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 April 3, 2017

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 Devon Energy Production Co LP (6137)	Contact Stephen Richards, Devon Completions Foreman
Address PO BOX 250, Artesia, NM 88211	Telephone No. (575) 252-3717
Facility Name: Trionyx Frac Pond (Completing wells on the Arabian 30-19 Fed Com 1H)	Facility Type Oil

Surface Owner: State	Mineral Owner: State	API No. 30-025-43176

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	2	25S	31E					EDDY

Latitude 32.154386 N Longitude 103.740605 W NAD83

NATURE OF RELEASE

Type of Release: Treated Produced Water	Volume of Release: 50 bbls	Volume Recovered: 40 bbls
Source of Release: Lay Flat Transfer Line	Date and Hour of Occurrence: 10/24/2017 @ 2:14 PM MST	Date and Hour of Discovery 10/24/2017 @ 2:14 PM MST
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? OCD: Olivia Yu	RECEIVED By Olivia Yu at 9:23 am, Nov 17, 2017
By Whom? Mike Shoemaker, EHS Professional	Date and Hour: OCD: 10/25/17 @ 7:24 PM MST	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. NA	

If a Watercourse was Impacted, Describe Fully.* NA

Describe Cause of Problem and Remedial Action Taken.*
A contract company was pigging the layflat line from the Arabian 30-19 Fed Com 1H to the Trionyx pond. They had completed the line from the location to their booster pump, after rigging up to pig from the booster pump to the Trionyx pond there was some air in the line which caused the line to come out of the pond and allowed fluid to be release to the ground from the line. The contract company shut down operations and notified Devon personnel. Approximately 50bbls of produced water ran off the side of the pond onto the Trionxy facility. A vacuum truck was dispatched and recovered 40 bbls of produced water.

Describe Area Affected and Cleanup Action Taken.*
The spill affected approximately 25,000 square feet running South from the release point. Approximately 50 barrels of treated produced water was spilled and approximately 40 barrels were recovered. A remediation contractor will be contacted to assist with the delineation and remediation efforts.

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: Denise Menoud	OIL CONSERVATION DIVISION
Printed Name: Denise Menoud	Approved by Environmental Specialist:
Title: Admin Field Support	Approval Date: 11/17/2017 Expiration Date:
E-mail Address: denise.menoud@dvn.com	Conditions of Approval: see attached directive Attached ☑
Date: 10/30/2017 Phone: (575)746-5544	

* Attach Additional Sheets If Necessary

1RP-4867 nOY1732133962 pOY1732135037

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _11/6/2017_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-4867__ has been assigned. **Please refer to this case number in all future correspondence.**

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District _1_ office in __Hobbs____ on or before _12/17/2017_. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

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

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

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

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

● Composite sampling is not generally allowed.

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

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

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

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

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

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

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

Trionyx Pond Spill 10.2

devon

This map is for illustrative purposes only and is neither a legally recorded map nor survey and is not intended to be used as one. Devon makes no warranty, representation, or guarantee of any kind regarding this map.

WGS_1984_Web_Mercator_Auxiliary_Sphere
Prepared by: Menoud
Map is current as of: 30-Oct-2017

N

Miles
0 0.01 0.02 0.04 1:1,779

From: Shoemaker, Mike
To: Yu, Olivia, EMNRD
Cc: Fulks, Brett
Subject: Spill Notification for the Arabian 30-19 Fed Com 1H (API #30-025-43176)
Date: Wednesday, October 25, 2017 7:24:28 PM
Attachments: image001.png

Good Evening,

Devon had the following releases occur beginning at 2:14 PM MST on 10/24/17. The incident is described below.

1. Arabian 30-19 Fed Com 1H (API #30-025-43176)
    a. A contract company was pigging the layflat line from the Arabian 30-19 Fed Com 1H to the Trionyx pond (Lat: 32.15486, Long: -103.74124). They had completed the line from the location to their booster pump, after rigging up to pig from the booster pump to the Trionyx pond there was some air in the line which caused the line to come out of the pond and allowed fluid to be release to the ground from the line. The contract company shut down operations and notified Devon personnel. Approximately 50bbls of produced water ran off the side of the pond onto the Trionxy facility. A vaccum truck was dispatched and recovered 40 bbls of produced water.

A C-141 will be prepared and submitted with GPS coordinates of the areas affected.

Thanks,

Mike Shoemaker
EHS Representative

Devon Energy Corporation
6488 Seven Rivers Highway
Artesia, New Mexico 88210
575-746-5566 Office
575-513-5035 Mobile

devon

TETRA Technologies, Inc.

INFORMATION ONLY

March 20, 2018

Ms. Olivia Yu
Environmental Specialist
New Mexico Oil Conservation District
District 1 – Hobbs
1625 N. French Drive
Hobbs, New Mexico 88240

RE: 1RP-4867 - Submittal of Proposed WorkPlan for Soil Delineation at the Trionyx Frac Pond T-25-S, R-31-E, Eddy County, New Mexico

Dear Ms. Yu,

TETRA Technologies Inc. (TETRA), a contractor to Devon Energy Production Co, LP (6137) (Devon) wishes to submit this Proposed Delineation Workplan (Workplan) to the New Mexico Oil Conservation Division (NMOCD) to address the release at the Trionyx Frac Pond on October 24, 2017. The purpose of this Workplan is to describe proposed methodologies and activities to carry out the delineation to assess the horizontal and vertical extent of impact to soils at the release site. The legal description of the Release Site is Unit Letter "P", Section 2, Township 25 South, Range 31 East, in Eddy County, New Mexico. The site location is shown in Figure 1.

Background

On October 24, 2017 at 2:14 PM MST, TETRA, under contract to Devon was pigging a line from the Arabian 30-19 Fed Com 1H to the Trionyx pond. TETRA had completed the line from the location to the booster pump. After rigging up to pig from the booster pump to the Trionyx pond, air in the line caused the line to come out of the pond and fluid was released to the ground. TETRA then shut down operations and notified Devon. Approximately 50bbls of produced water ran off the side of the pond onto the Trionxy facility. A vacuum truck was dispatched and recovered 40 bbls of treated produced water. The release affected approximately 25,000 square feet running south from the release point. The location of the release area is shown in Figure 2.

Soil Investigation

A sample of the treated produced water was taken from the Trionyx pond to determine the quality of the water released and to also ascertain what impacts may have occurred as a result of the release. The analytical results are provided in Table 1 below. Analytical reports from Cardinal Laboratories are attached to this Workplan.

24955 Interstate 45 North, The Woodlands, Texas 77380
281.364.5116

All results in mg/L	90 BBL COTTON DRAW WATER PIT
Benzene	0.823
Toluene	0.583
Ethylbenzene	0.033
Total xylenes	0.162
Total BTEX	1.60
Chloride	146000
GRO C6-C10	2.65
DRO > C10-C28	<1.00
EXT DRO > C28-C36	<1.00

Table 1 – Analytical results from Trionyx pond

As shown in Table 1, the levels found clearly show benzene, toluene, ethylbenzene and xylenes (BTEX) levels and total petroleum hydrocarbons (TPH) (GRO+DRO+MRO C6 thru C36) to be very low. TETRA would expect low TPH levels since the produced water had been treated prior to its use by TETRA. BTEX and TPH levels found are expected to have little or no impact to soils.

The results were also compared to the most restrictive NMOCD Site Classification criteria remediation levels, 10 mg/kg for benzene, 50 mg/kg for BTEX and 100 mg/kg for TPH. Results clearly indicate delineation of BTEX and TPH are not needed and therefore are not part of this delineation Workplan.

Chloride levels were found to be elevated and are part of this proposed delineation Workplan. Chloride remediation levels for the release site were determined to be 600 mg/kg, per discussions with NMOCD. This Workplan will focus on the delineation of chlorides and the horizontal and vertical impact to soils.

TETRA is currently screening contractors to perform the work required in this Workplan. TETRA proposes to delineate the release using either soil borings (with a hollow stem auger) or investigation trenches (using a backhoe). The method will be determined upon selection of a remediation contractor. Samples will be collected at the surface and at 1 to 2 foot intervals below ground surface (bgs) to assess the vertical extent of chloride impact. To assess the horizontal extent soil samples will be collected at sample points adjacent to the release point and at approximately twenty (20) foot intervals downgradient from the release point. Samples will be collected and field screened for chloride to assess the horizontal and vertical extent of impact to soils. Sampling will continue until chloride field screening indicate chloride concentrations do not exceed the recommended NMOCD regulatory guidelines of 600 mg/kg. Confirmation samples will be taken at the extent of the delineation to confirm field sampling results. Confirmation samples will be analyzed for chloride by EPA Method 300.0.

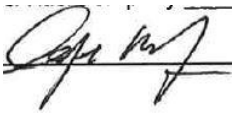
One (1) background soil sample will be collected from a non-impacted area approximately fifty (50) feet northeast of the release area.

Reporting

Upon receipt of the analytical results, a soil investigation report will be prepared by the TETRA contractor and submitted to the NMOCD for review and approval. If it is determined by NMOCD that remediation is required a Workplan for the remediation will be prepared and submitted to NMOCD for approval.

Should you have any questions or comments, please do not hesitate to contact me at 281-364-5116.

Sincerely,



Clifford Kirchof
Environmental/Chemical
Regulatory Compliance Manager

cc. Mike Shoemaker, Devon
Adam Calvin, TETRA
Delfino Escalante III, TETRA

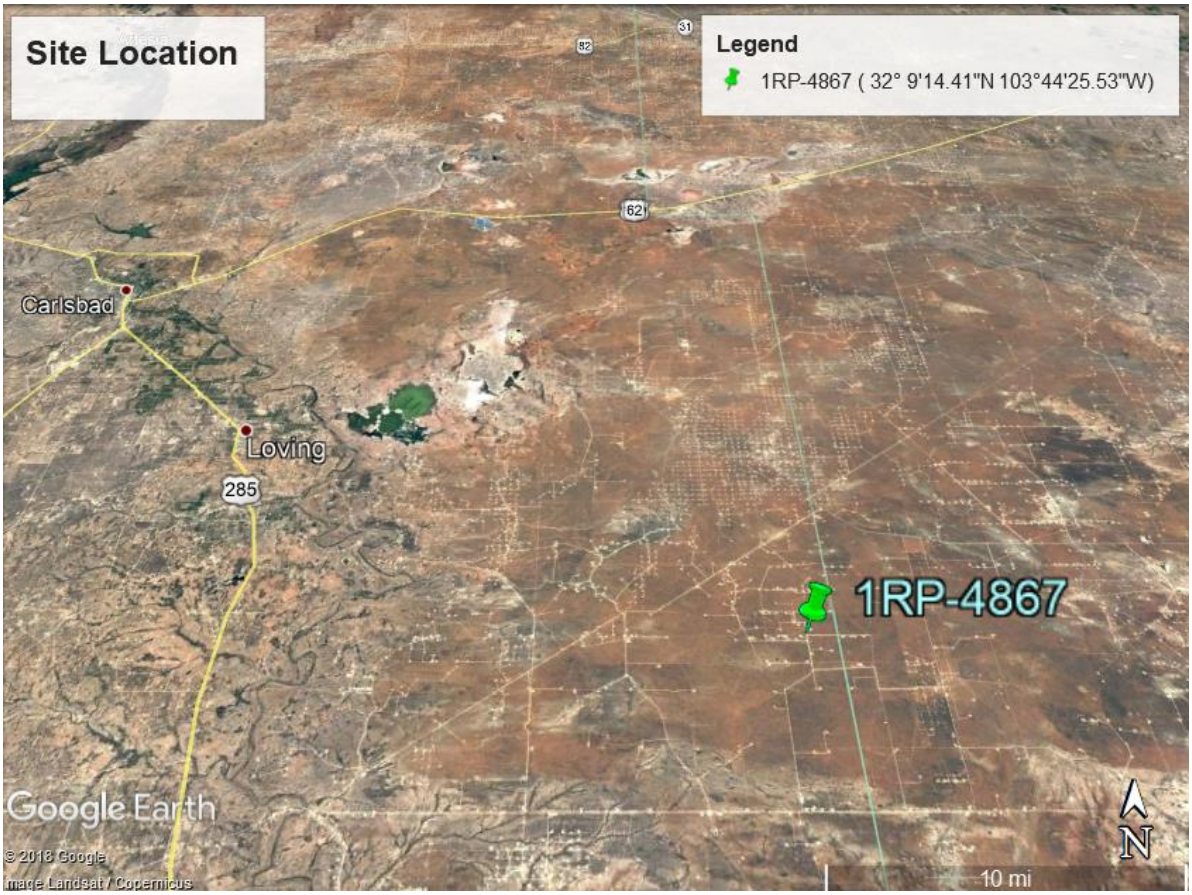


Figure 1 – Site location with Lat/Long coordinates.

Figure 2: Area of Release at Trionyx Frac Pond – 50 bbls with 40 bbls recovered.

CARDINAL Laboratories

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

February 13, 2018

ANDREW ROMO

TETRA TECHNOLOGIES

1114 S FM 1788

MIDLAND, TX 79765

RE: COTTON DRAW WATER PIT

Enclosed are the results of analyses for samples received by the laboratory on 02/12/18 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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,

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TETRA TECHNOLOGIES
ANDREW ROMO
1114 S FM 1788
MIDLAND TX, 79765
Fax To:

Received:	02/12/2018	Sampling Date:	02/12/2018
Reported:	02/13/2018	Sampling Type:	Wastewater
Project Name:	COTTON DRAW WATER PIT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LOVINGTON, NM		

Sample ID: 250 BBL COTTON DRAW WATER PIT (H800433-01)

BTEX 8021B mg/L Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**0.813**	0.020	02/12/2018	ND	0.020	99.2	0.0200	0.733	
Toluene*	**0.569**	0.020	02/12/2018	ND	0.020	97.9	0.0200	1.35	
Ethylbenzene*	**0.031**	0.020	02/12/2018	ND	0.020	97.5	0.0200	2.48	
Total Xylenes*	**0.154**	0.060	02/12/2018	ND	0.061	102	0.0600	1.74	
Total BTEX	**1.57**	0.120	02/12/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *81.3-128*

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**150000**	4.00	02/12/2018	ND	104	104	100	3.92	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**220000**	5.00	02/13/2018	ND	209	98.1	213	2.38	

TPH 8015M mg/L Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**2.27**	1.00	02/12/2018	ND	37.4	74.8	50.0	0.837	
DRO >C10-C28*	<1.00	1.00	02/12/2018	ND	48.5	96.9	50.0	2.18	
EXT DRO >C28-C36	<1.00	1.00	02/12/2018	ND					

Surrogate: 1-Chlorooctane *70.5 %* *37.1-138*

Surrogate: 1-Chlorooctadecane *90.7 %* *44.6-151*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TETRA TECHNOLOGIES
ANDREW ROMO
1114 S FM 1788
MIDLAND TX, 79765
Fax To:

Received:	02/12/2018	Sampling Date:	02/12/2018
Reported:	02/13/2018	Sampling Type:	Wastewater
Project Name:	COTTON DRAW WATER PIT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LOVINGTON, NM		

Sample ID: 90 BBL COTTON DRAW WATER PIT (H800433-02)

BTEX 8021B mg/L Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**0.823**	0.020	02/12/2018	ND	0.020	99.2	0.0200	0.733	
Toluene*	**0.583**	0.020	02/12/2018	ND	0.020	97.9	0.0200	1.35	
Ethylbenzene*	**0.033**	0.020	02/12/2018	ND	0.020	97.5	0.0200	2.48	
Total Xylenes*	**0.162**	0.060	02/12/2018	ND	0.061	102	0.0600	1.74	
Total BTEX	**1.60**	0.120	02/12/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *81.3-128*

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**146000**	4.00	02/12/2018	ND	104	104	100	3.92	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**213000**	5.00	02/13/2018	ND	209	98.1	213	2.38	

TPH 8015M mg/L Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**2.65**	1.00	02/12/2018	ND	37.4	74.8	50.0	0.837	
DRO >C10-C28*	<1.00	1.00	02/12/2018	ND	48.5	96.9	50.0	2.18	
EXT DRO >C28-C36	<1.00	1.00	02/12/2018	ND					

Surrogate: 1-Chlorooctane *75.0 %* *37.1-138*

Surrogate: 1-Chlorooctadecane *78.7 %* *44.6-151*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	Tetra Technology	**BILL TO**	
Project Manager:	Andrew Romo	P.O. #:	
Address:		Company:	
City:	State: Zip:	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:	Cotton Draw Water Pit	State: Zip:	
Project Location:	Lovington, NM	Phone #:	
Sampler Name:	Andrew Romo	Fax #:	

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST										
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	TPH 8015	BTEX	CL	TDS							
H800433																									
1	250 bbl Cotton Draw Water Pit				✓								2/12/18	10:30	✓	✓	✓	✓							
2	90 bbl Cotton Draw water Pit				✓								2/12/18	10:30	✓	✓	✓	✓							

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 2/12/18	Received By: Jodi Henson	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 11:30		Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: aromo@tetratech.com
	Time:		RUSH!!
Delivered By: (Circle One) #75	Sample Condition: Cool ☑ Yes ☐ No, Intact ☑ Yes ☐ No	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:	1.1°C / 1.3°C		

+ Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

From:	Yu, Olivia, EMNRD
To:	"Clifford Kirchof"
Cc:	Shoemaker, Mike; Adam Calvin; Delfino Escalante III; Andrew Romo; Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD
Subject:	RE: 1RP-4867 - Submittal of Proposed WorkPlan for Soil Delineation at the Trionyx Frac Pond T-25-S, R-31-E, Eddy County, New Mexico
Date:	Thursday, April 12, 2018 10:09:00 AM

Good morning Mr. Kirchof:

Thank you for the primary document regarding 1RP-4867. Is this a template for whichever environmental consultancy will be awarded to conduct the release characterization/delineation?

Please be advised that several additional details are necessary for assessment:

- Depth to groundwater evaluation: use NMOSE, USGS, and other available databases.
- Distance to nearest waterbody and wellheads: topographic maps for a preliminary evaluation is available on NMOCD website: OCD GIS
- All maps and figures must be scaled appropriately to the size of the release. Impacted area must be outlined and proposed delineation sample points marked, in relation to the release point, based on site assessment of representative pooling spots.
- All laboratory analyses should have accompanying data from field tests. Tabulate data to facilitate review.
- Caliche 'impermeable' layer is not an acceptable rationale for incompletion of vertical delineation.

Please be advised that according to NMOCD database, this release occurred on State surface and mineral ownership. NMSLO can verify. All corresponding agencies must be included in all communications and submitted reports.

Thanks,

Olivia Yu
Environmental Specialist
NMOCD, District I
Olivia.yu@state.nm.us
575-393-6161 x113

From: Clifford Kirchof <CKirchof@tetratec.com>
Sent: Tuesday, March 20, 2018 1:56 PM

To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: Shoemaker, Mike <Mike.Shoemaker@dvn.com>; Adam Calvin <ACalvin@tetratec.com>; Delfino Escalante III <D3Escalante@tetratec.com>; Andrew Romo <aromo@tetratec.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Subject: 1RP-4867 - Submittal of Proposed WorkPlan for Soil Delineation at the Trionyx Frac Pond T-25-S, R-31-E, Eddy County, New Mexico

Ms. Olivia Yu

TETRA Technologies Inc. (TETRA), a contractor to Devon Energy Production Co, LP (6137) (Devon) wishes to submit a Proposed Delineation Workplan (Workplan) to the New Mexico Oil Conservation Division (NMOCD) to address the release at the Trionyx Frac Pond on October 24, 2017 (Case No. 1RP-4867). Attached is the proposed Workplan for your review and comments.

I have also copied Mike Bratcher, NMOCD because a similar release occurred from the same water source in District 2 (2RP-4543). We have submitted a similar Workplan to Mr. Bratcher for that release.

Should you have any questions or comments, please do not hesitate to contact me at 281-364-5116.

