202	0.00202	<0.00200	0.00200			<0.00200	0.00200			<0.00201	0.00201
Toluene		<0.00202	0.00202	<0.00200	0.00200			<0.00200	0.00200			<0.00201	0.00201
Ethylbenzene		<0.00202	0.00202	<0.00200	0.00200			<0.00200	0.00200			<0.00201	0.00201
m,p-Xylenes		<0.00403	0.00403	<0.00399	0.00399			<0.00400	0.00400			<0.00402	0.00402
o-Xylene		<0.00202	0.00202	<0.00200	0.00200			<0.00200	0.00200			<0.00201	0.00201
Total Xylenes		<0.00202	0.00202	<0.00200	0.00200			<0.00200	0.00200			<0.00201	0.00201
Total BTEX		<0.00202	0.00202	<0.00200	0.00200			<0.00200	0.00200			<0.00201	0.00201
Chloride by EPA 300	Extracted:	May-23-19 16:40		May-23-19 16:40		May-23-19 16:40		May-23-19 16:40		May-23-19 16:40		May-23-19 15:00	
	Analyzed:	May-24-19 06:59		May-24-19 07:21		May-24-19 07:29		May-24-19 07:36		May-24-19 07:43		May-24-19 02:17	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		260	5.05	854	4.98	403	5.00	12800	100	328	5.00	71.1	4.99
TPH by SW8015 Mod	Extracted:	May-25-19 10:00		May-25-19 10:00				May-25-19 10:00				May-25-19 10:00	
	Analyzed:	May-25-19 20:43		May-25-19 21:07				May-25-19 21:32				May-25-19 21:56	
	Units/RL:	mg/kg	RL	mg/kg	RL			mg/kg	RL			mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0			<14.9	14.9			<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0			<14.9	14.9			<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0			<14.9	14.9			<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0			<14.9	14.9			<15.0	15.0

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 625281

Tetra Tech- Midland, Midland, TX

Project Name: White Federal 1H Flowline (5-13-19)

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy County, New Mexico

Date Received in Lab: Thu May-23-19 10:48 am
Report Date: 29-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	625281-013		625281-014		625281-015							
	Field Id:	Horizontal SE-3 (0-1')		Horizontal SE-4 (0-1')		Horizontal SE-4 (1-1.5')							
	Depth:												
	Matrix:	SOIL		SOIL		SOIL							
	Sampled:	May-21-19 00:00		May-21-19 00:00		May-21-19 00:00							
BTEX by EPA 8021B	*Extracted:*	May-28-19 16:00		May-28-19 16:00									
	Analyzed:	May-29-19 04:19		May-29-19 04:38									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Benzene		<0.00198	0.00198	<0.00200	0.00200								
Toluene		<0.00198	0.00198	<0.00200	0.00200								
Ethylbenzene		<0.00198	0.00198	<0.00200	0.00200								
m,p-Xylenes		<0.00397	0.00397	<0.00401	0.00401								
o-Xylene		<0.00198	0.00198	<0.00200	0.00200								
Total Xylenes		<0.00198	0.00198	<0.00200	0.00200								
Total BTEX		<0.00198	0.00198	<0.00200	0.00200								
Chloride by EPA 300	*Extracted:*	May-23-19 15:00		May-23-19 16:40		May-28-19 13:10							
	Analyzed:	May-24-19 03:58		May-24-19 07:50		May-28-19 18:17							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Chloride		48.2	4.95	2670	25.0	481	4.96						
TPH by SW8015 Mod	*Extracted:*	May-25-19 10:00		May-25-19 10:00									
	Analyzed:	May-25-19 22:21		May-25-19 22:45									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0								
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0								
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0								
Total TPH		<15.0	15.0	<15.0	15.0								

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

Version: 1.%

Jessica Kramer
Project Assistant

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625281, **Project ID:** 212C-MD-01765

Lab Batch #: 3090331 **Sample:** 625281-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/25/19 18:40

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.7	102	70-135	
o-Terphenyl	47.0	49.9	94	70-135	

Lab Batch #: 3090331 **Sample:** 625281-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/25/19 19:05

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.6	102	70-135	
o-Terphenyl	37.0	49.8	74	70-135	

Lab Batch #: 3090331 **Sample:** 625281-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/25/19 19:29

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.9	102	70-135	
o-Terphenyl	39.2	50.0	78	70-135	

Lab Batch #: 3090331 **Sample:** 625281-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/25/19 20:18

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.9	99.7	95	70-135	
o-Terphenyl	42.8	49.9	86	70-135	

Lab Batch #: 3090331 **Sample:** 625281-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/25/19 20:43

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.5	99.7	90	70-135	
o-Terphenyl	34.2	49.9	69	70-135	**

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

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625281, **Project ID:** 212C-MD-01765

Lab Batch #: 3090331 **Sample:** 625281-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/25/19 21:07

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.9	99.8	88	70-135	
o-Terphenyl	34.4	49.9	69	70-135	**

Lab Batch #: 3090331 **Sample:** 625281-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/25/19 21:32

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.0	99.6	98	70-135	
o-Terphenyl	46.2	49.8	93	70-135	

Lab Batch #: 3090331 **Sample:** 625281-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/25/19 21:56

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.4	99.8	93	70-135	
o-Terphenyl	39.9	49.9	80	70-135	

