

Spill Volume(Bbls) Calculator		
<i>Inputs in blue, Outputs in red</i>		
Length(Ft)	Width(Ft)	Depth(In)
<u>200.000</u>	<u>155.000</u>	<u>6.500</u>
Cubic Feet Impacted		<u>16791.667</u>
Barrels		<u>2990.50</u>
Soil Type		Clay
Bbls Assuming 100% Saturation		<u>299.05</u>
Saturation	Fluid present with shovel/backhoe	
Estimated Barrels Released		299.10000

Instructions
1. Input spill measurements below. Length and width need to be input in feet and depth in inches.
2. Select a soil type from the drop down menu.
3. Select a saturation level from the drop down menu.
(For data gathering instructions see appendix tab)

Measurements	
Length (ft)	200
Width (ft)	155
Depth (in)	6.500









4518 W. Pierce St.

Carlsbad NM, 88220

November 7, 2024

Spur Energy Partners
2407 Pecos Ave
Artesia NM, 88210

Attn: New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico, NM 87505

RE: **OCD Closure Denial Response and Amended Closure Report**
Pronghorn Riser
Lot 2, Section 30, T17S, R32E
Lea County, New Mexico
NMOCD No. nRM2017440778
Terracon Project No. AR207106

To Whom It May Concern:

Terracon Consultants, Inc. (Terracon) is pleased to submit this amended closure report on behalf of Spur Energy Partners (Spur Energy) to the New Mexico Oil and Gas Conservation Division (NMOCD). This amended closure report is being submitted in response to NMOCD's December 04, 2023, email denial of the June 12, 2020 Release Investigation and Deferral Request prepared by Terracon.

The NMOCD rejected the submitted application ID # 290653 for approval of the release notification and corrective action (C141), for incident ID # nRM2017440778 for the following reasons:

- **scwells (12/4/2023), This application has been rejected because the C-141 is incomplete. The submitted application indicates a conflict between the questions answered and the attachments that have been submitted. For example, the answer "No" was selected when requesting a remediation plan approval; however, your attachments indicate that the intent is to request a remediation closure report approval. Please review the Dec 1, 2023, Public Notice titled Implementation of Digital C-141 and New Incident Statuses found on the OCD website. Review your C-141 submission and submit a new C-141 answering the appropriate questions for your circumstance**
 - Response: A new C-141 has been fully completed and submitted with corrections.

Explore with us

NMOCD Closure Denial Response and Amended Closure Report
Pronghorn Riser | Lea County, New Mexico
November 7, 2024, | Terracon Project No. AR207106



Conclusion

In accordance with NMAC 19.15.29.12, and NMAC 19.15.29.1.C (2) remediation of the impacted material is complete, and delineation has been attained in accordance with NMOCD criteria and the NMAC deferral state statute. Spur Energy Partners respectfully requests closure of incident ID nRM2017440778 that occurred June 12, 2020.

We at Terracon are deeply grateful for the opportunity to offer our environmental services to Spur Energy Partners. We are committed to providing the highest level of service and support. Should you need further information or have any queries, we encourage you to reach out to our office at your earliest convenience.

Sincerely,



Prepared by:

A handwritten signature in black ink, appearing to read 'Travis Casey'.

Travis Casey

Senior Scientist

Carlsbad, NM

Reviewed by:

A handwritten signature in black ink, appearing to read 'John Grams'.

John Grams, P.G. (TX)

Environmental Department Manager

Lubbock

Attachments

Appendix A – C-141 Summary Sheet



APPENDIX A

C-141 Summary Sheet

Tuesday, October 1, 2024



C-141 Summary Sheet

Summary of incident information relevant to C-141

Name:	Kathy Purvis	
Email:	katherine.purvis@spurenergy.com	
Phone:	(575)441-8619	

Initial Release C-141

Application Details

Incident ID:	nRM2017440778				
District:	Hobbs				
County:	Lea				
Legal Description:	Unit: L 2	Section: 30	Township: 17S	Range: 32E	
Lat/Long:	N: 32.807410		E: -103.813110		

Prerequisites

Incident Operator:	Spur Energy Partners	
Release Type:	Produced Water	
Incident Status:	Report was rejected. Resubmitting. Pending NMOCD approval.	

Release Information

Site Name:	Pronghorn SWD	(MM/DD/YYYY)
Date Discovered:	6/12/2020	
Surface Owner:	Federal	

Incident Details

Incident Type:	Produced Water Release	
Fire:	No	
Injuries:	No	
Watercourse:	No	
Public Health:	No	
Significant to Property or Environment:	No	
Detrimental to Freshwater:	No	

Nature and Volume of Release

Released Product:	Produced Water		
Cause:	Corrosion		
Source:	Pipeline (Any)		
Release:	300	(bbls/Mcf)	
Recovered:	180	(bbls/Mcf)	
Additional Details:			

Nature and Volume of Release

<u>Release and Release of Release</u>		
Is this a gas submission	No	
was this a major release (Y/N) >25bbls	Yes	
Justification of release volume calculation	Yes	

Initial Response

Release has been stopped	Yes	
release area has been secured:	Yes	
released material has been contained	Yes	
All free liquids have been recovered	Yes	
If actions have not been completed, why?	(Attached Explanation)	

Remediation Action Plan C-141

Site Characterization

what is groundwater beneath effected area?	100ft - 500ft	
What method was used to determine depth?	Search	
Did release impact GW or Surface Water?	No	
continuously flowing watercourse	greater than 5 (mi.)	
lakebed, sinkhole, or playa (measured from the high-water mark)	greater than 5 (mi.)	
an occupied permanent residence	greater than 5 (mi.)	
spring or private domestic well	greater than 5 (mi.)	
Incorporated municipal boundaries	greater than 5 (mi.)	
wetland	between 1 to 5 (mi.)	
subsurface mine	greater than 5 (mi.)	
a (non-karst) unstable area	greater than 5 (mi.)	
categorize the risk of this well / site being in a karst geology	Low	
a 100-year floodplain	between 1 to 5 (mi.)	
did the release impact areas not on an exploration, development, production, or storage site	No	