Best regards,
cliff

Clifford E Kirchof
Environmental/Chemical Regulatory Compliance Manager

TETRA Technologies, Inc.
24955 Interstate 45 North
The Woodlands, TX 77380
Office: 281-364-5116
Mobile: 832-434-0979
ckirchof@tetratec.com

Dedicated to the CØRE

From:	Clifford Kirchof
To:	Mann, Ryan; Yu, Olivia, EMNRD
Cc:	Shoemaker, Mike; Adam Calvin; Delfino Escalante III; Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD; Patrick Windham
Subject:	RE: 1RP-4867 - Submittal of Proposed WorkPlan for Soil Delineation at the Trionyx Frac Pond T-25-S, R-31-E, Eddy County, New Mexico
Date:	Thursday, May 3, 2018 12:23:37 PM

Ryan,

Thank you for the approvals and comments. As an update, the request for proposal (RFP) has been sent to selected firms for bidding on the continued remediation work. We will most likely select a firm next week and move forward with addressing the comments from NMOCD. Your comments will be addressed in future documents and NMSLO will be copied on all further communication.

Best regards,
cliff

From: Mann, Ryan <rmann@slo.state.nm.us>
Sent: Thursday, May 3, 2018 11:03 AM
To: 'Yu, Olivia, EMNRD' <Olivia.Yu@state.nm.us>; Clifford Kirchof <CKirchof@tetratec.com>
Cc: Shoemaker, Mike <Mike.Shoemaker@dvn.com>; Adam Calvin <ACalvin@tetratec.com>; Delfino Escalante III <D3Escalante@tetratec.com>; Andrew Romo <aromo@tetratec.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>
Subject: RE: 1RP-4867 - Submittal of Proposed WorkPlan for Soil Delineation at the Trionyx Frac Pond T-25-S, R-31-E, Eddy County, New Mexico

NMSLO approves of both of the proposed delineation plans pending concurrence by NMOCD. Also, any release which traveled off the pad and affected pasture areas will need to have a revegetation plan included when submitting the remediation work plan. 1RP-4867 appears to have remained on location, I cannot tell for 2RP-4543. Please include NMSLO in further communication regarding these releases or any others in which state resources are affected.

Thanks

Ryan Mann
Remediation Specialist
Field Operation Division
(575) 392-3697
(505) 699-1989
New Mexico State Land Office
2827 N. Dal Paso Suite 117
Hobbs, NM 88240

From: Yu, Olivia, EMNRD [mailto:Olivia.Yu@state.nm.us]
Sent: Tuesday, May 1, 2018 3:37 PM
To: Clifford Kirchof <CKirchof@tetratec.com>; Mann, Ryan <rmann@slo.state.nm.us>

Cc: Shoemaker, Mike <Mike.Shoemaker@dvn.com>; Adam Calvin <ACalvin@tetratec.com>; Delfino Escalante III <D3Escalante@tetratec.com>; Andrew Romo <aromo@tetratec.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>
Subject: RE: 1RP-4867 - Submittal of Proposed WorkPlan for Soil Delineation at the Trionyx Frac Pond T-25-S, R-31-E, Eddy County, New Mexico

Mr. Kirchof:

Thank you for the update. Please remember to include NMSLO in all email communications and submittals. Please be advised that while the actual work may be conducted in tandem for 1RP-4867 and 2RP-4543, the proposed delineation plans must be approved by the respective Districts and NMSLO before commencement.

Thanks,
Olivia

From: Clifford Kirchof <CKirchof@tetratec.com>
Sent: Tuesday, May 1, 2018 2:56 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: Shoemaker, Mike <Mike.Shoemaker@dvn.com>; Adam Calvin <ACalvin@tetratec.com>; Delfino Escalante III <D3Escalante@tetratec.com>; Andrew Romo <aromo@tetratec.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>
Subject: RE: 1RP-4867 - Submittal of Proposed WorkPlan for Soil Delineation at the Trionyx Frac Pond T-25-S, R-31-E, Eddy County, New Mexico

Ms. Yu

We are in the process of interviewing contractors to finalize the workplan and address your questions. If at all possible, TETRA would like to perform the fieldwork required at this site along with the other site under Mike Bratcher. The sites are close together and it would be more cost effective to perform the field work in one mobilization effort.

Please feel free to call if you would like to discuss. We hopefully will have a consultant selected next week to address your questions and move forward.

Best regards,
cliff

From: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Sent: Thursday, April 12, 2018 11:10 AM
To: Clifford Kirchof <CKirchof@tetratec.com>
Cc: Shoemaker, Mike <Mike.Shoemaker@dvn.com>; Adam Calvin <ACalvin@tetratec.com>; Delfino Escalante III <D3Escalante@tetratec.com>; Andrew Romo <aromo@tetratec.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>
Subject: RE: 1RP-4867 - Submittal of Proposed WorkPlan for Soil Delineation at the Trionyx Frac

Pond T-25-S, R-31-E, Eddy County, New Mexico

Good morning Mr. Kirchof:

Thank you for the primary document regarding 1RP-4867. Is this a template for whichever environmental consultancy will be awarded to conduct the release characterization/delineation?

Please be advised that several additional details are necessary for assessment:

- Depth to groundwater evaluation: use NMOSE, USGS, and other available databases.
- Distance to nearest waterbody and wellheads: topographic maps for a preliminary evaluation is available on NMOCD website: OCD GIS
- All maps and figures must be scaled appropriately to the size of the release. Impacted area must be outlined and proposed delineation sample points marked, in relation to the release point, based on site assessment of representative pooling spots.
- All laboratory analyses should have accompanying data from field tests. Tabulate data to facilitate review.
- Caliche 'impermeable' layer is not an acceptable rationale for incompletion of vertical delineation.

Please be advised that according to NMOCD database, this release occurred on State surface and mineral ownership. NMSLO can verify. All corresponding agencies must be included in all communications and submitted reports.

Thanks,

Olivia Yu
Environmental Specialist
NMOCD, District I
Olivia.yu@state.nm.us
575-393-6161 x113

From: Clifford Kirchof <CKirchof@tetratec.com>
Sent: Tuesday, March 20, 2018 1:56 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>
Cc: Shoemaker, Mike <Mike.Shoemaker@dvn.com>; Adam Calvin <ACalvin@tetratec.com>; Delfino Escalante III <D3Escalante@tetratec.com>; Andrew Romo <aromo@tetratec.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>

Subject: 1RP-4867 - Submittal of Proposed WorkPlan for Soil Delineation at the Trionyx Frac Pond T-25-S, R-31-E, Eddy County, New Mexico

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Should you have any questions or comments, please do not hesitate to contact me at 281-364-5116.

Best regards,
cliff

Clifford E Kirchof
Environmental/Chemical Regulatory Compliance Manager

TETRA Technologies, Inc.
24955 Interstate 45 North
The Woodlands, TX 77380
Office: 281-364-5116
Mobile: 832-434-0979
ckirchof@tetratec.com

Dedicated to the CØRE

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit http://www.symanteccloud.com

2057 Commerce Drive
Midland, TX 79703

432.520.7720 PHONE
432.520.7701 FAX

www.trcsolutions.com

APPROVED
By Olivia Yu at 11:12 am, Aug 27, 2018

NMOCD approves of the proposed delineation plan for 1RP-4867.

July 30, 2018

Olivia Yu
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, District 1
1625 French Drive
Hobbs, NM 88240

Ryan Mann
Hobbs Field Office
New Mexico State Land Office
2827 N. Dal Paso St., Suite 117
Hobbs, New Mexico 88240

Re: Proposed Soil Delineation Workplan
Trionyx Frac Pond (1R-4867)
GPS: N 32.154386° W 103.740605°
Unit Letter "P", Section 2, Township 25 South, Range 31 East, NMPM
Eddy County, New Mexico

Dear Ms. Yu and Mr. Mann,

TRC Environmental Corporation (TRC), on behalf of TETRA Technologies, Inc. (TETRA) has prepared this Proposed Soil Delineation Workplan (Workplan) for the Trionyx Frac Pond Release Site (Site). The purpose of this Workplan is to propose delineation activities designed to prepare a Soil Delineation Summary and Proposed Remediation Workplan, which will advance the Site toward an NMOCD approved Site Closure Status. The legal description of the Release Site is Unit Letter "P", Section 2, Township 25 South, Range 31 East, NMPM in Eddy County, New Mexico. The GPS coordinates for the site are N 32.154386° W 103.740605°. The subject property is leased by Devon Energy Production Company, L.P. (Devon) and owned by the State of New Mexico and is administered by the New Mexico State Land Office (NMSLO). A Site Location Map and Site Details and Proposed Trench Location Map are provided as Figure 1 and Figure 2, respectively.

On October 24, 2017, TETRA was pigging the "layflat" line from the Devon Arabian 30-19 Fed Com 1H well site to the Devon Trionyx Frac Pond. TETRA had completed pigging the line from the well site to a TETRA booster pump, while pigging from the TETRA booster pump to the Devon Trionyx Frac Pond air in the "layflat" line resulted in the "layflat" line falling out of the Trionyx Frac Pond, which resulted in fluid being released to the ground from the line. The release was contained on the location on the caliche pad. The release area reportedly measured approximately 2,100 square feet. During initial response activities, the pigging activities were suspended. Approximately fifty (50) barrels of treated produced water was released

from the "layflat" line and approximately forty (40) barrels of treated produced water was recovered utilizing a vacuum truck. On March 24, 2017, a Devon Representative notified the NMOCD of the Release and Devon submitted a Release Notification and Corrective Action (Form C-141) to the NMOCD on October 30, 2017. The Form C-141 is attached to this report.

A groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) identified registered water wells in Section 2, Township 25 South, Range 31 East. The nearest water well (NMOSE File Number C-3830) is located approximately eight hundred (800) feet north of the reported location of the release. The Well Record and Log indicated a water bearing zone was identified at approximately three hundred forty-eight (348) feet below ground surface (bgs). A reference map utilized by the NMOCD Hobbs District Office indicates groundwater should be encountered at approximately three hundred seventy-five (375) feet bgs. Based on the NMOCD site classification system, zero (0) points will be assigned to the subject area ranking as a result of this criterion. Please reference the attached NMOSE data.

One water well (described above) was observed within one-thousand (1,000) feet of the Release Site. Based on the NMOCD site classification system, twenty (20) points will be assigned to the subject area ranking as a result of this criterion.

No surface water was observed within one-thousand (1,000) feet of the release. Based on the NMOCD site classification system, zero (0) points will be assigned to the subject area ranking as a result of this criterion.

Based on the NMOCD Site Classification criteria, the Release Site soil remediation levels are 10 milligrams per kilogram (mg/kg) for benzene, 50 mg/kg for benzene, toluene, ethylbenzene and xylenes (BTEX), and 100 mg/kg for total petroleum hydrocarbons (TPH). Per NMOCD request, chloride remediation levels for the Release Site will be 600 mg/kg.

On February 12, 2018, a Representative of TETRA collected two (2) treated produced water samples (250 bbl Cotton Draw Water Pit and 90 bbl Cotton Draw Water Pit) which were representative of the treated produced water released at the subject release. The water samples were submitted to Cardinal Laboratories in Hobbs, New Mexico and analyzed for concentrations of TPH, BTEX, chloride, and total dissolved solids (TDS) by Method SW846-8015M, EPA Method 8021B, SM4500Cl-B, and EPA Method 160.1, respectively.

The analytical results indicated TPH concentrations ranged from 2.27 mg/L in water sample 250 bbl Cotton Draw Water Pit to 2.65 mg/L in water sample 50 bbl Cotton Draw Water Pit. Benzene concentrations ranged from 0.813 mg/L in water sample 250 bbl Cotton Draw Water Pit to 0.823 mg/L in water sample 50 bbl Cotton Draw Water Pit. Toluene concentrations ranged from 0.569 mg/L in water sample 250 bbl Cotton Draw Water Pit to 0.583 mg/L in water sample 50 bbl Cotton Draw Water Pit. Ethylbenzene concentrations ranged from 0.031 mg/L in water sample 250 bbl Cotton Draw Water Pit to 0.033 mg/L in water sample 50 bbl Cotton Draw Water Pit. Xylene concentrations ranged from 1.57 mg/L in water sample 250 bbl Cotton Draw Water Pit to 1.60 mg/L in water sample 50 bbl Cotton Draw Water Pit.

The analytical results indicated chloride concentrations ranged from 146,000 mg/L in water sample 90 bbl Cotton Draw Water Pit to 150,000 mg/L in water sample 50 bbl Cotton Draw Water Pit. TDS

concentrations ranged from 213,000 mg/L in water sample 90 bbl Cotton Draw Water Pit to 220,000 mg/L in water sample 250 bbl Cotton Draw Water Pit. Based on the analytical results of source water, it appears the primary contaminant of concern for this release will be chloride which exceeds the NMOCD recommended remediation guidelines.

TRC on behalf of TETRA, proposes the following delineation activities designed to advance the Trionyx Frac Pond Release Site toward an NMOCD and NMSLO approved closure:

- Utilizing a backhoe, one (1) background trench (BT) will be advanced to a depth of approximately ten (10) feet bgs. The background trench will be located in an area topographically upslope and at a distance from the Release Site. Initially, soil samples will be chloride field screened at one (1) foot vertical intervals and the chloride field screen intervals may be adjusted based on the initial chloride field screen results. The soil sample exhibiting the highest chloride concentration in the background trench and a soil sample at the bottom of the trench will be collected and submitted to a NMOCD approved laboratory for determination of concentrations of BTEX, TPH, and chloride.
- Utilizing a backhoe, advance three (3) soil investigation trenches (T-1 through T-3) within the release margins to a maximum depth of approximately ten (10) feet bgs. Initially, soil samples will be chloride field screened at one (1) foot vertical intervals and the chloride field screen intervals may be adjusted based on the initial chloride field screen results. When chloride field screening indicates chloride concentrations are less than the NMOCD recommended concentration of 600 mg/kg, the soil investigation trench will be terminated.
- Based on the field screening results, the soil sample exhibiting the highest chloride concentration in each soil investigation trench and two (2) consecutive soil samples at the bottom of each soil investigation trench will be collected and submitted to a NMOCD approved laboratory for determination of concentrations of BTEX, TPH, and chloride. Following the collection of the soil samples, the investigation trenches will be backfilled as a safety precaution.
- In addition, four (4) soil investigation trenches (N. Trench, E. Trench, S. Trench, and W. Trench) will be advanced outside of the impacted area at a depth equal to the deepest trench within the release margins. Chloride field screening will be utilized to guide the advancement of the soil investigation trenches. If chloride field screening in the soil investigation trenches outside of the release margins indicates vertical and horizontal delineation of the contaminant of concern has not been successful, additional soil investigation trenches will be advanced to complete the delineation of the Release Site.
- Based on the field screening results, the soil sample exhibiting the highest chloride concentration in each soil investigation trench and the soil sample at the bottom of each soil investigation trench outside of the release margins will be collected and submitted to a NMOCD approved laboratory for determination of concentrations of BTEX, TPH, and chloride. Following the collection of the soil samples, the investigation trenches will be backfilled as a safety precaution.
- On receipt of favorable analytical results (below the NMOCD regulatory guidelines referenced above), a “Soil Investigation Summary and Proposed Soil Remediation Strategy” will be prepared on behalf of TETRA and submitted to the NMOCD and NMSLO for approval. If the analytical results indicate the soil investigation trenches have not provided vertical delineation of the Release Site, an air rotary drilling rig may be mobilized to the Release Site to continue the vertical delineation efforts.

TETRA is prepared to begin the activities outlined in this Proposed Soil Delineation Workplan on NMOCD and NMSLO approval.

If you have any questions, or if additional information is required, please feel free to call me at 432-520-7720 (office) or 432-559-3296 (cell).

Thank you,

Curt D. Stanley
Senior Project Manager
TRC Environmental Corporation

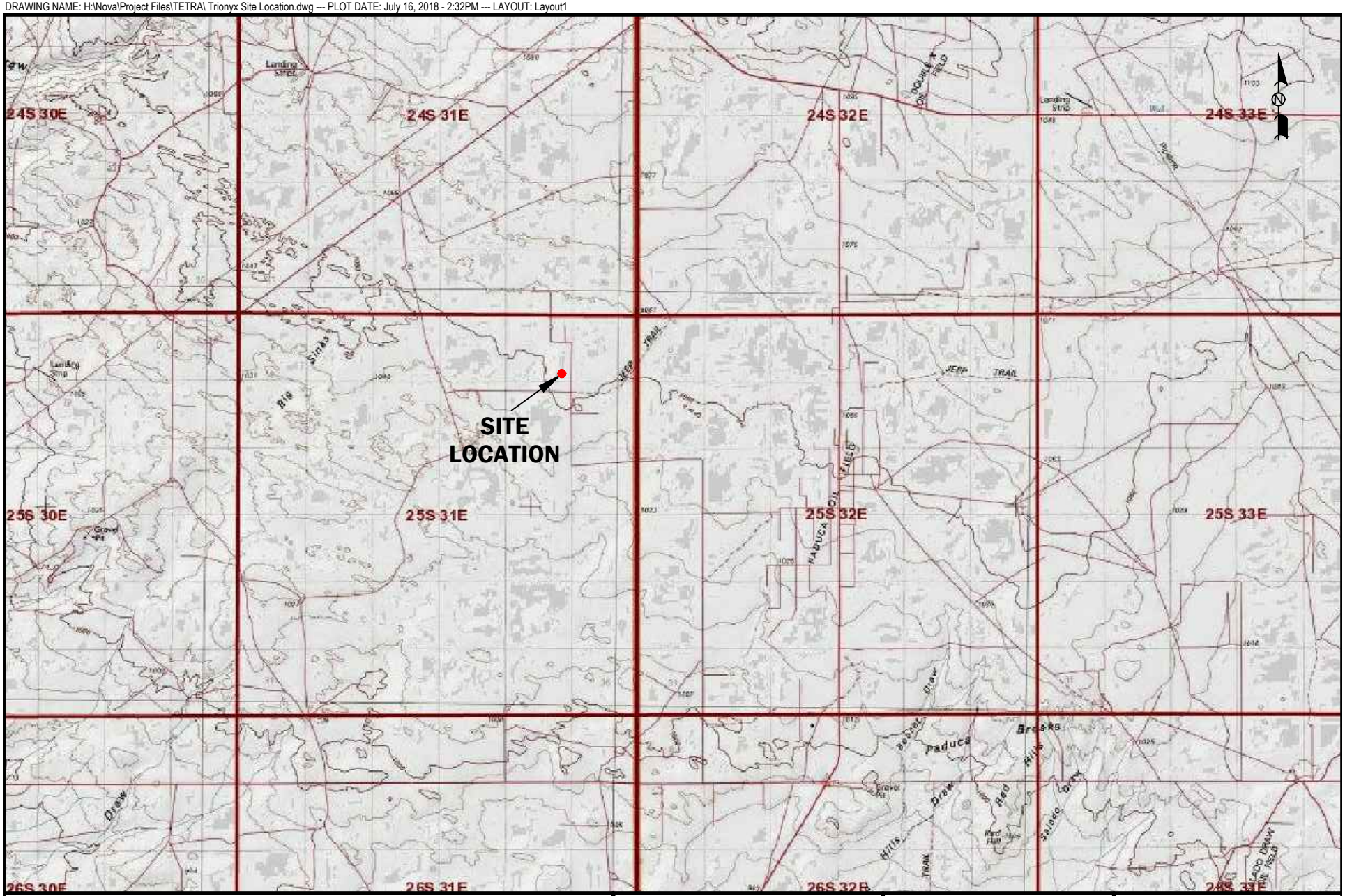
Joel W. Lowry
Senior Project Manager
TRC Environmental Corporation

Attachments:

Figure 1 - Site Location Map
Figure 2 - Site Map and Proposed Soil Investigation Trenches
NMOSE Data
Laboratory Analytical Results
Release Notification and Corrective Action (Form C-141)

cc: File

DRAWING NAME: H:\Nova\Project Files\TETRA\ Trionyx Site Location.dwg --- PLOT DATE: July 16, 2018 - 2:32PM --- LAYOUT: Layout1



LEGEND:

2 1 0 1 2

Distance in Miles

Figure 1
Site Location Map
TETRA Technologies
Trionyx Frac Pond
NMOCD Reference # 1RP-4867
Eddy County, NM