Lab Batch #: 3090331 **Sample:** 625281-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/25/19 22:21

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.1	100	98	70-135	
o-Terphenyl	41.3	50.0	83	70-135	

Lab Batch #: 3090331 **Sample:** 625281-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/25/19 22:45

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.1	99.9	90	70-135	
o-Terphenyl	38.5	50.0	77	70-135	

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

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625281, **Project ID:** 212C-MD-01765

Lab Batch #: 3090399 **Sample:** 625281-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 21:51

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	70-130	
4-Bromofluorobenzene	0.0341	0.0300	114	70-130	

Lab Batch #: 3090399 **Sample:** 625281-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 22:10

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	70-130	
4-Bromofluorobenzene	0.0357	0.0300	119	70-130	

Lab Batch #: 3090399 **Sample:** 625281-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 22:29

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	70-130	
4-Bromofluorobenzene	0.0355	0.0300	118	70-130	

Lab Batch #: 3090399 **Sample:** 625281-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 22:48

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	70-130	
4-Bromofluorobenzene	0.0355	0.0300	118	70-130	

Lab Batch #: 3090399 **Sample:** 625281-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 23:07

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	70-130	
4-Bromofluorobenzene	0.0359	0.0300	120	70-130	

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

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625281, **Project ID:** 212C-MD-01765

Lab Batch #: 3090399 **Sample:** 625281-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 23:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	70-130	
4-Bromofluorobenzene	0.0432	0.0300	144	70-130	**

Lab Batch #: 3090399 **Sample:** 625281-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 23:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	70-130	
4-Bromofluorobenzene	0.0356	0.0300	119	70-130	

Lab Batch #: 3090399 **Sample:** 625281-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/29/19 00:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	70-130	
4-Bromofluorobenzene	0.0415	0.0300	138	70-130	**

Lab Batch #: 3090434 **Sample:** 625281-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/29/19 04:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	70-130	
4-Bromofluorobenzene	0.0295	0.0300	98	70-130	

Lab Batch #: 3090434 **Sample:** 625281-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/29/19 04:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	70-130	
4-Bromofluorobenzene	0.0310	0.0300	103	70-130	

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

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625281, **Project ID:** 212C-MD-01765

Lab Batch #: 3090331 **Sample:** 7678657-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/25/19 13:41

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.7	100	99	70-135	
o-Terphenyl	51.8	50.0	104	70-135	

Lab Batch #: 3090399 **Sample:** 7678713-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/28/19 16:50

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	70-130	
4-Bromofluorobenzene	0.0313	0.0300	104	70-130	

Lab Batch #: 3090434 **Sample:** 7678719-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/29/19 02:44

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	70-130	
4-Bromofluorobenzene	0.0246	0.0300	82	70-130	

Lab Batch #: 3090331 **Sample:** 7678657-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/25/19 14:06

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.4	100	97	70-135	
o-Terphenyl	54.6	50.0	109	70-135	

Lab Batch #: 3090399 **Sample:** 7678713-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/28/19 15:16

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	70-130	
4-Bromofluorobenzene	0.0302	0.0300	101	70-130	

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

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625281, **Project ID:** 212C-MD-01765

Lab Batch #: 3090434 **Sample:** 7678719-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/29/19 01:10

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	70-130	
4-Bromofluorobenzene	0.0281	0.0300	94	70-130	

Lab Batch #: 3090331 **Sample:** 7678657-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/25/19 14:31

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	62.0	50.0	124	70-135	

Lab Batch #: 3090399 **Sample:** 7678713-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/28/19 15:35

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	70-130	
4-Bromofluorobenzene	0.0302	0.0300	101	70-130	

Lab Batch #: 3090434 **Sample:** 7678719-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/29/19 01:29

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	70-130	
4-Bromofluorobenzene	0.0292	0.0300	97	70-130	

Lab Batch #: 3090331 **Sample:** 625271-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/25/19 15:21

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.2	99.9	83	70-135	
o-Terphenyl	36.8	50.0	74	70-135	

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

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Orders : 625281, **Project ID:** 212C-MD-01765

Lab Batch #: 3090399 **Sample:** 625614-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 15:54

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	70-130	
4-Bromofluorobenzene	0.0311	0.0300	104	70-130	

Lab Batch #: 3090434 **Sample:** 625615-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/29/19 01:48

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	70-130	
4-Bromofluorobenzene	0.0296	0.0300	99	70-130	

Lab Batch #: 3090331 **Sample:** 625271-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/25/19 15:46

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.9	100	83	70-135	
o-Terphenyl	35.5	50.0	71	70-135	

Lab Batch #: 3090399 **Sample:** 625614-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/28/19 16:13

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	70-130	
4-Bromofluorobenzene	0.0332	0.0300	111	70-130	

Lab Batch #: 3090434 **Sample:** 625615-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/29/19 02:07

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	70-130	
4-Bromofluorobenzene	0.0270	0.0300	90	70-130	

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

Version: 1.%

BS / BSD Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Order #: 625281 **Project ID:** 212C-MD-01765

Analyst: SCM **Date Prepared:** 05/28/2019 **Date Analyzed:** 05/28/2019

Lab Batch ID: 3090399 **Sample:** 7678713-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.0998	0.101	101	0.100	0.103	103	2	70-130	35	
Toluene	<0.00200	0.0998	0.102	102	0.100	0.101	101	1	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.115	115	0.100	0.114	114	1	70-130	35	
m,p-Xylenes	<0.00399	0.200	0.241	121	0.201	0.236	117	2	70-130	35	
o-Xylene	<0.00200	0.0998	0.114	114	0.100	0.113	113	1	70-130	35	