Remediation Plan				
Have lateral and vertical extents of impacts been delineated, to the strictest standards?	Yes			
Was the release entirely contained within a lined containment?	No			
Soil Contamination Sampling (provide the highest observed value for each)(0.1)	Chloride	14,000		(mg/kg)
	Total TPH	59.8		(mg/kg)
	GRO+DRO	59.8		(mg/kg)
	BTEX	0		(mg/kg)
	Benzene	0		(mg/kg)
Date of Remediation Commencement	10/5/2020			
Date of Final Sampling or Liner Inspection	10/3/2023			
Date of Remediation Completion	10/9/2020			
Estimated Surface Area (sq.ft) to be reclaimed	20,500			
Estimated Volume (cu. Yds) to be reclaimed	3,000			
Estimated Surface Area (sq.ft) to be remediated	20,500			
Estimated Volume (cu. Yds) to be remediated	3,000			
Excavation and off-site disposal (dig & haul)	Yes		(Ex-Situ)	
Excavation and on-site remediation (land farm)	No		(Ex-Situ)	
Soil Vapor Extraction	No		(In-Situ)	
Chemical processing (soil shredding...etc)	No		(In-Situ)	
Biological processing (microbes / fertilizer...etc)	No		(In-Situ)	
Physical processing (soil washing, gypsum...etc)	No		(In-Situ)	
Ground Water Abatement	No			
Other (Non-listed remedial process)	No			
Closure/Deferral Request C-141				
Deferral Request (attachment with explanation)	No			
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes			
Total Surface Area (sq.ft) to be remediated	20,500		(Square Feet)	
Total Volume (cu. Yds) to be remediated	3,000		(Cubic Yards)	
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes			
Estimated Surface Area (sq.ft) to be reclaimed			(Square Feet)	
Estimated Volume (cu. Yds) to be reclaimed			(Cubic Yards)	
Attached Summary of additional remediation Activities	Yes			
Requesting approval of Reclamation Completion	No			



November 17, 2023

Spur Energy Partners LLC
920 Memorial City Way, Suite 1000
Houston, Texas 77024

Attn: New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: Amended Closure Report
Pronghorn SWD
Lot 2, Section 30, T17S, R32E
Eddy County, New Mexico
Incident ID: nRM2017440778

To Whom It May Concern:

On June 12, 2020, Terracon Consultants, Inc (Terracon) was requested to oversee the remediation of a reportable release at the Pronghorn SWD site. The release was approximately 300 bbls of produced water on property owned by the Bureau of Land Management (BLM). The New Mexico Oil Conservation District (NMOCD) was notified on June 18, 2020.

Action Items

Completed Actions

- 1) All aspects of the closure were approved on June 29, 2021, with the exception being the depth of groundwater at the site.
- 2) On May 16, 2023, a meeting took place between Terracon, BLM, NMOCD and Spur Energy Partners LLC (Spur). During this meeting, it was determined that all parties were in agreement that no further remedial action was warranted at the site contingent upon the evaluation of additional confirmation samples from the floor of the northern excavation and additional photographs to demonstrate the revegetation that had taken place at the site.
- 3) Additional soil samples were collected in the northern section of the remediation to satisfy the NMOCDs requirement for sufficient confirmation samples. The additional soil sample results have been included in Appendix A.
- 4) The additional photographs of the remediated site have been included in Appendix A.

Anticipated Actions

- 1) NMOCD's confirmation of closure at the site.

Remedial Activities

On October 03, 2023, Terracon mobilized to the site to conduct additional delineation soil sampling activities at the site. Terracon performed soil sample collection activities at the northern section of the

Amended Closure Report

Pronghorn Riser ■ Eddy County, New Mexico

October 30, 2023 ■ Terracon Project No. AR207106



site. Terracon personnel collected soils from 1.5 to 2 feet below ground surface (bgs). Terracon returned on October 18, 2023, to perform additional soil sampling at the site due to the soil sample (S-NF) had been collected within the 10 ft radius of the non-disturbed soil around the riser. The soil samples collected on October 18, 2023, were collected outside of the 10 ft radius of the riser and in the southern section of the northern area of the remediated area. The additional soil sample results and positions can be viewed in Appendix A.

Conclusion

In accordance with NMAC 19.15.29.12, remediation of the remaining impacted material proximate to excavation is below the NMOCD RALs. Terracon recommends no further action be taken regarding incident number nRM2017440778, for the Pronghorn Riser site.

Should you have any questions, please contact the undersigned at (806) 300 0140.

Sincerely,

The Terracon logo features a stylized 'T' composed of three colored squares (blue, green, and red) followed by the word 'terracon' in a lowercase, sans-serif font.

Prepared by:

Reviewed by:

A handwritten signature in black ink, appearing to read 'Travis Casey', with a long horizontal flourish extending to the right.

Travis Casey
Senior Staff Scientist
Carlsbad

Erin Loyd, P.G. (TX)
Senior Principal
Office Manager – Lubbock

Attachments**Appendix A – Exhibits**

Exhibit 1 – Site Map

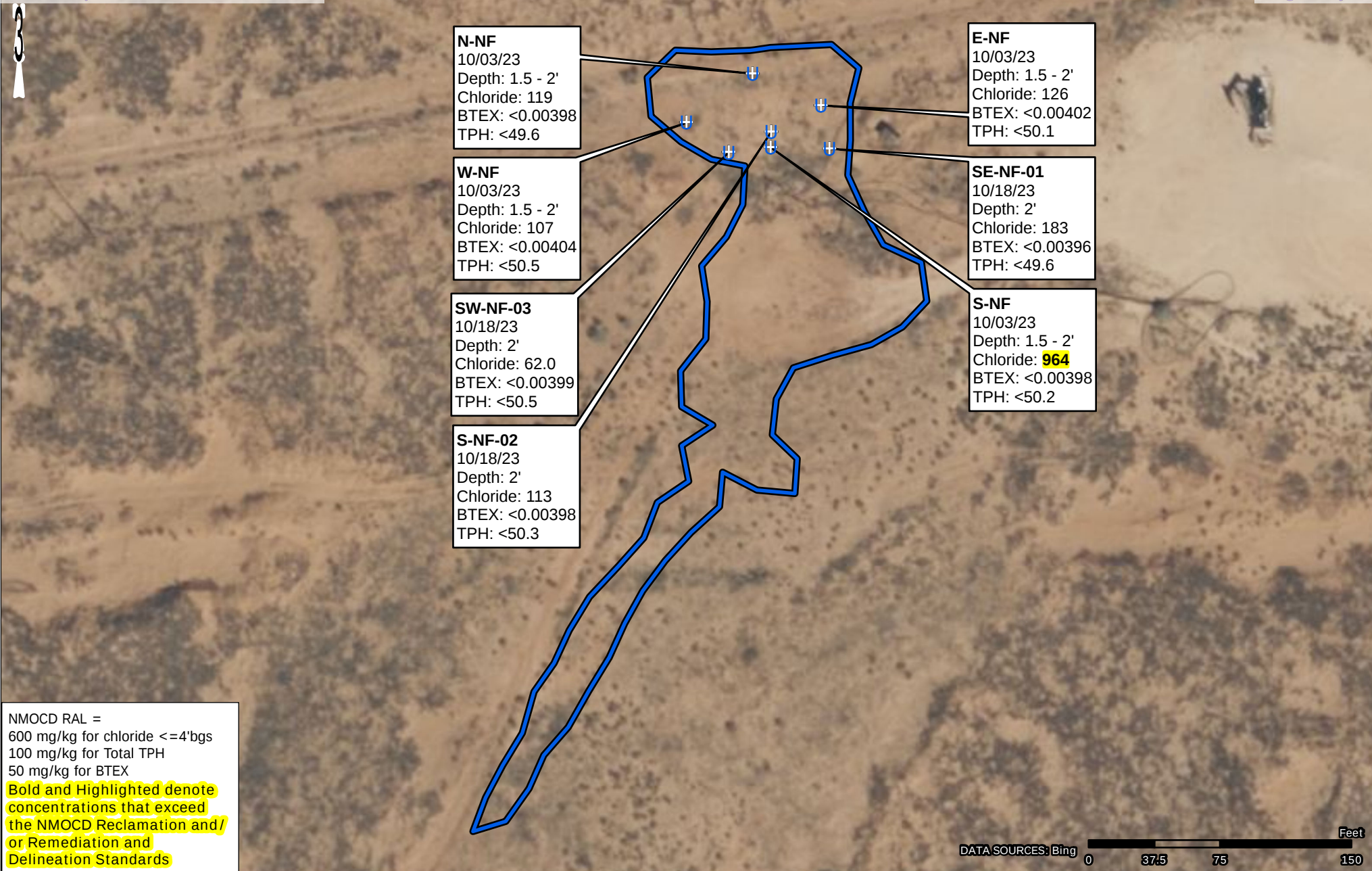
Table 1 – Soil Analytical Results Summary - Confirmation Samples