Scale: 1" = 2 Miles	
CAD By: CS	Checked By: CS
Draft: July 16, 2018	
Lat. N 32.154386° , Long. W 103.740605°	
ULT "P", Section 2, Township 25S, Range 31 E	

TRC
2057 Commerce Drive
Midland, Texas 79703
432.520.7720

LEGEND:

Area of Impact

Proposed Trench Location

100 50 0 50 100

Distance in Feet

Figure 2
Proposed Trench Location Map
TETRA Technologies, Inc.
Trionyx Frac Pond
NMOCD Reference
1RP-4867
Eddy County,NM

Scale: 1" = 100 feet	
CAD By: CS	Checked By: CS
Draft: July 16, 2018	
Lat. N 32.154386° , Long. W 103.740605°	
ULT "P", Section 2, Township 25S, Range 31E	

TRC
2057 Commerce Drive
Midland, Texas 79703
432.520.7720

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER): 1	OSE FILE NUMBER(S): C-3830
WELL OWNER NAME(S): ROCKHOUSE RANCH INC.	PHONE (OPTIONAL): 575-995-6920
WELL OWNER MAILING ADDRESS: 1108 W PIEARCE ST.	CITY: CARLSBAD STATE: NM ZIP: 88220

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	09	22	N
LONGITUDE	103	44	31	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND

* DATUM REQUIRED: WGS 84

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

SE 1/4,NE 1/4, SE 1/4, SECTION 2, TOWNSHIP 25S, RANGE 31E

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1607	LUIS A. (TONY) DURAN	DURAN DRILLING

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
1/28/15	2/02/15	451	450	300

COMPLETED WELL IS: ○ ARTESIAN ○ DRY HOLE ◉ SHALLOW (UNCONFINED) — STATIC WATER LEVEL IN COMPLETED WELL (FT):

DRILLING FLUID: ○ AIR ◉ MUD ADDITIVES – SPECIFY: DRILLING MUD

DRILLING METHOD: ◉ ROTARY ○ HAMMER ○ CABLE TOOL ○ OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	220	12	STEEL	STEEL PERF	7	1/4	-
220	450	12	STEEL PERF	STEEL	7	1/4	1/8

STATE ENGINEER OFFICE RECEIVED FEB 23 AM 10:23

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
~~0~~	~~20~~	~~12~~	~~20 BGS 80 LBS CEMENT~~		MIXER
20	450	12	22 YARDS 1/4" GRAVEL		

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	POD NUMBER	TRN NUMBER
C-3830	1	560005

25S.31E.2.424

END

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	1	1	TOPSOIL	○ Y ◉ N	
1	4	3	CALICHE	○ Y ◉ N	
4	16	12	SAND	○ Y ◉ N	
90	99	9	CLAY	○ Y ◉ N	
99	190	91	SAND	○ Y ◉ N	
190	250	60	BROWN CLAY	○ Y ◉ N	
250	265	15	SAND	○ Y ◉ N	
265	340	75	CLAY	○ Y ◉ N	
340	348	8	SAND	○ Y ◉ N	
348	378	30	GRAVEL	◉ Y ○ N	10
378	384	6	CALY	○ Y ◉ N	
384	448	64	SAND	◉ Y ○ N	5
448	450	2	RED BED	○ Y ◉ N	
				○ Y ◉ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	
				○ Y ○ N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: ○ PUMP ○ AIR LIFT ◉ BAILER ○ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 15

5. TEST; RIG SUPERVISION

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

MISCELLANEOUS INFORMATION:

STATE ENGINEER OFFICE RECEIVED FEB 23 AM 8:23

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

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Luis A. Duran LUIS A. DURAN — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

2-02-15 — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	POD NUMBER	TRN NUMBER
C-3830	/	560005

255.31E.2.424

EXPL

CARDINAL Laboratories

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

February 13, 2018

ANDREW ROMO

TETRA TECHNOLOGIES

1114 S FM 1788

MIDLAND, TX 79765

RE: COTTON DRAW WATER PIT

Enclosed are the results of analyses for samples received by the laboratory on 02/12/18 11:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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,

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TETRA TECHNOLOGIES
ANDREW ROMO
1114 S FM 1788
MIDLAND TX, 79765
Fax To:

Received:	02/12/2018	Sampling Date:	02/12/2018
Reported:	02/13/2018	Sampling Type:	Wastewater
Project Name:	COTTON DRAW WATER PIT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LOVINGTON, NM		

Sample ID: 250 BBL COTTON DRAW WATER PIT (H800433-01)

BTEX 8021B mg/L Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**0.813**	0.020	02/12/2018	ND	0.020	99.2	0.0200	0.733	
Toluene*	**0.569**	0.020	02/12/2018	ND	0.020	97.9	0.0200	1.35	
Ethylbenzene*	**0.031**	0.020	02/12/2018	ND	0.020	97.5	0.0200	2.48	
Total Xylenes*	**0.154**	0.060	02/12/2018	ND	0.061	102	0.0600	1.74	
Total BTEX	**1.57**	0.120	02/12/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *81.3-128*

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**150000**	4.00	02/12/2018	ND	104	104	100	3.92	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**220000**	5.00	02/13/2018	ND	209	98.1	213	2.38	

TPH 8015M mg/L Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**2.27**	1.00	02/12/2018	ND	37.4	74.8	50.0	0.837	
DRO >C10-C28*	<1.00	1.00	02/12/2018	ND	48.5	96.9	50.0	2.18	
EXT DRO >C28-C36	<1.00	1.00	02/12/2018	ND					

Surrogate: 1-Chlorooctane *70.5 %* *37.1-138*

Surrogate: 1-Chlorooctadecane *90.7 %* *44.6-151*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TETRA TECHNOLOGIES
ANDREW ROMO
1114 S FM 1788
MIDLAND TX, 79765
Fax To:

Received:	02/12/2018	Sampling Date:	02/12/2018
Reported:	02/13/2018	Sampling Type:	Wastewater
Project Name:	COTTON DRAW WATER PIT	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	LOVINGTON, NM		

Sample ID: 90 BBL COTTON DRAW WATER PIT (H800433-02)

BTEX 8021B mg/L Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**0.823**	0.020	02/12/2018	ND	0.020	99.2	0.0200	0.733	
Toluene*	**0.583**	0.020	02/12/2018	ND	0.020	97.9	0.0200	1.35	
Ethylbenzene*	**0.033**	0.020	02/12/2018	ND	0.020	97.5	0.0200	2.48	
Total Xylenes*	**0.162**	0.060	02/12/2018	ND	0.061	102	0.0600	1.74	
Total BTEX	**1.60**	0.120	02/12/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *81.3-128*

Chloride, SM4500Cl-B mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	**146000**	4.00	02/12/2018	ND	104	104	100	3.92	

TDS 160.1 mg/L Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TDS*	**213000**	5.00	02/13/2018	ND	209	98.1	213	2.38	

TPH 8015M mg/L Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	**2.65**	1.00	02/12/2018	ND	37.4	74.8	50.0	0.837	
DRO >C10-C28*	<1.00	1.00	02/12/2018	ND	48.5	96.9	50.0	2.18	
EXT DRO >C28-C36	<1.00	1.00	02/12/2018	ND					

Surrogate: 1-Chlorooctane *75.0 %* *37.1-138*

Surrogate: 1-Chlorooctadecane *78.7 %* *44.6-151*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	Tetra Technology	**BILL TO**	
Project Manager:	Andrew Romo	P.O. #:	
Address:		Company:	
City:	State: Zip:	Attn:	
Phone #:	Fax #:	Address:	
Project #:	Project Owner:	City:	
Project Name:	Cotton Draw Water Pit	State: Zip:	
Project Location:	Lovington, NM	Phone #:	
Sampler Name:	Andrew Romo	Fax #:	

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST										
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	TPH 8015	BTEX	CL	TDS							
H800433																									
1	250 bbl Cotton Draw Water Pit				✓								2/12/18	10:30	✓	✓	✓	✓							
2	90 bbl Cotton Draw water Pit				✓								2/12/18	10:30	✓	✓	✓	✓							

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 2/12/18	Received By: Jodi Henson	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 11:30		Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: aromo@tetratech.com
	Time:		RUSH!!
Delivered By: (Circle One) #75	Sample Condition: Cool ☑ Yes ☐ No, Intact ☑ Yes ☐ No	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:	1.1°C / 1.3°C		

+ Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

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 April 3, 2017

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 Devon Energy Production Co LP (6137)	Contact Stephen Richards, Devon Completions Foreman
Address PO BOX 250, Artesia, NM 88211	Telephone No. (575) 252-3717
Facility Name: Trionyx Frac Pond (Completing wells on the Arabian 30-19 Fed Com 1H)	Facility Type Oil

Surface Owner: State	Mineral Owner: State	API No. 30-025-43176

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	2	25S	31E					EDDY

Latitude 32.154386 N Longitude 103.740605 W NAD83

NATURE OF RELEASE

Type of Release: Treated Produced Water	Volume of Release: 50 bbls	Volume Recovered: 40 bbls
Source of Release: Lay Flat Transfer Line	Date and Hour of Occurrence: 10/24/2017 @ 2:14 PM MST	Date and Hour of Discovery 10/24/2017 @ 2:14 PM MST
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? OCD: Olivia Yu	RECEIVED By Olivia Yu at 9:23 am, Nov 17, 2017
By Whom? Mike Shoemaker, EHS Professional	Date and Hour: OCD: 10/25/17 @ 7:24 PM MST	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. NA	

If a Watercourse was Impacted, Describe Fully.* NA

Describe Cause of Problem and Remedial Action Taken.*
A contract company was pigging the layflat line from the Arabian 30-19 Fed Com 1H to the Trionyx pond. They had completed the line from the location to their booster pump, after rigging up to pig from the booster pump to the Trionyx pond there was some air in the line which caused the line to come out of the pond and allowed fluid to be release to the ground from the line. The contract company shut down operations and notified Devon personnel. Approximately 50bbls of produced water ran off the side of the pond onto the Trionxy facility. A vacuum truck was dispatched and recovered 40 bbls of produced water.

Describe Area Affected and Cleanup Action Taken.*
The spill affected approximately 25,000 square feet running South from the release point. Approximately 50 barrels of treated produced water was spilled and approximately 40 barrels were recovered. A remediation contractor will be contacted to assist with the delineation and remediation efforts.

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: Denise Menoud	OIL CONSERVATION DIVISION
Printed Name: Denise Menoud	Approved by Environmental Specialist:
Title: Admin Field Support	Approval Date: 11/17/2017 Expiration Date:
E-mail Address: denise.menoud@dvn.com	Conditions of Approval: see attached directive Attached ☑
Date: 10/30/2017 Phone: (575)746-5544	

* Attach Additional Sheets If Necessary

1RP-4867 nOY1732133962 pOY1732135037

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _11/6/2017_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-4867__ has been assigned. **Please refer to this case number in all future correspondence.**

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District _1_ office in __Hobbs____ on or before _12/17/2017_. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

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

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

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

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

● Composite sampling is not generally allowed.

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

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

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

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

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

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

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

From:	Mann, Ryan
To:	Yu, Olivia, EMNRD; Stanley, Curtis D.
Cc:	Clifford Kirchof; acalvin@tetratec.com; D3Escalante@tetratec.com; pwindham@swiftwater.com; Lowry, Joel; Crain, Cynthia K.; Bratcher, Mike, EMNRD
Subject:	RE: Proposed Soil Delineation Workplan - TETRA Technologies Trionyx Frac Pond (1R-4867)
Date:	Tuesday, September 4, 2018 1:51:07 PM

NMSLO approves of the delineation plan as written with no additional conditions.

Ryan Mann
Remediation Specialist
Field Operation Division
(575) 392-3697
(505) 699-1989
New Mexico State Land Office
2827 N. Dal Paso Suite 117
Hobbs, NM 88240

From: Yu, Olivia, EMNRD [mailto:Olivia.Yu@state.nm.us]
Sent: Monday, August 27, 2018 11:23 AM
To: Stanley, Curtis D. <CDStanley@trcsolutions.com>; Mann, Ryan <rmann@slo.state.nm.us>
Cc: Clifford Kirchof <CKirchof@tetratec.com>; acalvin@tetratec.com; D3Escalante@tetratec.com; pwindham@swiftwater.com; Lowry, Joel <JLowry@trcsolutions.com>; Crain, Cynthia K. <CKCrain@trcsolutions.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Subject: RE: Proposed Soil Delineation Workplan - TETRA Technologies Trionyx Frac Pond (1R-4867)

Good morning Mr. Stanley:

Please note that the RRAL levels for TPH are incorrect on page 2.

NMOCD approves of the proposed delineation/release characterization plan for 1RP-4867. Please include in the subsequent report, a scaled map with the locations of the background sample and release point, along with the delineation sample trenches. Also, please remember to include all associated field and laboratory data and photo documentation.

Like approval from NMSLO required. NMSLO may have additional conditions and stipulations.

Thanks,

Olivia Yu
Environmental Specialist
NMOCD, District I
Olivia.yu@state.nm.us
575-393-6161 x113

OCD approval does not relieve the operator of liability should their operations fail to adequately

investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Stanley, Curtis D. <CDStanley@trcsolutions.com>
Sent: Monday, July 30, 2018 3:57 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; rmann@slo.state.nm.us
Cc: Clifford Kirchof <CKirchof@tetratec.com>; mike.shoemaker@dvn.com; acalvin@tetratec.com; D3Escalante@tetratec.com; pwindham@swiftwater.com; Lowry, Joel <JLowry@trcsolutions.com>; Crain, Cynthia K. <CKCrain@trcsolutions.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Subject: Proposed Soil Delineation Workplan - TETRA Technologies Trionyx Frac Pond (1R-4867)

Dear Ms. Yu and Mr. Mann,

TRC Environmental Corporation (TRC), on behalf of TETRA Technologies, Inc. (TETRA) is pleased to submit the attached Trionyx Frac Pond (NMOCD Reference 1R-4867) *Proposed Soil Delineation Workplan* for your review and approval. The Release Site is located in Unit Letter "P", Section 2, Township 25 South, Range 31 East, NMPM in Eddy County, New Mexico. Please note, the Release Site is located within Eddy County, New Mexico. Please advise, if the New Mexico State Land Office (NMSLO) will require a "Right of Entry" Permit prior to commencing the proposed delineation activities. In addition, please advise if the NMSLO will require a New Mexico Archaeological Records Section (NMARMS) database query prior to commencing the proposed delineation activities. If you have any questions, please contact me by email or phone at your convenience.

Respectfully submitted,

Curt D. Stanley
Senior Project Manager

Please note our address and phone numbers have changed.

10 Desta Drive, Suite 150E, Midland, TX 79705
T: 432.520.7720 | C: 432.559.3296 | D: 432.294.5193

LinkedIn | Twitter | Blog | www.trcsolutions.com

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 April 3, 2017

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 Devon Energy Production Co LP (6137)	Contact Stephen Richards, Devon Completions Foreman
Address PO BOX 250, Artesia, NM 88211	Telephone No. (575) 252-3717
Facility Name: Transfer line from Trionyx Frac Pond to Arabian 30-19 Fed Com 1H – Spill 2 (Near the Shire 22 Fed 1H (API #30-015-43222)	Facility Type Oil well

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-025-43176

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	27	25S	31E					Eddy

Latitude 32.102724 N Longitude 103.757986 W NAD83

NATURE OF RELEASE

Type of Release: Treated Produced Water	Volume of Release: 397 bbls	Volume Recovered: 0 bbls
Source of Release: Lay Flat Transfer Line	Date and Hour of Occurrence: 10/18/2017, 11:46 PM	Date and Hour of Discovery 10/18/2017, 11:46 PM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? OCD: Crystal Weaver & Mike Bratcher BLM: Shelly Tucker	
By Whom? Mike Shoemaker, EHS Professional	Date and Hour: OCD: 10/19/17, 5:46 PM BLM: 10/19/17, 5:46 PM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. NA	

RECEIVED
By Olivia Yu at 10:37 am, Nov 17, 2017

If a Watercourse was Impacted, Describe Fully.* NA

Describe Cause of Problem and Remedial Action Taken.*
During rigging up of layflat hose a victrolic end connector was removed from hose in order to fit hose under cattle guard. When the contract company reassembled the end to the hose they failed to tighten the clamp bolts. After hydro testing the line to 100 PSI they began the frac job. During stage 2 the victrolic connection blew out of the hose. Approximately 397 bbls of produced water was released with 0 bbls of produced water being recovered. The pump was shut down and the clamps were tightened.

Describe Area Affected and Cleanup Action Taken.*
The spill affected approximately 1,214 square feet running North, East, and West from the rupture point located approximately at 32.102724 N, 103.757986 W and is approximately 2.15 miles West from the Albian 30-19 Fed Com 1H well pad. An estimated 397 barrels of treated produced water was spilled and 0 barrels were recovered. A remediation contractor will be contacted to assist with the delineation and remediation efforts.

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: Denise Menoud	OIL CONSERVATION DIVISION
Printed Name: Denise Menoud	Approved by Environmental Specialist:
Title: Admin Field Support	Approval Date: 11/17/2017 Expiration Date:
E-mail Address: denise.menoud@dvn.com	Conditions of Approval: Attached ☑

see attached directive

Rele nOY1732141384 22 1: pOY1732141830 1RP-4872

Date: 10/24/2017 Phone: (575)746-5544		

* Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _11/16/2017_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-4872__ has been assigned. **Please refer to this case number in all future correspondence.**

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District _1_ office in __Hobbs____ on or before _12/17/2017_. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

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

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

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

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

● Composite sampling is not generally allowed.

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

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

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

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

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

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

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

From: Shoemaker, Mike
To: Weaver, Crystal, EMNRD; Bratcher, Mike, EMNRD; Shelly Tucker (stucker@blm.gov); Yu, Olivia, EMNRD
Cc: Fulks, Brett; Menoud, Denise
Subject: RE: Spill Notification for the Snapping 2 State 9 H (now Arabian 30-19 FC 1H-Spill 2)
Date: Thursday, November 16, 2017 3:22:21 PM
Attachments: image001.png
C-141 - Arabian 30-19 FC 1H - Spill 2 10.18.17.doc

Crystal,
Please see the revised C-141 with the corrected API # for the Arabian 30-19 Fed Com 1 (API#30-025-43176). Per our conversation I have also included Olivia on the e-mail chain and will include her on all correspondence going forward for this release.

If you need any additional information please let me know.

Thanks,

Mike Shoemaker
EHS Representative

Devon Energy Corporation
6488 Seven Rivers Highway
Artesia, New Mexico 88210
575-746-5566 Office
575-513-5035 Mobile

devon

From: Shoemaker, Mike
Sent: Thursday, November 02, 2017 7:48 PM
To: Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>; 'Bratcher, Mike, EMNRD' <mike.bratcher@state.nm.us>; Shelly Tucker (stucker@blm.gov) <stucker@blm.gov>
Cc: Fulks, Brett (Brett.Fulks@dvn.com) <Brett.Fulks@dvn.com>; Menoud, Denise (Denise.Menoud@dvn.com) <Denise.Menoud@dvn.com>
Subject: Spill Notification for the Snapping 2 State 9 H (now Arabian 30-19 FC 1H-Spill 2)

Good Evening,
Attached please find the Initial C-141 and GIS Image for the 397 bbls produced water released at the Arabian 30-19 FC 1H-Spill 2(Initially reported as the Snapping 2 State 9 H-see e-mail chain below) on 10.18.17.
Per your recent guidance on C-141s I have updated the naming conventions and pads that these locations have been associated to. My updates can be found in red in the e-mail chain below. If you have any questions please let me know.
Please note that the API number tagged for the Arabian 30-19 FC 1H would indicate that this release should be sent to Olivia in District 1 . I originally notified the District 2 based off of the APIs # for the locations that were originally tagged for this release (All 30-015-XXXXX).

Based on the GPS coordinates for where the actual release occurred I believe it will stay with the District 2 Office as it is just inside Eddy County but if this is incorrect please let me know and I will adjust it accordingly.