Analyst: SCM **Date Prepared:** 05/28/2019 **Date Analyzed:** 05/29/2019

Lab Batch ID: 3090434 **Sample:** 7678719-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000383	0.0996	0.103	103	0.0994	0.0997	100	3	70-130	35	
Toluene	<0.000454	0.0996	0.0954	96	0.0994	0.0915	92	4	70-130	35	
Ethylbenzene	<0.000563	0.0996	0.101	101	0.0994	0.0956	96	5	70-130	35	
m,p-Xylenes	<0.00101	0.199	0.207	104	0.199	0.198	99	4	70-130	35	
o-Xylene	<0.000343	0.0996	0.102	102	0.0994	0.0998	100	2	70-130	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

BS / BSD Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Order #: 625281 **Project ID:** 212C-MD-01765

Analyst: CHE **Date Prepared:** 05/23/2019 **Date Analyzed:** 05/24/2019

Lab Batch ID: 3090081 **Sample:** 7678490-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	246	98	250	246	98	0	90-110	20	

Analyst: CHE **Date Prepared:** 05/23/2019 **Date Analyzed:** 05/23/2019

Lab Batch ID: 3090083 **Sample:** 7678491-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	258	103	250	259	104	0	90-110	20	

Analyst: CHE **Date Prepared:** 05/23/2019 **Date Analyzed:** 05/24/2019

Lab Batch ID: 3090088 **Sample:** 7678496-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	247	99	250	246	98	0	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

BS / BSD Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Order #: 625281 **Project ID:** 212C-MD-01765

Analyst: CHE **Date Prepared:** 05/28/2019 **Date Analyzed:** 05/28/2019

Lab Batch ID: 3090379 **Sample:** 7678648-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.858	250	237	95	250	238	95	0	90-110	20	

Analyst: ARM **Date Prepared:** 05/25/2019 **Date Analyzed:** 05/25/2019

Lab Batch ID: 3090331 **Sample:** 7678657-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	991	99	1000	1030	103	4	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	938	94	1000	1060	106	12	70-135	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Order # : 625281 **Project ID:** 212C-MD-01765

Lab Batch ID: 3090399 **QC- Sample ID:** 625614-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/28/2019 **Date Prepared:** 05/28/2019 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.100	0.0761	76	0.101	0.0652	65	15	70-130	35	X
Toluene	<0.00200	0.100	0.0766	77	0.101	0.0741	73	3	70-130	35	
Ethylbenzene	<0.00200	0.100	0.0856	86	0.101	0.0751	74	13	70-130	35	
m,p-Xylenes	<0.00401	0.200	0.180	90	0.201	0.136	68	28	70-130	35	X
o-Xylene	<0.00200	0.100	0.0855	86	0.101	0.0629	62	30	70-130	35	X

Lab Batch ID: 3090434 **QC- Sample ID:** 625615-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/29/2019 **Date Prepared:** 05/28/2019 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000386	0.100	0.101	101	0.0992	0.106	107	5	70-130	35	
Toluene	<0.000457	0.100	0.0928	93	0.0992	0.0970	98	4	70-130	35	
Ethylbenzene	<0.000566	0.100	0.0967	97	0.0992	0.102	103	5	70-130	35	
m,p-Xylenes	<0.00102	0.200	0.200	100	0.198	0.208	105	4	70-130	35	
o-Xylene	0.000360	0.100	0.0987	98	0.0992	0.100	100	1	70-130	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Order # : 625281 **Project ID:** 212C-MD-01765

Lab Batch ID: 3090081 **QC- Sample ID:** 625281-012 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/24/2019 **Date Prepared:** 05/23/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	71.1	250	317	98	250	320	100	1	90-110	20	

Lab Batch ID: 3090081 **QC- Sample ID:** 625281-013 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/24/2019 **Date Prepared:** 05/23/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	48.2	248	274	91	248	292	98	6	90-110	20	

Lab Batch ID: 3090083 **QC- Sample ID:** 625280-037 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/23/2019 **Date Prepared:** 05/23/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	564	251	810	98	251	807	97	0	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Order # : 625281 **Project ID:** 212C-MD-01765

Lab Batch ID: 3090083 **QC- Sample ID:** 625280-041 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/23/2019 **Date Prepared:** 05/23/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1120	250	1320	80	250	1320	80	0	90-110	20	X

Lab Batch ID: 3090088 **QC- Sample ID:** 625281-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/24/2019 **Date Prepared:** 05/23/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	276	248	458	73	248	515	96	12	90-110	20	X

Lab Batch ID: 3090088 **QC- Sample ID:** 625335-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/24/2019 **Date Prepared:** 05/23/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.865	252	246	98	252	246	98	0	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: White Federal 1H Flowline (5-13-19)

Work Order # : 625281 **Project ID:** 212C-MD-01765

Lab Batch ID: 3090379 **QC- Sample ID:** 625611-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/28/2019 **Date Prepared:** 05/28/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	23.4	250	257	93	250	259	94	1	90-110	20	

Lab Batch ID: 3090379 **QC- Sample ID:** 625616-008 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/28/2019 **Date Prepared:** 05/28/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	371	251	595	89	251	594	89	0	90-110	20	X

Lab Batch ID: 3090331 **QC- Sample ID:** 625271-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/25/2019 **Date Prepared:** 05/25/2019 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	8.90	999	877	87	1000	869	86	1	70-135	20	
Diesel Range Organics (DRO)	9.43	999	822	81	1000	829	82	1	70-135	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Analysis Request of Chain of Custody Record

bf52781

Tetra Tech, Inc.