Exhibit 2 – Photographic Log

Exhibit 3 – Laboratory Reports and Chains of Custody

Responsive ■ Resourceful ■ Reliable

APPENDIX A – EXHIBITS



Sample Location
 Inferred Release

Project No.:
AR207106
Date:
Nov 13 2023
Drawn By:
JWL
Reviewed By:
JRG

4526 W Pierce St
Carlsbad, NM
PH. 806-300-0140 terracon.com

Site Sample Map

Pipeline 03 Antelope Riser
Maljamar SWD 30 #2
32.807408°, -103.813111°
Lea County, New Mexico

Exhibit

3

Table 1
Soil Analytical Results Summary - Confirmation Evaluation (Floor Samples)

NMOCD Reference No.											
Sample ID	Sample Date	Sample Depth (ft bgs)	Sample Type	Sample Status	Chloride (mg/Kg)	Benzene (mg/Kg)	Total BTEX ¹ (mg/Kg)	Total TPH ² (mg/Kg)	Diesel Range Organics (Over C10-C28) (mg/Kg)	Gasoline Range Organics (C6-C10) (mg/Kg)	Oil Range Organics (Over C28-C36) (mg/Kg)
					EPA Method 300	EPA Method 8021B	EPA Method 8021B	EPA Method 8015M	EPA Method 8015M	EPA Method 8015M	EPA Method 8015M
Release Delineation Assessment (Floor Samples)											
N-NF 2'	10/03/23 01:46	2	Grab	In-situ	119	<0.00199	<0.00398	<49.6	<49.6	<49.6	<49.6
S-NF 2'	10/03/23 01:56	2	Grab	In-situ	964	<0.00199	<0.00398	<50.2	<50.2	<50.2	<50.2
SE-NF-01	10/18/23 10:56	2	Grab	In-situ	183	<0.00198	<0.00396	<49.6	<49.6	<49.6	<49.6
S-NF-02	10/18/23 10:59	2	Grab	In-situ	113	<0.00199	<0.00398	<50.3	<50.3	<50.3	<50.3
SW-NF-03	10/18/23 11:04	2	Grab	In-situ	62.0	<0.00200	<0.00399	<50.5	<50.5	<50.5	<50.5
E-NF 2'	10/03/23 02:08	2	Grab	In-situ	126	<0.00201	<0.00402	<50.1	<50.1	<50.1	<50.1
W-NF 2'	10/03/23 02:15	2	Grab	In-situ	107	<0.00202	<0.00404	<50.5	<50.5	<50.5	<50.5
NMOCD Reclamation Standards ³ (Surface to 4 ft bgs)					600	10	10	100	N/A		
NMOCD Remediation Standards ⁴ (Greater than Depths of 4 ft bgs)					10000	10	50	100	N/A		

1. BTEX = Benzene, toluene, ethylbenzene, and total xylenes

2. TPH = Total petroleum hydrocarbons

3. New Mexico Administration Code (NMAC) Restoration, Reclamation and Re-vegetation (19.15.29.13), NMAC-D (Reclamation of Areas No Longer in Use) for Soils Extending to 4 ft. bgs

4. New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards (19.15.29.12) NMAC-N, 8/14/2018

< = Constituent was not detected above the indicated laboratory sample detection limit (SDL).

NA = Not Analyzed

Bold denotes concentrations above applicable laboratory SDLs.

Bold and Highlighted denote concentrations that exceed the NMOCD Reclamation and/or Remediation and Delineation Standards.

In-situ = Sample is representative of material which remains in-place at the site.

Excavated = Sample is representative of materials which was excavated and disposed of at a permitted disposal facility.

Antelope SWD ■ Eddy County, New Mexico
October 11, 2023 ■ NMOCD ID: nRM2017440778



PHOTO 1: South facing view of remediated area.



PHOTO 2: West facing view of remediated area.

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Antelope SWD ■ Eddy County, New Mexico
October 11, 2023 ■ NMOCD ID: nRM2017440778



PHOTO 3: West facing view of remediated area.



PHOTO 4: Southwest facing view of remediated area.

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Antelope SWD ■ Eddy County, New Mexico
October 11, 2023 ■ NMOCD ID: nRM2017440778



PHOTO 5: Northwest facing view of the remediated area.



PHOTO 6: Northwest facing view of the remediated area.

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Antelope SWD ■ Eddy County, New Mexico
October 11, 2023 ■ NMOCD ID: nRM2017440778



PHOTO 7: Northeast facing view of the remediated area.



PHOTO 8: South facing view of the remediated area

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Antelope SWD ■ Eddy County, New Mexico
October 11, 2023 ■ NMOCD ID: nRM2017440778



PHOTO 9: East facing view of the remediated area.