Thank you,

Mike Shoemaker
EHS Representative

Devon Energy Corporation
6488 Seven Rivers Highway
Artesia, New Mexico 88210
575-746-5566 Office
575-513-5035 Mobile

devon

From: Shoemaker, Mike
Sent: Thursday, October 19, 2017 5:46 PM
To: Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Shelly Tucker (stucker@blm.gov) <stucker@blm.gov>
Cc: Fulks, Brett (Brett.Fulks@dvn.com) <Brett.Fulks@dvn.com>
Subject: Spill Notification for the Shire 22 Fed 1H and the Snapping 2 State 9

Good Evening,
Devon had the following two releases which occurred simultaneously at 11:46 PM on 10/18/17. The two incidents are described below.

1. Shire 22 Fed 1H (API # 30-015-43222) now Arabian 30-19 FC 1H-Spill 1
    a. The following GPS coordinates were taken at the point of the release (Lat:32.114514° N, Long: -103.758858°W) ½ mile south of the Shire 22 FED 1 H- During rigging up of layflat hose a victrolic end connector was removed from hose in order to fit hose under cattle guard. When the contract company reassembled the end to the hose they failed to tighten the clamp bolts. After hydro testing the line to 100 PSI they began the frac job. During stage 2 the victrolic connection blew out of the hose. Approximately 396 bbls of produced water was released with 240 bbls of produced water being recovered.
2. Snapping 2 State 9 H (API # 30-015-43023) now Arabian 30-19 FC 1H-Spill 2 (this was also updated on C-141 to reflect that it is in better proximity to the Shire rather than the Snapping)
    a. The following GPS coordinates were taken at the point of the release (Lat:32.091466° N, Long: -103.757313°W updated to Lat:32.102724° N, Long: -103.7757986°W original coordinates were incorrect. The coordinates in the C-141 reflect this update also) 600' west of Snapping 2 State 9 H - During rigging up of layflat hose a victrolic end connector was removed from hose in order to fit hose

under cattle guard. When the contract company reassembled the end to the hose they failed to tighten the clamp bolts. After hydro testing to 100 PSI they began the frac job. During stage 2 the victrolic connection blew out of the hose. Approximately 397 bbls of produced water was released with 0 bbls of produced water being recovered.

An initial C-141 will be completed and sent to the NMOCD and BLM. If you have any additional question please let me know.

Thanks,

Mike Shoemaker
EHS Representative

Devon Energy Corporation
6488 Seven Rivers Highway
Artesia, New Mexico 88210
575-746-5566 Office
575-513-5035 Mobile

talonlpe.com • 866.742.0742

TALON LPE

Remediation and Closure Report

Arabian 30 19 Federal Com #001H
Lea County, NM
API# 30-025-43176, NOY1732141384 (1RP-4872)

Prepared For:

Devon Energy Production Company
6488 Seven Rivers Highway
Artesia, New Mexico 88210

Prepared By:

TALON/LPE
408 W. Texas Avenue
Artesia, New Mexico 88210

December 9, 2020

Mr. Jim Amos
Bureau of Land Management
620 East Green Street
Carlsbad, NM 88220

Mr. Bradford Billings
NMOCD District 1
1220 South St. Francis Dr.
Santa Fe, NM 87505

Subject: **Remediation and Closure Report**
Arabian 30 19 Federal Com #001H
Lea County, NM
API# 30-025-43176, NOY1732141384 (1RP-4872)

Dear Mr. Amos & Mr. Billings,

Devon Energy Production Company (Devon) has contracted Talon/LPE (Talon) to perform soil assessment and remediation services at the above-referenced location. The results of our site characterization and remediation activities are contained herein.

Site Information

The Arabian 30 19 Federal Com #001H is located approximately fifty-three (53) miles southwest of Hobbs, New Mexico. While the well with which this release is associated is located within Lea County, the release itself occurred from a flowline 2.15 miles west of the location in Eddy County. The legal location for this release is Unit Letter H, Section 27, Township 25 South and Range 31 East in Eddy County, New Mexico. More specifically the latitude and longitude for the release are 32.102724 North and -103.757986 West. A site plan is presented in Appendix I.

According to the soil survey provided by the United States Department of Agriculture Natural Resources Conservation Service, the soil in this area is made up of Berino complex soils with 0 to 3 percent slopes, eroded. The local surface and shallow geology is Holocene to middle Pleistocene in age and is comprised of eolian and alluvium sand deposits. Drainage courses in this area are typically dry.

The New Mexico Office of the State Engineer web site indicates that the nearest depth to groundwater is 390' below ground surface (BGS). See Appendix II for the referenced groundwater data.

Site Characterization

Pursuant to Table I, New Mexico Oil Conservation Division (NMOCD) Rule 19.15.29 of the New Mexico Administrative Code (NMAC), if a release occurs within the following areas, the responsible party must treat the release as if it occurred less than 50 feet to the groundwater.

Approximate Depth to Groundwater	390 Feet/BGS
☐Yes ☒No	Within 300 feet of any continuously flowing watercourse or any other significant watercourse
☐Yes ☒No	Within 200 feet of any lakebed, sinkhole or playa lake
☐Yes ☒No	Within 300 feet from an occupied permanent residence, school, hospital, institution or church
☐Yes ☒No	Within 500 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	Within 1000 feet of any fresh water well or spring
☐Yes ☒No	Within incorporated municipal boundaries or within a defined Municipal fresh water well field covered under a municipal ordinance adopted pursuant to Section 3-2703 NMSA 1978
☐Yes ☒No	Within 300 feet of a wetland
☐Yes ☒No	Within the area overlying a subsurface mine
☐Yes ☒No	Within an unstable area
☐Yes ☒No	Within a 100-year floodplain

While this release does not meet any of the criteria listed above, pasture area was impacted by the release. Therefore, the closure criteria for this site are as follows:

Table I
Closure Criteria for Soils Impacted by a Release

Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l TDS	Constituent	Method*	Limit**
≤ 50 feet	Chloride***	EPA 300.0 or SM4500 Cl B	600 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	100 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

Incident Description

On October 18, 2017, a vitrolic end connector failed during hydro-fracking operations, releasing 397 barrels (bbls) of produced water into the pasture area. No fluids were recovered.

Site Assessment

On June 24, 2020, Talon mobilized personnel to perform a site assessment and collect soil samples. Grab soil samples were collected within and around the impacted area utilizing a hand auger. Results from our sampling event are presented in the following data table. A complete laboratory report can be found in Appendix V.

Table 1 : *Soil Sample Analysis*

Sample ID	Depth (ft.)	Date	BTEX (mg/kg)	Benzene (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	Total TPH (mg/kg)	Cl (mg/kg)
Closure Criteria 19.15.29.12 NMAC			50 mg/kg	10 mg/kg				100 mg/kg	600 mg/kg
S-1	0-1	6/24/2020	ND	ND	ND	ND	ND	-	9.25
	1.5 R	6/24/2020	ND	ND	ND	ND	ND	-	9.15
S-2	0-1	6/24/2020	ND	ND	ND	ND	ND	-	12
	1.5 R	6/24/2020	ND	ND	ND	ND	ND	-	9.56
S-3	0-1	6/24/2020	ND	ND	ND	ND	ND	-	8.92
	1.5 R	6/24/2020	ND	ND	ND	ND	ND	-	9.43
S-4	0-1	6/24/2020	ND	ND	ND	ND	ND	-	9.52
	1.5 R	6/24/2020	ND	ND	ND	ND	ND	-	9.57
S-5	0-1	6/24/2020	ND	ND	ND	ND	ND	-	10.1
	2	6/24/2020	ND	ND	ND	ND	ND	-	8.88
	3	6/24/2020	ND	ND	ND	ND	ND	-	6.67
	3.5 R	6/24/2020	ND	ND	ND	ND	ND	-	11.8
S-6	0-1	6/24/2020	ND	ND	ND	ND	ND	-	11
	1.5 R	6/24/2020	ND	ND	ND	ND	ND	-	10.2
S-7	0-1	6/24/2020	ND	ND	ND	ND	ND	-	10.1
	1.5 R	6/24/2020	ND	ND	ND	ND	ND	-	9.73
S-8	0-1	6/24/2020	ND	ND	ND	ND	ND	-	10.6
	1.5 R	6/24/2020	ND	ND	ND	ND	ND	-	9.98
S-9	0-1	6/24/2020	ND	ND	ND	ND	ND	-	9.73
	1.5 R	6/24/2020	ND	ND	ND	ND	ND	-	10.9
S-10	0-1	6/24/2020	ND	ND	ND	ND	ND	-	6.55
	1.5 R	6/24/2020	ND	ND	ND	ND	ND	-	10.6
S-11	0-1	6/24/2020	ND	ND	ND	ND	ND	-	11.9
	1.5 R	6/24/2020	ND	ND	ND	ND	ND	-	11.5
S-12	0-1	6/24/2020	ND	ND	ND	ND	ND	-	11.2
	1.5 R	6/24/2020	ND	ND	ND	ND	ND	-	10.3

ND=Analyte Not Detected
R= Boring Refusal

Remedial Actions

- No soil remediation was deemed necessary as the presence of pollutants was not detected via laboratory analysis, nor did any of the surrounding vegetation appear to be adversely impacted.

Closure

Based on the results of this assessment, we request that no further actions be required and that closure regarding this incident be granted.

Should you have any questions or if further information is required, please do not hesitate to contact our office at 575-746-8768.

Respectfully submitted,

TALON/LPE

Brandon Sinclair
Project Manager

David J. Adkins
Regional Manager

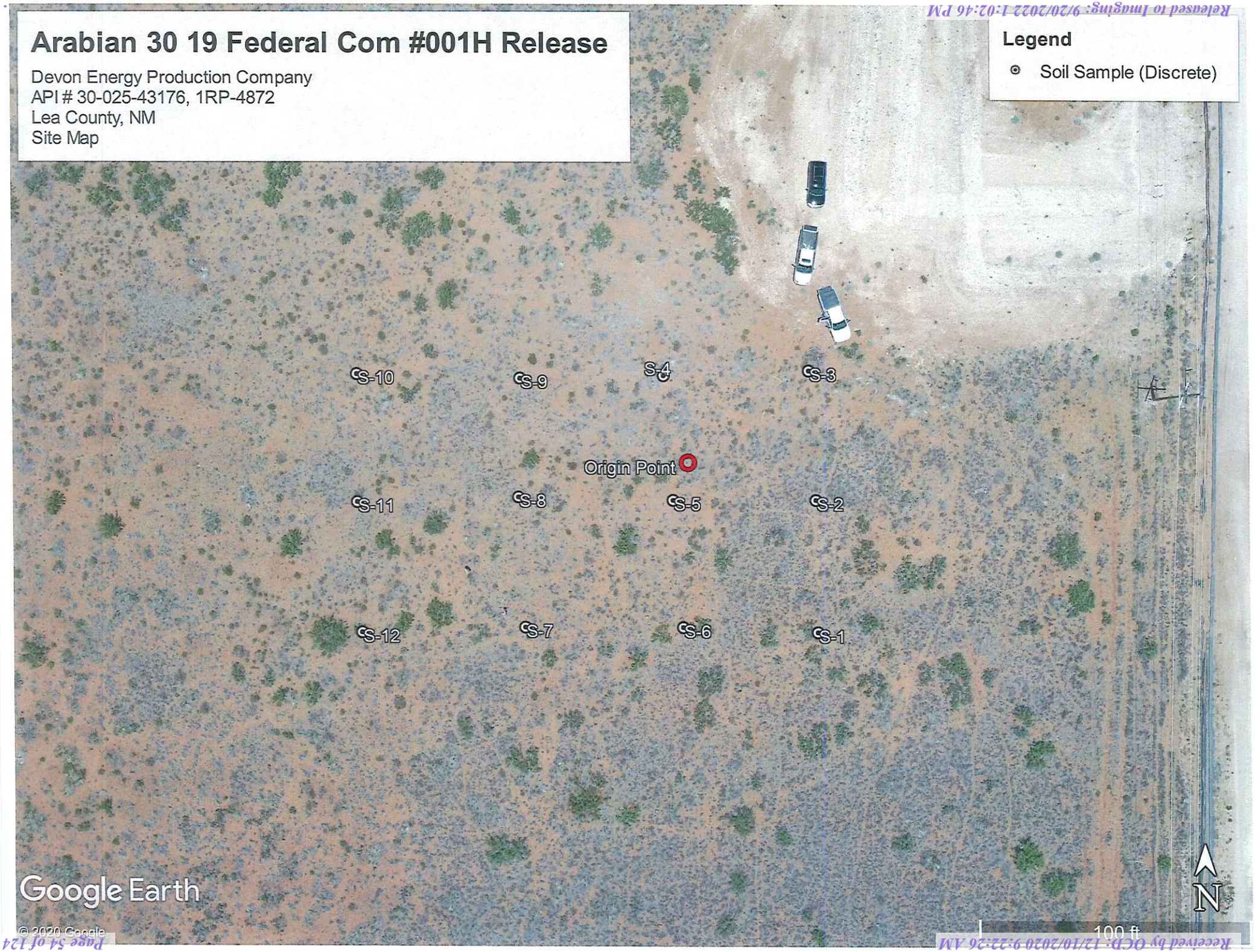
Attachments:
Appendix I Site Maps
Appendix II Soil Survey & Groundwater Data
Appendix III Final C-141's
Appendix IV Photographic Documentation
Appendix V Laboratory Data

APPENDIX I

SITE MAPS

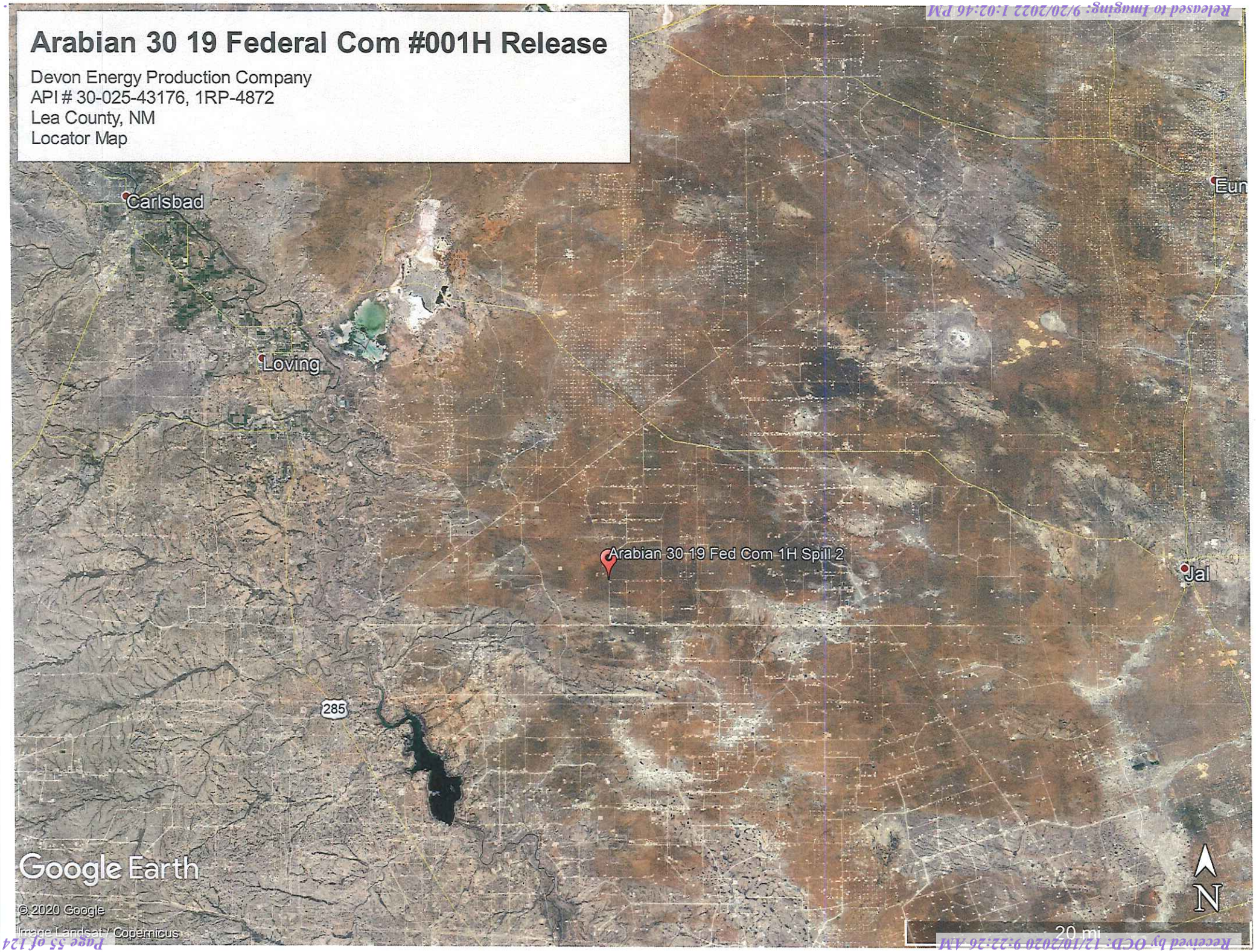
Arabian 30 19 Federal Com #001H Release

Devon Energy Production Company
API # 30-025-43176, 1RP-4872
Lea County, NM
Site Map



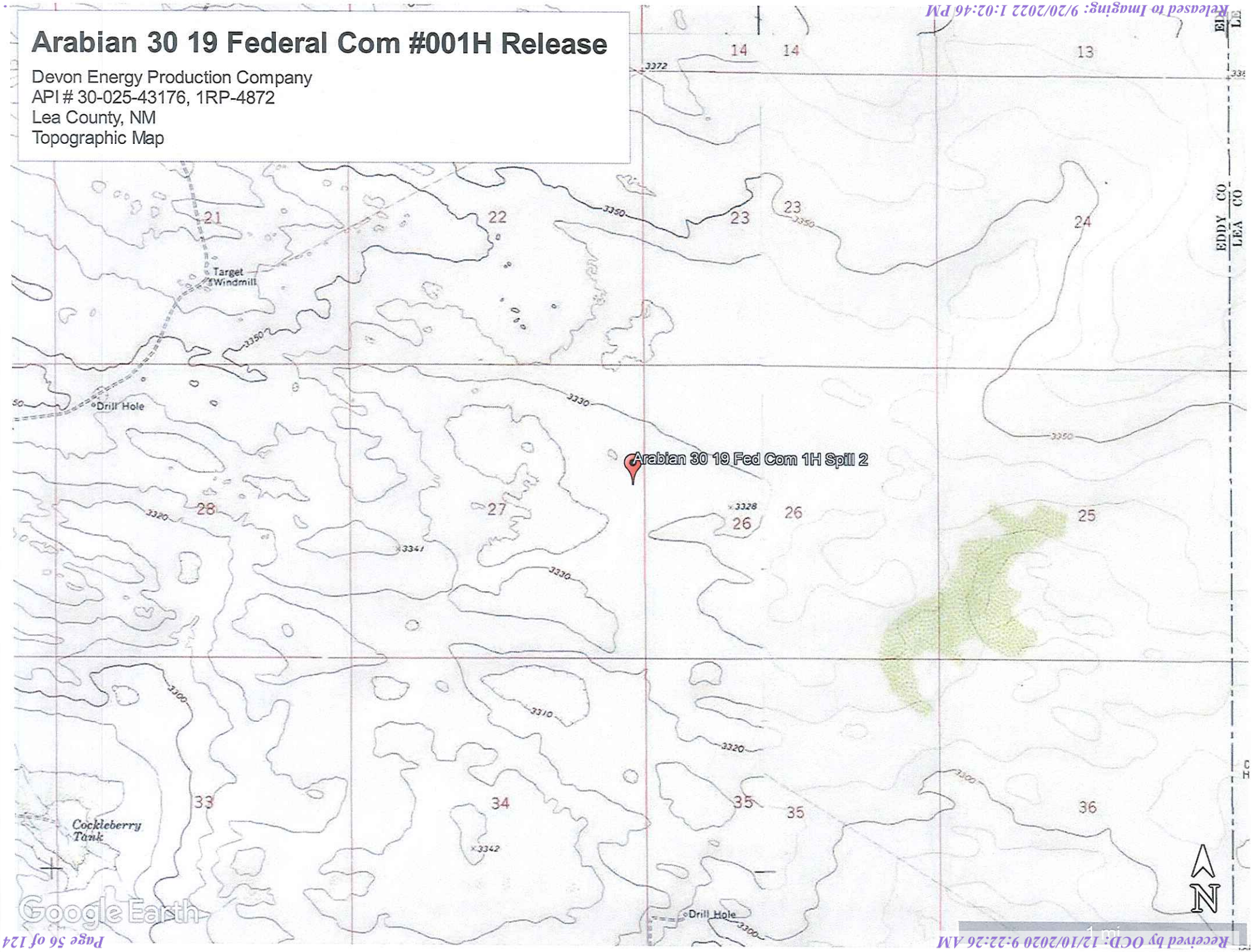
Arabian 30 19 Federal Com #001H Release

Devon Energy Production Company
API # 30-025-43176, 1RP-4872
Lea County, NM
Locator Map