900 West Wall Street, Ste 100
Midland,Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name:	COG	**Site Manager:**	Mike Carmona
Project Name:	White Federal 1H Flowline (5-13-19)		
Project Location: (county, state)	Eddy County, New Mexico	**Project #:**	212C-MD-01765
Invoice to:	Ike Tavarez		
Receiving Laboratory:	Xenco	**Sampler Signature:**	Devin Dominguez

Comments: Run deeper samples if TPH (GRO + DRO + MRO) exceeds 1,000 mg/kg. run deeper samples if benzene exceeds 10 mg/kg or Total BTEX exceeds 50 mg/kg.

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None		# CONTAINERS	FILTERED (Y/N)
	Horizontal NW-1 (0-1')	5/21/2019			X				X			1	N
	Horizontal NW-1 (1'-1.5')	5/21/2019			X				X			1	N
	Horizontal NW-2 (0-1')	5/21/2019			X				X			1	N
	Horizontal NW-2 (1'-1.5')	5/21/2019			X				X			1	N
	Horizontal NW-3 (0-1')	5/21/2019			X				X			1	N
	Horizontal NW-4 (0-1')	5/21/2019			X				X			1	N
	Horizontal NW-5 (0-1')	5/21/2019			X				X			1	N
	Horizontal NW-6 (0-1')	5/21/2019			X				X			1	N
	Horizontal NW-6 (1'-1.5')	5/21/2019			X				X			1	N
	Horizontal SE-1 (0-1')	5/21/2019			X				X			1	N
	Horizontal SE-1 (1-1.5')	5/21/2019			X				X			1	N

ANALYSIS REQUEST
(Circle or Specify Method No.)

	BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	TPH 8015R			Hold
	X			X												X							
																X							
	X			X												X							
																X							
	X			X												X							
	X			X												X							
	X			X												X							
	X			X												X							
																X							
	X			X												X							
																X							

Relinquished by: Date: 5-23-19 Time:
Received by: Date: 5/23/19 Time: 1018

Relinquished by: Date: Time:
Received by: Date: Time:

Relinquished by: Date: Time:
Received by: Date: Time:

LAB USE ONLY
Sample Temperature
3.3/3.1

REMARKS:
- ☐ STANDARD
- ☒ RUSH: Same Day 24 hr 48 hr (72 hr)
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Analysis Request of Chain of Custody Record

675281

Page 2 of 2

Tetra Tech, Inc.

900 West Wall Street, Ste 100
Midland,Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: White Federal 1H Flowline (5-13-19)	
Project Location: (county, state) Eddy County, New Mexico	**Project #:** 212C-MD-01765
Invoice to: Ike Tavarez	
Receiving Laboratory: Xenco	**Sampler Signature:** Devin Dominguez

Comments: Run deeper samples if TPH (GRO + DRO + MRO) exceeds 1,000 mg/kg. run deeper samples if benzene exceeds 10 mg/kg or Total BTEX exceeds 50 mg/kg.

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	# CONTAINERS	FILTERED (Y/N)
	Horizontal SE-2 (0-1')	5/21/2019			X				X		1	N
	Horizontal SE-3 (0-1')	5/21/2019			X				X		1	N
	Horizontal SE-4 (0-1')	5/21/2019			X				X		1	N
	Horizontal SE-4 (1'-1.5')	5/21/2019			X				X		1	N

ANALYSIS REQUEST
(Circle or Specify Method No.)

BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	TPH 8015R			Hold
X		X												X							
X		X												X							
X		X												X							
														X							

Relinquished by: Date: 5-23-19 Time:
Received by: Date: 5/23/19 Time: 1410

Relinquished by: Date: Time:
Received by: Date: Time:

Relinquished by: Date: Time:
Received by: Date: Time:

LAB USE ONLY

Sample Temperature 3.3/3.1

REMARKS:

- ☐ STANDARD
- ☒ RUSH: Same Day 24 hr 48 hr (72 hr)
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Final 1.000

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 05/23/2019 10:48:00 AM

Work Order #: 625281

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.1
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 05/23/2019
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 05/28/2019
Jessica Kramer

Analytical Report 628192

for

Tetra Tech- Midland

Project Manager: Mike Carmona

White Fed 1H Flowline

212C-MD-01765

25-JUN-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

25-JUN-19

Project Manager: **Mike Carmona**
Tetra Tech- Midland
901 West Wall ST
Midland, TX 79701

Reference: XENCO Report No(s): **628192**
White Fed 1H Flowline
Project Address: Eddy Co,NM

Mike Carmona:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 628192. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 628192 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

