SITE INFORMATION

Report Type: Closure Report 1RP-1902

General Site Information:						
Site:	**Union AJS Federal #1**					
Company:	**EOG Resources**					
Section, Township and Range	**Unit J**	**Sec. 08**	**T 21S**	**R 32E**		
Lease Number:						
County:	**Lea County**					
GPS:	**32.491712º**			**-103.694401º**		
Surface Owner:	Fee					
Mineral Owner:						
Directions:	Travel south 5.79 miles on Campbell Rd from the W Carlsbad HWY, Turn left onto lease road and follow for 1.05 miles. Turn left onto lease road and follow for 1.22 miles. Turn right onto lease road and follow for 0.9 miles. Turn Left onto lease road and follow to location.					

Release Data:	
Date Released:	6/22//2008
Type Release:	Produced Water
Source of Contamination:	Overflowed Stock Tank
Fluid Released:	45 bbl produced water
Fluids Recovered:	20 bbl produced water

Official Communication:			
Name:	James Kennedy		Clair Gonzales
Company:	EOG Resources		Tetra Tech
Address:	5509 Champions Dr.		901 W. Wall St.
			Ste 100
City:	Midland, Texas, 79706		Midland, Texas, 79701
Phone number:	(432) 258-4346		(432) 682-4559
Fax:			
Email:	James_Kennedy@eogresources.com		clair.gonzales@tetratech.com

Site Characterization	
Depth to Groundwater:	*48.64' Below Ground Surface*
Karst Potential:	*Low*

Recommended Remedial Action Levels (RRALs)				
Benzene	***Total BTEX***	***TPH (GRO+DRO)***	***TPH (GRO+DRO+MRO)***	***Chlorides***
10 mg/kg	*50 mg/kg*	*100 mg/kg*	*100 mg/kg*	*600 mg/kg*

TETRA TECH

March 5, 2021

Environmental Specialist
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Closure Report for the EOG Resources, Union Federal SWD #1, Unit J, Section 8, Township 21 South, Range 32 East, Lea County, New Mexico. 1RP-1902

Oil Conservation Division:

Tetra Tech, Inc. (Tetra Tech) was contacted by EOG Resources (EOG) to assess and remediate a release that occurred at the EOG, Union Federal SWD #1, Unit J, Section 8, Township 21 South, Range 32 East, Lea County, New Mexico (Site). The site coordinates are 32.491712º, -103.694401º. 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 June 22, 2008, and released approximately 45 barrels of produced water due to an overflowed stock tank inside an unlined bermed area. A total of 20 barrels of the released fluids were recovered. The release occurred in the bermed area of the tank battery. There is a previous work plan and closure report referring to the remediation of this spill, both approved by the OCD, and is shown in Appendix B. This spill was excavated to approximately 4.0' below surface and a liner was installed. The release was closed along with 1RP-2538, 1RP-3563, and 1RP-3568. The C-141 form is included in Appendix A.

Site Characterization

A site characterization was performed for the site and no watercourses, 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 and the site is in a low karst potential area. The nearest well is listed in the USGS National Water Information Database website in Section 6, approximately 2.16 miles northwest of the site, and has a reported depth to groundwater of 48.64 feet below ground surface. Site characterization data is included in Appendix C.

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

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

TETRA TECH

(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 100 mg/kg (GRO+DRO+MRO). Additionally, based on the site characterization, the proposed RRAL for chlorides is 600 mg/kg.

Soil Assessment and Analytical Results

On November 18, 2020, Tetra Tech personnel were onsite to evaluate and sample the release area. Based on the previously completed remediation, Tetra Tech installed a total of five (5) auger holes (AH-1 through AH-5) at total depths ranging from 0-1' – 4.0' below surface, in the lined area to verify the release was properly remediated. Therefore, auger holes were not installed any deeper to prevent damage to the previously installed liner. Additionally, six (6) horizontal samples (Horizontal-1 through Horizontal-6) at a depth of 0-1.0' were collected. Select samples were analyzed 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 D. The results of the sampling are summarized in Table 1. The auger hole and horizontal 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 with the exception of the TPH concentration of 201.2 mg/kg from auger hole (AH-1) at a depth 1.0'-2.0' below surface. However, elevated chloride concentrations were detected above RRAL. The area of AH-4 showed a chloride concentration of 975 mg/kg, at a depth of 3.0'-4.0' below surface. The area of Horizontal-2 showed a chloride concentration of 1,700 mg/kg, at a depth of 0-1.0' below surface. Vertical delineation was not reached during the site assessment but was found during remediation activities and confirmed with confirmation samples.

Remediation and Reclamation Activities

Based on the results of the soil assessment, Tetra Tech personnel were onsite February 1, 2021 through February 11, 2021, to supervise the remediation and reclamation activities as well as to collect confirmation samples. The impacted areas were excavated to total depths of 4.0' below surface to expose and inspect the previously installed liner, the liner was fully intact and free of damage, so no further excavation was required. The excavation area and depths are shown on Figure 4 and Table 2.

Confirmation sidewall samples were collected every 200 square feet. A total of six (6) sidewall samples (SW-1 through SW-6) were collected to ensure proper removal of the impacted soils. Additionally, a horizontal sample (H-2) was collected at the remediation to insure proper delineation of the previous exceedance. The samples were submitted to the laboratory to be analyzed for TPH method 8015 extended, BTEX method 8021B, and Chloride by EPA Method 300.0. The sampling results are summarized in Table 2. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix D. The excavation depths and sample locations are shown in Figure 4.

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Referring to Table 2, all final confirmation samples collected showed benzene, total BTEX, and TPH concentrations below the RRALs. Additionally, all final samples showed chloride concentrations below the 600 mg/kg threshold in the top 4' of soil.

Approximately 280 cubic yards of material was excavated and transported offsite for proper disposal. The previously installed liner was exposed and inspected, the liner was fully intact and free of damage, so no further excavation was required. The areas were then backfilled with clean material to surface grade.

Conclusion

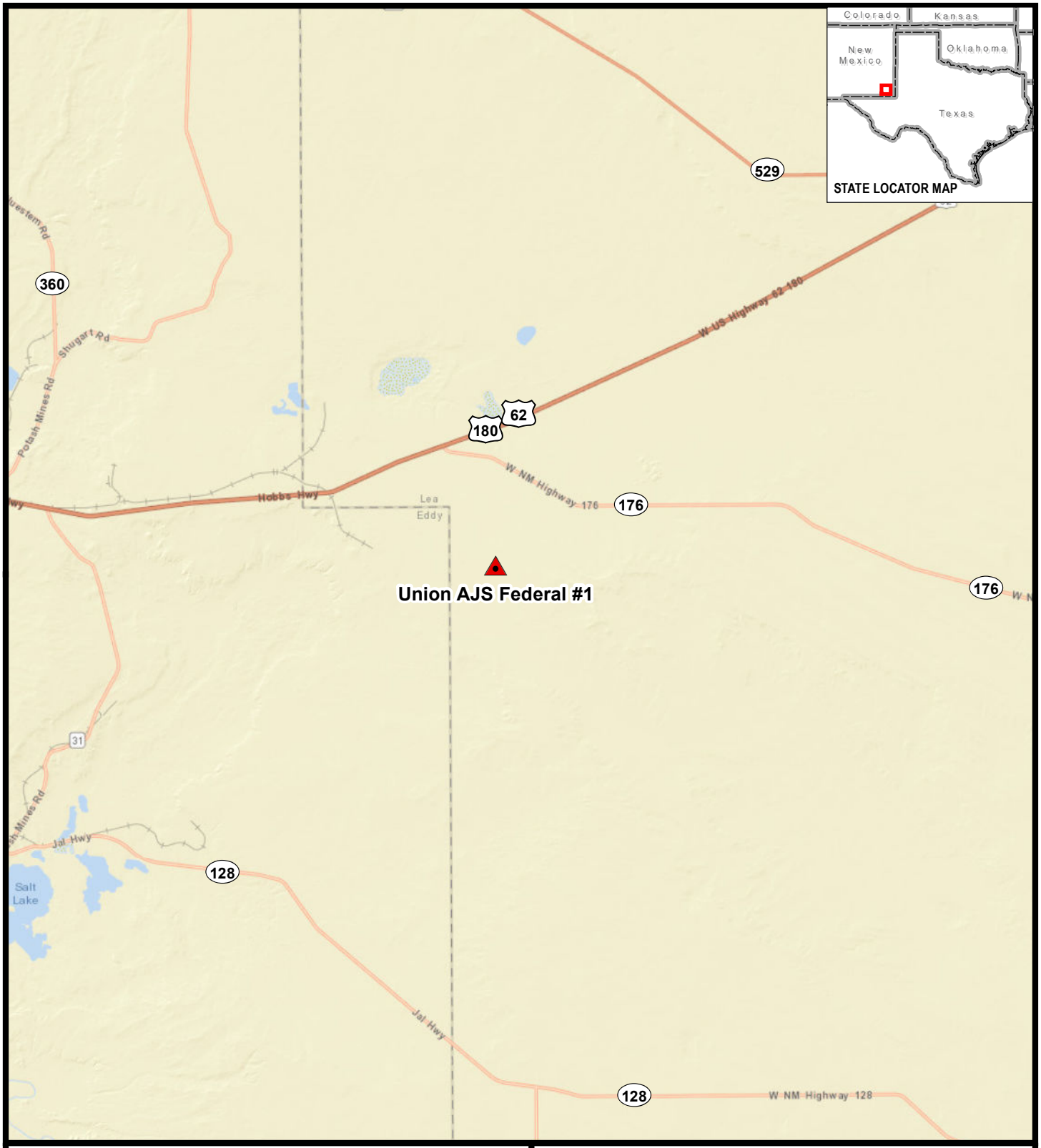
Based on the laboratory results and remediation activities performed, EOG requests closure of this spill issue. Additionally, this spill was previously remediated and closed along with 1RP-2538, 1RP-3563, and 1RP-3568, the previously approved work plan and closure report are shown in Appendix B. If you have any questions or comments concerning the assessment or remediation activities for this site, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Brittany Long,
Project Manager

Clair Gonzales,
Senior Project Manager

Figures



SITE LOCATION

N
W E
S

0 2.5 5 Miles

Approximate Scale in Miles

Source: ESRI Basemap - Streets, 2021.

OVERVIEW MAP
UNION AJS FEDERAL #1
Property Located at coordinates 32.49136°, -103.69418°
LEA COUNTY, NEW MEXICO

eog resources

Project #:
212C-MD-02360

FIGURE
1

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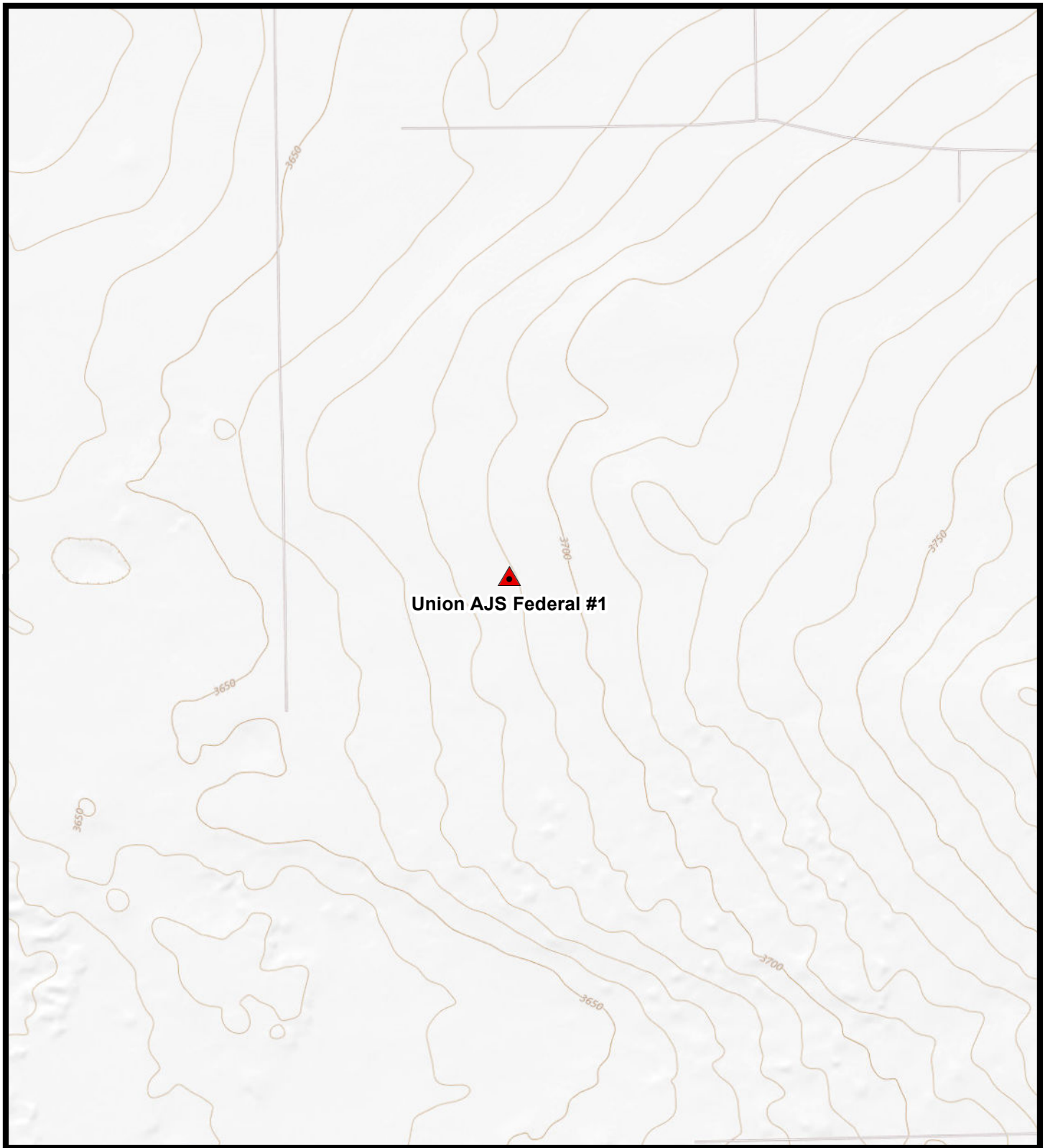

SITE LOCATION

N
W
E
S

0 1,000 2,000 Feet

Approximate Scale in Feet

Source: USGS, The National Map, Topo Base, 2021.

TOPOGRAPHIC MAP
UNION AJS FEDERAL #1
Property Located at coordinates 32.49136°, -103.69418°
LEA COUNTY, NEW MEXICO

eog resources

Project #:
212C-MD-02360

FIGURE
2

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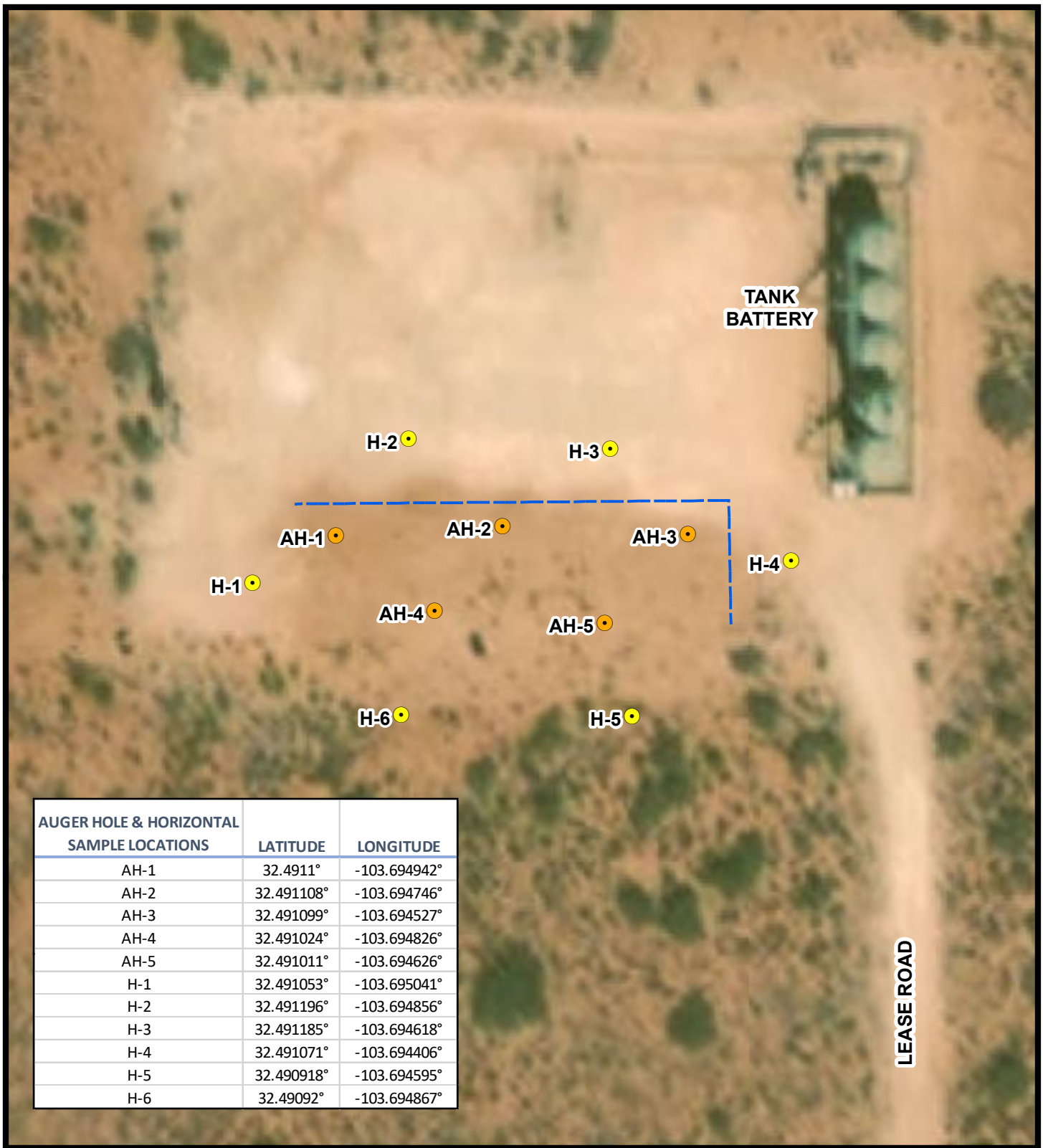

AUGER HOLE & HORIZONTAL SAMPLE LOCATIONS	LATITUDE	LONGITUDE
AH-1	32.4911°	-103.694942°
AH-2	32.491108°	-103.694746°
AH-3	32.491099°	-103.694527°
AH-4	32.491024°	-103.694826°
AH-5	32.491011°	-103.694626°
H-1	32.491053°	-103.695041°
H-2	32.491196°	-103.694856°
H-3	32.491185°	-103.694618°
H-4	32.491071°	-103.694406°
H-5	32.490918°	-103.694595°
H-6	32.49092°	-103.694867°

AUGER HOLE SAMPLE LOCATION

HORIZONTAL SAMPLE LOCATION

UNDERGROUND PIPELINE

N W E S

0 25 50 Feet

Approximate Scale in Feet

Source: ESRI Basemap, Imagery, 2019.