Arabian 30 19 Federal Com #001H Release

Devon Energy Production Company
API # 30-025-43176, 1RP-4872
Lea County, NM
Topographic Map



Arabian 30 19 Federal Com #001H Release

Devon Energy Production Company
API # 30-025-43176, 1RP-4872
Lea County, NM
Karst Map

Legend
- High
- Low
- Medium

Arabian 30 19 Fed Com 1H Spill 2

Google Earth

3 mi

N

National Flood Hazard Layer FIRMette

FEMA

103°45'47"W 32°6'25"N

103°45'10"W 32°5'55"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represe an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/4/2020 at 5:49 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX II

SOIL SURVEY

GROUNDWATER DATA

Eddy Area, New Mexico

BB—Berino complex, 0 to 3 percent slopes, eroded

Map Unit Setting

National map unit symbol: 1w43
Elevation: 2,000 to 5,700 feet
Mean annual precipitation: 5 to 15 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 180 to 260 days
Farmland classification: Not prime farmland

Map Unit Composition

Berino and similar soils: 60 percent
Pajarito and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Berino

Setting

Landform: Fan piedmonts, plains
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 17 inches: fine sand
H2 - 17 to 58 inches: sandy clay loam
H3 - 58 to 60 inches: loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water capacity: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: B
Ecological site: R042XC003NM - Loamy Sand
Hydric soil rating: No

Description of Pajarito

Setting

Landform: Interdunes, plains, dunes
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 9 inches: loamy fine sand
H2 - 9 to 72 inches: fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water capacity: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R042XC003NM - Loamy Sand
Hydric soil rating: No

Minor Components

Cacique

Percent of map unit: 4 percent
Ecological site: R042XC004NM - Sandy
Hydric soil rating: No

Pajarito

Percent of map unit: 4 percent
Ecological site: R042XC003NM - Loamy Sand
Hydric soil rating: No

Wink

Percent of map unit: 4 percent
Ecological site: R042XC003NM - Loamy Sand
Hydric soil rating: No

Kermit

Percent of map unit: 3 percent
Ecological site: R042XC005NM - Deep Sand
Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 16, Jun 8, 2020

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

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

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

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

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 02250		CUB	ED	3	1	4	21	25S	31E	614912	3553620*	2537	400	390	10

Average Depth to Water: **390 feet**

Minimum Depth: **390 feet**

Maximum Depth: **390 feet**

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 617187.9 Northing (Y): 3552497 Radius: 3000

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

11/3/20 3:49 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

APPENDIX III

FINAL C-141

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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 Devon Energy Production Co LP (6137)	Contact Stephen Richards, Devon Completions Foreman
Address PO BOX 250, Artesia, NM 88211	Telephone No. (575) 252-3717
Facility Name: Transfer line from Trionyx Frac Pond to Arabian 30-19 Fed Com 1H – Spill 2 (Near the Shire 22 Fed 1H (API #30-015-43222)	Facility Type Oil well

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-025-43176

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	27	25S	31E					Eddy

Latitude 32.102724 N Longitude 103.757986 W NAD83

NATURE OF RELEASE

Type of Release: Treated Produced Water	Volume of Release: 397 bbls	Volume Recovered: 0 bbls
Source of Release: Lay Flat Transfer Line	Date and Hour of Occurrence: 10/18/2017, 11:46 PM	Date and Hour of Discovery 10/18/2017, 11:46 PM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? OCD: Crystal Weaver & Mike Bratcher BLM: Shelly Tucker	
By Whom? Mike Shoemaker, EHS Professional	Date and Hour: OCD: 10/19/17, 5:46 PM BLM: 10/19/17, 5:46 PM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. NA	

If a Watercourse was Impacted, Describe Fully.* NA

RECEIVED
By Olivia Yu at 10:37 am, Nov 17, 2017

Describe Cause of Problem and Remedial Action Taken.*
During rigging up of layflat hose a victrolic end connector was removed from hose in order to fit hose under cattle guard. When the contract company reassembled the end to the hose they failed to tighten the clamp bolts. After hydro testing the line to 100 PSI they began the frac job. During stage 2 the victrolic connection blew out of the hose. Approximately 397 bbls of produced water was released with 0 bbls of produced water being recovered. The pump was shut down and the clamps were tightened.

Describe Area Affected and Cleanup Action Taken.*
The spill affected approximately 1,214 square feet running North, East, and West from the rupture point located approximately at 32.102724 N, 103.757986 W and is approximately 2.15 miles West from the Albian 30-19 Fed Com 1H well pad. An estimated 397 barrels of treated produced water was spilled and 0 barrels were recovered. A remediation contractor will be contacted to assist with the delineation and remediation efforts.

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: Denise Menoud	OIL CONSERVATION DIVISION Approved by Environmental Specialist:
Printed Name: Denise Menoud	
Title: Admin Field Support	Approval Date: 11/17/2017 Expiration Date:
E-mail Address: denise.menoud@dvn.com	Conditions of Approval: see attached directive Attached ☑

nOY1732141384 pOY1732141830 1RP-4872

Date: 10/24/2017 Phone: (575)746-5544		

* Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _11/16/2017_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-4872__ has been assigned. **Please refer to this case number in all future correspondence.**

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District _1_ office in __Hobbs____ on or before _12/17/2017_. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

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

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

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

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

- Composite sampling is not generally allowed.

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

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

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

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

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

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

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

Form C-141
Page 6

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	1RP-4872
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: Brandon Sinclair

Title: Environmental Project Manager

Signature: Brandon Sinclair

Date: 11-4-2020

email: bsinclair@talonlpe.com

Telephone: 575-746-8768

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: APPROVED By Ashley Maxwell at 1:00 pm, Sep 20, 2022

Date: _____

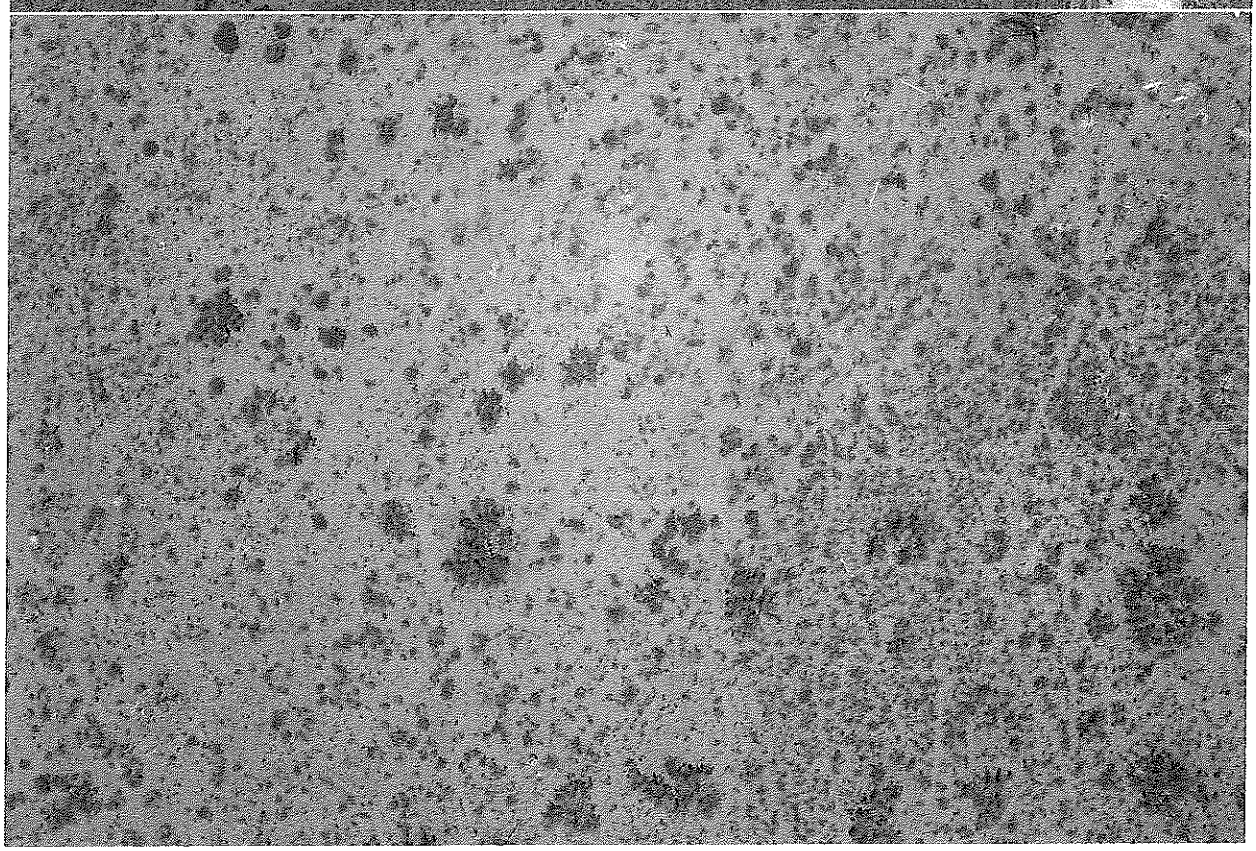
Printed Name: _____

Title: _____

APPENDIX IV

PHOTOGRAPHIC DOCUMENTATION

Assessment Photographs



APPENDIX V

LABORATORY DATA

Analytical Report 665605

for

Talon LPE-Artesia

Project Manager: David Adkins

Arabian 30-19 1H

700794.332.01

06.30.2020

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-36), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-25), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-17)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-22)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-7)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

06.30.2020

Project Manager: **David Adkins**
Talon LPE-Artesia
408 West Texas St.
Artesia, NM 88210

Reference: XENCO Report No(s): **665605**
Arabian 30-19 1H
Project Address: Lea County

David Adkins:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 665605. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 665605 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Manager

A Small Business and Minority Company

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

Sample Cross Reference 665605

Talon LPE-Artesia, Artesia, NM

Arabian 30-19 1H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-1 0-1'	S	06.24.2020 12:52		665605-001
S-1 1.5' R	S	06.24.2020 12:56		665605-002
S-2 0-1'	S	06.24.2020 13:00		665605-003
S-2 1.5' R	S	06.24.2020 13:03		665605-004
S-3 0-1'	S	06.24.2020 13:05		665605-005
S-31.5' R	S	06.24.2020 13:08		665605-006
S-4 0-1'	S	06.24.2020 13:14		665605-007
S-4 1.5 R	S	06.24.2020 13:16		665605-008
S-5 0.1'	S	06.24.2020 13:20		665605-009
S-5 2'	S	06.24.2020 13:23		665605-010
S-5 3'	S	06.24.2020 13:25		665605-011
S-5 3.5' R	S	06.24.2020 13:28		665605-012
S-6 0-1'	S	06.24.2020 13:32		665605-013
S-6 1.5' R	S	06.24.2020 13:36		665605-014
S-7 0-1'	S	06.24.2020 13:40		665605-015
S-7 1.5' R	S	06.24.2020 13:44		665605-016
S-8 0-1'	S	06.24.2020 13:30		665605-017
S-8 1.5' R	S	06.24.2020 13:33		665605-018
S-9 0-1'	S	06.24.2020 13:24		665605-019
S-9 1.5' R	S	06.24.2020 13:27		665605-020
S-10 0.1'	S	06.24.2020 13:45		665605-021
S-10 1.5' R	S	06.24.2020 13:50		665605-022
S11 0.1'	S	06.24.2020 13:53		665605-023
S11 1.5' R	S	06.24.2020 13:57		665605-024
S-12 0-1'	S	06.24.2020 14:03		665605-025
S-12 1.5' R	S	06.24.2020 14:06		665605-026

CASE NARRATIVE

Client Name: Talon LPE-Artesia

Project Name: Arabian 30-19 1H

Project ID: *700794.332.01*
Work Order Number(s): *665605*

Report Date: *06.30.2020*
Date Received: *06.25.2020*

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results
665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-1 0-1'** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-001 Date Collected: 06.24.2020 12:52 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130200 Date Prep: 06.26.2020 08:41

Prep seq: 7706226

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**9.25**	9.94	0.352	mg/kg	06.26.2020 13:38	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: CAC % Moist: Tech: CAC

Seq Number: 3130037 Date Prep: 06.25.2020 16:48

Prep seq: 7706231

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.8	49.8	13.8	mg/kg	06.26.2020 00:21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.4	49.8	11.4	mg/kg	06.26.2020 00:21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	49.8	11.4	mg/kg	06.26.2020 00:21	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 00:21	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	98	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130038 Date Prep: 06.25.2020 16:52

Prep seq: 7706233

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000486	0.00200	0.000486	mg/kg	06.26.2020 02:06	U	1
Toluene	108-88-3	<0.000529	0.00200	0.000529	mg/kg	06.26.2020 02:06	U	1
Ethylbenzene	100-41-4	<0.000407	0.00200	0.000407	mg/kg	06.26.2020 02:06	U	1
m_p-Xylenes	179601-23-1	<0.000755	0.00401	0.000755	mg/kg	06.26.2020 02:06	U	1
o-Xylene	95-47-6	<0.000404	0.00200	0.000404	mg/kg	06.26.2020 02:06	U	1
Xylenes, Total	1330-20-7	<0.000404		0.000404	mg/kg	06.26.2020 02:06	U	
Total BTEX		<0.000404		0.000404	mg/kg	06.26.2020 02:06	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	95	70 - 130	%		

Certificate of Analytical Results
665605

Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: S-1 1.5' R | Matrix: Soil | Sample Depth:
Lab Sample Id: 665605-002 | Date Collected: 06.24.2020 12:56 | Date Received: 06.25.2020 15:45

Analytical Method: Inorganic Anions by EPA 300/300.1 | Prep Method: E300P
Analyst: MAB | % Moist: | Tech: MAB
Seq Number: 3130200 | Date Prep: 06.26.2020 08:41
Prep seq: 7706226

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**9.15**	9.94	0.352	mg/kg	06.26.2020 14:00	J	1

Analytical Method: TPH by SW8015 Mod | Prep Method: 8015
Analyst: CAC | % Moist: | Tech: CAC
Seq Number: 3130037 | Date Prep: 06.25.2020 16:48
Prep seq: 7706231

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.8	49.9	13.8	mg/kg	06.26.2020 00:42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.4	49.9	11.4	mg/kg	06.26.2020 00:42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	49.9	11.4	mg/kg	06.26.2020 00:42	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 00:42	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	88	70 - 135	%		
o-Terphenyl	92	70 - 135	%		

Analytical Method: BTEX by EPA 8021 | Prep Method: 5035A
Analyst: MAB | % Moist: | Tech: MAB
Seq Number: 3130038 | Date Prep: 06.25.2020 16:52
Prep seq: 7706233

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000487	0.00201	0.000487	mg/kg	06.26.2020 02:28	U	1
Toluene	108-88-3	<0.000530	0.00201	0.000530	mg/kg	06.26.2020 02:28	U	1
Ethylbenzene	100-41-4	<0.000408	0.00201	0.000408	mg/kg	06.26.2020 02:28	U	1
m_p-Xylenes	179601-23-1	<0.000757	0.00402	0.000757	mg/kg	06.26.2020 02:28	U	1
o-Xylene	95-47-6	<0.000405	0.00201	0.000405	mg/kg	06.26.2020 02:28	U	1
Xylenes, Total	1330-20-7	<0.000405		0.000405	mg/kg	06.26.2020 02:28	U	
Total BTEX		<0.000405		0.000405	mg/kg	06.26.2020 02:28	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	100	70 - 130	%		
4-Bromofluorobenzene	101	70 - 130	%		

Final 1.000

Certificate of Analytical Results
665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-2 0-1'** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-003 Date Collected: 06.24.2020 13:00 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130200 Date Prep: 06.26.2020 08:41

Prep seq: 7706226

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**12.0**	9.98	0.353	mg/kg	06.26.2020 14:08		1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: CAC % Moist: Tech: CAC

Seq Number: 3130037 Date Prep: 06.25.2020 16:48

Prep seq: 7706231

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	50.0	13.9	mg/kg	06.26.2020 01:02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.5	50.0	11.5	mg/kg	06.26.2020 01:02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	50.0	11.4	mg/kg	06.26.2020 01:02	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 01:02	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	85	70 - 135	%		
o-Terphenyl	93	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130038 Date Prep: 06.25.2020 16:52

Prep seq: 7706233

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000485	0.00200	0.000485	mg/kg	06.26.2020 02:49	U	1
Toluene	108-88-3	<0.000527	0.00200	0.000527	mg/kg	06.26.2020 02:49	U	1
Ethylbenzene	100-41-4	<0.000405	0.00200	0.000405	mg/kg	06.26.2020 02:49	U	1
m_p-Xylenes	179601-23-1	<0.000752	0.00399	0.000752	mg/kg	06.26.2020 02:49	U	1
o-Xylene	95-47-6	<0.000402	0.00200	0.000402	mg/kg	06.26.2020 02:49	U	1
Xylenes, Total	1330-20-7	<0.000402		0.000402	mg/kg	06.26.2020 02:49	U	
Total BTEX		<0.000402		0.000402	mg/kg	06.26.2020 02:49	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	102	70 - 130	%		

Certificate of Analytical Results
665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-2 1.5' R** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-004 Date Collected: 06.24.2020 13:03 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130200 Date Prep: 06.26.2020 08:41

Prep seq: 7706226

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**9.56**	9.98	0.353	mg/kg	06.26.2020 14:30	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: CAC % Moist: Tech: CAC

Seq Number: 3130037 Date Prep: 06.25.2020 16:48

Prep seq: 7706231

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	50.0	13.9	mg/kg	06.26.2020 01:23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.5	50.0	11.5	mg/kg	06.26.2020 01:23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	50.0	11.4	mg/kg	06.26.2020 01:23	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 01:23	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	90	70 - 135	%		
o-Terphenyl	93	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130038 Date Prep: 06.25.2020 16:52

Prep seq: 7706233

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000483	0.00199	0.000483	mg/kg	06.26.2020 03:10	U	1
Toluene	108-88-3	<0.000525	0.00199	0.000525	mg/kg	06.26.2020 03:10	U	1
Ethylbenzene	100-41-4	<0.000404	0.00199	0.000404	mg/kg	06.26.2020 03:10	U	1
m_p-Xylenes	179601-23-1	<0.000749	0.00398	0.000749	mg/kg	06.26.2020 03:10	U	1
o-Xylene	95-47-6	<0.000401	0.00199	0.000401	mg/kg	06.26.2020 03:10	U	1
Xylenes, Total	1330-20-7	<0.000401		0.000401	mg/kg	06.26.2020 03:10	U	
Total BTEX		<0.000401		0.000401	mg/kg	06.26.2020 03:10	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	102	70 - 130	%		

Certificate of Analytical Results
665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: S-3 0-1' | Matrix: Soil | Sample Depth:
Lab Sample Id: 665605-005 | Date Collected: 06.24.2020 13:05 | Date Received: 06.25.2020 15:45