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

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

Sample Cross Reference 628192

Tetra Tech- Midland, Midland, TX

White Fed 1H Flowline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH #1 (0-1')	S	06-18-19 00:00		628192-001
AH #1 (1-1.5')	S	06-18-19 00:00		628192-002
AH #1 (2-2.5')	S	06-18-19 00:00		628192-003
AH #1 (3-3.5')	S	06-18-19 00:00		628192-004
AH #2 (0-1')	S	06-18-19 00:00		628192-005
AH #2 (1-1.5')	S	06-18-19 00:00		628192-006
AH #3 (0-1')	S	06-18-19 00:00		628192-007
AH #3 (1-1.5')	S	06-18-19 00:00		628192-008
AH #4 (0-1')	S	06-18-19 00:00		628192-009
AH #4 (1-1.5')	S	06-18-19 00:00		628192-010
AH #4 (2-2.5')	S	06-18-19 00:00		628192-011
AH #5 (0-1')	S	06-18-19 00:00		628192-012
AH #5(1-1.5')	S	06-18-19 00:00		628192-013
AH #5 (2-2.5')	S	06-18-19 00:00		628192-014
AH #5 (3-3.5')	S	06-18-19 00:00		628192-015
AH #6 (0-1')	S	06-18-19 00:00		628192-016
AH #6 (1-1.5')	S	06-18-19 00:00		628192-017
AH #6 (2-2.5')	S	06-18-19 00:00		628192-018
AH #6 (3-3.5')	S	06-18-19 00:00		628192-019
AH #6 (4-4.5')	S	06-18-19 00:00		628192-020
AH #6 (5-5.5')	S	06-18-19 00:00		628192-021
AH #7 (0-1')	S	06-18-19 00:00		628192-022
AH #7 (1-1.5')	S	06-18-19 00:00		628192-023
AH #7 (2-2.5')	S	06-18-19 00:00		628192-024
AH #8 (0-1')	S	06-18-19 00:00		628192-025
AH #8 (1-1.5')	S	06-18-19 00:00		628192-026
AH #8 (2-2.5')	S	06-18-19 00:00		628192-027
AH #9 (0-1')	S	06-18-19 00:00		628192-028
AH #9 (1-1.5')	S	06-18-19 00:00		628192-029
AH #9 (2-2.5')	S	06-18-19 00:00		628192-030
AH #9 (3-3.5')	S	06-18-19 00:00		628192-031
AH #10 (0-1')	S	06-18-19 00:00		628192-032
AH #10 (1-1.5')	S	06-18-19 00:00		628192-033
AH #10 (2-2.5')	S	06-18-19 00:00		628192-034
AH #11 (0-1')	S	06-18-19 00:00		628192-035
AH #11 (1-1'.5)	S	06-18-19 00:00		628192-036
AH #11 (2-2.5')	S	06-18-19 00:00		628192-037
AH #11 (3-3.5')	S	06-18-19 00:00		628192-038
AH #12 (0-1')	S	06-18-19 00:00		628192-039
AH #12 (1-1.5')	S	06-18-19 00:00		628192-040
AH #13 (0-1')	S	06-18-19 00:00		628192-041
AH #13 (1-1.5')	S	06-18-19 00:00		628192-042
AH #13 (2-2.5')	S	06-18-19 00:00		628192-043

Sample Cross Reference 628192

Tetra Tech- Midland, Midland, TX

White Fed 1H Flowline

AH #14 (0-1')	S	06-18-19 00:00	628192-044
AH #14 (1-1.5')	S	06-18-19 00:00	628192-045

CASE NARRATIVE

Client Name: Tetra Tech- Midland
Project Name: White Fed 1H Flowline

Project ID: *212C-MD-01765*
Work Order Number(s): *628192*

Report Date: *25-JUN-19*
Date Received: *06/19/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3092996 Chloride by EPA 300
Lab Sample ID 628192-026 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 628192-018, -019, -020, -021, -022, -023, -024, -025, -026, -027, -028, -029, -030, -031, -032, -033, -034, -035, -036, -037.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3093264 Chloride by EPA 300
Lab Sample ID 628335-006 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 628192-043, -044, -045.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 628192

Tetra Tech- Midland, Midland, TX

Project Name: White Fed 1H Flowline

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy Co,NM

Date Received in Lab: Wed Jun-19-19 11:40 am
Report Date: 25-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628192-001		628192-002		628192-003		628192-004		628192-005		628192-006	
	Field Id:	AH #1 (0-1')		AH #1 (1-1.5')		AH #1 (2-2.5')		AH #1 (3-3.5')		AH #2 (0-1')		AH #2 (1-1.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00	
Chloride by EPA 300	***Extracted:***	Jun-19-19 19:00		Jun-19-19 19:00		Jun-19-19 19:00		Jun-19-19 19:00		Jun-19-19 19:00		Jun-19-19 19:00	
	Analyzed:	Jun-19-19 20:51		Jun-19-19 20:56		Jun-19-19 21:13		Jun-19-19 21:19		Jun-19-19 21:24		Jun-19-19 21:30	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		36.9	4.99	680	4.96	34.9	5.00	2430	25.0	1090	5.01	2110	24.9