SPILL ASSESSMENT MAP
UNION AJS FEDERAL #1
Property Located at coordinates 32.49136°, -103.69418°
LEA COUNTY, NEW MEXICO

eog resources

Project #: 212C-MD-02360

FIGURE 3

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SIDEWALL DESIGNATION

EXCAVATION AREA, 4.0' DEPTH

N
W
E
S

0 25 50 Feet

Approximate Scale in Feet

Source: ESRI Basemap, Imagery, 2019.

EXCAVATION AREA AND DEPTH MAP
UNION AJS FEDERAL #1
Property Located at coordinates 32.49136°, -103.69418°
LEA COUNTY, NEW MEXICO

eog resources

Project #:
212C-MD-02360

FIGURE
4

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Tables

Table 1
EOG
Union AJS Federal #1
Lea County, New Mexico

Sample ID	Sample Date	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	MRO	Total						
AH-1	11/18/2020	0-1		X	<50.0	<50.0	<50.0	<50.00	<0.00201	<0.00201	<0.00201	<0.002010	<0.002010	155
	"	1-2		X	<50.0	**149**	52.2	**201.2**	<0.00200	<0.00200	<0.00200	<0.002000	<0.002000	500
	"	2-3	X											271
	"	3-4	X											173
AH-2	11/18/2020	0-1	X		<50.0	<50.0	<50.0	<50.00	<0.00199	<0.00199	<0.00199	<0.001990	<0.001990	43.1
	"	1-2	X		<49.9	<49.9	<49.9	<49.90	<0.00198	<0.00198	<0.00198	<0.001980	<0.001980	79.4
	"	2-3	X											105
	"	3-4	X											35.7
AH-3	11/18/2020	0-1	X		<49.8	<49.8	<49.8	<49.80	<0.00198	<0.00198	<0.00198	<0.001980	<0.001980	26.6
	"	1-2	X		<50.0	<50.0	<50.0	<50.00	<0.00199	<0.00199	<0.00199	<0.001990	<0.001990	34.4
	"	2-3	X											16.6
	"	3-4	X											22.2
AH-4	11/18/2020	0-1		X	<49.9	<49.9	<49.9	<49.90	<0.00202	<0.00202	<0.00202	<0.002020	<0.002020	144
	"	1-2		X	<50.0	<50.0	<50.0	<50.00	<0.00200	<0.00200	<0.00200	<0.002000	<0.002000	126
	"	2-3		X										310
	"	3-4		X										**975**
AH-5	11/18/2020	0-1	X		<50.0	<50.0	<50.0	<50.00	<0.00200	<0.00200	<0.00200	<0.002000	<0.002000	43.3
	"	1-2	X		<49.9	<49.9	<49.9	<49.90	<0.00198	<0.00198	<0.00198	<0.001980	<0.001980	54.1
	"	2-3	X											96.6
	"	3-4	X											568
Horizontal-1	11/18/2020	0-1	X		<49.8	<49.8	<49.8	<49.80	<0.00199	<0.00199	<0.00199	<0.001990	<0.001990	113
Horizontal-2	11/18/2020	0-1		X	<50.0	<50.0	<50.0	<50.00	<0.00198	<0.00198	<0.00198	<0.001980	<0.001980	**1700**
	2/11/2021		X		<50.0	<50.0	<50.0	<50.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	59.2
Horizontal-3	11/18/2020	0-1	X		<50.0	<50.0	<50.0	<50.00	<0.00198	<0.00198	<0.00198	<0.001980	<0.001980	55.5
Horizontal-4	11/18/2020	0-1	X		<49.9	<49.9	<49.9	<49.90	<0.00200	<0.00200	<0.00200	<0.002000	<0.002000	13.1
Horizontal-5	11/18/2020	0-1	X		<50.0	<50.0	<50.0	<50.00	<0.00200	<0.00200	<0.00200	<0.002000	<0.002000	113
Horizontal-6	11/18/2020	0-1	X		<50.0	<50.0	<50.0	<50.00	<0.00200	<0.00200	<0.00200	<0.002000	<0.002000	116

(-) Not Analyzed
Excavation

Table 2
EOG
Union AJS Federal #1
Lea County, New Mexico

Sample ID	Sample Date	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	MRO	Total						
Sidewall-1	2/11/2021		X		<49.9	<49.9	<49.9	<49.9	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	46.7
Sidewall-2	2/11/2021		X		<49.9	<49.9	<49.9	<49.9	<0.00199	<0.00199	<0.00199	0.00264	0.00264	53.4
Sidewall-3	2/11/2021		X		<50.0	<50.0	<50.0	<50.0	<0.00198	<0.00198	<0.00198	0.00250	0.00250	60.7
Sidewall-4	2/11/2021		X		<49.9	<49.9	<49.9	<49.9	0.00285	<0.00199	<0.00199	0.00296	0.00581	51.7
Sidewall-5	2/11/2021		X		<49.9	<49.9	<49.9	<49.9	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	60.9
Sidewall-6	2/11/2021		X		<50.0	<50.0	<50.0	<50.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	53.7

(-) Not Analyzed

Photos

EOG Resources
Union AJS Federal #1
Lea County, New Mexico

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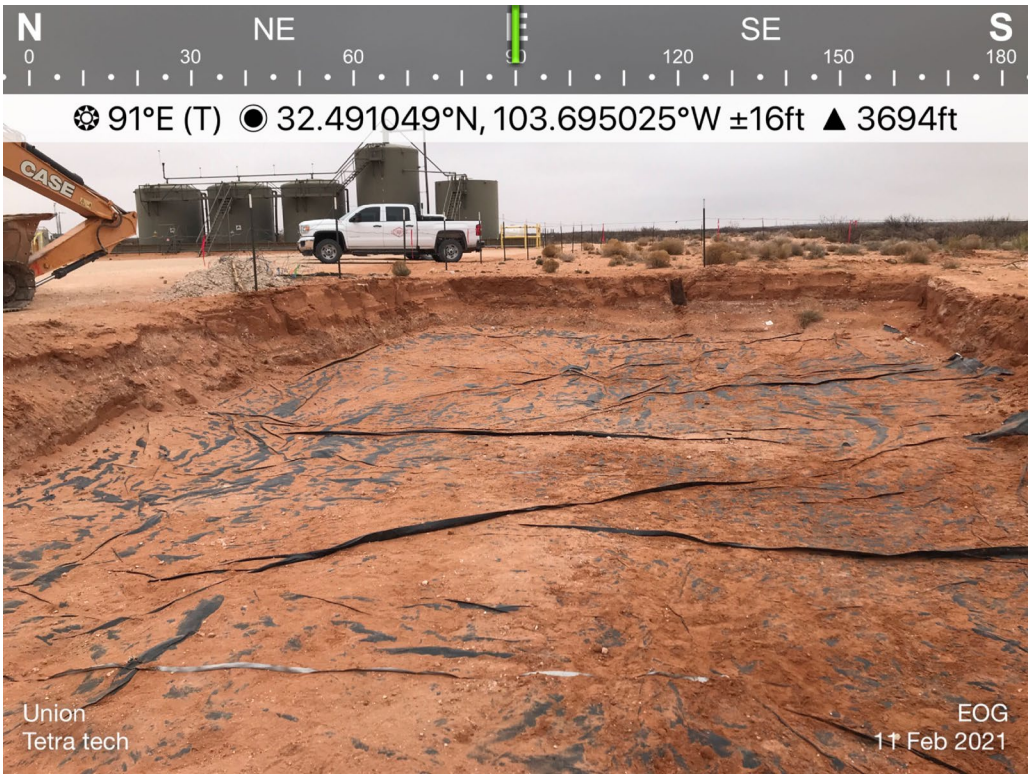
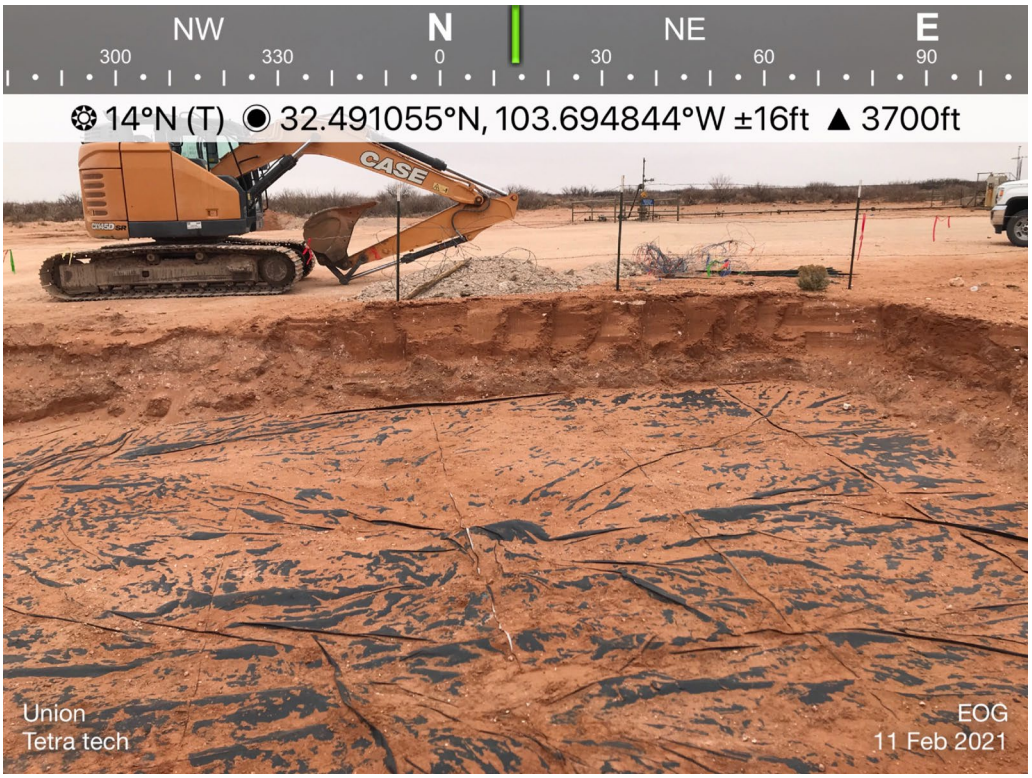


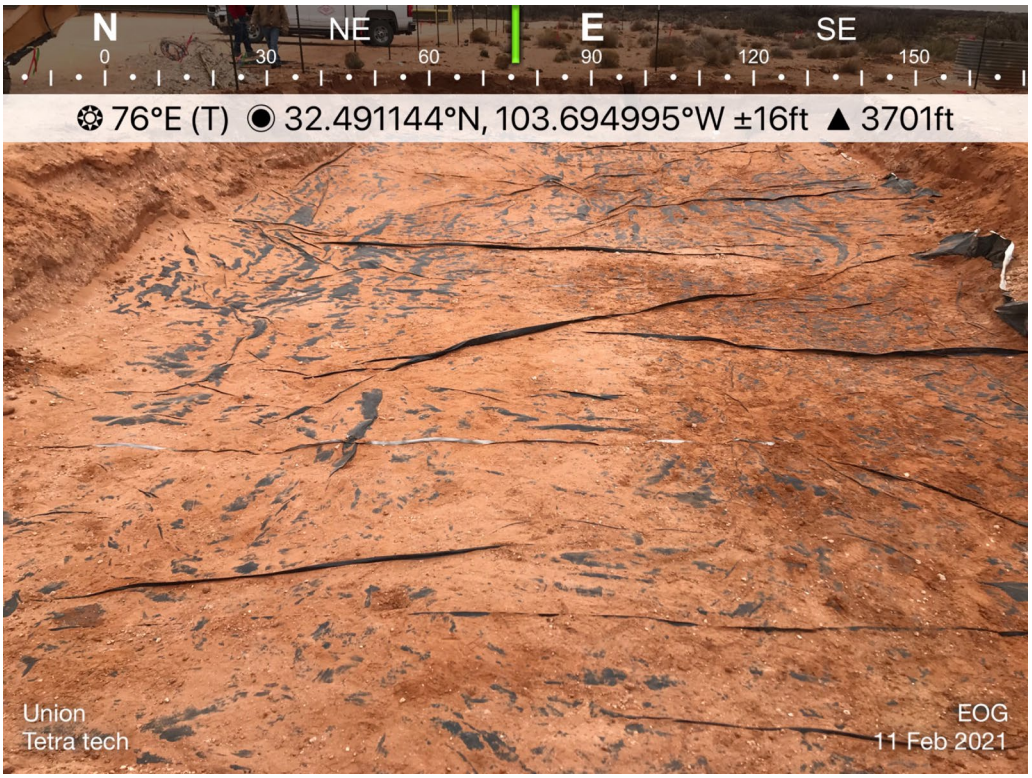
View of Remediation Activities – View East



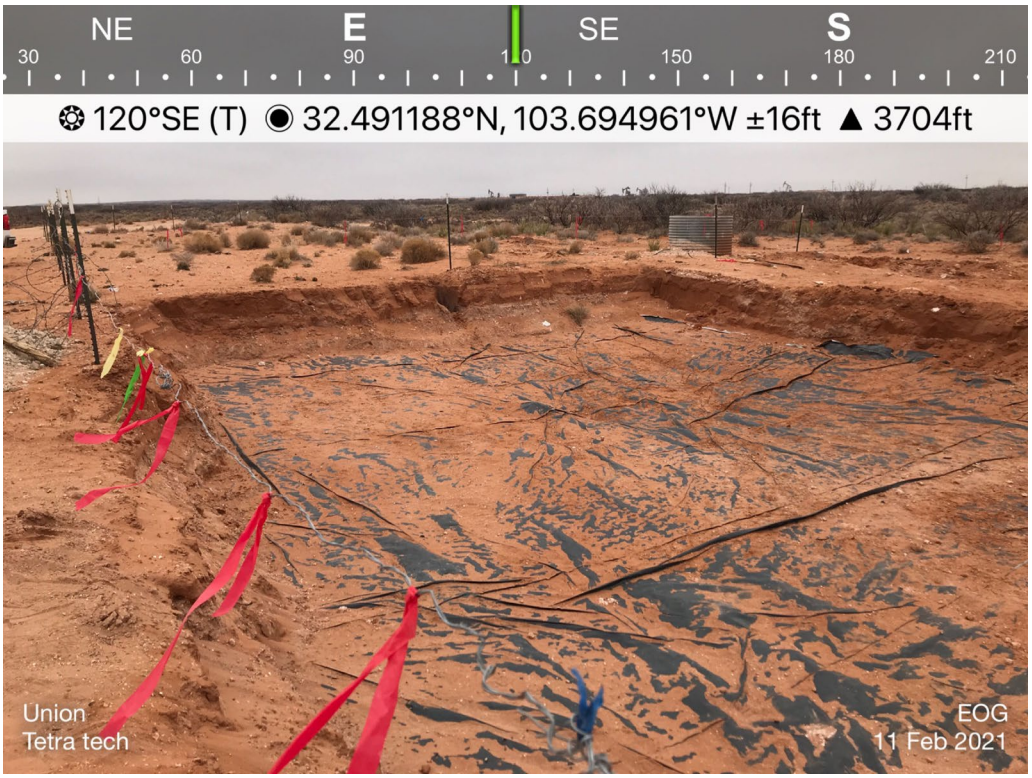
View of Remediation Activities – View North

EOG Resources
Union AJS Federal #1
Lea County, New Mexico

TETRA TECH



View of Remediation – View East



View of Installed Trench– View Southeast

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources

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

RECEIVED
JUL 01 2008
HOBBS OCD

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

X Initial Report Final Report

Name of Company Yates Petroleum Corporation	Contact Mike Stubblefield
Address 105 South 4th Street, Artesia, N.M. 88210	Telephone No. 505-7484500 505-513-1712
Facility Name Union AJS Federal #1	Facility Type Tank battery

Surface Owner Federal	Mineral Owner Federal	~~Lease No.~~ API# 30 025 [illegible]

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
J	8	21s	32e	1980'	FSL	1980'	FEL	Lea 31412

Latitude 32.41862 Longitude 103.72033

NATURE OF RELEASE

Type of Release: Produced water and Hydrocarbon	Volume of Release 45 B/PW ½ Hydrocarbon	Volume Recovered 20 B/PW
Source of Release stock tank	Date and Hour of Occurrence 6/22/2008 6.00am	Date and Hour of Discovery 6/22/2008 6·00am
Was Immediate Notice Given? Yes X No Not Required	If YES, To Whom? Larry Johnson's voice mail box	
By Whom? Mike Stubblefield	Date and Hour 6/23/2008 10:00am	
Was a Watercourse Reached? ☐ Yes X No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Low power Deans alarms did not work, Stock tank containing produced water overflowed.