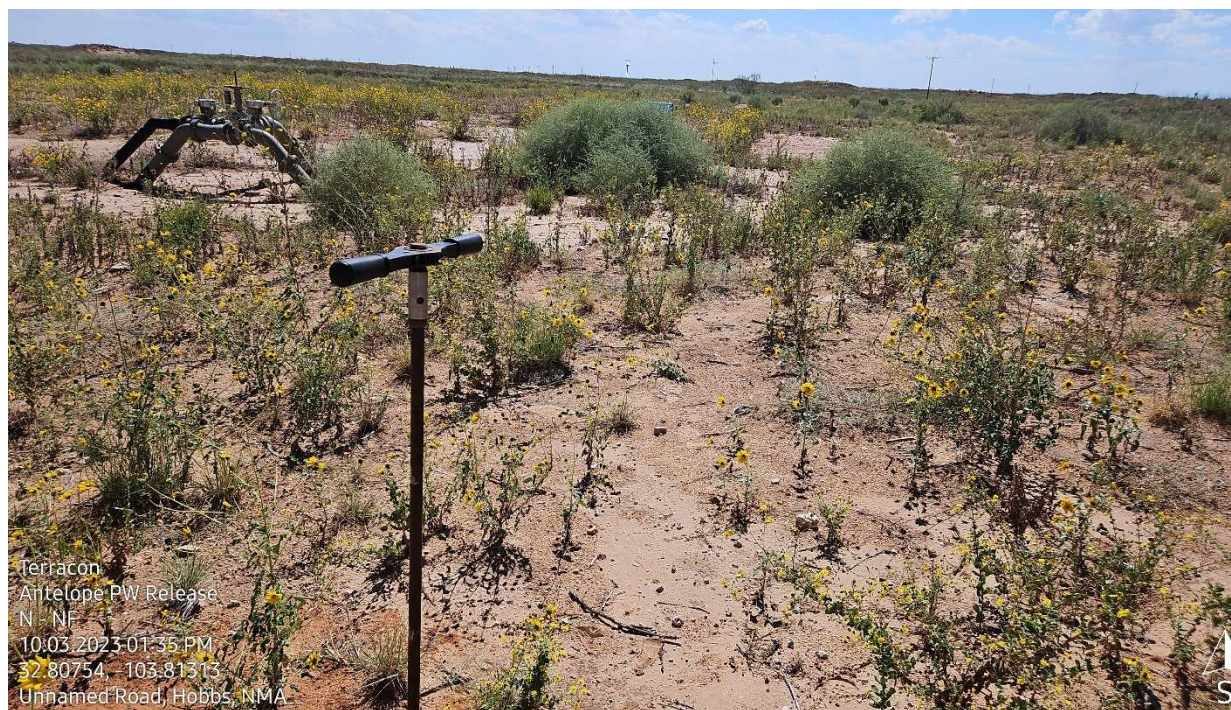


PHOTO 10: South facing view of the remediated area.

Responsive ■ Resourceful ■ Reliable

Antelope SWD ■ Eddy County, New Mexico
October 11, 2023 ■ NMOCID ID: nRM2017440778



PHOTO 11: South facing view of the remediated area.



PHOTO 12: South facing view of the remediated area.

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Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Joseph Guesnier
Terracon Consulting Eng & Scientists
5847 50th St
Lubbock, Texas 79424
Generated 10/10/2023 1:13:30 PM

JOB DESCRIPTION

Antelope PW Release
SDG NUMBER AR207106

JOB NUMBER

890-5407-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
10/10/2023 1:13:30 PM

Authorized for release by
Jessica Kramer, Project Manager
Jessica.Kramer@et.eurofinsus.com
(432)704-5440

Eurofins Carlsbad

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments. QC data that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result. Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Coliform MCLs

· Based on the EPA primary drinking water standard MCL for total coliforms, a water supply is considered bacteriologically "SAFE" if no coliform bacteria are detected. To be considered "SAFE" your report should indicate "<1 cfu/100mL" or "NEG" for the coliform test. If you report indicates a positive result "POS" or a value greater than or equal to one, then your supply is "UNSAFE FOR DRINKING" contact your local health department.

Warranties, Terms, and Conditions

· Analyses for Field Parameters are performed by Eurofins Philadelphia field staff. Locations and certifications are identified on the Chain of Custody as follows:

ERF = field staff performs tests under NJ State certification # 02015.

VL = field staff performs tests under NJ State certification # 06005.

WG = field staff performs tests under NJ State certification # PA001, PA State certification # 48-01334.

H = field staff performs tests under NJ NELAP certification # PA093, PA NELAP certification # 46-05499.

· Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.

· The report shall not be reproduced, except in full, without the written consent of the laboratory

· All samples are collected as "grab" samples unless otherwise identified.

· Reported results related only to the samples as tested. Eurofins Philadelphia is not responsible for sample integrity unless sampling has been performed by a member of our staff.

· Eurofins Philadelphia is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly) to ensure compliance.

· Eurofins' online data portal "TotalAccess" will provide you with real-time access to collection dates and testing results. Please contact Client Services for further information.

· The following personnel or their deputies have approved the results of the tests performed by Eurofins Philadelphia : Nicki Smith (Environmental Chemistry) and Jacqueline Gartner (Water Microbiology).



Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Laboratory Job ID: 890-5407-1
SDG: AR207106

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Definitions/Glossary

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

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

Glossary

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

Case Narrative

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

Job ID: 890-5407-1

Laboratory: Eurofins Carlsbad

Narrative

**Job Narrative
890-5407-1**

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 10/3/2023 4:22 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.6°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: E-NF 2' (890-5407-1), W-NF 2' (890-5407-2), S-NF 2' (890-5407-3) and N-NF 2' (890-5407-4).

GC VOA

Method 8021B: The continuing calibration verification (CCV) associated with batch 880-64080 recovered under the lower control limit for Toluene, Ethylbenzene, m-Xylene & p-Xylene and o-Xylene. The samples associated with this CCV were ran within 12 hours of passing CCV; therefore, the data have been reported.>(CCV 880-64080/64)

Method 8021B: The surrogate recovery for the blank associated with preparation batch 880-63806 and 880-64082 and analytical batch 880-64080 was outside the upper control limits.

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

GC Semi VOA

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-63945 and analytical batch 880-64185 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-64185/20), (CCV 880-64185/31), (CCV 880-64185/46) and (CCV 880-64185/5). Evidence of matrix interferences is not obvious.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (890-5407-A-4-C MS) and (890-5407-A-4-D MSD). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8015MOD_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-64055 and analytical batch 880-64187 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

HPLC/IC

Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-64009 and analytical batch 880-64140 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits. The associated samples are: E-NF 2' (890-5407-1), W-NF 2' (890-5407-2), S-NF 2' (890-5407-3), N-NF 2' (890-5407-4), (890-5406-A-1-A),

Case Narrative

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

Job ID: 890-5407-1 (Continued)

Laboratory: Eurofins Carlsbad (Continued)

(890-5406-A-1-B MS) and (890-5406-A-1-C MSD).