Analytical Method: Inorganic Anions by EPA 300/300.1 | Prep Method: E300P
Analyst: MAB | % Moist: | Tech: MAB
Seq Number: 3130200 | Date Prep: 06.26.2020 08:41
Prep seq: 7706226

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**8.92**	9.88	0.350	mg/kg	06.26.2020 14:38	J	1

Analytical Method: TPH by SW8015 Mod | Prep Method: 8015
Analyst: CAC | % Moist: | Tech: CAC
Seq Number: 3130037 | Date Prep: 06.25.2020 16:48
Prep seq: 7706231

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.8	49.9	13.8	mg/kg	06.26.2020 01:43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.4	49.9	11.4	mg/kg	06.26.2020 01:43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	49.9	11.4	mg/kg	06.26.2020 01:43	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 01:43	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	90	70 - 135	%		
o-Terphenyl	93	70 - 135	%		

Analytical Method: BTEX by EPA 8021 | Prep Method: 5035A
Analyst: MAB | % Moist: | Tech: MAB
Seq Number: 3130038 | Date Prep: 06.25.2020 16:52
Prep seq: 7706233

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000489	0.00202	0.000489	mg/kg	06.26.2020 03:32	U	1
Toluene	108-88-3	<0.000532	0.00202	0.000532	mg/kg	06.26.2020 03:32	U	1
Ethylbenzene	100-41-4	<0.000409	0.00202	0.000409	mg/kg	06.26.2020 03:32	U	1
m_p-Xylenes	179601-23-1	<0.000760	0.00403	0.000760	mg/kg	06.26.2020 03:32	U	1
o-Xylene	95-47-6	<0.000406	0.00202	0.000406	mg/kg	06.26.2020 03:32	U	1
Xylenes, Total	1330-20-7	<0.000406		0.000406	mg/kg	06.26.2020 03:32	U	
Total BTEX		<0.000406		0.000406	mg/kg	06.26.2020 03:32	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	103	70 - 130	%		

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Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-31.5' R** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-006 Date Collected: 06.24.2020 13:08 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130200 Date Prep: 06.26.2020 08:41

Prep seq: 7706226

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**9.43**	9.84	0.348	mg/kg	06.26.2020 14:45	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: CAC % Moist: Tech: CAC

Seq Number: 3130037 Date Prep: 06.25.2020 16:48

Prep seq: 7706231

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.8	49.9	13.8	mg/kg	06.26.2020 02:04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.4	49.9	11.4	mg/kg	06.26.2020 02:04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	49.9	11.4	mg/kg	06.26.2020 02:04	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 02:04	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	89	70 - 135	%		
o-Terphenyl	92	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130038 Date Prep: 06.25.2020 16:52

Prep seq: 7706233

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000483	0.00199	0.000483	mg/kg	06.26.2020 03:53	U	1
Toluene	108-88-3	<0.000525	0.00199	0.000525	mg/kg	06.26.2020 03:53	U	1
Ethylbenzene	100-41-4	<0.000404	0.00199	0.000404	mg/kg	06.26.2020 03:53	U	1
m_p-Xylenes	179601-23-1	<0.000749	0.00398	0.000749	mg/kg	06.26.2020 03:53	U	1
o-Xylene	95-47-6	<0.000401	0.00199	0.000401	mg/kg	06.26.2020 03:53	U	1
Xylenes, Total	1330-20-7	<0.000401		0.000401	mg/kg	06.26.2020 03:53	U	
Total BTEX		<0.000401		0.000401	mg/kg	06.26.2020 03:53	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	97	70 - 130	%		
4-Bromofluorobenzene	100	70 - 130	%		

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Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-4 0-1'** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-007 Date Collected: 06.24.2020 13:14 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130200 Date Prep: 06.26.2020 08:41

Prep seq: 7706226

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**9.52**	9.88	0.350	mg/kg	06.26.2020 14:53	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: CAC % Moist: Tech: CAC

Seq Number: 3130037 Date Prep: 06.25.2020 16:48

Prep seq: 7706231

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	50.2	13.9	mg/kg	06.26.2020 02:24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.5	50.2	11.5	mg/kg	06.26.2020 02:24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.5	50.2	11.5	mg/kg	06.26.2020 02:24	U	1
Total TPH	PHC635	<11.5		11.5	mg/kg	06.26.2020 02:24	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	88	70 - 135	%		
o-Terphenyl	92	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130038 Date Prep: 06.25.2020 16:52

Prep seq: 7706233

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000484	0.00199	0.000484	mg/kg	06.26.2020 04:15	U	1
Toluene	108-88-3	<0.000526	0.00199	0.000526	mg/kg	06.26.2020 04:15	U	1
Ethylbenzene	100-41-4	<0.000405	0.00199	0.000405	mg/kg	06.26.2020 04:15	U	1
m_p-Xylenes	179601-23-1	<0.000751	0.00398	0.000751	mg/kg	06.26.2020 04:15	U	1
o-Xylene	95-47-6	<0.000401	0.00199	0.000401	mg/kg	06.26.2020 04:15	U	1
Xylenes, Total	1330-20-7	<0.000401		0.000401	mg/kg	06.26.2020 04:15	U	
Total BTEX		<0.000401		0.000401	mg/kg	06.26.2020 04:15	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	70 - 130	%		
4-Bromofluorobenzene	103	70 - 130	%		

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Arabian 30-19 1H

Sample Id: **S-4 1.5 R** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-008 Date Collected: 06.24.2020 13:16 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130200 Date Prep: 06.26.2020 08:41

Prep seq: 7706226

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**9.57**	9.98	0.353	mg/kg	06.26.2020 15:02	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: CAC % Moist: Tech: CAC

Seq Number: 3130037 Date Prep: 06.25.2020 16:48

Prep seq: 7706231

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.8	49.8	13.8	mg/kg	06.26.2020 02:45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.4	49.8	11.4	mg/kg	06.26.2020 02:45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	49.8	11.4	mg/kg	06.26.2020 02:45	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 02:45	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	91	70 - 135	%		
o-Terphenyl	98	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130038 Date Prep: 06.25.2020 16:52

Prep seq: 7706233

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000488	0.00201	0.000488	mg/kg	06.26.2020 04:36	U	1
Toluene	108-88-3	<0.000531	0.00201	0.000531	mg/kg	06.26.2020 04:36	U	1
Ethylbenzene	100-41-4	<0.000409	0.00201	0.000409	mg/kg	06.26.2020 04:36	U	1
m_p-Xylenes	179601-23-1	<0.000758	0.00402	0.000758	mg/kg	06.26.2020 04:36	U	1
o-Xylene	95-47-6	<0.000406	0.00201	0.000406	mg/kg	06.26.2020 04:36	U	1
Xylenes, Total	1330-20-7	<0.000406		0.000406	mg/kg	06.26.2020 04:36	U	
Total BTEX		<0.000406		0.000406	mg/kg	06.26.2020 04:36	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	103	70 - 130	%		

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Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-5 0.1'** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-009 Date Collected: 06.24.2020 13:20 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130200 Date Prep: 06.26.2020 08:41

Prep seq: 7706226

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**10.1**	9.98	0.353	mg/kg	06.26.2020 15:21		1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: CAC % Moist: Tech: CAC

Seq Number: 3130037 Date Prep: 06.25.2020 16:48

Prep seq: 7706231

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.8	49.9	13.8	mg/kg	06.26.2020 03:05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.4	49.9	11.4	mg/kg	06.26.2020 03:05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	49.9	11.4	mg/kg	06.26.2020 03:05	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 03:05	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	90	70 - 135	%		
o-Terphenyl	93	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130038 Date Prep: 06.25.2020 16:52

Prep seq: 7706233

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000483	0.00199	0.000483	mg/kg	06.26.2020 04:57	U	1
Toluene	108-88-3	<0.000525	0.00199	0.000525	mg/kg	06.26.2020 04:57	U	1
Ethylbenzene	100-41-4	<0.000404	0.00199	0.000404	mg/kg	06.26.2020 04:57	U	1
m_p-Xylenes	179601-23-1	<0.000749	0.00398	0.000749	mg/kg	06.26.2020 04:57	U	1
o-Xylene	95-47-6	<0.000401	0.00199	0.000401	mg/kg	06.26.2020 04:57	U	1
Xylenes, Total	1330-20-7	<0.000401		0.000401	mg/kg	06.26.2020 04:57	U	
Total BTEX		<0.000401		0.000401	mg/kg	06.26.2020 04:57	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	104	70 - 130	%		

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Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-5 2'** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-010 Date Collected: 06.24.2020 13:23 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130200 Date Prep: 06.26.2020 08:41

Prep seq: 7706226

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**8.88**	9.92	0.351	mg/kg	06.26.2020 15:27	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: CAC % Moist: Tech: CAC

Seq Number: 3130037 Date Prep: 06.25.2020 16:48

Prep seq: 7706231

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.8	49.8	13.8	mg/kg	06.26.2020 03:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.4	49.8	11.4	mg/kg	06.26.2020 03:26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	49.8	11.4	mg/kg	06.26.2020 03:26	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 03:26	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	84	70 - 135	%		
o-Terphenyl	88	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130038 Date Prep: 06.25.2020 16:52

Prep seq: 7706233

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000485	0.00200	0.000485	mg/kg	06.26.2020 05:19	U	1
Toluene	108-88-3	<0.000527	0.00200	0.000527	mg/kg	06.26.2020 05:19	U	1
Ethylbenzene	100-41-4	<0.000405	0.00200	0.000405	mg/kg	06.26.2020 05:19	U	1
m_p-Xylenes	179601-23-1	<0.000752	0.00399	0.000752	mg/kg	06.26.2020 05:19	U	1
o-Xylene	95-47-6	<0.000402	0.00200	0.000402	mg/kg	06.26.2020 05:19	U	1
Xylenes, Total	1330-20-7	<0.000402		0.000402	mg/kg	06.26.2020 05:19	U	
Total BTEX		<0.000402		0.000402	mg/kg	06.26.2020 05:19	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	103	70 - 130	%		

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Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: S-5 3' | Matrix: Soil | Sample Depth:
Lab Sample Id: 665605-011 | Date Collected: 06.24.2020 13:25 | Date Received: 06.25.2020 15:45

Analytical Method: Inorganic Anions by EPA 300/300.1 | Prep Method: E300P
Analyst: MAB | % Moist: | Tech: MAB
Seq Number: 3130201 | Date Prep: 06.26.2020 08:45
Prep seq: 7706227

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**6.67**	9.92	0.351	mg/kg	06.26.2020 16:03	J	1

Analytical Method: TPH by SW8015 Mod | Prep Method: 8015
Analyst: MAB | % Moist: | Tech: MAB
Seq Number: 3130203 | Date Prep: 06.26.2020 10:05
Prep seq: 7706261

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	50.2	13.9	mg/kg	06.26.2020 12:24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.5	50.2	11.5	mg/kg	06.26.2020 12:24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.5	50.2	11.5	mg/kg	06.26.2020 12:24	U	1
Total TPH	PHC635	<11.5		11.5	mg/kg	06.26.2020 12:24	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	93	70 - 135	%		
o-Terphenyl	96	70 - 135	%		

Analytical Method: BTEX by EPA 8021 | Prep Method: 5035A
Analyst: MAB | % Moist: | Tech: MAB
Seq Number: 3130199 | Date Prep: 06.26.2020 09:55
Prep seq: 7706236

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000483	0.00199	0.000483	mg/kg	06.26.2020 15:46	U	1
Toluene	108-88-3	<0.000525	0.00199	0.000525	mg/kg	06.26.2020 15:46	U	1
Ethylbenzene	100-41-4	<0.000404	0.00199	0.000404	mg/kg	06.26.2020 15:46	U	1
m,p-Xylenes	179601-23-1	<0.000749	0.00398	0.000749	mg/kg	06.26.2020 15:46	U	1
o-Xylene	95-47-6	<0.000401	0.00199	0.000401	mg/kg	06.26.2020 15:46	U	1
Total Xylenes	1330-20-7	<0.000401		0.000401	mg/kg	06.26.2020 15:46	U	
Total BTEX		<0.000401		0.000401	mg/kg	06.26.2020 15:46	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	105	70 - 130	%		

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Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-5 3.5' R** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-012 Date Collected: 06.24.2020 13:28 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130201 Date Prep: 06.26.2020 08:45

Prep seq: 7706227

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**11.8**	10.1	0.357	mg/kg	06.26.2020 16:21		1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130203 Date Prep: 06.26.2020 10:05

Prep seq: 7706261

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.8	49.9	13.8	mg/kg	06.26.2020 13:25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.4	49.9	11.4	mg/kg	06.26.2020 13:25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	49.9	11.4	mg/kg	06.26.2020 13:25	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 13:25	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	90	70 - 135	%		
o-Terphenyl	94	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130199 Date Prep: 06.26.2020 09:55

Prep seq: 7706236

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000486	0.00200	0.000486	mg/kg	06.26.2020 16:07	U	1
Toluene	108-88-3	<0.000529	0.00200	0.000529	mg/kg	06.26.2020 16:07	U	1
Ethylbenzene	100-41-4	<0.000407	0.00200	0.000407	mg/kg	06.26.2020 16:07	U	1
m,p-Xylenes	179601-23-1	<0.000755	0.00401	0.000755	mg/kg	06.26.2020 16:07	U	1
o-Xylene	95-47-6	<0.000404	0.00200	0.000404	mg/kg	06.26.2020 16:07	U	1
Total Xylenes	1330-20-7	<0.000404		0.000404	mg/kg	06.26.2020 16:07	U	
Total BTEX		<0.000404		0.000404	mg/kg	06.26.2020 16:07	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	104	70 - 130	%		
4-Bromofluorobenzene	95	70 - 130	%		

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Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-6 0-1'** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-013 Date Collected: 06.24.2020 13:32 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130201 Date Prep: 06.26.2020 08:45

Prep seq: 7706227

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**11.0**	10.1	0.357	mg/kg	06.26.2020 16:27		1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130203 Date Prep: 06.26.2020 10:05

Prep seq: 7706261

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.8	49.8	13.8	mg/kg	06.26.2020 13:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.4	49.8	11.4	mg/kg	06.26.2020 13:46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	49.8	11.4	mg/kg	06.26.2020 13:46	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 13:46	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	95	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130199 Date Prep: 06.26.2020 09:55

Prep seq: 7706236

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000483	0.00199	0.000483	mg/kg	06.26.2020 16:27	U	1
Toluene	108-88-3	<0.000525	0.00199	0.000525	mg/kg	06.26.2020 16:27	U	1
Ethylbenzene	100-41-4	<0.000404	0.00199	0.000404	mg/kg	06.26.2020 16:27	U	1
m,p-Xylenes	179601-23-1	<0.000749	0.00398	0.000749	mg/kg	06.26.2020 16:27	U	1
o-Xylene	95-47-6	<0.000401	0.00199	0.000401	mg/kg	06.26.2020 16:27	U	1
Total Xylenes	1330-20-7	<0.000401		0.000401	mg/kg	06.26.2020 16:27	U	
Total BTEX		<0.000401		0.000401	mg/kg	06.26.2020 16:27	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	70 - 130	%		
4-Bromofluorobenzene	103	70 - 130	%		

Certificate of Analytical Results
665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-6 1.5' R** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-014 Date Collected: 06.24.2020 13:36 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130201 Date Prep: 06.26.2020 08:45

Prep seq: 7706227

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**10.2**	10.0	0.355	mg/kg	06.26.2020 16:33		1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130203 Date Prep: 06.26.2020 10:05

Prep seq: 7706261

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	49.9	13.9	mg/kg	06.26.2020 14:17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.4	49.9	11.4	mg/kg	06.26.2020 14:17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	49.9	11.4	mg/kg	06.26.2020 14:17	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 14:17	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	89	70 - 135	%		
o-Terphenyl	92	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130199 Date Prep: 06.26.2020 09:55

Prep seq: 7706236

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000485	0.00200	0.000485	mg/kg	06.26.2020 16:47	U	1
Toluene	108-88-3	<0.000527	0.00200	0.000527	mg/kg	06.26.2020 16:47	U	1
Ethylbenzene	100-41-4	<0.000405	0.00200	0.000405	mg/kg	06.26.2020 16:47	U	1
m,p-Xylenes	179601-23-1	<0.000752	0.00399	0.000752	mg/kg	06.26.2020 16:47	U	1
o-Xylene	95-47-6	<0.000402	0.00200	0.000402	mg/kg	06.26.2020 16:47	U	1
Total Xylenes	1330-20-7	<0.000402		0.000402	mg/kg	06.26.2020 16:47	U	
Total BTEX		<0.000402		0.000402	mg/kg	06.26.2020 16:47	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	111	70 - 130	%		
4-Bromofluorobenzene	104	70 - 130	%		

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665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-7 0-1'** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-015 Date Collected: 06.24.2020 13:40 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130201 Date Prep: 06.26.2020 08:45

Prep seq: 7706227

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**10.1**	9.94	0.352	mg/kg	06.26.2020 16:39		1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130203 Date Prep: 06.26.2020 10:05

Prep seq: 7706261

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	50.2	13.9	mg/kg	06.26.2020 14:38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.5	50.2	11.5	mg/kg	06.26.2020 14:38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.5	50.2	11.5	mg/kg	06.26.2020 14:38	U	1
Total TPH	PHC635	<11.5		11.5	mg/kg	06.26.2020 14:38	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	90	70 - 135	%		
o-Terphenyl	93	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130199 Date Prep: 06.26.2020 09:55

Prep seq: 7706236

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000485	0.00200	0.000485	mg/kg	06.26.2020 17:08	U	1
Toluene	108-88-3	<0.000527	0.00200	0.000527	mg/kg	06.26.2020 17:08	U	1
Ethylbenzene	100-41-4	<0.000405	0.00200	0.000405	mg/kg	06.26.2020 17:08	U	1
m,p-Xylenes	179601-23-1	<0.000752	0.00399	0.000752	mg/kg	06.26.2020 17:08	U	1
o-Xylene	95-47-6	<0.000402	0.00200	0.000402	mg/kg	06.26.2020 17:08	U	1
Total Xylenes	1330-20-7	<0.000402		0.000402	mg/kg	06.26.2020 17:08	U	
Total BTEX		<0.000402		0.000402	mg/kg	06.26.2020 17:08	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	104	70 - 130	%		
4-Bromofluorobenzene	102	70 - 130	%		

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665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-7 1.5' R** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-016 Date Collected: 06.24.2020 13:44 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130201 Date Prep: 06.26.2020 08:45

Prep seq: 7706227

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**9.73**	9.96	0.353	mg/kg	06.26.2020 16:57	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130203 Date Prep: 06.26.2020 10:05

Prep seq: 7706261

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.8	49.9	13.8	mg/kg	06.26.2020 14:58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.4	49.9	11.4	mg/kg	06.26.2020 14:58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	49.9	11.4	mg/kg	06.26.2020 14:58	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 14:58	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	86	70 - 135	%		
o-Terphenyl	89	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130199 Date Prep: 06.26.2020 09:55

Prep seq: 7706236

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000481	0.00198	0.000481	mg/kg	06.26.2020 17:28	U	1
Toluene	108-88-3	<0.000522	0.00198	0.000522	mg/kg	06.26.2020 17:28	U	1
Ethylbenzene	100-41-4	<0.000402	0.00198	0.000402	mg/kg	06.26.2020 17:28	U	1
m,p-Xylenes	179601-23-1	<0.000746	0.00396	0.000746	mg/kg	06.26.2020 17:28	U	1
o-Xylene	95-47-6	<0.000399	0.00198	0.000399	mg/kg	06.26.2020 17:28	U	1
Total Xylenes	1330-20-7	<0.000399		0.000399	mg/kg	06.26.2020 17:28	U	
Total BTEX		<0.000399		0.000399	mg/kg	06.26.2020 17:28	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	111	70 - 130	%		
4-Bromofluorobenzene	115	70 - 130	%		

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665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-8 0-1'** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-017 Date Collected: 06.24.2020 13:30 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130201 Date Prep: 06.26.2020 08:45

Prep seq: 7706227

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**10.6**	9.98	0.353	mg/kg	06.26.2020 17:03		1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130203 Date Prep: 06.26.2020 10:05