Describe Area Affected and Cleanup Action Taken.*
The impacted area was the bermed area of the tank battery. The bermed area was unlined Soil samples will be taken from the impacted area. Soil samples will be submitted to a second party lab and analysis ran for Chlorides using EPA Method 300. When the analytical report is received from initial soil samples taken, the Chlorides will be evaluated and appropriate actions taken. Yates Petroleum Corporation will then submit a final C-141 form requesting closure for the release that occurred on 6/22/2008.
Depth to ground water > 100', Wellhead protection area > 1000', Distance to surface water body > 1000' Site ranking 0.

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

Signature: Mike Stubblefield	OIL CONSERVATION DIVISION Approved by District Supervisor: L Johnson
Printed Name: Mike Stubblefield	ENVIRONMENTAL ENGINEER
Title: Environmental Regulatory Agent	Approval Date: 7.9.08 Expiration Date: 9.9.08
E-mail Address: mikes@ypcnm.com	Conditions of Approval: Submit final C-141 by IRP# 1902 Attached ☐
Date: 6/30/2008 Phone: 505-748-4500	

* Attach Additional Sheets If Necessary

fGRL0822052656

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: James Kennedy _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	nGRL0822054735
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

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

☐ Description of remediation activities

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

Printed Name: _____ Title: _____

Signature: James Kennedy Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: Bradford Billings Date: 11/02/2021

Printed Name: Bradford Billings Title: Evvi.Spec.A

Appendix B

YATES PETROLEUM CORPORATION
105 SOUTH FOURTH STREET
ARTESIA, NEW MEXICO 88210-2118
TELEPHONE (575) 748-1471
www.yatespetroleum.com

January 22, 2016

Mr. Jamie Keys or Ms. Kellie Jones
NMOCD District I
1625 N. French Dr.
Hobbs, NM 88240

1/26/2016
*Submitted via email to NMOCD I & BLM
- All analyticals attached to submission.
AG

RE: Union Federal SWD #1
30-025-31412
Section 8, T21S-R32E
Lea County, New Mexico

Mr. Keys or Ms. Jones,

Yates Petroleum Corporation (Yates) would like to submit the attached plan of work to you regarding the two releases that occurred at the above mentioned facility on March 9, 2015 (1RP-3568) and March 10, 2015 (1RP-3568).

With NMOCD and BLM approval of this work plan, Yates will hold a bid meeting allowing several contractors the opportunity to submit bids on this remediation project. Bids that are received will be forwarded to Yates Management for review. Once Yates Management reviews the bids and gives approval, the remediation project will be awarded to a contractor for work to commence.

If you have any questions or concerns, I can be reached at (575) 748-4111 or by email at agriffin@yatespetroleum.com.

Thank You,
Amber Griffin

Amber Griffin
Environmental Regulatory Agent
Yates Petroleum Corporation

RECEIVED
By JKeyes at 11:02 am, Feb 08, 2016

APPROVED
By JKeyes at 11:03 am, Feb 08, 2016

Yates Petroleum Corporation

Union Federal SWD #1 Work Plan

Section 8, T21S-R32E

Lea County, New Mexico

January 22, 2016

I. Location

The well is located approximately 31.1 miles east of Carlsbad, NM on Highway 62/180, approximately 5.8 miles south of Highway 62/180 on Campbell Road (County Road 29) and approximately 1.8 miles east of Campbell Road (County Road 29) on a lease road.

II. Background

On March 9, 2015, Yates had a release of 10 barrels produced water, with 10 barrels produced water recovered. On March 10, 2015, Yates had a release of 300 barrels produced water, with 300 barrels produced water recovered. The area affected from these releases was within the unlined, bermed battery. An initial Form C-141 was submitted, via e-mail, to the NMOCD District I office on March 18, 2015 for both releases.

On April 1, 2015 personnel returned to the release area and collected initial composite soil samples from the surface and from the depths of 6" – 2' below surface level using a hand auger. The soil samples were sent to an approved NMOCD laboratory and tested for BTEX 8021B, TPH 8015M, and Chlorides SM4500Cl-B. Yates received the analytical results on April 9, 2015 (Report H500883 attached to this work plan). The analytical results showed that BTEX was at levels below NMOCD RRAL's. The analytical results also showed that TPH was at levels above NMOCD RRAL's and there were elevated chloride levels. Yates determined that further vertical delineation of TPH and chlorides was needed within the release area.

Due to the initial analytical results and two releases occurring within two days, Yates made the decision to relocate the tanks of this location from the south side to the east side of the production pad. It was decided that the tanks needed to be in a steel containment with a liner to prevent further environmental issues if more releases occurred at this facility. Production started the process to relocate the tanks into a lined, steel containment system. The tanks also needed to be re-located in order for environmental personnel to be able to safely and effectively complete vertical delineation within the release area. Further sampling and remediation of this site was put on hold until the tank re-location process was compelte.

On July 29, 2015 personnel returned to the release area and completed further vertical delineation within the battery using a backhoe. During this sampling event, the release area was split into three separate sections in order to have a better picture of the contamination issues at the site. For Section 1 of the release area, Yates sampled at depths of 1' – 5' below surface level. For Section 2 of the release area, Yates was able to successfully collect soil samples from the depths of 3' – 13' below surface level. For Section 3 of the release area, Yates was able to successfully collect soil samples from the depth of 3' – 11' below surface level. The backhoe was not able to safely or effectively pull samples from deeper depths. The soil samples from this sampling event were sent to an approved NMOCD laboratory and tested for BTEX 8021B, TPH 8051M, and Chlorides 300.0. Yates received the analytical results August 7, 10 & 24, 2015 (Reports 1507D85, 1507D95 and 1508707 attached to this work plan). The analytical results showed that both BTEX and TPH had delineated to levels below NMOCD RRAL's. The analytical results showed that there were still elevated chloride levels, and Yates determined that further vertical delineation of chlorides was still needed within the release area.

The release area contains mostly sandy soils and these soils would collapse while digging with heavy equipment. The collapsing of soils created personnel safety issues and made it

impossible to obtain discrete samples from deeper depths. As a result, it was determined that a hollow stem auger core rig would be needed to complete further vertical delineation within the release area.

On November 9, 2015 Yates contacted a company with a hollow stem auger core rig to conduct further vertical delineation of the release area. The hollow stem auger was scheduled for December 15, 2015 and complete vertical delineation of chlorides was completed. Soil samples obtained with the hollow stem auger were sent to an approved NMOCD laboratory and tested for Chlorides 300.0. Yates received the analytical results on January 6, 2016 (Report 1512A71 attached to this work plan). The analytical results showed that Yates had successfully found the bottom of the chloride contamination.

III. Surface and Ground Water

Area surface geology is Cenozoic. The ChevronTexaco depth to ground water map shows the depth to groundwater to be approximately 100 feet making the site ranking for this site a zero (0). Watercourses in the area are dry except for infrequent flows in response to major precipitation events.

The ranking for this site is zero (0) based on the following:

Depth to ground water	>100'
Wellhead Protection Area	> 1000'
Distance to surface water body	> 1000'

IV. Soils

The area consists of soils that are sand and interspersed with caliche and clay seams.

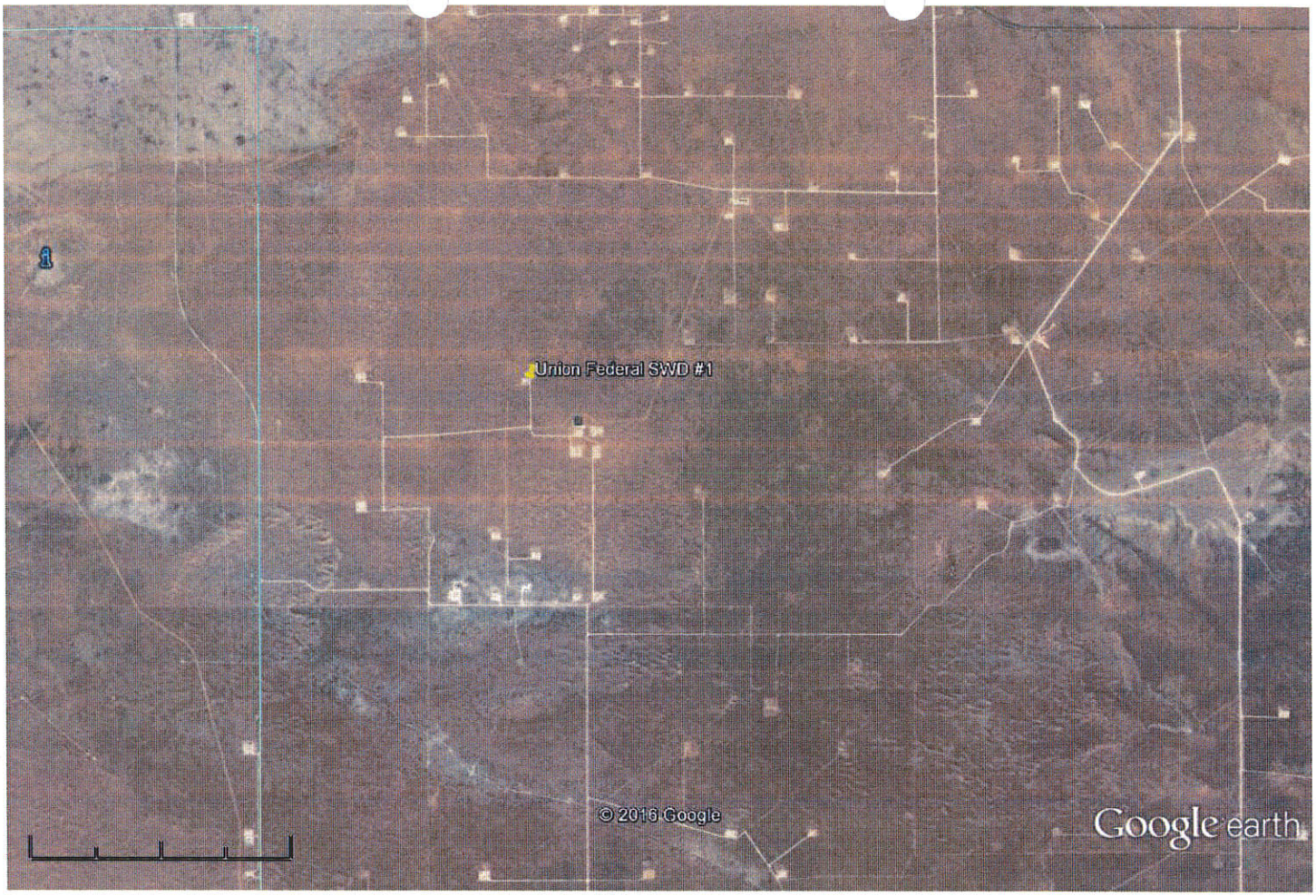
V. Scope of Work

Based off the analytical reports which show complete vertical delineation, Yates proposes to excavate four (4) feet from the release area. The excavation will be approximately 154' long, 29' wide. Once all soils have been excavated, a 20 mil synthetic liner will be placed in the bottom of the excavation. The backfill of the excavation will then be started with caliche (up to 2' below surface level) and finished with 2' of top soil or sand.

Contaminated soils that are excavated will be hauled to a NMOCD approved disposal facility, The Lea Land, Inc. Landfill.

The backfill material for the excavation will be purchased from the nearest BLM pit.

Once all excavation and backfill work is complete, Yates will submit a Final Form C-141 to NMOCD and BLM requesting closure of these three releases.



Google earth

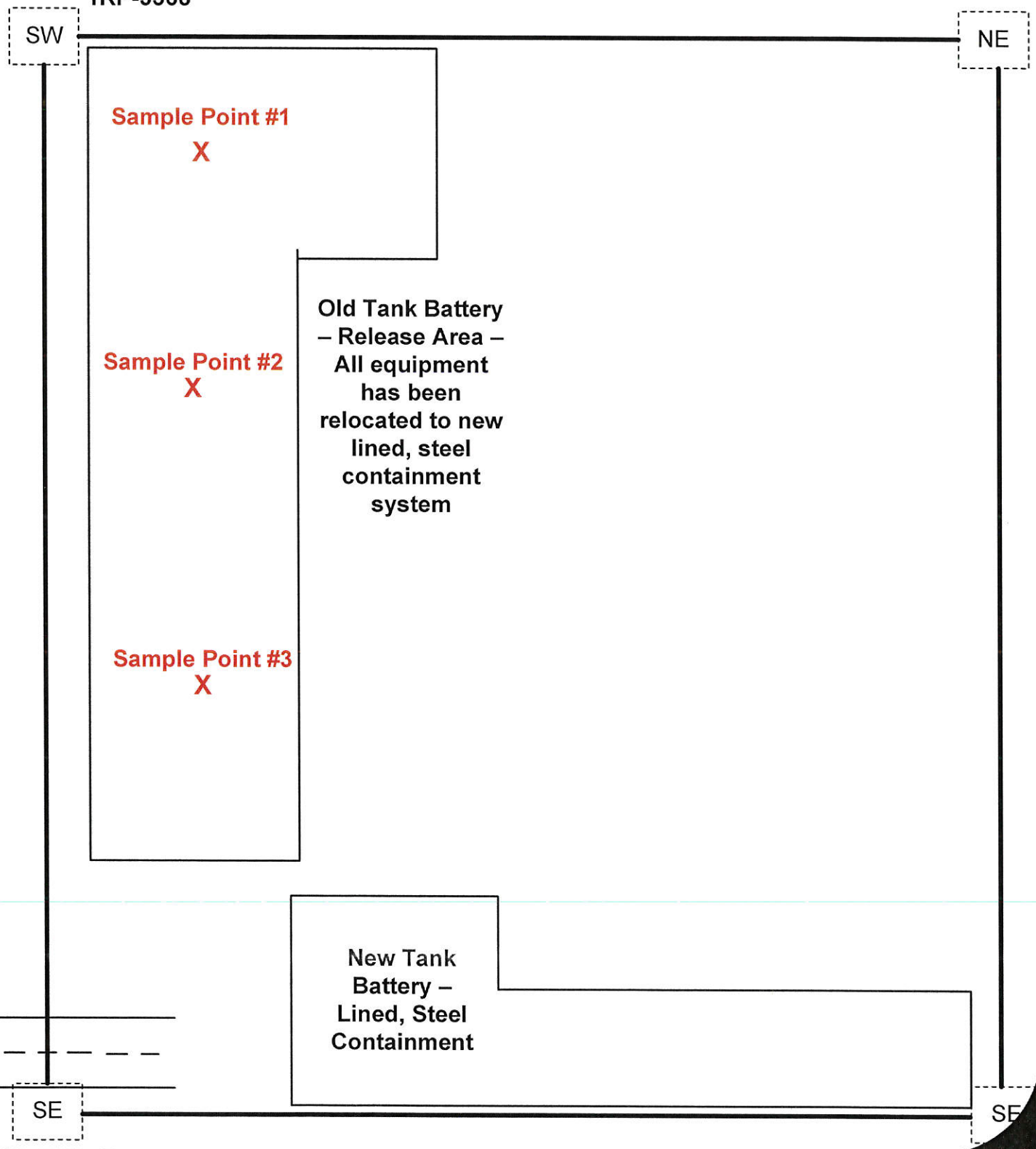
miles 4
km 6

YATES PETROLEUM CORPORATION

Union Federal SWD #1
30-025-31412
Section 8, T21S-R32E
Lea County, New Mexico
1RP-3568

DRAWING IS NOT TO SCALE

Friday, January 22, 2016



Union Federal SWD #1

	Sample Area	Sample Date	Analytical Report	Sample Type	Depth	BTEX	GRO	DRO	TOTAL	Chlorides
Surface	Release area	4/1/2015	H500883	Grab/Auger	Surface	5.21	295	10,500	10,795	11,600
6"	Release area	4/1/2015	H500883	Grab/Auger	6"	3.59	271	3710	3,981	9,600
1'	Release area	4/1/2015	H500883	Grab/Auger	1'	0.54	152	1820	1,972	7,600
2'	Release area	4/1/2015	H500883	Grab/Auger	2'	8.93	426	3510	3,936	10,400
1 - 1'	Release area	7/29/2015	1507D95	Grab/Backhoe	1'	ND	ND	170	170	690
1 - 2'	Release area	7/29/2015	1507D95	Grab/Backhoe	2'	ND	ND	140	140	83
1 - 3'	Release area	7/29/2015	1507D95	Grab/Backhoe	3'	ND	ND	170	170	ND
1 - 4'	Release area	7/29/2015	1507D85	Grab/Backhoe	4'	-	-	-	-	340
1 - 5'	Release area	7/29/2015	1507D85	Grab/Backhoe	5'	-	-	-	-	130
2 - 3'	Release area	7/29/2015	1507D95	Grab/Backhoe	3'	ND	ND	ND	ND	1,600
2 - 4'	Release area	7/29/2015	1507D95	Grab/Backhoe	4'	ND	ND	ND	ND	5,700
2 - 5'	Release area	7/29/2015	1507D95	Grab/Backhoe	5'	ND	ND	ND	ND	2,500
2 - 6'	Release area	7/29/2015	1507D85	Grab/Backhoe	6'	-	-	-	-	11,000
2 - 7'	Release area	7/29/2015	1507D85	Grab/Backhoe	7'	-	-	-	-	8,700
2 - 8'	Release area	7/29/2015	1507D85	Grab/Backhoe	8'	-	-	-	-	15,000
2 - 9'	Release area	7/29/2015	1507D85	Grab/Backhoe	9'	-	-	-	-	5,600
2-10'	Release area	7/29/2015	1508707	Grab/Backhoe	10'	-	-	-	-	4,800
2-11'	Release area	7/29/2015	1508707	Grab/Backhoe	11'	-	-	-	-	6,600
2-12'	Release area	7/29/2015	1508707	Grab/Backhoe	12'	-	-	-	-	14,000
2-13'	Release area	7/29/2015	1508707	Grab/Backhoe	13'	-	-	-	-	15,000
2-15'	Release area	12/15/2015	1512A71	Hollow Stem Auger	15'	-	-	-	-	5,500
2-20'	Release area	12/15/2015	1512A71	Hollow Stem Auger	20'	-	-	-	-	1,700
2-25'	Release area	12/15/2015	1512A71	Hollow Stem Auger	25'	-	-	-	-	1,800
2-30'	Release area	12/15/2015	1512A71	Hollow Stem Auger	30'	-	-	-	-	1,600
2-35'	Release area	12/15/2015	1512A71	Hollow Stem Auger	35'	-	-	-	-	2,000
2-40'	Release area	12/15/2015	1512A71	Hollow Stem Auger	40'	-	-	-	-	1,800
2-45'	Release area	12/15/2015	1512A71	Hollow Stem Auger	45'	-	-	-	-	700
2-50'	Release area	12/15/2015	1512A71	Hollow Stem Auger	50'	-	-	-	-	230
3 - 3'	Release area	7/29/2015	1507D95	Grab/Backhoe	3'	ND	ND	ND	ND	5,600
3 - 4'	Release area	7/29/2015	1507D95	Grab/Backhoe	4'	ND	ND	ND	ND	430
3 - 5'	Release area	7/29/2015	1507D95	Grab/Backhoe	5'	ND	ND	ND	ND	2,500
3 - 6'	Release area	7/29/2015	1507D85	Grab/Backhoe	6'	-	-	-	-	2,200
3 - 7'	Release area	7/29/2015	1507D85	Grab/Backhoe	7'	-	-	-	-	440
3 - 8'	Release area	7/29/2015	1507D85	Grab/Backhoe	8'	-	-	-	-	1,500
3 - 9'	Release area	7/29/2015	1507D85	Grab/Backhoe	9'	-	-	-	-	1,200
3-10'	Release area	7/29/2015	1508707	Grab/Backhoe	10'	-	-	-	-	480
3-11'	Release area	7/29/2015	1508707	Grab/Backhoe	11'	-	-	-	-	630

Site Ranking is ZERO (0). Depth to Ground Water >100' (approx. 100', per ChevronTexaco trend map).