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

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Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

Client Sample ID: E-NF 2'

Lab Sample ID: 890-5407-1

Date Collected: 10/03/23 02:08

Matrix: Solid

Date Received: 10/03/23 16:22

Sample Depth: 1.5'-2'

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		10/06/23 08:56	10/08/23 06:51	1
Toluene	<0.00201	U	0.00201		mg/Kg		10/06/23 08:56	10/08/23 06:51	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		10/06/23 08:56	10/08/23 06:51	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		10/06/23 08:56	10/08/23 06:51	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		10/06/23 08:56	10/08/23 06:51	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		10/06/23 08:56	10/08/23 06:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130	10/06/23 08:56	10/08/23 06:51	1
1,4-Difluorobenzene (Surr)	95		70 - 130	10/06/23 08:56	10/08/23 06:51	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			10/08/23 06:51	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.1	U	50.1		mg/Kg			10/09/23 18:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.1	U	50.1		mg/Kg		10/05/23 11:29	10/09/23 18:56	1
Diesel Range Organics (Over C10-C28)	<50.1	U	50.1		mg/Kg		10/05/23 11:29	10/09/23 18:56	1
Oil Range Organics (Over C28-C36)	<50.1	U	50.1		mg/Kg		10/05/23 11:29	10/09/23 18:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	119		70 - 130	10/05/23 11:29	10/09/23 18:56	1
o-Terphenyl	92		70 - 130	10/05/23 11:29	10/09/23 18:56	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	126		5.00		mg/Kg			10/07/23 14:33	1

Client Sample ID: W-NF 2'

Lab Sample ID: 890-5407-2

Date Collected: 10/03/23 02:15

Matrix: Solid

Date Received: 10/03/23 16:22

Sample Depth: 1.5'-2'

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		10/06/23 08:56	10/08/23 07:11	1
Toluene	<0.00202	U	0.00202		mg/Kg		10/06/23 08:56	10/08/23 07:11	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		10/06/23 08:56	10/08/23 07:11	1
m-Xylene & p-Xylene	<0.00404	U	0.00404		mg/Kg		10/06/23 08:56	10/08/23 07:11	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		10/06/23 08:56	10/08/23 07:11	1
Xylenes, Total	<0.00404	U	0.00404		mg/Kg		10/06/23 08:56	10/08/23 07:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130	10/06/23 08:56	10/08/23 07:11	1

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Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

Client Sample ID: W-NF 2'

Lab Sample ID: 890-5407-2

Date Collected: 10/03/23 02:15

Matrix: Solid

Date Received: 10/03/23 16:22

Sample Depth: 1.5'-2'

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	109		70 - 130	10/06/23 08:56	10/08/23 07:11	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00404	U	0.00404		mg/Kg			10/08/23 07:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5		mg/Kg			10/09/23 19:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.5	U	50.5		mg/Kg		10/05/23 11:29	10/09/23 19:17	1
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5		mg/Kg		10/05/23 11:29	10/09/23 19:17	1
Oil Range Organics (Over C28-C36)	<50.5	U	50.5		mg/Kg		10/05/23 11:29	10/09/23 19:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	120		70 - 130				10/05/23 11:29	10/09/23 19:17	1
o-Terphenyl	93		70 - 130				10/05/23 11:29	10/09/23 19:17	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	107		5.02		mg/Kg			10/07/23 14:53	1

Client Sample ID: S-NF 2'

Lab Sample ID: 890-5407-3

Date Collected: 10/03/23 01:56

Matrix: Solid

Date Received: 10/03/23 16:22

Sample Depth: 1.5'-2'

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		10/06/23 08:56	10/08/23 07:32	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/06/23 08:56	10/08/23 07:32	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/06/23 08:56	10/08/23 07:32	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/06/23 08:56	10/08/23 07:32	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/06/23 08:56	10/08/23 07:32	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/06/23 08:56	10/08/23 07:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		70 - 130	10/06/23 08:56	10/08/23 07:32	1
1,4-Difluorobenzene (Surr)	112		70 - 130	10/06/23 08:56	10/08/23 07:32	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			10/08/23 07:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.2	U	50.2		mg/Kg			10/09/23 19:39	1

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Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

Client Sample ID: S-NF 2'

Lab Sample ID: 890-5407-3

Date Collected: 10/03/23 01:56

Matrix: Solid

Date Received: 10/03/23 16:22

Sample Depth: 1.5'-2'

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.2	U	50.2		mg/Kg		10/05/23 11:29	10/09/23 19:39	1
Diesel Range Organics (Over C10-C28)	<50.2	U	50.2		mg/Kg		10/05/23 11:29	10/09/23 19:39	1
Oil Range Organics (Over C28-C36)	<50.2	U	50.2		mg/Kg		10/05/23 11:29	10/09/23 19:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	129		70 - 130				10/05/23 11:29	10/09/23 19:39	1
o-Terphenyl	101		70 - 130				10/05/23 11:29	10/09/23 19:39	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	964		5.01		mg/Kg			10/07/23 14:59	1

Client Sample ID: N-NF 2'

Lab Sample ID: 890-5407-4

Date Collected: 10/03/23 01:46

Matrix: Solid

Date Received: 10/03/23 16:22

Sample Depth: 1.5'-2'

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		10/06/23 08:56	10/08/23 07:52	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/06/23 08:56	10/08/23 07:52	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/06/23 08:56	10/08/23 07:52	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/06/23 08:56	10/08/23 07:52	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/06/23 08:56	10/08/23 07:52	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/06/23 08:56	10/08/23 07:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130				10/06/23 08:56	10/08/23 07:52	1
1,4-Difluorobenzene (Surr)	105		70 - 130				10/06/23 08:56	10/08/23 07:52	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			10/08/23 07:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6		mg/Kg			10/09/23 11:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.6	U F2	49.6		mg/Kg		10/05/23 17:18	10/09/23 11:36	1
Diesel Range Organics (Over C10-C28)	<49.6	U F1	49.6		mg/Kg		10/05/23 17:18	10/09/23 11:36	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6		mg/Kg		10/05/23 17:18	10/09/23 11:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	94		70 - 130				10/05/23 17:18	10/09/23 11:36	1
o-Terphenyl	86		70 - 130				10/05/23 17:18	10/09/23 11:36	1

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Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

Client Sample ID: N-NF 2'
Date Collected: 10/03/23 01:46
Date Received: 10/03/23 16:22
Sample Depth: 1.5'-2'

Lab Sample ID: 890-5407-4
Matrix: Solid

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	119		4.98		mg/Kg			10/07/23 15:06	1

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

Surrogate Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-5407-1	E-NF 2'	107	95
890-5407-2	W-NF 2'	99	109
890-5407-3	S-NF 2'	104	112
890-5407-4	N-NF 2'	99	105
LCS 880-64082/1-A	Lab Control Sample	104	102
LCSD 880-64082/2-A	Lab Control Sample Dup	108	102
MB 880-63806/5-A	Method Blank	123	134 S1+
MB 880-64082/5-A	Method Blank	120	148 S1+
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-5407-1	E-NF 2'	119	92
890-5407-2	W-NF 2'	120	93
890-5407-3	S-NF 2'	129	101
890-5407-4	N-NF 2'	94	86
890-5407-4 MS	N-NF 2'	64 S1-	58 S1-
890-5407-4 MSD	N-NF 2'	78	69 S1-
LCS 880-63945/2-A	Lab Control Sample	113	115
LCS 880-64055/2-A	Lab Control Sample	102	106
LCSD 880-63945/3-A	Lab Control Sample Dup	91	87
LCSD 880-64055/3-A	Lab Control Sample Dup	115	119
MB 880-63945/1-A	Method Blank	152 S1+	125
MB 880-64055/1-A	Method Blank	76	85
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-63806/5-A