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 628192

Tetra Tech- Midland, Midland, TX

Project Name: White Fed 1H Flowline

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy Co,NM

Date Received in Lab: Wed Jun-19-19 11:40 am
Report Date: 25-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628192-007		628192-008		628192-009		628192-010		628192-011		628192-012	
	Field Id:	AH #3 (0-1')		AH #3 (1-1.5')		AH #4 (0-1')		AH #4 (1-1.5')		AH #4 (2-2.5')		AH #5 (0-1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00	
Chloride by EPA 300	***Extracted:***	Jun-19-19 19:00		Jun-19-19 19:00		Jun-19-19 19:00		Jun-19-19 19:00		Jun-19-19 19:00		Jun-19-19 19:00	
	Analyzed:	Jun-19-19 21:41		Jun-19-19 21:35		Jun-19-19 21:57		Jun-19-19 22:03		Jun-19-19 22:19		Jun-19-19 22:25	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		171	4.96	2250	25.0	61.6	5.04	78.9	5.03	1390	5.03	38.2	5.02

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 628192

Tetra Tech- Midland, Midland, TX

Project Name: White Fed 1H Flowline

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy Co,NM

Date Received in Lab: Wed Jun-19-19 11:40 am
Report Date: 25-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628192-013		628192-014		628192-015		628192-016		628192-017		628192-018	
	Field Id:	AH #5(1-1.5')		AH #5 (2-2.5')		AH #5 (3-3.5')		AH #6 (0-1')		AH #6 (1-1.5')		AH #6 (2-2.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00	
Chloride by EPA 300	***Extracted:***	Jun-19-19 19:00		Jun-19-19 19:00		Jun-19-19 19:00		Jun-19-19 19:00		Jun-19-19 19:00		Jun-19-19 19:30	
	Analyzed:	Jun-19-19 22:30		Jun-19-19 22:36		Jun-19-19 22:41		Jun-19-19 22:47		Jun-19-19 22:52		Jun-19-19 23:42	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4260	25.2	8060	50.3	7510	49.5	63.4	5.04	96.5	5.04	1700	25.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 628192

Tetra Tech- Midland, Midland, TX

Project Name: White Fed 1H Flowline

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy Co,NM

Date Received in Lab: Wed Jun-19-19 11:40 am
Report Date: 25-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628192-019		628192-020		628192-021		628192-022		628192-023		628192-024	
	Field Id:	AH #6 (3-3.5')		AH #6 (4-4.5')		AH #6 (5-5.5')		AH #7 (0-1')		AH #7 (1-1.5')		AH #7 (2-2.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00	
Chloride by EPA 300	***Extracted:***	Jun-19-19 19:30		Jun-19-19 19:30		Jun-19-19 19:30		Jun-19-19 19:30		Jun-19-19 19:30		Jun-19-19 19:30	
	Analyzed:	Jun-19-19 23:48		Jun-19-19 23:53		Jun-19-19 23:59		Jun-20-19 00:15		Jun-20-19 00:21		Jun-20-19 19:27	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		11100	100	11600	100	6650	49.5	716	4.96	1890	25.0	5570	24.9

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 628192

Tetra Tech- Midland, Midland, TX

Project Name: White Fed 1H Flowline

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy Co,NM

Date Received in Lab: Wed Jun-19-19 11:40 am
Report Date: 25-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628192-025		628192-026		628192-027		628192-028		628192-029		628192-030	
	Field Id:	AH #8 (0-1')		AH #8 (1-1.5')		AH #8 (2-2.5')		AH #9 (0-1')		AH #9 (1-1.5')		AH #9 (2-2.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00	
Chloride by EPA 300	***Extracted:***	Jun-19-19 19:30		Jun-19-19 19:30		Jun-19-19 19:30		Jun-19-19 19:30		Jun-19-19 19:30		Jun-19-19 19:30	
	Analyzed:	Jun-20-19 00:26		Jun-20-19 00:43		Jun-20-19 00:32		Jun-20-19 00:37		Jun-20-19 00:59		Jun-20-19 01:05	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		48.6	5.01	542	5.00	12300	100	2110	25.0	7050	50.0	5920	50.3

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 628192

Tetra Tech- Midland, Midland, TX

Project Name: White Fed 1H Flowline

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy Co,NM

Date Received in Lab: Wed Jun-19-19 11:40 am
Report Date: 25-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628192-031		628192-032		628192-033		628192-034		628192-035		628192-036	
	Field Id:	AH #9 (3-3.5')		AH #10 (0-1')		AH #10 (1-1.5')		AH #10 (2-2.5')		AH #11 (0-1')		AH #11 (1-1'.5)	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00	
Chloride by EPA 300	***Extracted:***	Jun-19-19 19:30		Jun-19-19 19:30		Jun-19-19 19:30		Jun-19-19 19:30		Jun-19-19 19:30		Jun-19-19 19:30	
	Analyzed:	Jun-20-19 01:22		Jun-20-19 01:27		Jun-20-19 01:33		Jun-20-19 01:38		Jun-20-19 01:44		Jun-20-19 01:49	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		9710	49.6	72.3	5.03	454	5.02	623	5.05	52.2	5.05	501	5.00

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 628192

Tetra Tech- Midland, Midland, TX

Project Name: White Fed 1H Flowline

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy Co,NM

Date Received in Lab: Wed Jun-19-19 11:40 am
Report Date: 25-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628192-037		628192-038		628192-039		628192-040		628192-041		628192-042	
	Field Id:	AH #11 (2-2.5')		AH #11 (3-3.5')		AH #12 (0-1')		AH #12 (1-1.5')		AH #13 (0-1')		AH #13 (1-1.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00	
Chloride by EPA 300	***Extracted:***	Jun-19-19 19:30		Jun-20-19 18:30		Jun-20-19 18:30		Jun-20-19 18:30		Jun-20-19 18:30		Jun-20-19 18:30	
	Analyzed:	Jun-20-19 01:55		Jun-21-19 03:36		Jun-21-19 03:44		Jun-21-19 03:51		Jun-21-19 03:58		Jun-21-19 04:05	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		8560	49.8	3330	25.2	15.8	4.99	1470	5.04	37.4	5.04	34.2	4.96