All results are ppm.Chlorides for documentation.

Released: 10 B/PW; Recovered: 10 B/PW. Release Date: 3/9/2015, 1RP-3568

Released: 300 B/PW; Recovered: 300 B/PW. Release Date: 3/10/2015, 1RP-3568

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

April 09, 2015

AMBER CANNON

YATES PETROLEUM CORPORATION

105 S 4th Street

Artesia, NM 88210

RE: UNION FEDERAL SWD #1

Enclosed are the results of analyses for samples received by the laboratory on 04/02/15 11:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

YATES PETROLEUM CORPORATION
AMBER CANNON
105 S 4th Street
Artesia NM, 88210
Fax To: (505) 748-4635

Received:	04/02/2015	Sampling Date:	04/01/2015
Reported:	04/09/2015	Sampling Type:	Soil
Project Name:	UNION FEDERAL SWD #1	Sampling Condition:	Cool & Intact
Project Number:	1RP-3568	Sample Received By:	Jodi Henson
Project Location:	8-21S-32E, LEA COUNTY		

Sample ID: SURFACE (H500883-01)

BTEX 8021B mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	04/08/2015	ND	1.82	91.2	2.00	2.09	
Toluene*	**0.677**	0.200	04/08/2015	ND	1.74	86.9	2.00	0.754	
Ethylbenzene*	**0.804**	0.200	04/08/2015	ND	1.68	84.2	2.00	0.196	
Total Xylenes*	**3.73**	0.600	04/08/2015	ND	5.29	88.1	6.00	0.465	
Total BTEX	**5.21**	1.20	04/08/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID *127 %* *61-154*

TPH 8015M mg/kg **Analyzed By: MS** **S-06**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	**295**	50.0	04/06/2015	ND	193	96.5	200	0.183	
DRO >C10-C28	**10500**	50.0	04/06/2015	ND	203	101	200	0.985	

Surrogate: 1-Chlorooctane *128 %* *47.2-157*

Surrogate: 1-Chlorooctadecane *215 %* *52.1-176*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

YATES PETROLEUM CORPORATION
AMBER CANNON
105 S 4th Street
Artesia NM, 88210
Fax To: (505) 748-4635

Received:	04/02/2015	Sampling Date:	04/01/2015
Reported:	04/09/2015	Sampling Type:	Soil
Project Name:	UNION FEDERAL SWD #1	Sampling Condition:	Cool & Intact
Project Number:	1RP-3568	Sample Received By:	Jodi Henson
Project Location:	8-21S-32E, LEA COUNTY		

Sample ID: 6" (H500883-02)

BTEX 8021B mg/kg **Analyzed By: ms**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	04/08/2015	ND	1.82	91.2	2.00	2.09	
Toluene*	**0.431**	0.200	04/08/2015	ND	1.74	86.9	2.00	0.754	
Ethylbenzene*	**0.453**	0.200	04/08/2015	ND	1.68	84.2	2.00	0.196	
Total Xylenes*	**2.70**	0.600	04/08/2015	ND	5.29	88.1	6.00	0.465	
Total BTEX	**3.59**	1.20	04/08/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIL *130 %* *61-154*

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	**271**	50.0	04/06/2015	ND	193	96.5	200	0.183	
DRO >C10-C28	**3710**	50.0	04/06/2015	ND	203	101	200	0.985	

Surrogate: 1-Chlorooctane *113 %* *47.2-157*

Surrogate: 1-Chlorooctadecane *125 %* *52.1-176*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

YATES PETROLEUM CORPORATION
AMBER CANNON
105 S 4th Street
Artesia NM, 88210
Fax To: (505) 748-4635

Received:	04/02/2015	Sampling Date:	04/01/2015
Reported:	04/09/2015	Sampling Type:	Soil
Project Name:	UNION FEDERAL SWD #1	Sampling Condition:	Cool & Intact
Project Number:	1RP-3568	Sample Received By:	Jodi Henson
Project Location:	8-21S-32E, LEA COUNTY		

Sample ID: 1' (H500883-03)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/08/2015	ND	1.82	91.2	2.00	2.09	
Toluene*	**0.058**	0.050	04/08/2015	ND	1.74	86.9	2.00	0.754	
Ethylbenzene*	<0.050	0.050	04/08/2015	ND	1.68	84.2	2.00	0.196	
Total Xylenes*	**0.478**	0.150	04/08/2015	ND	5.29	88.1	6.00	0.465	
Total BTEX	**0.536**	0.300	04/08/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIL *135 %* *61-154*

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	**152**	50.0	04/06/2015	ND	193	96.5	200	0.183	
DRO >C10-C28	**1820**	50.0	04/06/2015	ND	203	101	200	0.985	

Surrogate: 1-Chlorooctane *103 %* *47.2-157*

Surrogate: 1-Chlorooctadecane *114 %* *52.1-176*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

YATES PETROLEUM CORPORATION
AMBER CANNON
105 S 4th Street
Artesia NM, 88210
Fax To: (505) 748-4635

Received:	04/02/2015	Sampling Date:	04/01/2015
Reported:	04/09/2015	Sampling Type:	Soil
Project Name:	UNION FEDERAL SWD #1	Sampling Condition:	Cool & Intact
Project Number:	1RP-3568	Sample Received By:	Jodi Henson
Project Location:	8-21S-32E, LEA COUNTY		

Sample ID: 2' (H500883-04)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	04/08/2015	ND	1.82	91.2	2.00	2.09	
Toluene*	**0.301**	0.200	04/08/2015	ND	1.74	86.9	2.00	0.754	
Ethylbenzene*	**0.262**	0.200	04/08/2015	ND	1.68	84.2	2.00	0.196	
Total Xylenes*	**8.37**	0.600	04/08/2015	ND	5.29	88.1	6.00	0.465	
Total BTEX	**8.93**	1.20	04/08/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID *115 %* *61-154*

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	**426**	50.0	04/06/2015	ND	193	96.5	200	0.183	
DRO >C10-C28	**3510**	50.0	04/06/2015	ND	203	101	200	0.985	

Surrogate: 1-Chlorooctane *121 %* *47.2-157*

Surrogate: 1-Chlorooctadecane *131 %* *52.1-176*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

ARDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240
(505) 393-2326 FAX (505) 393-2476

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Amber Cannon
Compa (505) 393-2326 Yates Petroleum Corporation
Company Address: 105 South 4th Street
City/State/Zip: Artesia, NM 88210
Telephone No: 575-748-4111 or 575-513-8799
Fax No: 575-748-4131
Sampler Signature: Amber Cannon
e-mail: acannon@yatespetroleum.com

Project Name: Union Federal SWD #1
Project #: 1RP-3568
Project Loc: 8-21S-32E, Lea County
PO #: 205-2020
Report Format: [x] Standard [ ] TRRP [ ] NPDES

(lab use only)
ORDER #: H500883

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge	GW = Groundwater S=Soil/Solid	NP=Non-Potable Specify Other	Analyze For: TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides	SAR	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
1	Surface	Surf.	Surf.	4/1/2015	10:42 AM		1	X									S		X								X						X
2	6"	6"	6"	4/1/2015	11:06 AM		1	X									S		X								X						X
3	1'	1'	1'	4/1/2015	11:23 AM		1	X									S		X								X						X
4	2'	2'	2'	4/1/2015	11:45 AM		1	X									S		X								X						X

Special Instructions: TPH: 8015B, BTEX: 8021B. Please show BTEX results as mg/kg. Please put chlorides on a separate report. Thank you.

Relinquished by: Amber Cannon	Date 4/2/2015	Time	Received by: Jodi Henson	Date 4/2/15	Time 11:35
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time

Laboratory Comments:
Sample Containers Intact? (Y) N
VOCs Free of Headspace? Y N
Labels on container(s) (Y) N
Custody seals on container(s) (Y) N
Custody seals on cooler(s) (Y) (N)
Sample Hand Delivered (Y) N
by Sampler/Client Rep. ? (Y) N
by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 2.0°C
#54

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

April 09, 2015

AMBER CANNON

YATES PETROLEUM CORPORATION

105 S 4th Street

Artesia, NM 88210

RE: UNION FEDERAL SWD #1

Enclosed are the results of analyses for samples received by the laboratory on 04/02/15 11:35.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

YATES PETROLEUM CORPORATION
AMBER CANNON
105 S 4th Street
Artesia NM, 88210
Fax To: (505) 748-4635

Received:	04/02/2015	Sampling Date:	04/01/2015
Reported:	04/09/2015	Sampling Type:	Soil
Project Name:	UNION FEDERAL SWD #1	Sampling Condition:	Cool & Intact
Project Number:	1RP-3568	Sample Received By:	Jodi Henson
Project Location:	8-21S-32E, LEA COUNTY		

Sample ID: SURFACE (H500883-01)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**11600**	16.0	04/06/2015	ND	400	100	400	0.00	

Sample ID: 6" (H500883-02)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**9600**	16.0	04/06/2015	ND	400	100	400	0.00	

Sample ID: 1' (H500883-03)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**7600**	16.0	04/06/2015	ND	400	100	400	0.00	

Sample ID: 2' (H500883-04)

Chloride, SM4500Cl-B mg/kg **Analyzed By: AP**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**10400**	16.0	04/06/2015	ND	400	100	400	0.00	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

ARDINAL LABORATORIES
101 East Marland, Hobbs, NM 88240
(505) 393-2326 FAX (505) 393-2476

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Amber Cannon
Compa (505) 393-2326 Yates Petroleum Corporation
Company Address: 105 South 4th Street
City/State/Zip: Artesia, NM 88210
Telephone No: 575-748-4111 or 575-513-8799
Fax No: 575-748-4131
Sampler Signature: Amber Cannon
e-mail: acannon@yatespetroleum.com

Project Name: Union Federal SWD #1
Project #: 1RP-3568
Project Loc: 8-21S-32E, Lea County
PO #: 205-2020
Report Format: [x] Standard [ ] TRRP [ ] NPDES

(lab use only)
ORDER #: H500883

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge / GW=Groundwater S=Soil/Solid / NP=Non-Potable Specify Other	Analyze For: TCLP: TOTAL: TPH: 418.1 8015M 8015	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides	SAR	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
1	Surface	Surf.	Surf.	4/1/2015	10:42 AM		1	X								S	X							X			X			X
2	6"	6"	6"	4/1/2015	11:06 AM		1	X								S	X							X			X			X
3	1'	1'	1'	4/1/2015	11:23 AM		1	X								S	X							X			X			X
4	2'	2'	2'	4/1/2015	11:45 AM		1	X								S	X							X			X			X

Special Instructions: TPH: 8015B, BTEX: 8021B. Please show BTEX results as mg/kg. Please put chlorides on a separate report. Thank you.

Relinquished by:	Date	Time	Received by:	Date	Time
Amber Cannon	4/2/2015		Jodi Henson	4/2/15	11:35
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time

Laboratory Comments:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N
Labels on container(s) Y N
Custody seals on container(s) Y N
Custody seals on cooler(s) Y N
Sample Hand Delivered Y N
by Sampler/Client Rep. ? Y N
by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 2.0 °C
#54

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 07, 2015

Amber Cannon
Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210
TEL: (575) 748-4195
FAX

RE: Union Federal SWD #1 OrderNo.: 1507D85

Dear Amber Cannon:

Hall Environmental Analysis Laboratory received 10 sample(s) on 7/31/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order: **1507D85**
Date Reported: **8/7/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab Order: 1507D85

Lab ID: 1507D85-001 **Collection Date:** 7/29/2015 7:28:00 AM
Client Sample ID: 1-4' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	340	30		mg/Kg	20	8/4/2015 11:51:20 AM	20587

Lab ID: 1507D85-002 **Collection Date:** 7/29/2015 7:31:00 AM
Client Sample ID: 1-5' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	130	30		mg/Kg	20	8/4/2015 12:28:33 PM	20587

Lab ID: 1507D85-003 **Collection Date:** 7/29/2015 8:04:00 AM
Client Sample ID: 2-6' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	11000	750		mg/Kg	500	8/5/2015 1:00:08 PM	20587

Lab ID: 1507D85-004 **Collection Date:** 7/29/2015 8:09:00 AM
Client Sample ID: 2-7' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	8700	300		mg/Kg	200	8/5/2015 1:12:33 PM	20587

Lab ID: 1507D85-005 **Collection Date:** 7/29/2015 8:13:00 AM
Client Sample ID: 2-8' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	15000	750		mg/Kg	500	8/5/2015 1:24:58 PM	20587

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **1507D85**
Date Reported: **8/7/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab Order: 1507D85

Lab ID: 1507D85-006 **Collection Date:** 7/29/2015 8:16:00 AM
Client Sample ID: 2-9' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	5600	300		mg/Kg	200	8/5/2015 1:37:23 PM	20587

Lab ID: 1507D85-007 **Collection Date:** 7/29/2015 9:20:00 AM
Client Sample ID: 3-6' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	2200	75		mg/Kg	50	8/5/2015 1:49:48 PM	20587

Lab ID: 1507D85-008 **Collection Date:** 7/29/2015 9:25:00 AM
Client Sample ID: 3-7' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	440	30		mg/Kg	20	8/4/2015 2:07:49 PM	20587

Lab ID: 1507D85-009 **Collection Date:** 7/29/2015 9:35:00 AM
Client Sample ID: 3-8' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	1500	75		mg/Kg	50	8/5/2015 2:02:12 PM	20587

Lab ID: 1507D85-010 **Collection Date:** 7/29/2015 9:42:00 AM
Client Sample ID: 3-9' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	1200	75		mg/Kg	50	8/5/2015 2:14:37 PM	20587

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507D85**

07-Aug-15

Client: Yates Petroleum Corporation

Project: Union Federal SWD #1

Sample ID	MB-20587	SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS	Batch ID:	20587		RunNo:	27959				
Prep Date:	8/4/2015	Analysis Date:	8/4/2015		SeqNo:	841176	Units:	mg/Kg		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-20587	SampType:	LCS		TestCode:	EPA Method 300.0: Anions				
Client ID:	LCSS	Batch ID:	20587		RunNo:	27959				
Prep Date:	8/4/2015	Analysis Date:	8/4/2015		SeqNo:	841177	Units:	mg/Kg		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.5	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Yates Petroleum Corpora Work Order Number: 1507D85 RcptNo: 1

Received by/date: AT 07/31/15

Logged By: Lindsay Mangin 7/31/2015 7:10:00 AM

Completed By: Lindsay Mangin 7/31/2015 8:24:11 AM

Reviewed By: CS 07/31/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☐ No ☑ NA ☐
   Approved by client.
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☐ No ☑ NA ☐
   Approved by client.
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
    # of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐ Adjusted?
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐ Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	21.0	Good	Yes			

Chain-of-Custody Record

Client: Yates Petroleum Corporation

Mailing Address: 105 South 4th Street Artesia, NM 88210

Phone #: 575-513-8799 or 575-748-4111

email or Fax#: acannon@yatespetroleum.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
X Standard ☐ Rush