Matrix: Solid

Analysis Batch: 64080

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 63806

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/02/23 16:41	10/07/23 11:50	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/02/23 16:41	10/07/23 11:50	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/02/23 16:41	10/07/23 11:50	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/02/23 16:41	10/07/23 11:50	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/02/23 16:41	10/07/23 11:50	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/02/23 16:41	10/07/23 11:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	123		70 - 130	10/02/23 16:41	10/07/23 11:50	1
1,4-Difluorobenzene (Surr)	134	S1+	70 - 130	10/02/23 16:41	10/07/23 11:50	1

Lab Sample ID: MB 880-64082/5-A

Matrix: Solid

Analysis Batch: 64080

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 64082

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/06/23 08:56	10/07/23 23:26	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/06/23 08:56	10/07/23 23:26	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/06/23 08:56	10/07/23 23:26	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/06/23 08:56	10/07/23 23:26	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/06/23 08:56	10/07/23 23:26	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/06/23 08:56	10/07/23 23:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	120		70 - 130	10/06/23 08:56	10/07/23 23:26	1
1,4-Difluorobenzene (Surr)	148	S1+	70 - 130	10/06/23 08:56	10/07/23 23:26	1

Lab Sample ID: LCS 880-64082/1-A

Matrix: Solid

Analysis Batch: 64080

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 64082

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1137		mg/Kg		114	70 - 130
Toluene	0.100	0.1050		mg/Kg		105	70 - 130
Ethylbenzene	0.100	0.1092		mg/Kg		109	70 - 130
m-Xylene & p-Xylene	0.200	0.2305		mg/Kg		115	70 - 130
o-Xylene	0.100	0.1099		mg/Kg		110	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: LCSD 880-64082/2-A

Matrix: Solid

Analysis Batch: 64080

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 64082

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1095		mg/Kg		110	70 - 130	4	35

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QC Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

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

Lab Sample ID: LCSD 880-64082/2-A

Matrix: Solid

Analysis Batch: 64080

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 64082

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene	0.100	0.09976		mg/Kg		100	70 - 130	5	35
Ethylbenzene	0.100	0.09641		mg/Kg		96	70 - 130	12	35
m-Xylene & p-Xylene	0.200	0.2241		mg/Kg		112	70 - 130	3	35
o-Xylene	0.100	0.1068		mg/Kg		107	70 - 130	3	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	108		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

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

Lab Sample ID: MB 880-63945/1-A

Matrix: Solid

Analysis Batch: 64185

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 63945

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		10/04/23 11:52	10/09/23 09:00	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/04/23 11:52	10/09/23 09:00	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/04/23 11:52	10/09/23 09:00	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	152	S1+	70 - 130	10/04/23 11:52	10/09/23 09:00	1
o-Terphenyl	125		70 - 130	10/04/23 11:52	10/09/23 09:00	1

Lab Sample ID: LCS 880-63945/2-A

Matrix: Solid

Analysis Batch: 64185

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 63945

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	932.7		mg/Kg		93	70 - 130
Diesel Range Organics (Over C10-C28)	1000	787.6		mg/Kg		79	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	113		70 - 130
o-Terphenyl	115		70 - 130

Lab Sample ID: LCSD 880-63945/3-A

Matrix: Solid

Analysis Batch: 64185

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 63945

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	918.1		mg/Kg		92	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	1000	765.4		mg/Kg		77	70 - 130	3	20

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QC Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

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

Lab Sample ID: LCSD 880-63945/3-A

Matrix: Solid

Analysis Batch: 64185

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 63945

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	91		70 - 130
o-Terphenyl	87		70 - 130

Lab Sample ID: MB 880-64055/1-A

Matrix: Solid

Analysis Batch: 64187

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 64055

	MB	MB								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		10/05/23 17:18	10/09/23 09:00	1	
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/05/23 17:18	10/09/23 09:00	1	
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/05/23 17:18	10/09/23 09:00	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
1-Chlorooctane	76		70 - 130				10/05/23 17:18	10/09/23 09:00	1	
o-Terphenyl	85		70 - 130				10/05/23 17:18	10/09/23 09:00	1	

Lab Sample ID: LCS 880-64055/2-A

Matrix: Solid

Analysis Batch: 64187

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 64055

		Spike	LCS	LCS				%Rec		
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline Range Organics (GRO)-C6-C10		1000	1196		mg/Kg		120	70 - 130		
Diesel Range Organics (Over C10-C28)		1000	914.2		mg/Kg		91	70 - 130		
Surrogate										
Surrogate	%Recovery	Qualifier	Limits							
1-Chlorooctane	102		70 - 130							
o-Terphenyl	106		70 - 130							

Lab Sample ID: LCSD 880-64055/3-A

Matrix: Solid

Analysis Batch: 64187

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 64055

		Spike	LCSD	LCSD				%Rec		RPD	
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics (GRO)-C6-C10		1000	1033		mg/Kg		103	70 - 130	15	20	
Diesel Range Organics (Over C10-C28)		1000	1004		mg/Kg		100	70 - 130	9	20	
Surrogate											
Surrogate	%Recovery	Qualifier	Limits								
1-Chlorooctane	115		70 - 130								
o-Terphenyl	119		70 - 130								

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QC Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

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

Lab Sample ID: 890-5407-4 MS

Matrix: Solid

Analysis Batch: 64187

Client Sample ID: N-NF 2'

Prep Type: Total/NA

Prep Batch: 64055

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.6	U F2	997	768.6		mg/Kg		74	70 - 130
Diesel Range Organics (Over C10-C28)	<49.6	U F1	997	507.9	F1	mg/Kg		46	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	64	S1-	70 - 130						
o-Terphenyl	58	S1-	70 - 130						

Lab Sample ID: 890-5407-4 MSD

Matrix: Solid

Analysis Batch: 64187

Client Sample ID: N-NF 2'

Prep Type: Total/NA

Prep Batch: 64055

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.6	U F2	997	946.0	F2	mg/Kg		92	70 - 130	21	20
Diesel Range Organics (Over C10-C28)	<49.6	U F1	997	612.0	F1	mg/Kg		57	70 - 130	19	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	78		70 - 130								
o-Terphenyl	69	S1-	70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-64009/1-A

Matrix: Solid

Analysis Batch: 64140

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			10/07/23 13:33	1

Lab Sample ID: LCS 880-64009/2-A

Matrix: Solid

Analysis Batch: 64140

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	247.5		mg/Kg		99	90 - 110

Lab Sample ID: LCSD 880-64009/3-A

Matrix: Solid

Analysis Batch: 64140

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	246.7		mg/Kg		99	90 - 110	0	20