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 628192

Tetra Tech- Midland, Midland, TX

Project Name: White Fed 1H Flowline

Project Id: 212C-MD-01765
Contact: Mike Carmona
Project Location: Eddy Co,NM

Date Received in Lab: Wed Jun-19-19 11:40 am
Report Date: 25-JUN-19
Project Manager: Jessica Kramer

Analysis Requested											
	Lab Id:	628192-043		628192-044		628192-045					
	Field Id:	AH #13 (2-2.5')		AH #14 (0-1')		AH #14 (1-1.5')					
	Depth:										
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	Jun-18-19 00:00		Jun-18-19 00:00		Jun-18-19 00:00					
Chloride by EPA 300	***Extracted:***	Jun-21-19 10:50		Jun-21-19 10:50		Jun-21-19 10:50					
	Analyzed:	Jun-21-19 11:14		Jun-21-19 11:29		Jun-21-19 11:34					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		635	4.99	24.9	5.03	6.77	4.96				

Jessica Kramer
Project Assistant

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

BS / BSD Recoveries

Project Name: White Fed 1H Flowline

Work Order #: 628192 **Project ID:** 212C-MD-01765

Analyst: SPC **Date Prepared:** 06/19/2019 **Date Analyzed:** 06/19/2019

Lab Batch ID: 3092993 **Sample:** 7680344-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	256	102	250	256	102	0	90-110	20	

Analyst: SPC **Date Prepared:** 06/19/2019 **Date Analyzed:** 06/19/2019

Lab Batch ID: 3092996 **Sample:** 7680345-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	256	102	250	256	102	0	90-110	20	

Analyst: SPC **Date Prepared:** 06/20/2019 **Date Analyzed:** 06/21/2019

Lab Batch ID: 3093095 **Sample:** 7680431-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.858	250	245	98	250	246	98	0	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: White Fed 1H Flowline

Work Order #: 628192 **Project ID:** 212C-MD-01765

Analyst: SPC **Date Prepared:** 06/21/2019 **Date Analyzed:** 06/21/2019

Lab Batch ID: 3093264 **Sample:** 7680446-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	246	98	250	238	95	3	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: White Fed 1H Flowline

Work Order # : 628192 **Project ID:** 212C-MD-01765

Lab Batch ID: 3092993 **QC- Sample ID:** 628187-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/19/2019 **Date Prepared:** 06/19/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	4.75	248	242	96	248	242	96	0	90-110	20	

Lab Batch ID: 3092993 **QC- Sample ID:** 628192-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/19/2019 **Date Prepared:** 06/19/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	171	248	408	96	248	410	96	0	90-110	20	

Lab Batch ID: 3092996 **QC- Sample ID:** 628192-024 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/20/2019 **Date Prepared:** 06/19/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	5570	249	5760	76	249	5760	76	0	90-110	20	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: White Fed 1H Flowline

Work Order # : 628192 **Project ID:** 212C-MD-01765

Lab Batch ID: 3092996 **QC- Sample ID:** 628192-026 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/20/2019 **Date Prepared:** 06/19/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	542	250	789	99	250	786	98	0	90-110	20	

Lab Batch ID: 3093095 **QC- Sample ID:** 628450-021 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/21/2019 **Date Prepared:** 06/20/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	46.0	249	299	102	249	299	102	0	90-110	20	

Lab Batch ID: 3093095 **QC- Sample ID:** 628450-031 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/21/2019 **Date Prepared:** 06/20/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	16.8	249	277	104	249	277	104	0	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: White Fed 1H Flowline

Work Order # : 628192 **Project ID:** 212C-MD-01765

Lab Batch ID: 3093264 **QC- Sample ID:** 628192-043 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/21/2019 **Date Prepared:** 06/21/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	635	250	821	74	250	822	75	0	90-110	20	X

Lab Batch ID: 3093264 **QC- Sample ID:** 628335-006 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/21/2019 **Date Prepared:** 06/21/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	141	252	386	97	252	386	97	0	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Analysis Request of Chain of Custody Record

6/20/19

Page 1 of 5

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: White Fed 1H Flowline	
Project Location: (county, state) Eddy Co, NM	**Project #:** 212C-MD-01765
Invoice to: COG - Ike Taverez	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring
Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	AH #1 (0-1')	6/18/2019			X				X			1	N															X								
	AH #1 (1-1.5')	6/18/2019			X				X			1	N															X								
	AH #1 (2-2.5')	6/18/2019			X				X			1	N															X								
	AH #1 (3-3.5')	6/18/2019			X				X			1	N															X								
	AH #2 (0-1')	6/18/2019			X				X			1	N															X								
	AH #2 (1-1.5')	6/18/2019			X				X			1	N															X								
	AH #3 (0-1')	6/18/2019			X				X			1	N															X								
	AH #3 (1-1.5')	6/18/2019			X				X			1	N															X								
	AH #4 (0-1')	6/18/2019			X				X			1	N															X								
	AH #4 (1-1.5')	6/18/2019			X				X			1	N															X								

ANALYSIS REQUEST
(Circle or Specify Method No.)