Prep seq: 7706261

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.8	49.8	13.8	mg/kg	06.26.2020 15:19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.4	49.8	11.4	mg/kg	06.26.2020 15:19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	49.8	11.4	mg/kg	06.26.2020 15:19	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 15:19	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	88	70 - 135	%		
o-Terphenyl	91	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130305 Date Prep: 06.29.2020 09:27

Prep seq: 7706338

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000485	0.00200	0.000485	mg/kg	06.29.2020 14:46	U	1
Toluene	108-88-3	<0.000527	0.00200	0.000527	mg/kg	06.29.2020 14:46	U	1
Ethylbenzene	100-41-4	<0.000405	0.00200	0.000405	mg/kg	06.29.2020 14:46	U	1
m,p-Xylenes	179601-23-1	<0.000752	0.00399	0.000752	mg/kg	06.29.2020 14:46	U	1
o-Xylene	95-47-6	<0.000402	0.00200	0.000402	mg/kg	06.29.2020 14:46	U	1
Total Xylenes	1330-20-7	<0.000402		0.000402	mg/kg	06.29.2020 14:46	U	
Total BTEX		<0.000402		0.000402	mg/kg	06.29.2020 14:46	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	100	70 - 130	%		
4-Bromofluorobenzene	101	70 - 130	%		

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665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-8 1.5' R** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-018 Date Collected: 06.24.2020 13:33 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130201 Date Prep: 06.26.2020 08:45

Prep seq: 7706227

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**9.98**	9.96	0.353	mg/kg	06.26.2020 17:08		1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130203 Date Prep: 06.26.2020 10:05

Prep seq: 7706261

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	50.0	13.9	mg/kg	06.26.2020 15:40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.5	50.0	11.5	mg/kg	06.26.2020 15:40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	50.0	11.4	mg/kg	06.26.2020 15:40	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 15:40	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	87	70 - 135	%		
o-Terphenyl	91	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130305 Date Prep: 06.29.2020 09:27

Prep seq: 7706338

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000489	0.00202	0.000489	mg/kg	06.29.2020 15:06	U	1
Toluene	108-88-3	<0.000532	0.00202	0.000532	mg/kg	06.29.2020 15:06	U	1
Ethylbenzene	100-41-4	<0.000409	0.00202	0.000409	mg/kg	06.29.2020 15:06	U	1
m,p-Xylenes	179601-23-1	<0.000760	0.00403	0.000760	mg/kg	06.29.2020 15:06	U	1
o-Xylene	95-47-6	<0.000406	0.00202	0.000406	mg/kg	06.29.2020 15:06	U	1
Total Xylenes	1330-20-7	<0.000406		0.000406	mg/kg	06.29.2020 15:06	U	
Total BTEX		<0.000406		0.000406	mg/kg	06.29.2020 15:06	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	70 - 130	%		
4-Bromofluorobenzene	101	70 - 130	%		

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665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-9 0-1'** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-019 Date Collected: 06.24.2020 13:24 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130201 Date Prep: 06.26.2020 08:45

Prep seq: 7706227

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**9.73**	9.90	0.350	mg/kg	06.26.2020 17:14	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130203 Date Prep: 06.26.2020 10:05

Prep seq: 7706261

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	49.9	13.9	mg/kg	06.26.2020 16:00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.4	49.9	11.4	mg/kg	06.26.2020 16:00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	49.9	11.4	mg/kg	06.26.2020 16:00	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 16:00	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	92	70 - 135	%		
o-Terphenyl	97	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130305 Date Prep: 06.29.2020 09:27

Prep seq: 7706338

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000484	0.00199	0.000484	mg/kg	06.29.2020 15:27	U	1
Toluene	108-88-3	<0.000526	0.00199	0.000526	mg/kg	06.29.2020 15:27	U	1
Ethylbenzene	100-41-4	<0.000405	0.00199	0.000405	mg/kg	06.29.2020 15:27	U	1
m,p-Xylenes	179601-23-1	<0.000751	0.00398	0.000751	mg/kg	06.29.2020 15:27	U	1
o-Xylene	95-47-6	<0.000401	0.00199	0.000401	mg/kg	06.29.2020 15:27	U	1
Total Xylenes	1330-20-7	<0.000401		0.000401	mg/kg	06.29.2020 15:27	U	
Total BTEX		<0.000401		0.000401	mg/kg	06.29.2020 15:27	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	95	70 - 130	%		

Certificate of Analytical Results
665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-9 1.5' R** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-020 Date Collected: 06.24.2020 13:27 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130201 Date Prep: 06.26.2020 08:45

Prep seq: 7706227

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**10.9**	9.94	0.352	mg/kg	06.26.2020 17:20		1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130203 Date Prep: 06.26.2020 10:05

Prep seq: 7706261

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	50.0	13.9	mg/kg	06.26.2020 16:21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.5	50.0	11.5	mg/kg	06.26.2020 16:21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	50.0	11.4	mg/kg	06.26.2020 16:21	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 16:21	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	99	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130305 Date Prep: 06.29.2020 09:27

Prep seq: 7706338

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000481	0.00198	0.000481	mg/kg	06.29.2020 15:47	U	1
Toluene	108-88-3	<0.000522	0.00198	0.000522	mg/kg	06.29.2020 15:47	U	1
Ethylbenzene	100-41-4	<0.000402	0.00198	0.000402	mg/kg	06.29.2020 15:47	U	1
m,p-Xylenes	179601-23-1	<0.000746	0.00396	0.000746	mg/kg	06.29.2020 15:47	U	1
o-Xylene	95-47-6	<0.000399	0.00198	0.000399	mg/kg	06.29.2020 15:47	U	1
Total Xylenes	1330-20-7	<0.000399		0.000399	mg/kg	06.29.2020 15:47	U	
Total BTEX		<0.000399		0.000399	mg/kg	06.29.2020 15:47	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	70 - 130	%		
4-Bromofluorobenzene	102	70 - 130	%		

Certificate of Analytical Results
665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-10 0.1'** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-021 Date Collected: 06.24.2020 13:45 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130201 Date Prep: 06.26.2020 08:45

Prep seq: 7706227

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**6.55**	9.94	0.352	mg/kg	06.26.2020 17:26	J	1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130203 Date Prep: 06.26.2020 10:05

Prep seq: 7706261

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.8	49.8	13.8	mg/kg	06.26.2020 17:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.4	49.8	11.4	mg/kg	06.26.2020 17:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	49.8	11.4	mg/kg	06.26.2020 17:08	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 17:08	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	91	70 - 135	%		
o-Terphenyl	95	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130305 Date Prep: 06.29.2020 09:27

Prep seq: 7706338

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000485	0.00200	0.000485	mg/kg	06.29.2020 16:08	U	1
Toluene	108-88-3	<0.000527	0.00200	0.000527	mg/kg	06.29.2020 16:08	U	1
Ethylbenzene	100-41-4	<0.000405	0.00200	0.000405	mg/kg	06.29.2020 16:08	U	1
m,p-Xylenes	179601-23-1	<0.000752	0.00399	0.000752	mg/kg	06.29.2020 16:08	U	1
o-Xylene	95-47-6	<0.000402	0.00200	0.000402	mg/kg	06.29.2020 16:08	U	1
Total Xylenes	1330-20-7	<0.000402		0.000402	mg/kg	06.29.2020 16:08	U	
Total BTEX		<0.000402		0.000402	mg/kg	06.29.2020 16:08	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	104	70 - 130	%		
4-Bromofluorobenzene	103	70 - 130	%		

Certificate of Analytical Results
665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-10 1.5' R** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-022 Date Collected: 06.24.2020 13:50 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130201 Date Prep: 06.26.2020 08:45

Prep seq: 7706227

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**10.6**	10.1	0.357	mg/kg	06.26.2020 17:44		1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130203 Date Prep: 06.26.2020 10:05

Prep seq: 7706261

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	50.0	13.9	mg/kg	06.26.2020 17:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.5	50.0	11.5	mg/kg	06.26.2020 17:28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	50.0	11.4	mg/kg	06.26.2020 17:28	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 17:28	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	91	70 - 135	%		
o-Terphenyl	94	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130305 Date Prep: 06.29.2020 09:27

Prep seq: 7706338

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000485	0.00200	0.000485	mg/kg	06.29.2020 16:28	U	1
Toluene	108-88-3	<0.000527	0.00200	0.000527	mg/kg	06.29.2020 16:28	U	1
Ethylbenzene	100-41-4	<0.000405	0.00200	0.000405	mg/kg	06.29.2020 16:28	U	1
m,p-Xylenes	179601-23-1	<0.000752	0.00399	0.000752	mg/kg	06.29.2020 16:28	U	1
o-Xylene	95-47-6	<0.000402	0.00200	0.000402	mg/kg	06.29.2020 16:28	U	1
Total Xylenes	1330-20-7	<0.000402		0.000402	mg/kg	06.29.2020 16:28	U	
Total BTEX		<0.000402		0.000402	mg/kg	06.29.2020 16:28	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	70 - 130	%		
4-Bromofluorobenzene	104	70 - 130	%		

Certificate of Analytical Results
665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S11 0.1'** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-023 Date Collected: 06.24.2020 13:53 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130201 Date Prep: 06.26.2020 08:45

Prep seq: 7706227

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**11.9**	10.1	0.356	mg/kg	06.26.2020 17:50		1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130203 Date Prep: 06.26.2020 10:05

Prep seq: 7706261

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	50.0	13.9	mg/kg	06.26.2020 17:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.5	50.0	11.5	mg/kg	06.26.2020 17:49	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.5	50.0	11.5	mg/kg	06.26.2020 17:49	U	1
Total TPH	PHC635	<11.5		11.5	mg/kg	06.26.2020 17:49	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	100	70 - 135	%		
o-Terphenyl	104	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130305 Date Prep: 06.29.2020 09:27

Prep seq: 7706338

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000486	0.00200	0.000486	mg/kg	06.29.2020 16:48	U	1
Toluene	108-88-3	<0.000529	0.00200	0.000529	mg/kg	06.29.2020 16:48	U	1
Ethylbenzene	100-41-4	<0.000407	0.00200	0.000407	mg/kg	06.29.2020 16:48	U	1
m,p-Xylenes	179601-23-1	<0.000755	0.00401	0.000755	mg/kg	06.29.2020 16:48	U	1
o-Xylene	95-47-6	<0.000404	0.00200	0.000404	mg/kg	06.29.2020 16:48	U	1
Total Xylenes	1330-20-7	<0.000404		0.000404	mg/kg	06.29.2020 16:48	U	
Total BTEX		<0.000404		0.000404	mg/kg	06.29.2020 16:48	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	70 - 130	%		
4-Bromofluorobenzene	101	70 - 130	%		

Certificate of Analytical Results
665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S11 1.5' R** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-024 Date Collected: 06.24.2020 13:57 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130201 Date Prep: 06.26.2020 08:45

Prep seq: 7706227

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**11.5**	10.0	0.355	mg/kg	06.26.2020 18:08		1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130203 Date Prep: 06.26.2020 10:05

Prep seq: 7706261

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	50.0	13.9	mg/kg	06.26.2020 18:09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.5	50.0	11.5	mg/kg	06.26.2020 18:09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	50.0	11.4	mg/kg	06.26.2020 18:09	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 18:09	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	97	70 - 135	%		
o-Terphenyl	101	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130305 Date Prep: 06.29.2020 09:27

Prep seq: 7706338

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000486	0.00200	0.000486	mg/kg	06.29.2020 17:09	U	1
Toluene	108-88-3	<0.000529	0.00200	0.000529	mg/kg	06.29.2020 17:09	U	1
Ethylbenzene	100-41-4	<0.000407	0.00200	0.000407	mg/kg	06.29.2020 17:09	U	1
m,p-Xylenes	179601-23-1	<0.000755	0.00401	0.000755	mg/kg	06.29.2020 17:09	U	1
o-Xylene	95-47-6	<0.000404	0.00200	0.000404	mg/kg	06.29.2020 17:09	U	1
Total Xylenes	1330-20-7	<0.000404		0.000404	mg/kg	06.29.2020 17:09	U	
Total BTEX		<0.000404		0.000404	mg/kg	06.29.2020 17:09	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	100	70 - 130	%		
4-Bromofluorobenzene	100	70 - 130	%		

Certificate of Analytical Results
665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-12 0-1'** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-025 Date Collected: 06.24.2020 14:03 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130201 Date Prep: 06.26.2020 08:45

Prep seq: 7706227

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**11.2**	9.94	0.352	mg/kg	06.26.2020 18:14		1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130203 Date Prep: 06.26.2020 10:05

Prep seq: 7706261

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	49.9	13.9	mg/kg	06.26.2020 18:30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.4	49.9	11.4	mg/kg	06.26.2020 18:30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.4	49.9	11.4	mg/kg	06.26.2020 18:30	U	1
Total TPH	PHC635	<11.4		11.4	mg/kg	06.26.2020 18:30	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	96	70 - 135	%		
o-Terphenyl	101	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130305 Date Prep: 06.29.2020 09:27

Prep seq: 7706338

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000487	0.00201	0.000487	mg/kg	06.29.2020 17:29	U	1
Toluene	108-88-3	<0.000530	0.00201	0.000530	mg/kg	06.29.2020 17:29	U	1
Ethylbenzene	100-41-4	<0.000408	0.00201	0.000408	mg/kg	06.29.2020 17:29	U	1
m,p-Xylenes	179601-23-1	<0.000757	0.00402	0.000757	mg/kg	06.29.2020 17:29	U	1
o-Xylene	95-47-6	<0.000405	0.00201	0.000405	mg/kg	06.29.2020 17:29	U	1
Total Xylenes	1330-20-7	<0.000405		0.000405	mg/kg	06.29.2020 17:29	U	
Total BTEX		<0.000405		0.000405	mg/kg	06.29.2020 17:29	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	103	70 - 130	%		
4-Bromofluorobenzene	105	70 - 130	%		

Certificate of Analytical Results
665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **S-12 1.5' R** Matrix: Soil Sample Depth:

Lab Sample Id: 665605-026 Date Collected: 06.24.2020 14:06 Date Received: 06.25.2020 15:45

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

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130201 Date Prep: 06.26.2020 08:45

Prep seq: 7706227

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**10.3**	9.96	0.353	mg/kg	06.26.2020 18:20		1

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130203 Date Prep: 06.26.2020 10:05

Prep seq: 7706261

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	50.1	13.9	mg/kg	06.26.2020 18:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.5	50.1	11.5	mg/kg	06.26.2020 18:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.5	50.1	11.5	mg/kg	06.26.2020 18:50	U	1
Total TPH	PHC635	<11.5		11.5	mg/kg	06.26.2020 18:50	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	93	70 - 135	%		
o-Terphenyl	97	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130305 Date Prep: 06.29.2020 09:27

Prep seq: 7706338

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000489	0.00202	0.000489	mg/kg	06.29.2020 17:50	U	1
Toluene	108-88-3	<0.000532	0.00202	0.000532	mg/kg	06.29.2020 17:50	U	1
Ethylbenzene	100-41-4	<0.000409	0.00202	0.000409	mg/kg	06.29.2020 17:50	U	1
m,p-Xylenes	179601-23-1	<0.000760	0.00403	0.000760	mg/kg	06.29.2020 17:50	U	1
o-Xylene	95-47-6	<0.000406	0.00202	0.000406	mg/kg	06.29.2020 17:50	U	1
Total Xylenes	1330-20-7	<0.000406		0.000406	mg/kg	06.29.2020 17:50	U	
Total BTEX		<0.000406		0.000406	mg/kg	06.29.2020 17:50	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	101	70 - 130	%		
4-Bromofluorobenzene	104	70 - 130	%		

Certificate of Analytical Results
665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **7706226-1-BLK** Matrix: Solid Sample Depth:
Lab Sample Id: 7706226-1-BLK Date Collected: Date Received:
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: MAB % Moist: Tech: MAB
Seq Number: 3130200 Date Prep: 06.26.2020 08:41
Prep seq: 7706226

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.354	10.0	0.354	mg/kg	06.26.2020 13:01	U	1

Sample Id: **7706227-1-BLK** Matrix: Solid Sample Depth:
Lab Sample Id: 7706227-1-BLK Date Collected: Date Received:
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Analyst: MAB % Moist: Tech: MAB
Seq Number: 3130201 Date Prep: 06.26.2020 08:45
Prep seq: 7706227

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.354	10.0	0.354	mg/kg	06.26.2020 15:45	U	1

Sample Id: **7706231-1-BLK** Matrix: Solid Sample Depth:
Lab Sample Id: 7706231-1-BLK Date Collected: Date Received:
Analytical Method: TPH by SW8015 Mod Prep Method: 8015
Analyst: CAC % Moist: Tech: CAC
Seq Number: 3130037 Date Prep: 06.25.2020 16:48
Prep seq: 7706231

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	50.0	13.9	mg/kg	06.25.2020 18:32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.5	50.0	11.5	mg/kg	06.25.2020 18:32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.5	50.0	11.5	mg/kg	06.25.2020 18:32	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	83	70 - 135	%		
o-Terphenyl	71	70 - 135	%		

Certificate of Analytical Results
665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **7706233-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7706233-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130038 Date Prep: 06.25.2020 16:52

Prep seq: 7706233

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000486	0.00200	0.000486	mg/kg	06.25.2020 19:17	U	1
Toluene	108-88-3	<0.000528	0.00200	0.000528	mg/kg	06.25.2020 19:17	U	1
Ethylbenzene	100-41-4	<0.000406	0.00200	0.000406	mg/kg	06.25.2020 19:17	U	1
m_p-Xylenes	179601-23-1	<0.000754	0.00400	0.000754	mg/kg	06.25.2020 19:17	U	1
o-Xylene	95-47-6	<0.000403	0.00200	0.000403	mg/kg	06.25.2020 19:17	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	98	70 - 130	%		
4-Bromofluorobenzene	95	70 - 130	%		

Sample Id: **7706236-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7706236-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130199 Date Prep: 06.26.2020 09:55

Prep seq: 7706236

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000486	0.00200	0.000486	mg/kg	06.26.2020 13:29	U	1
Toluene	108-88-3	<0.000528	0.00200	0.000528	mg/kg	06.26.2020 13:29	U	1
Ethylbenzene	100-41-4	<0.000406	0.00200	0.000406	mg/kg	06.26.2020 13:29	U	1
m,p-Xylenes	179601-23-1	<0.000754	0.00400	0.000754	mg/kg	06.26.2020 13:29	U	1
o-Xylene	95-47-6	<0.000403	0.00200	0.000403	mg/kg	06.26.2020 13:29	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	109	70 - 130	%		

Certificate of Analytical Results
665605
Talon LPE-Artesia, Artesia, NM
Arabian 30-19 1H

Sample Id: **7706261-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7706261-1-BLK Date Collected: Date Received:

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130203 Date Prep: 06.26.2020 10:05

Prep seq: 7706261

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	50.0	13.9	mg/kg	06.26.2020 11:02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.5	50.0	11.5	mg/kg	06.26.2020 11:02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.5	50.0	11.5	mg/kg	06.26.2020 11:02	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	72	70 - 135	%		
o-Terphenyl	75	70 - 135	%		

Sample Id: **7706338-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7706338-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021 Prep Method: 5035A

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3130305 Date Prep: 06.29.2020 09:27

Prep seq: 7706338

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000486	0.00200	0.000486	mg/kg	06.29.2020 12:29	U	1
Toluene	108-88-3	<0.000528	0.00200	0.000528	mg/kg	06.29.2020 12:29	U	1
Ethylbenzene	100-41-4	<0.000406	0.00200	0.000406	mg/kg	06.29.2020 12:29	U	1
m,p-Xylenes	179601-23-1	<0.000754	0.00400	0.000754	mg/kg	06.29.2020 12:29	U	1
o-Xylene	95-47-6	<0.000403	0.00200	0.000403	mg/kg	06.29.2020 12:29	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	102	70 - 130	%		

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

Form 2 - Surrogate Recoveries

Project Name: Arabian 30-19 1H

Work Orders : 665605 **Project ID:** 700794.332.01

Lab Batch #: 3130038 **Sample:** 7706233-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06.25.2020 19:17 **SURROGATE RECOVERY STUDY**