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QC Association Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

GC VOA

Prep Batch: 63806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-63806/5-A	Method Blank	Total/NA	Solid	5035	

Analysis Batch: 64080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5407-1	E-NF 2'	Total/NA	Solid	8021B	64082
890-5407-2	W-NF 2'	Total/NA	Solid	8021B	64082
890-5407-3	S-NF 2'	Total/NA	Solid	8021B	64082
890-5407-4	N-NF 2'	Total/NA	Solid	8021B	64082
MB 880-63806/5-A	Method Blank	Total/NA	Solid	8021B	63806
MB 880-64082/5-A	Method Blank	Total/NA	Solid	8021B	64082
LCS 880-64082/1-A	Lab Control Sample	Total/NA	Solid	8021B	64082
LCSD 880-64082/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	64082

Prep Batch: 64082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5407-1	E-NF 2'	Total/NA	Solid	5035	
890-5407-2	W-NF 2'	Total/NA	Solid	5035	
890-5407-3	S-NF 2'	Total/NA	Solid	5035	
890-5407-4	N-NF 2'	Total/NA	Solid	5035	
MB 880-64082/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-64082/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-64082/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 64286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5407-1	E-NF 2'	Total/NA	Solid	Total BTEX	
890-5407-2	W-NF 2'	Total/NA	Solid	Total BTEX	
890-5407-3	S-NF 2'	Total/NA	Solid	Total BTEX	
890-5407-4	N-NF 2'	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 63945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5407-1	E-NF 2'	Total/NA	Solid	8015NM Prep	
890-5407-2	W-NF 2'	Total/NA	Solid	8015NM Prep	
890-5407-3	S-NF 2'	Total/NA	Solid	8015NM Prep	
MB 880-63945/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-63945/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-63945/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	

Prep Batch: 64055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5407-4	N-NF 2'	Total/NA	Solid	8015NM Prep	
MB 880-64055/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-64055/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-64055/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5407-4 MS	N-NF 2'	Total/NA	Solid	8015NM Prep	
890-5407-4 MSD	N-NF 2'	Total/NA	Solid	8015NM Prep	

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QC Association Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

GC Semi VOA

Analysis Batch: 64185

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5407-1	E-NF 2'	Total/NA	Solid	8015B NM	63945
890-5407-2	W-NF 2'	Total/NA	Solid	8015B NM	63945
890-5407-3	S-NF 2'	Total/NA	Solid	8015B NM	63945
MB 880-63945/1-A	Method Blank	Total/NA	Solid	8015B NM	63945
LCS 880-63945/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	63945
LCSD 880-63945/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	63945

Analysis Batch: 64187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5407-4	N-NF 2'	Total/NA	Solid	8015B NM	64055
MB 880-64055/1-A	Method Blank	Total/NA	Solid	8015B NM	64055
LCS 880-64055/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	64055
LCSD 880-64055/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	64055
890-5407-4 MS	N-NF 2'	Total/NA	Solid	8015B NM	64055
890-5407-4 MSD	N-NF 2'	Total/NA	Solid	8015B NM	64055

Analysis Batch: 64351

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5407-1	E-NF 2'	Total/NA	Solid	8015 NM	
890-5407-2	W-NF 2'	Total/NA	Solid	8015 NM	
890-5407-3	S-NF 2'	Total/NA	Solid	8015 NM	
890-5407-4	N-NF 2'	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 64009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5407-1	E-NF 2'	Soluble	Solid	DI Leach	
890-5407-2	W-NF 2'	Soluble	Solid	DI Leach	
890-5407-3	S-NF 2'	Soluble	Solid	DI Leach	
890-5407-4	N-NF 2'	Soluble	Solid	DI Leach	
MB 880-64009/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-64009/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-64009/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 64140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5407-1	E-NF 2'	Soluble	Solid	300.0	64009
890-5407-2	W-NF 2'	Soluble	Solid	300.0	64009
890-5407-3	S-NF 2'	Soluble	Solid	300.0	64009
890-5407-4	N-NF 2'	Soluble	Solid	300.0	64009
MB 880-64009/1-A	Method Blank	Soluble	Solid	300.0	64009
LCS 880-64009/2-A	Lab Control Sample	Soluble	Solid	300.0	64009
LCSD 880-64009/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	64009

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Lab Chronicle

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

Client Sample ID: E-NF 2'
Date Collected: 10/03/23 02:08
Date Received: 10/03/23 16:22

Lab Sample ID: 890-5407-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	64082	10/06/23 08:56	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64080	10/08/23 06:51	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64286	10/08/23 06:51	SM	EET MID
Total/NA	Analysis	8015 NM		1			64351	10/09/23 18:56	SM	EET MID
Total/NA	Prep	8015NM Prep			9.98 g	10 mL	63945	10/05/23 11:29	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64185	10/09/23 18:56	SM	EET MID
Soluble	Leach	DI Leach			5 g	50 mL	64009	10/05/23 11:16	SMC	EET MID
Soluble	Analysis	300.0		1			64140	10/07/23 14:33	SMC	EET MID

Client Sample ID: W-NF 2'
Date Collected: 10/03/23 02:15
Date Received: 10/03/23 16:22

Lab Sample ID: 890-5407-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.95 g	5 mL	64082	10/06/23 08:56	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64080	10/08/23 07:11	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64286	10/08/23 07:11	SM	EET MID
Total/NA	Analysis	8015 NM		1			64351	10/09/23 19:17	SM	EET MID
Total/NA	Prep	8015NM Prep			9.91 g	10 mL	63945	10/05/23 11:29	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64185	10/09/23 19:17	SM	EET MID
Soluble	Leach	DI Leach			4.98 g	50 mL	64009	10/05/23 11:16	SMC	EET MID
Soluble	Analysis	300.0		1			64140	10/07/23 14:53	SMC	EET MID

Client Sample ID: S-NF 2'
Date Collected: 10/03/23 01:56
Date Received: 10/03/23 16:22

Lab Sample ID: 890-5407-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	64082	10/06/23 08:56	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64080	10/08/23 07:32	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64286	10/08/23 07:32	SM	EET MID
Total/NA	Analysis	8015 NM		1			64351	10/09/23 19:39	SM	EET MID
Total/NA	Prep	8015NM Prep			9.96 g	10 mL	63945	10/05/23 11:29	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64185	10/09/23 19:39	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	64009	10/05/23 11:16	SMC	EET MID
Soluble	Analysis	300.0		1			64140	10/07/23 14:59	SMC	EET MID

Client Sample ID: N-NF 2'
Date Collected: 10/03/23 01:46
Date Received: 10/03/23 16:22

Lab Sample ID: 890-5407-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	64082	10/06/23 08:56	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	64080	10/08/23 07:52	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			64286	10/08/23 07:52	SM	EET MID