Relinquished by: Conner Moehring	Date: 6/18/19	Time: 1350	Received by:	Date: 6/18/19	Time: 1350
Relinquished by:	Date: 6/18/19	Time: 1400	Received by: FedEx	Date: 6/18/19	Time: 1400
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature

0.8 / 0.3
-0.2 / 0.8

REMARKS:

- ☐ STANDARD
- ☒ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

6/20/19

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: White Fed 1H Flowline	
Project Location: (county, state) Eddy Co, NM	**Project #:** 212C-MD-01765
Invoice to: COG - Ike Taverez	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None		# CONTAINERS	FILTERED (Y/N)	BTEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	AH #4 (2-2.5')	6/18/2019			X				X			1	N															X								
	AH #5 (0-1')	6/18/2019			X				X			1	N															X								
	AH #5 (1-1.5')	6/18/2019			X				X			1	N															X								
	AH #5 (2-2.5')	6/18/2019			X				X			1	N															X								
	AH #5 (3-3.5')	6/18/2019			X				X			1	N															X								
	AH #6 (0-1')	6/18/2019			X				X			1	N															X								
	AH #6 (1-1.5')	6/18/2019			X				X			1	N															X								
	AH #6 (2-2.5')	6/18/2019			X				X			1	N															X								
	AH #6 (3-3.5')	6/18/2019			X				X			1	N															X								
	AH #6 (4-4.5')	6/18/2019			X				X			1	N															X								

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Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature 0.5 | 0.3

REMARKS:

- ☐ STANDARD
- ☒ RUSH: Same Day 24 hr 48 hr (72 hr)
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

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Project Name: White Fed 1H Flowline	
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Invoice to: COG - Ike Taverez	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring
Comments:	

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	AH #6 (5-5.5')	6/18/2019			X				X			1	N															X								
	AH #7 (0-1')	6/18/2019			X				X			1	N															X								
	AH #7 (1-1.5')	6/18/2019			X				X			1	N															X								
	AH #7 (2-2.5')	6/18/2019			X				X			1	N															X								
	AH #8 (0-1')	6/18/2019			X				X			1	N															X								
	AH #8 (1-1.5')	6/18/2019			X				X			1	N															X								
	AH #8 (2-2.5')	6/18/2019			X				X			1	N															X								
	AH #9 (0-1')	6/18/2019			X				X			1	N															X								
	AH #9 (1-1.5')	6/18/2019			X				X			1	N															X								
	AH #9 (2-2.5')	6/18/2019			X				X			1	N															X								

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Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY
Sample Temperature
0.5/0.3

REMARKS:
- ☐ STANDARD
- ☒ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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6/28/19

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: White Fed 1H Flowline	
Project Location: (county, state) Eddy Co, NM	**Project #:** 212C-MD-01765
Invoice to: COG - Ike Taverez	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE (YEAR: 2019)	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	MATRIX:	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: None	PRESERVATIVE METHOD:	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B / BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	AH #9 (3-3.5')	6/18/2019			X				X			1	N															X								
	AH #10 (0-1')	6/18/2019			X				X			1	N															X								
	AH #10 (1-1.5')	6/18/2019			X				X			1	N															X								
	AH #10 (2-2.5')	6/18/2019			X				X			1	N															X								
	AH #11 (0-1')	6/18/2019			X				X			1	N															X								
	AH #11 (1-1.5')	6/18/2019			X				X			1	N															X								
	AH #11 (2-2.5')	6/18/2019			X				X			1	N															X								
	AH #11 (3-3.5')	6/18/2019			X				X			1	N															X								
	AH #12 (0-1')	6/18/2019			X				X			1	N															X								
	AH #12 (1-1.5')	6/18/2019			X				X			1	N															X								

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Relinquished by:	Date: 6/18/19	Time: 1400	Received by: FedEx	Date: 6/18/19	Time: 1400
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature: 0.5/0.3

REMARKS:

- ☐ STANDARD
- ☒ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

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6/28/19

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: White Fed 1H Flowline	
Project Location: (county, state) Eddy Co, NM	**Project #:** 212C-MD-01765
Invoice to: COG - Ike Taverez	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE (YEAR: 2019)	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	MATRIX:	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: None	PRESERVATIVE METHOD:	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B / BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Sulfate TDS	Chloride	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	AH #13 (0-1')	6/18/2019			X				X			1	N															X									
	AH #13 (1-1.5')	6/18/2019			X				X			1	N															X									
	AH #13 (2-2.5')	6/18/2019			X				X			1	N															X									
	AH #14 (0-1')	6/18/2019			X				X			1	N															X									
	AH #14 (1-1.5')	6/18/2019			X				X			1	N															X									

Relinquished by: Commingled	Date: 6/18/19	Time: 1350	Received by:	Date: 6/18/19	Time: 1350
Relinquished by:	Date: 6/18/19	Time: 1400	Received by: FedEx	Date: 6/18/19	Time: 1400
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY
Sample Temperature
05013

REMARKS:
- ☐ STANDARD
- ☒ RUSH: Same Day 24 hr 48 hr (72 hr)
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 06/19/2019 11:40:00 AM

Work Order #: 628192

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 06/19/2019
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 06/19/2019
Jessica Kramer