Project Name: Union Federal SWD #1

Project #: 1RP-3568

Project Manager: Amber Griffin

PO # 205-2020

Sampler: Amber Griffin AG

On Ice: ☐ Yes ☒ No

Sample Temperature: 21.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1507D85	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diese	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO3,NO2,PO4,SO4	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles
7/29/2015	7:28	Soil	1 - 4'	1 - 4oz.	Not Required	-001								X				
7/29/2015	7:31	Soil	1 - 5'	1 - 4oz.	Not Required	-002								X				
7/29/2015	8:04	Soil	2 - 6'	1 - 4oz.	Not Required	-003								X				
7/29/2015	8:09	Soil	2 - 7'	1 - 4oz.	Not Required	-004								X				
7/29/2015	8:13	Soil	2 - 8'	1 - 4oz.	Not Required	-005								X				
7/29/2015	8:16	Soil	2 - 9'	1 - 4oz.	Not Required	-006								X				
7/29/2015	9:20	Soil	3 - 6'	1 - 4oz.	Not Required	-007								X				
7/29/2015	9:25	Soil	3 - 7'	1 - 4oz.	Not Required	-008								X				
7/29/2015	9:35	Soil	3 - 8'	1 - 4oz.	Not Required	-009								X				
7/29/2015	9:42	Soil	3 - 9'	1 - 4oz.	Not Required	-010								X				

Date: 7/30/15 Time: Relinquished by: Amber Griffin

Received by: Date 07/31/15 Time 0710

Date: Time: Relinquished by:

Received by: Date Time

Remarks: **Anions: Chloride only.**

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 10, 2015

Amber Cannon

Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210
TEL: (575) 748-4217
FAX

RE: Union Federal SWD #1 OrderNo.: 1507D95

Dear Amber Cannon:

Hall Environmental Analysis Laboratory received 9 sample(s) on 7/31/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-001 **Matrix:** SOIL

Client Sample ID: 1-1'
Collection Date: 7/29/2015 7:21:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	170	10		mg/Kg	1	8/3/2015 4:11:11 PM	20541
Surr: DNOP	98.0	57.9-140		%REC	1	8/3/2015 4:11:11 PM	20541
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/4/2015 1:05:03 AM	20550
Surr: BFB	87.6	75.4-113		%REC	1	8/4/2015 1:05:03 AM	20550
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	8/4/2015 1:05:03 AM	20550
Toluene	ND	0.049		mg/Kg	1	8/4/2015 1:05:03 AM	20550
Ethylbenzene	ND	0.049		mg/Kg	1	8/4/2015 1:05:03 AM	20550
Xylenes, Total	ND	0.097		mg/Kg	1	8/4/2015 1:05:03 AM	20550
Surr: 4-Bromofluorobenzene	93.3	80-120		%REC	1	8/4/2015 1:05:03 AM	20550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-002 **Matrix:** SOIL

Client Sample ID: 1-2'
Collection Date: 7/29/2015 7:23:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	140	10		mg/Kg	1	8/5/2015 11:19:39 AM	20541
Surr: DNOP	94.4	57.9-140		%REC	1	8/5/2015 11:19:39 AM	20541
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/4/2015 1:29:49 AM	20550
Surr: BFB	88.4	75.4-113		%REC	1	8/4/2015 1:29:49 AM	20550
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	8/4/2015 1:29:49 AM	20550
Toluene	ND	0.048		mg/Kg	1	8/4/2015 1:29:49 AM	20550
Ethylbenzene	ND	0.048		mg/Kg	1	8/4/2015 1:29:49 AM	20550
Xylenes, Total	ND	0.096		mg/Kg	1	8/4/2015 1:29:49 AM	20550
Surr: 4-Bromofluorobenzene	94.0	80-120		%REC	1	8/4/2015 1:29:49 AM	20550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Detection Limit

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-003 **Matrix:** SOIL

Client Sample ID: 1-3'
Collection Date: 7/29/2015 7:25:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	170	100		mg/Kg	10	8/3/2015 5:32:17 PM	20541
Surr: DNOP	0	57.9-140	S	%REC	10	8/3/2015 5:32:17 PM	20541
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/4/2015 1:54:34 AM	20550
Surr: BFB	89.8	75.4-113		%REC	1	8/4/2015 1:54:34 AM	20550
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	8/4/2015 1:54:34 AM	20550
Toluene	ND	0.048		mg/Kg	1	8/4/2015 1:54:34 AM	20550
Ethylbenzene	ND	0.048		mg/Kg	1	8/4/2015 1:54:34 AM	20550
Xylenes, Total	ND	0.095		mg/Kg	1	8/4/2015 1:54:34 AM	20550
Surr: 4-Bromofluorobenzene	95.8	80-120		%REC	1	8/4/2015 1:54:34 AM	20550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-004 **Matrix:** SOIL

Client Sample ID: 2-3'
Collection Date: 7/29/2015 7:52:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/3/2015 5:59:05 PM	20541
Surr: DNOP	104	57.9-140		%REC	1	8/3/2015 5:59:05 PM	20541
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/4/2015 2:19:17 AM	20550
Surr: BFB	91.6	75.4-113		%REC	1	8/4/2015 2:19:17 AM	20550
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	8/4/2015 2:19:17 AM	20550
Toluene	ND	0.049		mg/Kg	1	8/4/2015 2:19:17 AM	20550
Ethylbenzene	ND	0.049		mg/Kg	1	8/4/2015 2:19:17 AM	20550
Xylenes, Total	ND	0.098		mg/Kg	1	8/4/2015 2:19:17 AM	20550
Surr: 4-Bromofluorobenzene	98.2	80-120		%REC	1	8/4/2015 2:19:17 AM	20550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-005 **Matrix:** SOIL

Client Sample ID: 2-4'
Collection Date: 7/29/2015 7:55:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/3/2015 6:26:29 PM	20541
Surr: DNOP	102	57.9-140		%REC	1	8/3/2015 6:26:29 PM	20541
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/4/2015 2:44:04 AM	20550
Surr: BFB	89.9	75.4-113		%REC	1	8/4/2015 2:44:04 AM	20550
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	8/4/2015 2:44:04 AM	20550
Toluene	ND	0.048		mg/Kg	1	8/4/2015 2:44:04 AM	20550
Ethylbenzene	ND	0.048		mg/Kg	1	8/4/2015 2:44:04 AM	20550
Xylenes, Total	ND	0.095		mg/Kg	1	8/4/2015 2:44:04 AM	20550
Surr: 4-Bromofluorobenzene	95.4	80-120		%REC	1	8/4/2015 2:44:04 AM	20550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-006 **Matrix:** SOIL

Client Sample ID: 2-5'
Collection Date: 7/29/2015 7:58:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/3/2015 6:53:27 PM	20541
Surr: DNOP	102	57.9-140		%REC	1	8/3/2015 6:53:27 PM	20541
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/4/2015 10:07:35 AM	20550
Surr: BFB	92.1	75.4-113		%REC	1	8/4/2015 10:07:35 AM	20550
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	8/4/2015 10:07:35 AM	20550
Toluene	ND	0.048		mg/Kg	1	8/4/2015 10:07:35 AM	20550
Ethylbenzene	ND	0.048		mg/Kg	1	8/4/2015 10:07:35 AM	20550
Xylenes, Total	ND	0.096		mg/Kg	1	8/4/2015 10:07:35 AM	20550
Surr: 4-Bromofluorobenzene	99.9	80-120		%REC	1	8/4/2015 10:07:35 AM	20550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-007 **Matrix:** SOIL

Client Sample ID: 3-3'
Collection Date: 7/29/2015 9:05:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/3/2015 7:20:30 PM	20541
Surr: DNOP	102	57.9-140		%REC	1	8/3/2015 7:20:30 PM	20541
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/4/2015 10:32:21 AM	20550
Surr: BFB	89.6	75.4-113		%REC	1	8/4/2015 10:32:21 AM	20550
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.047		mg/Kg	1	8/4/2015 10:32:21 AM	20550
Toluene	ND	0.047		mg/Kg	1	8/4/2015 10:32:21 AM	20550
Ethylbenzene	ND	0.047		mg/Kg	1	8/4/2015 10:32:21 AM	20550
Xylenes, Total	ND	0.094		mg/Kg	1	8/4/2015 10:32:21 AM	20550
Surr: 4-Bromofluorobenzene	97.3	80-120		%REC	1	8/4/2015 10:32:21 AM	20550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-008 **Matrix:** SOIL

Client Sample ID: 3-4'
Collection Date: 7/29/2015 9:07:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/3/2015 7:47:32 PM	20541
Surr: DNOP	106	57.9-140		%REC	1	8/3/2015 7:47:32 PM	20541
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/4/2015 10:57:19 AM	20550
Surr: BFB	91.2	75.4-113		%REC	1	8/4/2015 10:57:19 AM	20550
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.047		mg/Kg	1	8/4/2015 10:57:19 AM	20550
Toluene	ND	0.047		mg/Kg	1	8/4/2015 10:57:19 AM	20550
Ethylbenzene	ND	0.047		mg/Kg	1	8/4/2015 10:57:19 AM	20550
Xylenes, Total	ND	0.095		mg/Kg	1	8/4/2015 10:57:19 AM	20550
Surr: 4-Bromofluorobenzene	98.7	80-120		%REC	1	8/4/2015 10:57:19 AM	20550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-009 **Matrix:** SOIL

Client Sample ID: 3-5'
Collection Date: 7/29/2015 9:14:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/3/2015 8:14:21 PM	20541
Surr: DNOP	101	57.9-140		%REC	1	8/3/2015 8:14:21 PM	20541
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/4/2015 11:22:21 AM	20550
Surr: BFB	88.2	75.4-113		%REC	1	8/4/2015 11:22:21 AM	20550
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	8/4/2015 11:22:21 AM	20550
Toluene	ND	0.048		mg/Kg	1	8/4/2015 11:22:21 AM	20550
Ethylbenzene	ND	0.048		mg/Kg	1	8/4/2015 11:22:21 AM	20550
Xylenes, Total	ND	0.096		mg/Kg	1	8/4/2015 11:22:21 AM	20550
Surr: 4-Bromofluorobenzene	94.2	80-120		%REC	1	8/4/2015 11:22:21 AM	20550

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507D95**

10-Aug-15

Client: Yates Petroleum Corporation

Project: Union Federal SWD #1

Sample ID **MB-20541**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **20541**	RunNo: **27904**
Prep Date: **7/31/2015**	Analysis Date: **8/3/2015**	SeqNo: **839331** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	10		10.00		101	57.9	140			

Sample ID **LCS-20541**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **20541**	RunNo: **27904**
Prep Date: **7/31/2015**	Analysis Date: **8/3/2015**	SeqNo: **839332** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.8	57.4	139			
Surr: DNOP	5.0		5.000		101	57.9	140			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507D95

10-Aug-15

Client: Yates Petroleum Corporation

Project: Union Federal SWD #1

Sample ID	MB-20550	SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	PBS	Batch ID:	20550		RunNo:	27919				
Prep Date:	7/31/2015	Analysis Date:	8/3/2015		SeqNo:	839770	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	910		1000		91.4	75.4	113			

Sample ID	LCS-20550	SampType:	LCS		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	LCSS	Batch ID:	20550		RunNo:	27919				
Prep Date:	7/31/2015	Analysis Date:	8/3/2015		SeqNo:	839772	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	79.6	122			
Surr: BFB	1000		1000		101	75.4	113			

Sample ID	5ML RB	SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	PBS	Batch ID:	R27950		RunNo:	27950				
Prep Date:		Analysis Date:	8/4/2015		SeqNo:	840981	Units:	%REC		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	910		1000		91.1	75.4	113			

Sample ID	2.5UG GRO LCS	SampType:	LCS		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	LCSS	Batch ID:	R27950		RunNo:	27950				
Prep Date:		Analysis Date:	8/4/2015		SeqNo:	840982	Units:	%REC		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		101	75.4	113			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507D95**

10-Aug-15

Client: Yates Petroleum Corporation

Project: Union Federal SWD #1

Sample ID **MB-20550**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **20550**	RunNo: **27919**
Prep Date: **7/31/2015**	Analysis Date: **8/3/2015**	SeqNo: **839800** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.99		1.000		99.1	80	120			

Sample ID **LCS-20550**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **20550**	RunNo: **27919**
Prep Date: **7/31/2015**	Analysis Date: **8/3/2015**	SeqNo: **839801** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	103	76.6	128			
Toluene	1.0	0.050	1.000	0	104	75	124			
Ethylbenzene	1.1	0.050	1.000	0	105	79.5	126			
Xylenes, Total	3.4	0.10	3.000	0	113	78.8	124			
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **R27950**	RunNo: **27950**
Prep Date:	Analysis Date: **8/4/2015**	SeqNo: **841022** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		99.5	80	120			

Sample ID **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **R27950**	RunNo: **27950**
Prep Date:	Analysis Date: **8/4/2015**	SeqNo: **841023** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Yates Petroleum Corpora Work Order Number: 1507D95 RcptNo: 1

Received by/date: JA 07/31/15

Logged By: Lindsay Mangin 7/31/2015 8:00:00 AM

Completed By: Lindsay Mangin 7/31/2015 9:27:19 AM

Reviewed By: CS 07/31/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Not Present			

Chain-of-Custody Record

Client: Yates Petroleum Corporation

Mailing Address:

105 South 4th Street Artesia, NM 88210

Phone #: 575-513-8799 or 575-748-4111

email or Fax#: acannon@yatespetroleum.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
X Standard ☐ Rush

Project Name:
Union Federal SWD #1

Project #:
1RP-3568

Project Manager:
Amber Griffin

PO # 205-2020

Sampler: Amber Griffin AG

On Ice: X Yes ☐ No

Sample Temperature: 1.2

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1507D95	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diese	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
7/29/2015	7:21	Soil	1 - 1'	1 - 4oz.	Ice	-001	X		X					X				
7/29/2015	7:23	Soil	1 - 2'	1 - 4oz.	Ice	-002	X		X					X				
7/29/2015	7:25	Soil	1 - 3'	1 - 4oz.	Ice	-003	X		X					X				
7/29/2015	7:52	Soil	2 - 3'	1 - 4oz.	Ice	-004	X		X					X				
7/29/2015	7:55	Soil	2 - 4'	1 - 4oz.	Ice	-005	X		X					X				
7/29/2015	7:58	Soil	2 - 5'	1 - 4oz.	Ice	-006	X		X					X				
7/29/2015	9:05	Soil	3 - 3'	1 - 4oz.	Ice	-007	X		X					X				
7/29/2015	9:07	Soil	3 - 4'	1 - 4oz.	Ice	-008	X		X					X				
7/29/2015	9:14	Soil	3 - 5'	1 - 4oz.	Ice	-009	X		X					X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
7/30/15		Amber Griffin	Joe. Ochoa	07/31/15	0800
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: **TPH: 8015B, BTEX: 8021B. Please show BTEX results as mg/kg. Anions: Chloride only. Please put chloric results on a separate report from TPH and BTEX.**

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 10, 2015

Amber Cannon
Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210
TEL: (575) 748-4217
FAX

RE: Union Federal SWD #1 OrderNo.: 1507D95

Dear Amber Cannon:

Hall Environmental Analysis Laboratory received 9 sample(s) on 7/31/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-001 **Matrix:** SOIL

Client Sample ID: 1-1'
Collection Date: 7/29/2015 7:21:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	690	30		mg/Kg	20	8/4/2015 9:59:21 PM	20603

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Detection Limit

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-002 **Matrix:** SOIL

Client Sample ID: 1-2'
Collection Date: 7/29/2015 7:23:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	83	30		mg/Kg	20	8/4/2015 10:11:45 PM	20603

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-003 **Matrix:** SOIL

Client Sample ID: 1-3'
Collection Date: 7/29/2015 7:25:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	ND	30		mg/Kg	20	8/4/2015 10:24:09 PM	20603

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Detection Limit

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-004 **Matrix:** SOIL

Client Sample ID: 2-3'
Collection Date: 7/29/2015 7:52:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	1600	75		mg/Kg	50	8/5/2015 6:22:49 PM	20603

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Detection Limit

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-005 **Matrix:** SOIL

Client Sample ID: 2-4'
Collection Date: 7/29/2015 7:55:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	5700	300		mg/Kg	200	8/5/2015 6:35:14 PM	20603

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-006 **Matrix:** SOIL

Client Sample ID: 2-5'
Collection Date: 7/29/2015 7:58:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	2500	150		mg/Kg	100	8/5/2015 6:47:39 PM	20603

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Detection Limit

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-007 **Matrix:** SOIL

Client Sample ID: 3-3'
Collection Date: 7/29/2015 9:05:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	5600	300		mg/Kg	200	8/5/2015 7:00:04 PM	20603

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-008 **Matrix:** SOIL

Client Sample ID: 3-4'
Collection Date: 7/29/2015 9:07:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	430	30		mg/Kg	20	8/4/2015 11:51:01 PM	20603

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Detection Limit

Analytical Report
Lab Order **1507D95**
Date Reported: **8/10/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab ID: 1507D95-009 **Matrix:** SOIL

Client Sample ID: 3-5'
Collection Date: 7/29/2015 9:14:00 AM
Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	2500	75		mg/Kg	50	8/5/2015 7:12:29 PM	20603

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507D95**

10-Aug-15

Client: Yates Petroleum Corporation

Project: Union Federal SWD #1

Sample ID	**MB-20603**	SampType:	**MBLK**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**20603**		RunNo:	**27959**				
Prep Date:	**8/4/2015**	Analysis Date:	**8/4/2015**		SeqNo:	**841213**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-20603**	SampType:	**LCS**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**20603**		RunNo:	**27959**				
Prep Date:	**8/4/2015**	Analysis Date:	**8/4/2015**		SeqNo:	**841214**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.4	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Yates Petroleum Corpora Work Order Number: 1507D95 RcptNo: 1

Received by/date: JA 07/31/15

Logged By: Lindsay Mangin 7/31/2015 8:00:00 AM

Completed By: Lindsay Mangin 7/31/2015 9:27:19 AM

Reviewed By: CS 07/31/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Not Present			

Chain-of-Custody Record

Client: Yates Petroleum Corporation

Mailing Address:

105 South 4th Street Artesia, NM 88210

Phone #: 575-513-8799 or 575-748-4111

email or Fax#: acannon@yatespetroleum.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
X Standard ☐ Rush

Project Name:
Union Federal SWD #1

Project #:
1RP-3568

Project Manager:
Amber Griffin
PO # 205-2020

Sampler: Amber Griffin AG

On Ice: X Yes ☐ No

Sample Temperature: 1.2

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1507D95	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diese	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles / - NI
7/29/2015	7:21	Soil	1 - 1'	1 - 4oz.	Ice	-001	X		X					X				
7/29/2015	7:23	Soil	1 - 2'	1 - 4oz.	Ice	-002	X		X					X				
7/29/2015	7:25	Soil	1 - 3'	1 - 4oz.	Ice	-003	X		X					X				
7/29/2015	7:52	Soil	2 - 3'	1 - 4oz.	Ice	-004	X		X					X				
7/29/2015	7:55	Soil	2 - 4'	1 - 4oz.	Ice	-005	X		X					X				
7/29/2015	7:58	Soil	2 - 5'	1 - 4oz.	Ice	-006	X		X					X				
7/29/2015	9:05	Soil	3 - 3'	1 - 4oz.	Ice	-007	X		X					X				
7/29/2015	9:07	Soil	3 - 4'	1 - 4oz.	Ice	-008	X		X					X				
7/29/2015	9:14	Soil	3 - 5'	1 - 4oz.	Ice	-009	X		X					X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
7/30/15		Amber Griffin		07/31/15	0800
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: **TPH: 8015B, BTEX: 8021B. Please show BTEX results as mg/kg. Anions: Chloride only. Please put chloric results on a separate report from TPH and BTEX.**

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 06, 2016

Amber Griffin
Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210
TEL: (575) 748-4111
FAX

RE: Union Federal SWD #1 OrderNo.: 1512A71

Dear Amber Griffin:

Hall Environmental Analysis Laboratory received 8 sample(s) on 12/23/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order: **1512A71**
Date Reported: **1/6/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation **Lab Order:** 1512A71
Project: Union Federal SWD #1

Lab ID: 1512A71-001 **Collection Date:** 12/15/2015 8:32:00 AM
Client Sample ID: 2-15' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	5500	300		mg/Kg	200	12/31/2015 9:09:41 PM	23002

Lab ID: 1512A71-002 **Collection Date:** 12/15/2015 8:43:00 AM
Client Sample ID: 2-20' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	1700	75		mg/Kg	50	12/31/2015 9:22:05 PM	23002

Lab ID: 1512A71-003 **Collection Date:** 12/15/2015 8:54:00 AM
Client Sample ID: 2-25' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	1800	75		mg/Kg	50	12/31/2015 9:34:30 PM	23002

Lab ID: 1512A71-004 **Collection Date:** 12/15/2015 9:05:00 AM
Client Sample ID: 2-30' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	1600	75		mg/Kg	50	12/31/2015 9:46:55 PM	23002

Lab ID: 1512A71-005 **Collection Date:** 12/15/2015 9:34:00 AM
Client Sample ID: 2-35' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	2000	75		mg/Kg	50	12/31/2015 9:59:19 PM	23002

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **1512A71**
Date Reported: **1/6/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab Order: 1512A71

Lab ID: 1512A71-006 **Collection Date:** 12/15/2015 9:55:00 AM
Client Sample ID: 2-40' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	1800	75		mg/Kg	50	12/31/2015 10:36:34 PM	23002

Lab ID: 1512A71-007 **Collection Date:** 12/15/2015 10:25:00 AM
Client Sample ID: 2-45' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	700	30		mg/Kg	20	12/30/2015 3:13:10 PM	23002

Lab ID: 1512A71-008 **Collection Date:** 12/15/2015 10:56:00 AM
Client Sample ID: 2-50' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	230	30		mg/Kg	20	12/30/2015 1:06:47 AM	23001

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1512A71**

06-Jan-16

Client: Yates Petroleum Corporation

Project: Union Federal SWD #1

Sample ID	**MB-23001**	SampType: **MBLK**			TestCode: **EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID: **23001**			RunNo: **31145**					
Prep Date:	**12/29/2015**	Analysis Date: **12/30/2015**			SeqNo: **953296**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-23001**	SampType: **LCS**			TestCode: **EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID: **23001**			RunNo: **31145**					
Prep Date:	**12/29/2015**	Analysis Date: **12/30/2015**			SeqNo: **953297**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.4	90	110			

Sample ID	**MB-23002**	SampType: **MBLK**			TestCode: **EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID: **23002**			RunNo: **31168**					
Prep Date:	**12/29/2015**	Analysis Date: **12/30/2015**			SeqNo: **954140**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-23002**	SampType: **LCS**			TestCode: **EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID: **23002**			RunNo: **31168**					
Prep Date:	**12/29/2015**	Analysis Date: **12/30/2015**			SeqNo: **954141**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.4	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Yates Petroleum Corporat Work Order Number: 1512A71 RcptNo: 1

Received by/date: [signature] 12/23/15

Logged By: Lindsay Mangin 12/23/2015 9:40:00 AM [signature]

Completed By: Lindsay Mangin 12/23/2015 10:25:55 AM [signature]

Reviewed By: CS 12/23/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☑ No ☐ Not Present ☐
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐ # of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐ Adjusted?
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐ Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	9.8	Good	Yes			

Chain-of-Custody Record

Client: Yates Petroleum Corporation

Mailing Address: 105 South 4th Street Artesia, NM 88210

Phone #: 575-513-8799 or 575-748-4111

email or Fax#: agriffin@yatespetroleum.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
X Standard ☐ Rush

Project Name: Union Federal SWD #1

Project #: 1RP-3568

Project Manager: Amber Griffin
PO # 205-2020

Sampler: Amber Griffin AG

On Ice: ☐ Yes ☐ No

Sample Temperature: 9.8

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1512A71	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
12/15/2015	8:32	Soil	2-15'	1 - 4oz.	-	-001								X				
12/15/2015	8:43	Soil	2-20'	1 - 4oz.	-	-002								X				
12/15/2015	8:54	Soil	2-25'	1 - 4oz.	-	-003								X				
12/15/2015	9:05	Soil	2-30'	1 - 4oz.	-	-004								X				
12/15/2015	9:34	Soil	2-35'	1 - 4oz.	-	-005								X				
12/15/2015	9:55	Soil	2-40'	1 - 4oz.	-	-006								X				
12/15/2015	10:25	Soil	2-45'	1 - 4oz.	-	-007								X				
12/15/2015	10:56	Soil	2-50'	1 - 4oz.	-	-008								X				

Date	Time	Relinquished by	Received by	Date	Time
12/21/15	8:00A	Amber Griffin			
				12/23/15	0948

Remarks: Anions: Chloride only.

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 24, 2015

Amber Griffin

Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210
TEL: (575) 748-4111
FAX

RE: Union Federal SWD #1 OrderNo.: 1508707

Dear Amber Griffin:

Hall Environmental Analysis Laboratory received 6 sample(s) on 8/14/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order: **1508707**
Date Reported: **8/24/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab Order: 1508707

Lab ID: 1508707-001 **Collection Date:** 7/29/2015 8:20:00 AM
Client Sample ID: 2-10' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	4800	150		mg/Kg	100	8/20/2015 8:01:16 PM	20871

Lab ID: 1508707-002 **Collection Date:** 7/29/2015 8:24:00 AM
Client Sample ID: 2-11' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	6600	300		mg/Kg	200	8/20/2015 8:13:41 PM	20871

Lab ID: 1508707-003 **Collection Date:** 7/29/2015 8:28:00 AM
Client Sample ID: 2-12' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	14000	750		mg/Kg	500	8/20/2015 8:26:05 PM	20871

Lab ID: 1508707-004 **Collection Date:** 7/29/2015 8:32:00 AM
Client Sample ID: 2-13' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	15000	750		mg/Kg	500	8/20/2015 8:38:30 PM	20871

Lab ID: 1508707-005 **Collection Date:** 7/29/2015 9:47:00 AM
Client Sample ID: 3-10' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	480	30		mg/Kg	20	8/19/2015 1:50:55 PM	20871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order: **1508707**
Date Reported: **8/24/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Union Federal SWD #1
Lab Order: 1508707

Lab ID: 1508707-006
Client Sample ID: 3-11'
Collection Date: 7/29/2015 9:53:00 AM
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	630	30		mg/Kg	20	8/19/2015 2:03:20 PM	20871

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Yates Petroleum Corpora Work Order Number: 1508707 RcptNo 1

Received by/date: CS 08/14/15

Logged By: Ashley Gallegos 8/14/2015 9:18:00 AM

Completed By: Ashley Gallegos 8/14/2015 1:48:59 PM

Reviewed By: 08/14/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	# of preserved bottles checked for pH:
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	(<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date

By Whom: Via ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.6	Good	Yes			

Chain-of-Custody Record

Client: Yates Petroleum Corporation

Mailing Address: 105 South 4th Street Artesia, NM 88210

Phone #: 575-513-8799 or 575-748-4111

email or Fax#: agriffin@yatespetroleum.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation:
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
X Standard ☐ Rush

Project Name: Union Federal SWD #1

Project #: 1RP-3568

Project Manager: Amber Griffin
PO # 205-2020

Sampler: Amber Griffin AG

On Ice: X Yes ☐ No

Sample Temperature: 5.6°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1508707	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
7/29/2015	8:20	Soil	2 - 10'	1 - 4oz.	Not Required	-001								X				
7/29/2015	8:24	Soil	2 - 11'	1 - 4oz.	Not Required	-002								X				
7/29/2015	8:28	Soil	2 - 12'	1 - 4oz.	Not Required	-003								X				
7/29/2015	8:32	Soil	2 - 13'	1 - 4oz.	Not Required	-004								X				
7/29/2015	9:47	Soil	3 - 10'	1 - 4oz.	Not Required	-005								X				
7/29/2015	9:53	Soil	3 - 11'	1 - 4oz.	Not Required	-006								X				

Analysis Request

Remarks: Anions: Chloride only.

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/12/15		Amber Griffin	Celina Sanchez	08/14/15	0918
Date:	Time:	Relinquished by:	Received by:	Date	Time

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

RECEIVED
By JKeyes at 9:30 am, Apr 11, 2016

APPROVED

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	OGRID Number	Contact
Yates Petroleum Corporation	25575	Amber Griffin
Address		Telephone No.
104 S. 4th Street		575-748-1471
Facility Name		Facility Type
Union Federal SWD #1		Battery

Surface Owner	Mineral Owner	API No.
Federal	Federal	30-025-31412

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
J	8	21S	32E	1980	South	1980	East	Lea

Latitude 32.49136 **Longitude** 103.69418

NATURE OF RELEASE

Type of Release	Volume of Release	Volume Recovered
Produced Water	10 B/PW	10 B/PW
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
Water transfer pump	3/9/2015; AM	3/9/2015; AM
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour N/A	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
The water transfer pump could not keep up with the amount of water coming to the location, causing the storage tanks to overflow and release produced water. Wells were shut in or produced water was sent to another Salt Water Disposal facility. Vacuum truck(s) were called to recover the spill.

Describe Area Affected and Cleanup Action Taken.*
An approximate area of 30'X 20' within an unlined bermed tank battery. Vacuum trucks were called and recovered all of the produced water released. Impacted soils will be excavated /hauled to a NMOCD approved facility. Vertical and horizontal delineation samples will be taken and analysis ran for TPH & BTEX (chlorides for documentation). If initial analytical results for TPH & BTEX are under RRAL's (site ranking is 0) a Final Report, C-141 will be submitted to the OCD requesting closure. If the analytical results are above the RRAL a work plan will be submitted to the OCD. **Depth to Ground Water: >100' (approximately 100', per ChevronTexaco Trend Map), Wellhead Protection Area: No, Distance to Surface Water Body: >1000', SITE RANKING IS 0. Yates Petroleum requests closure based off all work being completed as per NMOCD approved work plan. 4' of contaminated soils were excavated from the release area, a 20 mil liner was installed in the bottom of the excavation, and the excavation was backfilled. Contaminated soils were taken to R360 Environmental Solutions on Highway 62/180.**

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

Signature: Amber Griffin	OIL CONSERVATION DIVISION	
Printed Name: Amber Griffin	Approved by Environmental Specialist:	
Title: NM Environmental Regulatory Agent	Approval Date: 04/11/2016	Expiration Date: ///
E-mail Address: agriffin@yatespetroleum.com	Conditions of Approval:	Attached ☐
Date: April 6, 2016 Phone: 575-748-4111	1RP-3568	

*Attach Additional Sheets If Necessary

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	OGRID Number	Contact
Yates Petroleum Corporation	25575	Amber Griffin
Address		Telephone No.
104 S. 4th Street		575-748-1471
Facility Name		Facility Type
Union Federal SWD #1		Battery

Surface Owner	Mineral Owner	API No.
Federal	Federal	30-025-31412

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
J	8	21S	32E	1980	South	1980	East	Lea

Latitude 32.49136 **Longitude** 103.69418

NATURE OF RELEASE

Type of Release	Volume of Release	Volume Recovered
Produced Water	300 B/PW	300 B/PW
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
Water transfer pump	3/10/2015; AM	3/10/2015; AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Who? Tomas Oberding, PhD/NMOCD II	
By Whom? Robert Asher/Yates Petroleum Corporation	Date and Hour 3/10/2015; AM (Email)	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
The water transfer pump could not keep up with the amount of water coming to the location, causing the storage tanks to overflow and release produced water. Wells were shut in or produced water was sent to another Salt Water Disposal facility. Vacuum truck(s) were called to recover the spill.

Describe Area Affected and Cleanup Action Taken.*
An approximate area of 50'X 30' within an unlined bermed tank battery. Vacuum trucks were called and recovered all of the produced water released. Impacted soils will be excavated /hauled to a NMOCD approved facility. Vertical and horizontal delineation samples will be taken and analysis ran for TPH & BTEX (chlorides for documentation). If initial analytical results for TPH & BTEX are under RRAL's (site ranking is 0) a Final Report, C-141 will be submitted to the OCD requesting closure. If the analytical results are above the RRAL a work plan will be submitted to the OCD. **Depth to Ground Water: >100' (approximately 100', per ChevronTexaco Trend Map), Wellhead Protection Area: No, Distance to Surface Water Body: >1000', SITE RANKING IS 0. Yates Petroleum requests closure based off all work being completed as per NMOCD approved work plan. 4' of contaminated soils were excavated from the release area, a 20 mil liner was installed in the bottom of the excavation, and the excavation was backfilled. Contaminated soils were taken to R360 Environmental Solutions on Highway 62/180.**

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

Signature: Amber Griffin	OIL CONSERVATION DIVISION
Printed Name: Amber Griffin	Approved by Environmental Specialist:
Title: NM Environmental Regulatory Agent	Approval Date: / Expiration Date:
E-mail Address: agriffin@yatespetroleum.com	Conditions of Approval: / Attached ☐
Date: April 6, 2016 Phone: 575-748-4111	1RP-3568

* Attach Additional Sheets If Necessary

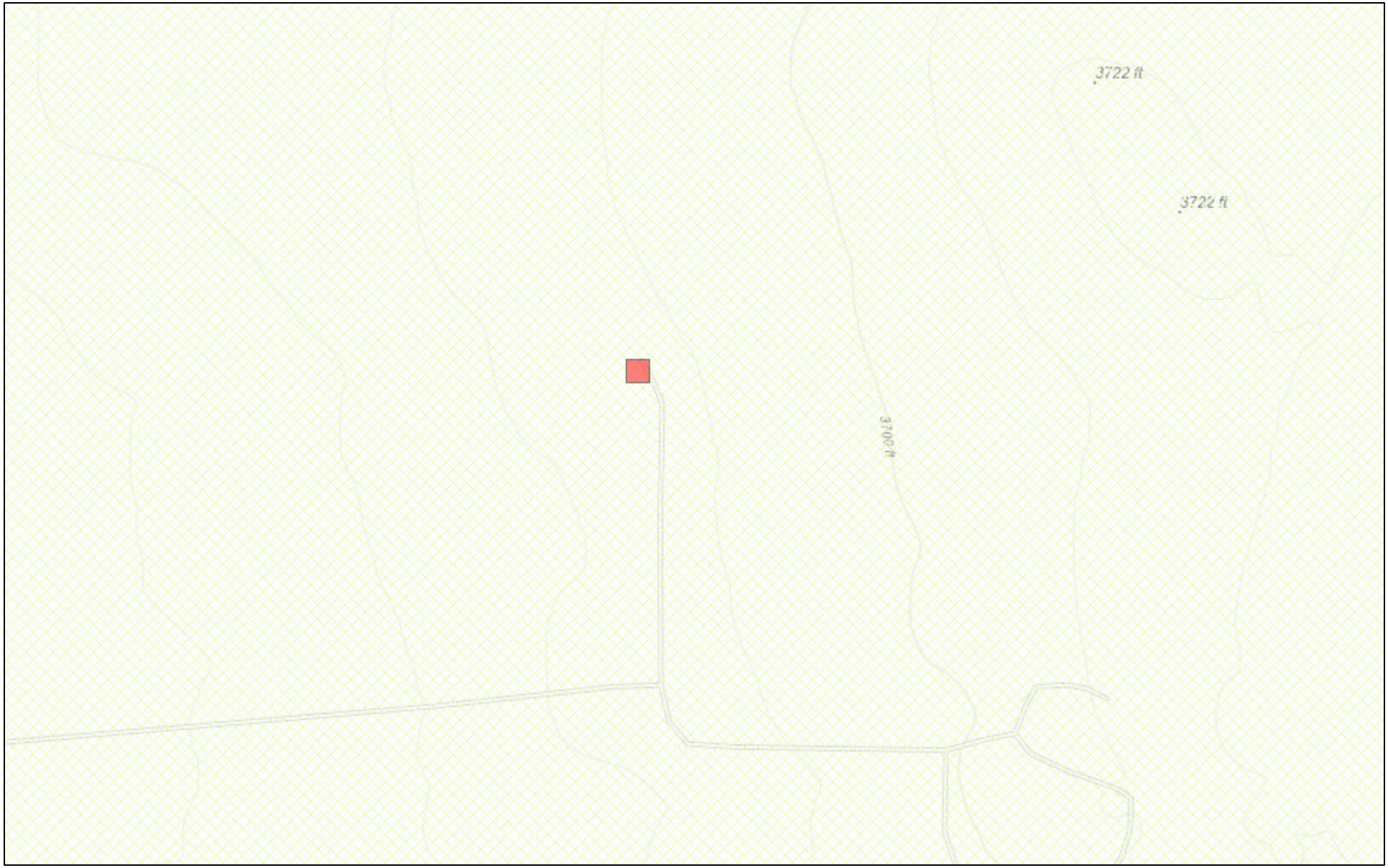
Appendix C

USGS science for a changing world

National Water Information System: Mapper

Site Information

New Mexico NFHL Data



May 12, 2020

1:9,028

0 0.075 0.15 0.3 mi

0 0.1 0.2 0.4 km

FEMA
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

nmflood.org is made possible through a collaboration with NMDHSEM, EDAC, and FEMA
This is a non-regulatory product for informational use only. Please consult your local floodplain administrator for further information.