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	70-130	
4-Bromofluorobenzene	0.0285	0.0300	95	70-130	

Lab Batch #: 3130038 **Sample:** 7706233-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06.25.2020 19:39 **SURROGATE RECOVERY STUDY**

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

Lab Batch #: 3130038 **Sample:** 7706233-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06.25.2020 20:00 **SURROGATE RECOVERY STUDY**

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	70-130	
4-Bromofluorobenzene	0.0318	0.0300	106	70-130	

Lab Batch #: 3130038 **Sample:** 665597-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06.25.2020 20:22 **SURROGATE RECOVERY STUDY**

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	70-130	
4-Bromofluorobenzene	0.0336	0.0300	112	70-130	

Lab Batch #: 3130038 **Sample:** 665597-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06.25.2020 20:43 **SURROGATE RECOVERY STUDY**

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	70-130	
4-Bromofluorobenzene	0.0319	0.0300	106	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: Arabian 30-19 1H

Work Orders : 665605 **Project ID:** 700794.332.01

Lab Batch #: 3130199 **Sample:** 7706236-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06.26.2020 13:29 **SURROGATE RECOVERY STUDY**

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	70-130	
4-Bromofluorobenzene	0.0327	0.0300	109	70-130	

Lab Batch #: 3130199 **Sample:** 7706236-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06.26.2020 13:49 **SURROGATE RECOVERY STUDY**

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	70-130	
4-Bromofluorobenzene	0.0281	0.0300	94	70-130	

Lab Batch #: 3130199 **Sample:** 7706236-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06.26.2020 14:10 **SURROGATE RECOVERY STUDY**

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	70-130	
4-Bromofluorobenzene	0.0288	0.0300	96	70-130	

Lab Batch #: 3130199 **Sample:** 665605-011 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06.26.2020 14:30 **SURROGATE RECOVERY STUDY**

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	70-130	
4-Bromofluorobenzene	0.0298	0.0300	99	70-130	

Lab Batch #: 3130199 **Sample:** 665605-011 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06.26.2020 14:51 **SURROGATE RECOVERY STUDY**

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	70-130	
4-Bromofluorobenzene	0.0287	0.0300	96	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: Arabian 30-19 1H

Work Orders : 665605 **Project ID:** 700794.332.01

Lab Batch #: 3130305 **Sample:** 7706338-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06.29.2020 12:29 **SURROGATE RECOVERY STUDY**

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	70-130	
4-Bromofluorobenzene	0.0307	0.0300	102	70-130	

Lab Batch #: 3130305 **Sample:** 7706338-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06.29.2020 12:49 **SURROGATE RECOVERY STUDY**

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	70-130	
4-Bromofluorobenzene	0.0300	0.0300	100	70-130	

Lab Batch #: 3130305 **Sample:** 7706338-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06.29.2020 13:10 **SURROGATE RECOVERY STUDY**

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	70-130	
4-Bromofluorobenzene	0.0296	0.0300	99	70-130	

Lab Batch #: 3130305 **Sample:** 665605-017 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06.29.2020 13:30 **SURROGATE RECOVERY STUDY**

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	70-130	
4-Bromofluorobenzene	0.0299	0.0300	100	70-130	

Lab Batch #: 3130305 **Sample:** 665605-017 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06.29.2020 13:50 **SURROGATE RECOVERY STUDY**

BTEX by EPA 8021 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	70-130	
4-Bromofluorobenzene	0.0297	0.0300	99	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: Arabian 30-19 1H

Work Orders : 665605 **Project ID:** 700794.332.01

Lab Batch #: 3130037 **Sample:** 7706231-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06.25.2020 18:32 **SURROGATE RECOVERY STUDY**

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.6	100	83	70-135	
o-Terphenyl	35.4	50.0	71	70-135	

Lab Batch #: 3130037 **Sample:** 7706231-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06.25.2020 18:53 **SURROGATE RECOVERY STUDY**

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	52.8	50.0	106	70-135	

Lab Batch #: 3130037 **Sample:** 7706231-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06.25.2020 19:14 **SURROGATE RECOVERY STUDY**

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	100	119	70-135	
o-Terphenyl	58.1	50.0	116	70-135	

Lab Batch #: 3130037 **Sample:** 665597-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06.25.2020 20:15 **SURROGATE RECOVERY STUDY**

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.8	110	70-135	
o-Terphenyl	52.4	49.9	105	70-135	

Lab Batch #: 3130037 **Sample:** 665597-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06.25.2020 20:36 **SURROGATE RECOVERY STUDY**

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.5	107	70-135	
o-Terphenyl	51.7	49.8	104	70-135	

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

Form 2 - Surrogate Recoveries

Project Name: Arabian 30-19 1H

Work Orders : 665605 **Project ID:** 700794.332.01

Lab Batch #: 3130203 **Sample:** 7706261-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06.26.2020 11:02 **SURROGATE RECOVERY STUDY**

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.7	100	72	70-135	
o-Terphenyl	37.3	50.0	75	70-135	

Lab Batch #: 3130203 **Sample:** 7706261-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06.26.2020 11:22 **SURROGATE RECOVERY STUDY**

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	53.0	50.0	106	70-135	

Lab Batch #: 3130203 **Sample:** 7706261-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06.26.2020 11:43 **SURROGATE RECOVERY STUDY**

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	59.9	50.0	120	70-135	

Lab Batch #: 3130203 **Sample:** 665605-011 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06.26.2020 12:44 **SURROGATE RECOVERY STUDY**

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.8	102	70-135	
o-Terphenyl	49.4	49.9	99	70-135	

Lab Batch #: 3130203 **Sample:** 665605-011 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06.26.2020 13:05 **SURROGATE RECOVERY STUDY**

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.5	103	70-135	
o-Terphenyl	48.4	49.8	97	70-135	

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

BS / BSD Recoveries

Project Name: Arabian 30-19 1H

Work Order #: 665605

Project ID: 700794.332.01

Analyst: MAB **Date Prepared:** 06.25.2020 **Date Analyzed:** 06.25.2020

Lab Batch ID: 3130038 **Sample:** 7706233-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000486	0.100	0.105	105	0.100	0.106	106	1	70-130	35	
Toluene	<0.000528	0.100	0.106	106	0.100	0.108	108	2	70-130	35	
Ethylbenzene	<0.000406	0.100	0.103	103	0.100	0.104	104	1	71-129	35	
m_p-Xylenes	<0.000754	0.200	0.211	106	0.200	0.213	107	1	70-135	35	
o-Xylene	<0.000403	0.100	0.105	105	0.100	0.106	106	1	71-133	35	

Analyst: MAB **Date Prepared:** 06.26.2020 **Date Analyzed:** 06.26.2020

Lab Batch ID: 3130199 **Sample:** 7706236-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000486	0.100	0.103	103	0.100	0.0896	90	14	70-130	35	
Toluene	<0.000528	0.100	0.0972	97	0.100	0.0912	91	6	70-130	35	
Ethylbenzene	<0.000406	0.100	0.102	102	0.100	0.0972	97	5	71-129	35	
m,p-Xylenes	<0.000754	0.200	0.208	104	0.200	0.199	100	4	70-135	35	
o-Xylene	<0.000403	0.100	0.101	101	0.100	0.0989	99	2	71-133	35	

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

BS / BSD Recoveries

Project Name: Arabian 30-19 1H

Work Order #: 665605

Project ID: 700794.332.01

Analyst: MAB

Date Prepared: 06.29.2020

Date Analyzed: 06.29.2020

Lab Batch ID: 3130305

Sample: 7706338-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000486	0.100	0.0943	94	0.100	0.0939	94	0	70-130	35	
Toluene	<0.000528	0.100	0.0935	94	0.100	0.0934	93	0	70-130	35	
Ethylbenzene	<0.000406	0.100	0.0990	99	0.100	0.100	100	1	71-129	35	
m,p-Xylenes	<0.000754	0.200	0.204	102	0.200	0.204	102	0	70-135	35	
o-Xylene	<0.000403	0.100	0.0992	99	0.100	0.100	100	1	71-133	35	

Analyst: MAB

Date Prepared: 06.26.2020

Date Analyzed: 06.26.2020

Lab Batch ID: 3130200

Sample: 7706226-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.354	250	254	102	250	262	105	3	90-110	20	

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

BS / BSD Recoveries

Project Name: Arabian 30-19 1H

Work Order #: 665605

Project ID: 700794.332.01

Analyst: MAB

Date Prepared: 06.26.2020

Date Analyzed: 06.26.2020

Lab Batch ID: 3130201

Sample: 7706227-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.354	250	253	101	250	261	104	3	90-110	20	

Analyst: CAC

Date Prepared: 06.25.2020

Date Analyzed: 06.25.2020

Lab Batch ID: 3130037

Sample: 7706231-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<13.9	1000	743	74	1000	835	84	12	70-135	35	
Diesel Range Organics (DRO)	<11.5	1000	889	89	1000	985	99	10	70-135	35	

Analyst: MAB

Date Prepared: 06.26.2020

Date Analyzed: 06.26.2020

Lab Batch ID: 3130203

Sample: 7706261-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<13.9	1000	741	74	1000	853	85	14	70-135	35	
Diesel Range Organics (DRO)	<11.5	1000	892	89	1000	1020	102	13	70-135	35	

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

Form 3 - MS / MSD Recoveries

Project Name: Arabian 30-19 1H

Work Order # : 665605
Lab Batch ID: 3130038
Date Analyzed: 06.25.2020
Reporting Units: mg/kg

QC- Sample ID: 665597-001 S
Date Prepared: 06.25.2020
Batch #: 1
Analyst: MAB

Project ID: 700794.332.01
Matrix: Soil

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000484	0.0996	0.115	115	0.0998	0.120	120	4	70-130	35	
Toluene	<0.000526	0.0996	0.112	112	0.0998	0.119	119	6	70-130	35	
Ethylbenzene	<0.000405	0.0996	0.0967	97	0.0998	0.112	112	15	71-129	35	
m_p-Xylenes	<0.000751	0.199	0.196	98	0.200	0.227	114	15	70-135	35	
o-Xylene	<0.000401	0.0996	0.0972	98	0.0998	0.110	110	12	71-133	35	

Lab Batch ID: 3130199
Date Analyzed: 06.26.2020
Reporting Units: mg/kg

QC- Sample ID: 665605-011 S
Date Prepared: 06.26.2020
Batch #: 1
Analyst: MAB

Matrix: Soil

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000484	0.0996	0.0925	93	0.100	0.0969	97	5	70-130	35	
Toluene	<0.000526	0.0996	0.0928	93	0.100	0.0969	97	4	70-130	35	
Ethylbenzene	<0.000405	0.0996	0.0994	100	0.100	0.103	103	4	71-129	35	
m,p-Xylenes	<0.000751	0.199	0.204	103	0.201	0.209	104	2	70-135	35	
o-Xylene	<0.000401	0.0996	0.102	102	0.100	0.105	105	3	71-133	35	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: Arabian 30-19 1H

Work Order # : 665605
Lab Batch ID: 3130305
Date Analyzed: 06.29.2020
Reporting Units: mg/kg

QC- Sample ID: 665605-017 S
Date Prepared: 06.29.2020
Batch #: 1
Analyst: MAB

Project ID: 700794.332.01
Matrix: Soil

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000486	0.100	0.109	109	0.100	0.107	107	2	70-130	35	
Toluene	<0.000529	0.100	0.104	104	0.100	0.100	100	4	70-130	35	
Ethylbenzene	<0.000407	0.100	0.108	108	0.100	0.103	103	5	71-129	35	
m,p-Xylenes	<0.000755	0.200	0.224	112	0.201	0.210	104	6	70-135	35	
o-Xylene	<0.000404	0.100	0.110	110	0.100	0.103	103	7	71-133	35	

Lab Batch ID: 3130200
Date Analyzed: 06.26.2020
Reporting Units: mg/kg

QC- Sample ID: 665597-001 S
Date Prepared: 06.26.2020
Batch #: 1
Analyst: MAB

Matrix: Soil

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	10000	200	10200	100	200	10200	100	0	90-110	20	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: Arabian 30-19 1H

Work Order # : 665605
Lab Batch ID: 3130200
Date Analyzed: 06.26.2020
Reporting Units: mg/kg

QC- Sample ID: 665605-001 S
Date Prepared: 06.26.2020

Batch #: 1
Analyst: MAB

Project ID: 700794.332.01
Matrix: Soil

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	9.25	200	195	93	200	196	93	1	90-110	20	

Lab Batch ID: 3130201
Date Analyzed: 06.26.2020
Reporting Units: mg/kg

QC- Sample ID: 665605-011 S
Date Prepared: 06.26.2020

Batch #: 1
Analyst: MAB

Matrix: Soil

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	6.67	199	196	95	199	196	95	0	90-110	20	

Lab Batch ID: 3130201
Date Analyzed: 06.26.2020
Reporting Units: mg/kg

QC- Sample ID: 665605-021 S
Date Prepared: 06.26.2020

Batch #: 1
Analyst: MAB

Matrix: Soil

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	6.55	200	192	93	200	192	93	0	90-110	20	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: Arabian 30-19 1H

Work Order # : 665605
Lab Batch ID: 3130037
Date Analyzed: 06.25.2020
Reporting Units: mg/kg

QC- Sample ID: 665597-001 S
Date Prepared: 06.25.2020

Batch #: 1
Analyst: CAC

Project ID: 700794.332.01
Matrix: Soil

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<13.9	998	1000	100	995	968	97	3	70-135	35	
Diesel Range Organics (DRO)	<11.4	998	1120	112	995	1130	114	1	70-135	35	

Lab Batch ID: 3130203
Date Analyzed: 06.26.2020
Reporting Units: mg/kg

QC- Sample ID: 665605-011 S
Date Prepared: 06.26.2020

Batch #: 1
Analyst: MAB

Matrix: Soil

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<13.9	998	904	91	995	931	94	3	70-135	35	
Diesel Range Organics (DRO)	<11.4	998	1100	110	995	1120	113	2	70-135	35	

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

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

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

Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300, San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440, El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 355-0900
Tampa, FL (813) 620-2000, Tallahassee, FL (850) 558-0747, Delray Beach, FL (561) 689-6701
Atlanta, GA (770) 449-8800

Work Order No: 665605

www.xenco.com Page 1 of 3

Project Manager:	David Adkins	Bill to: (if different)	
Company Name:	Talon LPE	Company Name:	
Address:	408 W Texas Ave	Address:	
City, State ZIP:	Artesia, NM 88210	City, State ZIP:	
Phone:	575-746-8768	Email:	dadkins@talonlpe.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Arabian 30-19 1H	Turn Around	
Project Number:	200794.332.01	☑ Routine ☐ Rush	
Project Location	Lea County	Due Date:	
Sampler's Name:	Brandon Sinclair	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT			
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No
Received Intact:	(Yes) No	Thermometer ID:	NM007
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes (No) N/A	Temperature Reading:	3.8
Total Containers:	20	Corrected Temperature:	3.6

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2SO_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_2$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: BTEX	TPH EXT	Total Chlorides	Sample Comments
S-1 0-1'	Soil	6-24-20	12:52		G			✓	✓	✓	
S-1 1.5' R			12:56								
S-2 0-1'			13:00								
S-2 1.5' R			13:03								
S-3 0-1'			13:05								
S-3 1.5' R			13:08								
S-4 0-1'			13:14								
S-4 1.5' R			13:16								
S-5 0-1'			13:20								
S-5 2'			13:23								

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $85.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			06/25/20 1504			6/25/20 15:45
3						
5				4		
				6		

Revised Date 05012020 Rev 2020.1

Chain of Custody

XENCO LABORATORIES

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300, San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440, EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 355-0900
Tampa, FL (813) 620-2000, Tallahassee, FL (850) 558-0747, Delray Beach, FL (561) 689-6701
Atlanta, GA (770) 449-8800

Work Order No: 6-45605

www.xenco.com Page 2 of 3

Project Manager:	David Adkins	Bill to: (if different)	
Company Name:	Talon LPE	Company Name:	
Address:	408 W Texas Ave	Address:	
City, State ZIP:	Artesia, NM 88210	City, State ZIP:	
Phone:	575-746-8768	Email:	dadkins@talonlpe.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Arabian 30-19 1H	Turn Around	
Project Number:	200794.332.01	☑ Routine ☐ Rush	
Project Location	Lea County	Due Date:	
Sampler's Name:	Brandon Sinclair	TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Received Intact:	Yes No	Thermometer ID:		
Cooler Custody Seals:	Yes No N/A	Correction Factor:		
Sample Custody Seals:	Yes No N/A	Temperature Reading:		
Total Containers:		Corrected Temperature:		

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2SO_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	BTEX	TPH EXT	Total Chlorides	Sample Comments
S-5 3'	SO	6-24-20	13:25		G			✓	✓	✓	
S-5 3.5'R			13:28								
S-6 0-1'			13:32								
S-6 1.5'R			13:36								
S-7 0-1'			13:40								
S-7 1.5'R			13:44								
S-8 0-1'			13:30								
S-8 1.5'R			13:33								
S-9 0-1'			13:24								
S-9 1.5'R			13:27								

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

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	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			06/25/20 1500	2		6/25/20 15:45
3				4		
5				6		

Revised Date 08012020 Rev. 2020.1

Final 1.000

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Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300, San Antonio, TX (210) 509-3334
Midland, TX (432) 704-5440, El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 355-0900
Tampa, FL (813) 620-2000, Tallahassee, FL (850) 756-0747, Delray Beach, FL (561) 689-6701
Atlanta, GA (770) 449-8800

Work Order No: 665605

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Project Manager:	David Adkins	Bill to: (if different)	
Company Name:	Talon LPE	Company Name:	
Address:	408 W Texas Ave	Address:	
City, State ZIP:	Artesia, NM 88210	City, State ZIP:	
Phone:	575-746-8768	Email:	dadkins@talonlpe.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Arabian 30-19 1H	Turn Around	
Project Number:	200794.332.01	☑ Routine ☐ Rush	
Project Location	Lea County	Due Date:	
Sampler's Name:		TAT starts the day received by the lab, if received by 4:30pm	
PO #:			

SAMPLE RECEIPT				
Temp Blank:	Yes No	Wet Ice:	Yes No	
Received Intact:	Yes No	Thermometer ID:		
Cooler Custody Seals:	Yes No N/A	Correction Factor:		
Sample Custody Seals:	Yes No N/A	Temperature Reading:		
Total Containers:		Corrected Temperature:		

Preservative Codes

None: NO; DI Water: H_2O; Cool: Cool; MeOH: Me; HCL: HC; HNO_3: HN; H_2SO_4: H_2; NaOH: Na; H_3PO_4: HP; $NaHSO_4$: NABIS; $Na_2S_2O_3$: $NaSO_3$; Zn Acetate+NaOH: Zn; NaOH+Ascorbic Acid: SAPC

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	Pres. Code	Parameters: BTEX	TPH EXT	Total Chlorides	Sample Comments
S-10 0-1'	SO	6-24-20	13:45		G			✓	✓	✓	
S-10 1.5'R			13:50								
S-11 0-1'			13:53								
S-11 1.5'R			13:57								
S-12 0-1'			14:03								
S-12 1.5'R			14:06								

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO_2 Na Sr Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U Hg: 1631 / 245.1 / 7470 / 7471

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	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1			06/25/20 1500	2		6/25/20 15:45
3				4		
5				6		

Revised Date 05312020 Rev. 2020.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Talon LPE-Artesia

Date/ Time Received: 06.25.2020 03.45.00 PM

Work Order #: 665605

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

Temperature Measuring device used : T NM 007

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	3.6	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?	Yes	
#6*Custody Seals Signed and dated?	Yes	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	Samples received in bulk containers
#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: Martha Castro Date: 06.25.2020

Checklist reviewed by: Jessica Kramer Date: 06.26.2020

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

Action 11697

CONDITIONS

Operator: Talon LPE 408 W Texas Artesia, NM 88210	OGRID: 329944
	Action Number: 11697
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	9/20/2022