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater ▼ Geographic Area: New Mexico ▼ GO

Click to hideNews Bulletins

- **Notice** - The USGS Water Resources Mission Area's priority is to maintain the safety and well-being of our communities, including providing critical situational awareness in times of flooding in all 50 U.S. states and additional territories. Our hydrologic monitoring stations continue to send data in near real-time to NWISWeb, and we are continuing critical water monitoring activities to protect life and property on a case-by-case basis. The health and safety of the public and our employees are our highest priorities, and we continue to follow guidance from the White House, the CDC, and state and local authorities.
- Introducing The Next Generation of USGS Water Data for the Nation
- Full News

Groundwater levels for New Mexico

Click to hide state-specific text

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 323039103432501

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

USGS 323039103432501 21S.32E.06.11131

Lea County, New Mexico
Latitude 32°30'39", Longitude 103°43'25" NAD27
Land-surface elevation 3,606 feet above NAVD88
The depth of the well is 55 feet below land surface.
This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source of measurement
1965-12-01		D	42.50			2		U		U
1968-05-29		D	45.34			2	P	U		U
1971-02-03		D	44.04			2	R	U		U
1976-02-25		D	43.66			2		U		U
1981-03-10		D	46.21			2		U		U
1986-03-21		D	48.64			2		U		U

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Status	P	Site was being pumped.
Status	R	Site had been pumped recently.

Section	Code	Description
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Accessibility Plug-Ins FOIA Privacy Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey

Title: Groundwater for New Mexico: Water Levels
URL: https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?

Page Contact Information: New Mexico Water Data Maintainer
Page Last Modified: 2020-05-12 14:06:30 EDT
0.25 0.23 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	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
CP 00793 POD1	CP	LE	1	1	2	01	21S	32E	628932	3598270*	1000		
CP 01701 POD1	CP	LE		1	3	35	21S	32E	626652	3589283	840	560	280

Average Depth to Water: **560 feet**

Minimum Depth: **560 feet**

Maximum Depth: **560 feet**

Record Count: 2

Basin/County Search:

County: Lea

PLSS Search:

Township: 21S **Range:** 32E

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

EOG

Union Federal SWD #1
Low Karst

Legend

- High
- Low
- Medium
- Union Federal SWD #1

62

Union Federal SWD #1

Google Earth

N

10 mi

Water Well Data
Average Depth to Groundwater (ft)
Union Federal SWD #1
Lea County, New Mexico

20 South 32 East

6	5	4	3	2	1 21.8
7	8	9	10	11	12
18 89	17	16	15	14	13
19	20	21	22	23	24
30 9.9	29	28	27 12.3	26	25
31	32	33	34	35	36 46

20 South 33 East

6	5 325 278	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24 +300
30	29	28	27	26	25
31	32	33	34	35	36

20 South 34 East

6	5	4 125	3	2	1
7	8	9	10	11	12
18	17 128 140	16	15	14 150	13
19	20	21	22	23	24 270
30	29	28	27	26	25
31	32	33	34 82	35	36

21 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16 630	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33 SITE	34	35	36

21 South 32 East

6	5	4	3	2	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	35	36

21 South 33 East

6	5	4	3	2 79 107	1
7	8	9	10	11 150	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28 179	27	26	25
31	32	33 180	34	35	36

22 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16 448	15	14	13
19	20 47	21	22	23	24
30	29 413	28 444	27	26	25
31	32	33 325	34	35	36

22 South 32 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14 382 350	13
19 (S) 280	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

22 South 33 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13 391
19	20	21	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)

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

Appendix D

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Certificate of Analysis Summary 688169

Tetra Tech- Midland, Midland, TX

Project Name: Union AJS Federal #1

Project Id:

Contact: Brittany Long

Project Location: Lea County, New Mexico

Date Received in Lab: Thu 02.11.2021 15:41

Report Date: 02.18.2021 14:59

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	688169-001		688169-002		688169-003		688169-004		688169-005		688169-006	
	Field Id:	SW-1		SW-2		SW-3		SW-4		SW-5		SW-6	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	02.11.2021 00:00		02.11.2021 00:00		02.11.2021 00:00		02.11.2021 00:00		02.11.2021 00:00		02.11.2021 00:00	
BTEX by EPA 8021B	***Extracted:***	02.12.2021 10:00		02.12.2021 10:00		02.12.2021 10:00		02.12.2021 10:00		02.12.2021 10:00		02.12.2021 10:00	
	Analyzed:	02.13.2021 03:58		02.13.2021 04:24		02.13.2021 04:51		02.13.2021 05:17		02.13.2021 05:44		02.13.2021 06:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00202	0.00202	<0.00199	0.00199	<0.00198	0.00198	0.00285	0.00199	<0.00202	0.00202	<0.00200	0.00200
Toluene		<0.00202	0.00202	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00202	0.00202	<0.00200	0.00200
Ethylbenzene		<0.00202	0.00202	<0.00199	0.00199	<0.00198	0.00198	<0.00199	0.00199	<0.00202	0.00202	<0.00200	0.00200
m,p-Xylenes		<0.00403	0.00403	<0.00398	0.00398	<0.00396	0.00396	<0.00398	0.00398	<0.00403	0.00403	<0.00401	0.00401
o-Xylene		<0.00202	0.00202	0.00264	0.00199	0.00250	0.00198	0.00296	0.00199	<0.00202	0.00202	<0.00200	0.00200
Total Xylenes		<0.00202	0.00202	0.00264	0.00199	0.00250	0.00198	0.00296	0.00199	<0.00202	0.00202	<0.00200	0.00200
Total BTEX		<0.00202	0.00202	0.00264	0.00199	0.00250	0.00198	0.00581	0.00199	<0.00202	0.00202	<0.00200	0.00200
Inorganic Anions by EPA 300/300.1	***Extracted:***	02.11.2021 21:20		02.11.2021 21:20		02.11.2021 21:20		02.11.2021 21:20		02.11.2021 21:20		02.11.2021 21:20	
	Analyzed:	02.12.2021 08:45		02.12.2021 09:01		02.12.2021 09:06		02.12.2021 09:22		02.12.2021 09:27		02.12.2021 09:33	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		46.7 HF	5.01	53.4 HF	5.00	60.7 HF	4.99	51.7 HF	5.03	60.9 HF	5.02	53.7 HF	5.03
TPH By SW8015 Mod	***Extracted:***	02.12.2021 12:00		02.12.2021 12:00		02.12.2021 12:00		02.12.2021 12:00		02.12.2021 12:00		02.12.2021 12:00	
	Analyzed:	02.12.2021 12:27		02.12.2021 13:32		02.12.2021 13:53		02.12.2021 14:14		02.12.2021 14:36		02.12.2021 14:57	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<49.9	49.9	<49.9	49.9	<50.0	50.0	<49.9	49.9	<49.9	49.9	<50.0	50.0
Diesel Range Organics (DRO)		<49.9	49.9	<49.9	49.9	<50.0	50.0	<49.9	49.9	<49.9	49.9	<50.0	50.0
Motor Oil Range Hydrocarbons (MRO)		<49.9	49.9	<49.9	49.9	<50.0	50.0	<49.9	49.9	<49.9	49.9	<50.0	50.0
Total TPH		<49.9	49.9	<49.9	49.9	<50.0	50.0	<49.9	49.9	<49.9	49.9	<50.0	50.0

BRL - Below Reporting Limit

Jessica Kramer

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

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Analytical Report 688169

for

Tetra Tech- Midland

Project Manager: Brittany Long

Union AJS Federal #1

02.18.2021

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

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

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

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

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02.18.2021

Project Manager: **Brittany Long**
Tetra Tech- Midland
901 West Wall ST
Midland, TX 79701

Reference: Eurofins Xenco, LLC Report No(s): **688169**
Union AJS Federal #1
Project Address: Lea County, New Mexico

Brittany Long:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 688169. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 688169 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Manager

A Small Business and Minority Company

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

eurofins | Environment Testing Xenco

Sample Cross Reference 688169

Tetra Tech- Midland, Midland, TX

Union AJS Federal #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SW-1	S	02.11.2021 00:00		688169-001
SW-2	S	02.11.2021 00:00		688169-002
SW-3	S	02.11.2021 00:00		688169-003
SW-4	S	02.11.2021 00:00		688169-004
SW-5	S	02.11.2021 00:00		688169-005
SW-6	S	02.11.2021 00:00		688169-006

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CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: Union AJS Federal #1

Project ID:
Work Order Number(s): *688169*

Report Date: *02.18.2021*
Date Received: *02.11.2021*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3150840 Inorganic Anions by EPA 300/300.1

Chloride recovered above QC limits in the laboratory control sample indicating a potential high bias.
Samples in the analytical batch are: 688169-001, -002, -003, -004, -005, -006.

Chloride RPD was outside laboratory control limits.
Samples in the analytical batch are: 688169-001, -002, -003, -004, -005, -006

Batch: LBA-3150999 BTEX by EPA 8021B

Surrogate 1,4-Difluorobenzene recovered below QC limits. Samples affected are: 7721488-1-BLK.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 688169-006.

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Certificate of Analytical Results 688169

Tetra Tech- Midland, Midland, TX

Union AJS Federal #1

Sample Id: **SW-1** Matrix: Soil Date Received:02.11.2021 15:41

Lab Sample Id: 688169-001 Date Collected: 02.11.2021 00:00

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.11.2021 21:20 % Moisture:

Seq Number: 3150840 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**46.7**	5.01	mg/kg	02.12.2021 08:45	HF	1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.12.2021 12:00 % Moisture:

Seq Number: 3151060 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.12.2021 12:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.12.2021 12:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.12.2021 12:27	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.12.2021 12:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-130	02.12.2021 12:27	
o-Terphenyl	84-15-1	126	%	70-130	02.12.2021 12:27	

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Certificate of Analytical Results 688169

Tetra Tech- Midland, Midland, TX

Union AJS Federal #1

Sample Id:	**SW-1**	Matrix:	Soil	Date Received:	02.11.2021 15:41
Lab Sample Id:	688169-001	Date Collected:	02.11.2021 00:00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL				
Analyst:	KTL	Date Prep:	02.12.2021 10:00	% Moisture:	
Seq Number:	3150999			Basis:	Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.13.2021 03:58	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.13.2021 03:58	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.13.2021 03:58	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.13.2021 03:58	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.13.2021 03:58	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.13.2021 03:58	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.13.2021 03:58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	99	%	70-130	02.13.2021 03:58	
4-Bromofluorobenzene	460-00-4	78	%	70-130	02.13.2021 03:58	

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Certificate of Analytical Results 688169

Tetra Tech- Midland, Midland, TX

Union AJS Federal #1

Sample Id: **SW-2** Matrix: Soil Date Received:02.11.2021 15:41

Lab Sample Id: 688169-002 Date Collected: 02.11.2021 00:00

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.11.2021 21:20 % Moisture:

Seq Number: 3150840 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**53.4**	5.00	mg/kg	02.12.2021 09:01	HF	1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.12.2021 12:00 % Moisture:

Seq Number: 3151060 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.12.2021 13:32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.12.2021 13:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.12.2021 13:32	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.12.2021 13:32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-130	02.12.2021 13:32	
o-Terphenyl	84-15-1	105	%	70-130	02.12.2021 13:32	

eurofins | Environment Testing Xenco

Certificate of Analytical Results 688169

Tetra Tech- Midland, Midland, TX

Union AJS Federal #1

Sample Id:	**SW-2**	Matrix:	Soil	Date Received:	02.11.2021 15:41
Lab Sample Id:	688169-002	Date Collected:	02.11.2021 00:00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL				
Analyst:	KTL	Date Prep:	02.12.2021 10:00	% Moisture:	
Seq Number:	3150999			Basis:	Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.13.2021 04:24	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.13.2021 04:24	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.13.2021 04:24	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.13.2021 04:24	U	1
o-Xylene	95-47-6	**0.00264**	0.00199	mg/kg	02.13.2021 04:24		1
Total Xylenes	1330-20-7	**0.00264**	0.00199	mg/kg	02.13.2021 04:24		1
Total BTEX		**0.00264**	0.00199	mg/kg	02.13.2021 04:24		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	81	%	70-130	02.13.2021 04:24	
4-Bromofluorobenzene	460-00-4	120	%	70-130	02.13.2021 04:24	

eurofins | Environment Testing Xenco

Certificate of Analytical Results 688169

Tetra Tech- Midland, Midland, TX

Union AJS Federal #1

Sample Id: **SW-3** Matrix: Soil Date Received:02.11.2021 15:41

Lab Sample Id: 688169-003 Date Collected: 02.11.2021 00:00

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.11.2021 21:20 % Moisture:

Seq Number: 3150840 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**60.7**	4.99	mg/kg	02.12.2021 09:06	HF	1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.12.2021 12:00 % Moisture:

Seq Number: 3151060 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.12.2021 13:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.12.2021 13:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.12.2021 13:53	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.12.2021 13:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-130	02.12.2021 13:53	
o-Terphenyl	84-15-1	120	%	70-130	02.12.2021 13:53	

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Tetra Tech- Midland, Midland, TX

Union AJS Federal #1

Sample Id:	**SW-3**	Matrix:	Soil	Date Received:	02.11.2021 15:41
Lab Sample Id:	688169-003	Date Collected:	02.11.2021 00:00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL				
Analyst:	KTL	Date Prep:	02.12.2021 10:00	% Moisture:	
Seq Number:	3150999			Basis:	Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.13.2021 04:51	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.13.2021 04:51	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.13.2021 04:51	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	02.13.2021 04:51	U	1
o-Xylene	95-47-6	**0.00250**	0.00198	mg/kg	02.13.2021 04:51		1
Total Xylenes	1330-20-7	**0.00250**	0.00198	mg/kg	02.13.2021 04:51		1
Total BTEX		**0.00250**	0.00198	mg/kg	02.13.2021 04:51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	121	%	70-130	02.13.2021 04:51	
1,4-Difluorobenzene	540-36-3	85	%	70-130	02.13.2021 04:51	

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Tetra Tech- Midland, Midland, TX

Union AJS Federal #1

Sample Id: **SW-4** Matrix: Soil Date Received:02.11.2021 15:41

Lab Sample Id: 688169-004 Date Collected: 02.11.2021 00:00

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.11.2021 21:20 % Moisture:

Seq Number: 3150840 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**51.7**	5.03	mg/kg	02.12.2021 09:22	HF	1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.12.2021 12:00 % Moisture:

Seq Number: 3151060 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.12.2021 14:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.12.2021 14:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.12.2021 14:14	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.12.2021 14:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-130	02.12.2021 14:14	
o-Terphenyl	84-15-1	122	%	70-130	02.12.2021 14:14	

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Tetra Tech- Midland, Midland, TX

Union AJS Federal #1

Sample Id:	**SW-4**	Matrix:	Soil	Date Received:	02.11.2021 15:41
Lab Sample Id:	688169-004	Date Collected:	02.11.2021 00:00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL				
Analyst:	KTL	Date Prep:	02.12.2021 10:00	% Moisture:	
Seq Number:	3150999			Basis:	Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	**0.00285**	0.00199	mg/kg	02.13.2021 05:17		1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.13.2021 05:17	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.13.2021 05:17	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.13.2021 05:17	U	1
o-Xylene	95-47-6	**0.00296**	0.00199	mg/kg	02.13.2021 05:17		1
Total Xylenes	1330-20-7	**0.00296**	0.00199	mg/kg	02.13.2021 05:17		1
Total BTEX		**0.00581**	0.00199	mg/kg	02.13.2021 05:17		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	79	%	70-130	02.13.2021 05:17	
1,4-Difluorobenzene	540-36-3	72	%	70-130	02.13.2021 05:17	

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Tetra Tech- Midland, Midland, TX

Union AJS Federal #1

Sample Id: **SW-5** Matrix: Soil Date Received:02.11.2021 15:41

Lab Sample Id: 688169-005 Date Collected: 02.11.2021 00:00

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.11.2021 21:20 % Moisture:

Seq Number: 3150840 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**60.9**	5.02	mg/kg	02.12.2021 09:27	HF	1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.12.2021 12:00 % Moisture:

Seq Number: 3151060 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.12.2021 14:36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.12.2021 14:36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.12.2021 14:36	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.12.2021 14:36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-130	02.12.2021 14:36	
o-Terphenyl	84-15-1	110	%	70-130	02.12.2021 14:36	

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Tetra Tech- Midland, Midland, TX

Union AJS Federal #1

Sample Id:	**SW-5**	Matrix:	Soil	Date Received:	02.11.2021 15:41
Lab Sample Id:	688169-005	Date Collected:	02.11.2021 00:00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL				
Analyst:	KTL	Date Prep:	02.12.2021 10:00	% Moisture:	
Seq Number:	3150999			Basis:	Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	02.13.2021 05:44	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	02.13.2021 05:44	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	02.13.2021 05:44	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	02.13.2021 05:44	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	02.13.2021 05:44	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	02.13.2021 05:44	U	1
Total BTEX		<0.00202	0.00202	mg/kg	02.13.2021 05:44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	88	%	70-130	02.13.2021 05:44	
4-Bromofluorobenzene	460-00-4	116	%	70-130	02.13.2021 05:44	

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Certificate of Analytical Results 688169

Tetra Tech- Midland, Midland, TX

Union AJS Federal #1

Sample Id: **SW-6** Matrix: Soil Date Received:02.11.2021 15:41

Lab Sample Id: 688169-006 Date Collected: 02.11.2021 00:00

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.11.2021 21:20 % Moisture:

Seq Number: 3150840 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**53.7**	5.03	mg/kg	02.12.2021 09:33	HF	1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.12.2021 12:00 % Moisture:

Seq Number: 3151060 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.12.2021 14:57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.12.2021 14:57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.12.2021 14:57	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.12.2021 14:57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-130	02.12.2021 14:57	
o-Terphenyl	84-15-1	125	%	70-130	02.12.2021 14:57	

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Certificate of Analytical Results 688169

Tetra Tech- Midland, Midland, TX

Union AJS Federal #1

Sample Id:	**SW-6**	Matrix:	Soil	Date Received:	02.11.2021 15:41
Lab Sample Id:	688169-006	Date Collected:	02.11.2021 00:00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL				
Analyst:	KTL	Date Prep:	02.12.2021 10:00	% Moisture:	
Seq Number:	3150999			Basis:	Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.13.2021 06:10	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.13.2021 06:10	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.13.2021 06:10	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.13.2021 06:10	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.13.2021 06:10	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.13.2021 06:10	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.13.2021 06:10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	91	%	70-130	02.13.2021 06:10	
4-Bromofluorobenzene	460-00-4	140	%	70-130	02.13.2021 06:10	**

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Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

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QC Summary 688169

Tetra Tech- Midland

Union AJS Federal #1

Analytical Method: Inorganic Anions by EPA 300/300.1 — Prep Method: E300P
Seq Number: 3150840 — Matrix: Solid — Date Prep: 02.11.2021
MB Sample Id: 7721358-1-BLK — LCS Sample Id: 7721358-1-BKS — LCSD Sample Id: 7721358-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	319	128	257	103	90-110	22	20	mg/kg	02.11.2021 22:54	HF

Analytical Method: Inorganic Anions by EPA 300/300.1 — Prep Method: E300P
Seq Number: 3150840 — Matrix: Soil — Date Prep: 02.11.2021
Parent Sample Id: 688105-044 — MS Sample Id: 688105-044 S — MSD Sample Id: 688105-044 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	487	252	728	96	738	100	90-110	1	20	mg/kg	02.11.2021 23:10	

Analytical Method: Inorganic Anions by EPA 300/300.1 — Prep Method: E300P
Seq Number: 3150840 — Matrix: Soil — Date Prep: 02.11.2021
Parent Sample Id: 688169-001 — MS Sample Id: 688169-001 S — MSD Sample Id: 688169-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	46.7	251	316	107	313	106	90-110	1	20	mg/kg	02.12.2021 08:50	

Analytical Method: TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3151060 — Matrix: Solid — Date Prep: 02.12.2021
MB Sample Id: 7721492-1-BLK — LCS Sample Id: 7721492-1-BKS — LCSD Sample Id: 7721492-1-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)	<50.0	1000	996	100	943	94	70-130	5	20	mg/kg	02.12.2021 11:44	
Diesel Range Organics (DRO)	<50.0	1000	971	97	963	96	70-130	1	20	mg/kg	02.12.2021 11:44	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		111		110		70-130	%	02.12.2021 11:44
o-Terphenyl	130		126		122		70-130	%	02.12.2021 11:44

Analytical Method: TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3151060 — Matrix: Solid — Date Prep: 02.12.2021
MB Sample Id: 7721492-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.12.2021 11:23	

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

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QC Summary 688169

Tetra Tech- Midland

Union AJS Federal #1

Analytical Method: **TPH By SW8015 Mod** Prep Method: SW8015P
Seq Number: 3151060 Matrix: Soil Date Prep: 02.12.2021
Parent Sample Id: 688169-001 MS Sample Id: 688169-001 S MSD Sample Id: 688169-001 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)	<50.0	999	1050	105	1040	104	70-130	1	20	mg/kg	02.12.2021 12:48	
Diesel Range Organics (DRO)	<50.0	999	1030	103	1010	101	70-130	2	20	mg/kg	02.12.2021 12:48	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		106		70-130	%	02.12.2021 12:48
o-Terphenyl	114		117		70-130	%	02.12.2021 12:48

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3150999 Matrix: Solid Date Prep: 02.12.2021
MB Sample Id: 7721488-1-BLK LCS Sample Id: 7721488-1-BKS LCSD Sample Id: 7721488-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.109	109	0.107	107	70-130	2	35	mg/kg	02.12.2021 18:42	
Toluene	<0.00200	0.100	0.110	110	0.109	109	70-130	1	35	mg/kg	02.12.2021 18:42	
Ethylbenzene	<0.00200	0.100	0.113	113	0.111	111	70-130	2	35	mg/kg	02.12.2021 18:42	
m,p-Xylenes	<0.00400	0.200	0.222	111	0.218	109	70-130	2	35	mg/kg	02.12.2021 18:42	
o-Xylene	<0.00200	0.100	0.112	112	0.111	111	70-130	1	35	mg/kg	02.12.2021 18:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	117		96		96		70-130	%	02.12.2021 18:42
4-Bromofluorobenzene	89		116		115		70-130	%	02.12.2021 18:42

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3150999 Matrix: Soil Date Prep: 02.12.2021
Parent Sample Id: 688219-001 MS Sample Id: 688219-001 S MSD Sample Id: 688219-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000527	0.0990	0.0935	94	0.0823	81	70-130	13	35	mg/kg	02.12.2021 19:35	
Toluene	0.00510	0.0990	0.0956	91	0.0855	80	70-130	11	35	mg/kg	02.12.2021 19:35	
Ethylbenzene	0.00442	0.0990	0.0969	93	0.0874	82	70-130	10	35	mg/kg	02.12.2021 19:35	
m,p-Xylenes	0.0879	0.198	0.191	52	0.171	41	70-130	11	35	mg/kg	02.12.2021 19:35	X
o-Xylene	0.0282	0.0990	0.0971	70	0.0874	59	70-130	11	35	mg/kg	02.12.2021 19:35	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		83		70-130	%	02.12.2021 19:35
4-Bromofluorobenzene	119		110		70-130	%	02.12.2021 19:35

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

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

6088109

Client Name: EOG	**Site Manager:** Brittany Long
Project Name: Union AJS Federal #1	
Project Location: (county, state) Lea County, New Mexico	**Project #:**
Invoice to: James Kennedy	
Receiving Laboratory: Xenco	**Sampler Signature:** Devin Dominguez
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2021 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
	SW-1	2/11/2021			X				X			1	N	X		X												X							
	SW-2	2/11/2021			X				X			1	N	X		X												X							
	SW-3	2/11/2021			X				X			1	N	X		X												X							
	SW-4	2/11/2021			X				X			1	N	X		X												X							
	SW-5	2/11/2021			X				X			1	N	X		X												X							
	SW-6	2/11/2021			X				X			1	N	X		X												X							

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
	2/11/21	1541		2/11/21	1541
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature

7.3

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 #: _____

ORIGINAL COPY

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 02.11.2021 03.41.00 PM

Work Order #: 688169

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

Temperature Measuring device used : IR8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	7.3	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	Cooling in progress
#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: 02.11.2021
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 02.12.2021
Jessica Kramer

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Certificate of Analysis Summary 688170

Tetra Tech- Midland, Midland, TX

Project Name: Union AJS Federal #1

Project Id:

Contact: Brittany Long

Project Location: Lea County, New Mexico

Date Received in Lab: Thu 02.11.2021 15:41

Report Date: 02.18.2021 15:00

Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	688170-001					
	Field Id:	H-1					
	Depth:						
	Matrix:	SOIL					
	Sampled:	02.11.2021 00:00					
BTEX by EPA 8021B	***Extracted:***	02.12.2021 10:00					
	Analyzed:	02.13.2021 06:36					
	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				
Inorganic Anions by EPA 300/300.1	***Extracted:***	02.11.2021 21:20					
	Analyzed:	02.12.2021 09:38					
	Units/RL:	mg/kg	RL				
Chloride		59.2 HF	5.03				
TPH By SW8015 Mod	***Extracted:***	02.12.2021 12:00					
	Analyzed:	02.12.2021 18:34					
	Units/RL:	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0				
Diesel Range Organics (DRO)		<50.0	50.0				
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0				
Total TPH		<50.0	50.0				

BRL - Below Reporting Limit

Jessica Kramer

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

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Analytical Report 688170

for

Tetra Tech- Midland

Project Manager: Brittany Long

Union AJS Federal #1

02.18.2021

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

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

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

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

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02.18.2021

Project Manager: **Brittany Long**
Tetra Tech- Midland
901 West Wall ST
Midland, TX 79701

Reference: Eurofins Xenco, LLC Report No(s): **688170**
Union AJS Federal #1
Project Address: Lea County, New Mexico

Brittany Long:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 688170. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 688170 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Manager

A Small Business and Minority Company

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

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Sample Cross Reference 688170

Tetra Tech- Midland, Midland, TX

Union AJS Federal #1

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
H-1	S	02.11.2021 00:00		688170-001

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CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: Union AJS Federal #1

Project ID:
Work Order Number(s): *688170*

Report Date: *02.18.2021*
Date Received: *02.11.2021*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3150840 Inorganic Anions by EPA 300/300.1
Chloride RPD was outside laboratory control limits.
Samples in the analytical batch are: 688170-001

Chloride recovered above QC limits in the laboratory control sample indicating a potential high bias.
Samples in the analytical batch are: 688170-001.

Batch: LBA-3150999 BTEX by EPA 8021B
Surrogate 1,4-Difluorobenzene recovered below QC limits. Samples affected are: 7721488-1-BLK.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 688170-001.

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Certificate of Analytical Results 688170

Tetra Tech- Midland, Midland, TX

Union AJS Federal #1

Sample Id: **H-1** Matrix: Soil Date Received:02.11.2021 15:41

Lab Sample Id: 688170-001 Date Collected: 02.11.2021 00:00

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 02.11.2021 21:20 % Moisture:

Seq Number: 3150840 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**59.2**	5.03	mg/kg	02.12.2021 09:38	HF	1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P

Tech: DVM

Analyst: ARM Date Prep: 02.12.2021 12:00 % Moisture:

Seq Number: 3151062 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.12.2021 18:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.12.2021 18:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.12.2021 18:34	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.12.2021 18:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-130	02.12.2021 18:34	
o-Terphenyl	84-15-1	117	%	70-130	02.12.2021 18:34	

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Certificate of Analytical Results 688170

Tetra Tech- Midland, Midland, TX

Union AJS Federal #1

Sample Id:	**H-1**	Matrix:	Soil	Date Received:	02.11.2021 15:41
Lab Sample Id:	688170-001	Date Collected:	02.11.2021 00:00		
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5035A
Tech:	KTL				
Analyst:	KTL	Date Prep:	02.12.2021 10:00	% Moisture:	
Seq Number:	3150999			Basis:	Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.13.2021 06:36	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.13.2021 06:36	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.13.2021 06:36	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.13.2021 06:36	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.13.2021 06:36	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.13.2021 06:36	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.13.2021 06:36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	136	%	70-130	02.13.2021 06:36	**
1,4-Difluorobenzene	540-36-3	89	%	70-130	02.13.2021 06:36	

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Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

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

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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

QC Summary 688170

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Tetra Tech- Midland

Union AJS Federal #1

Analytical Method: Inorganic Anions by EPA 300/300.1 — Prep Method: E300P
Seq Number: 3150840 — Matrix: Solid — Date Prep: 02.11.2021
MB Sample Id: 7721358-1-BLK — LCS Sample Id: 7721358-1-BKS — LCSD Sample Id: 7721358-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	319	128	257	103	90-110	22	20	mg/kg	02.11.2021 22:54	HF

Analytical Method: Inorganic Anions by EPA 300/300.1 — Prep Method: E300P
Seq Number: 3150840 — Matrix: Soil — Date Prep: 02.11.2021
Parent Sample Id: 688105-044 — MS Sample Id: 688105-044 S — MSD Sample Id: 688105-044 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	487	252	728	96	738	100	90-110	1	20	mg/kg	02.11.2021 23:10	

Analytical Method: Inorganic Anions by EPA 300/300.1 — Prep Method: E300P
Seq Number: 3150840 — Matrix: Soil — Date Prep: 02.11.2021
Parent Sample Id: 688169-001 — MS Sample Id: 688169-001 S — MSD Sample Id: 688169-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	46.7	251	316	107	313	106	90-110	1	20	mg/kg	02.12.2021 08:50	

Analytical Method: TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3151062 — Matrix: Solid — Date Prep: 02.12.2021
MB Sample Id: 7721494-1-BLK — LCS Sample Id: 7721494-1-BKS — LCSD Sample Id: 7721494-1-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)	<50.0	1000	997	100	1030	103	70-130	3	20	mg/kg	02.12.2021 11:44	
Diesel Range Organics (DRO)	<50.0	1000	1100	110	1110	111	70-130	1	20	mg/kg	02.12.2021 11:44	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	71		71		72		70-130	%	02.12.2021 11:44
o-Terphenyl	77		72		73		70-130	%	02.12.2021 11:44

Analytical Method: TPH By SW8015 Mod — Prep Method: SW8015P
Seq Number: 3151062 — Matrix: Solid — Date Prep: 02.12.2021
MB Sample Id: 7721494-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.12.2021 11:23	

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

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

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

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QC Summary 688170

Tetra Tech- Midland

Union AJS Federal #1

Analytical Method: **TPH By SW8015 Mod** Prep Method: SW8015P
Seq Number: 3151062 Matrix: Soil Date Prep: 02.12.2021
Parent Sample Id: 688218-001 MS Sample Id: 688218-001 S MSD Sample Id: 688218-001 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)	<49.9	998	1020	102	991	99	70-130	3	20	mg/kg	02.12.2021 12:48	
Diesel Range Organics (DRO)	17.1	998	1170	116	1120	111	70-130	4	20	mg/kg	02.12.2021 12:48	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	121		128		70-130	%	02.12.2021 12:48
o-Terphenyl	130		126		70-130	%	02.12.2021 12:48

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3150999 Matrix: Solid Date Prep: 02.12.2021
MB Sample Id: 7721488-1-BLK LCS Sample Id: 7721488-1-BKS LCSD Sample Id: 7721488-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.109	109	0.107	107	70-130	2	35	mg/kg	02.12.2021 18:42	
Toluene	<0.00200	0.100	0.110	110	0.109	109	70-130	1	35	mg/kg	02.12.2021 18:42	
Ethylbenzene	<0.00200	0.100	0.113	113	0.111	111	70-130	2	35	mg/kg	02.12.2021 18:42	
m,p-Xylenes	<0.00400	0.200	0.222	111	0.218	109	70-130	2	35	mg/kg	02.12.2021 18:42	
o-Xylene	<0.00200	0.100	0.112	112	0.111	111	70-130	1	35	mg/kg	02.12.2021 18:42	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	117		96		96		70-130	%	02.12.2021 18:42
4-Bromofluorobenzene	89		116		115		70-130	%	02.12.2021 18:42

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5035A
Seq Number: 3150999 Matrix: Soil Date Prep: 02.12.2021
Parent Sample Id: 688219-001 MS Sample Id: 688219-001 S MSD Sample Id: 688219-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.000527	0.0990	0.0935	94	0.0823	81	70-130	13	35	mg/kg	02.12.2021 19:35	
Toluene	0.00510	0.0990	0.0956	91	0.0855	80	70-130	11	35	mg/kg	02.12.2021 19:35	
Ethylbenzene	0.00442	0.0990	0.0969	93	0.0874	82	70-130	10	35	mg/kg	02.12.2021 19:35	
m,p-Xylenes	0.0879	0.198	0.191	52	0.171	41	70-130	11	35	mg/kg	02.12.2021 19:35	X
o-Xylene	0.0282	0.0990	0.0971	70	0.0874	59	70-130	11	35	mg/kg	02.12.2021 19:35	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		83		70-130	%	02.12.2021 19:35
4-Bromofluorobenzene	119		110		70-130	%	02.12.2021 19:35

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

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

608170

Client Name: EOG	**Site Manager:** Brittany Long
Project Name: Union AJS Federal #1	
Project Location: (county, state) Lea County, New Mexico	**Project #:**
Invoice to: James Kennedy	
Receiving Laboratory: Xenco	**Sampler Signature:** Devin Dominguez
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2021 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
	H-1	2/11/2021			X				X			1	N	X		X												X							

Relinquished by:	Date: 2/11/21	Time: 1541	Received by: Date: 2/11/21 Time: 1541
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY

Sample Temperature: 7.3

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 #: _____

ORIGINAL COPY

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 02.11.2021 03.41.00 PM

Work Order #: 688170

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

Temperature Measuring device used : IR8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	7.3	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	Cooling in progress
#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: 02.11.2021
Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 02.12.2021
Jessica Kramer

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

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

CONDITIONS

Operator:	OGRID:
EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	7377
	Action Number: 54736
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bbillings	None	11/2/2021