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Lab Chronicle

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

Client Sample ID: N-NF 2'
Date Collected: 10/03/23 01:46
Date Received: 10/03/23 16:22

Lab Sample ID: 890-5407-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			64351	10/09/23 11:36	SM	EET MID
Total/NA	Prep	8015NM Prep			10.08 g	10 mL	64055	10/05/23 17:18	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	64187	10/09/23 11:36	SM	EET MID
Soluble	Leach	DI Leach			5.02 g	50 mL	64009	10/05/23 11:16	SMC	EET MID
Soluble	Analysis	300.0		1			64140	10/07/23 15:06	SMC	EET MID

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

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Accreditation/Certification Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

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

Protocol References:

- ASTM = ASTM International
- EPA = US Environmental Protection Agency
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
- TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW Release

Job ID: 890-5407-1
SDG: AR207106

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5407-1	E-NF 2'	Solid	10/03/23 02:08	10/03/23 16:22	1.5'-2'
890-5407-2	W-NF 2'	Solid	10/03/23 02:15	10/03/23 16:22	1.5'-2'
890-5407-3	S-NF 2'	Solid	10/03/23 01:56	10/03/23 16:22	1.5'-2'
890-5407-4	N-NF 2'	Solid	10/03/23 01:46	10/03/23 16:22	1.5'-2'

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Environment Testing
Xenco

Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0200
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334
EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No: _____

www.xenco.com Page _____ of _____

Project Manager:	Joseph Guesnier	Bill to: (if different)	
Company Name:	Terracon	Company Name:	Spur
Address:	4518 W. Pierce St	Address:	
City, State ZIP:	Carlsbad NM, 88220	City, State ZIP:	
Phone:	(806)-300-0140	Email:	Gus.Sanchez@Terracon.com; Travis.Casey@Terracon.com; Joseph.Guesnier@Terracon.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:		Antelope PW Release		Turn Around				ANALYSIS REQUEST										Preservative Codes				
Project Number:		AR207106		☒ Routine ☐ Rush		Pres. Code												None: NO DI Water: H ₂ O				
Project Location:				Due Date:														Cool: Cool MeOH: Me				
Sampler's Name:		Gus Sanchez		TAT starts the day received by the lab, if received by 4:30pm														HCL: HC HNO ₃ : HN				
PO #:																		H ₂ SO ₄ : H ₂ NaOH: Na				
SAMPLE RECEIPT		Temp Blank: ☒ Yes ☐ No		Wet Ice: ☐ Yes ☐ No														H ₃ PO ₄ : HP				
Samples Received Intact:		☒ Yes ☐ No		Thermometer ID:		TINMOO7												NaHSO ₄ : NABIS				
Cooler Custody Seals:		☐ Yes ☒ No		Correction Factor:		-0.2												Na ₂ S ₂ O ₃ : NaSO ₃				
Sample Custody Seals:		☐ Yes ☒ No		Temperature Reading:		3.8												Zn Acetate+NaOH: Zn				
Total Containers:				Corrected Temperature:		3.6												NaOH+Ascorbic Acid: SAPC				
Sample Identification		Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Chloride (EPA 300)	BTEX (8021 B)	TPH (8015)											Sample Comments	
E - NF 2'		Soil	10-07-23	2:08 pm	1 1/2'	Comp	1	✓	✓	✓												
W - NF 2'				2:15 pm	1 1/2'		1	✓	✓	✓												
S - NF 2'				1:56 pm	1 1/2'		1	✓	✓	✓												
N - NF 2'				1:46 pm	1 1/2'		1	✓	✓	✓												

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 Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed		TCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins 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 Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins 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
		10/3/2023			

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

Job Number: 890-5407-1

SDG Number: AR207106

Login Number: 5407

List Number: 1

Creator: Bruns, Shannon

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

Job Number: 890-5407-1

SDG Number: AR207106

Login Number: 5407

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 10/05/23 10:51 AM

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



Environment Testing

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ANALYTICAL REPORT

PREPARED FOR

Attn: Joseph Guesnier
Terracon Consulting Eng & Scientists
5847 50th St
Lubbock, Texas 79424

Generated 10/23/2023 10:28:38 PM

JOB DESCRIPTION

Antelope PW
SDG NUMBER AR207106

JOB NUMBER

890-5480-1

Eurofins Carlsbad
1089 N Canal St.
Carlsbad NM 88220

See page two for job notes and contact information.

Eurofins Carlsbad

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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10/23/2023 10:28:38 PM

Authorized for release by
Jessica Kramer, Project Manager
Jessica.Kramer@et.eurofinsus.com
(432)704-5440

Eurofins Carlsbad

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments. QC data that exceed the upper limits and are associated with non-detect samples are qualified but no further narration is needed since the bias is high and does not change a non-detect result. Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Coliform MCLs

· Based on the EPA primary drinking water standard MCL for total coliforms, a water supply is considered bacteriologically "SAFE" if no coliform bacteria are detected. To be considered "SAFE" your report should indicate "<1 cfu/100mL" or "NEG" for the coliform test. If you report indicates a positive result "POS" or a value greater than or equal to one, then your supply is "UNSAFE FOR DRINKING" contact your local health department.

Warranties, Terms, and Conditions

· Analyses for Field Parameters are performed by Eurofins Philadelphia field staff. Locations and certifications are identified on the Chain of Custody as follows:

ERF = field staff performs tests under NJ State certification # 02015.

VL = field staff performs tests under NJ State certification # 06005.

WG = field staff performs tests under NJ State certification # PA001, PA State certification # 48-01334.

H = field staff performs tests under NJ NELAP certification # PA093, PA NELAP certification # 46-05499.

· Test results meet all TNI or other applicable regulatory agency requirements, including holding times and preservation, unless otherwise indicated.

· The report shall not be reproduced, except in full, without the written consent of the laboratory

· All samples are collected as "grab" samples unless otherwise identified.

· Reported results related only to the samples as tested. Eurofins Philadelphia is not responsible for sample integrity unless sampling has been performed by a member of our staff.

· Eurofins Philadelphia is not responsible for sampling and/or testing omissions. Note that regulatory authorities may assess substantial fines for testing omissions. Please track your sample collection schedules and results on a regular basis (e.g. weekly, monthly, or quarterly) to ensure compliance.

· Eurofins' online data portal "TotalAccess" will provide you with real-time access to collection dates and testing results. Please contact Client Services for further information.

· The following personnel or their deputies have approved the results of the tests performed by Eurofins Philadelphia : Nicki Smith (Environmental Chemistry) and Jacqueline Gartner (Water Microbiology).



Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW

Laboratory Job ID: 890-5480-1
SDG: AR207106

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Definitions/Glossary

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW

Job ID: 890-5480-1
SDG: AR207106

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW

Job ID: 890-5480-1
SDG: AR207106

Job ID: 890-5480-1

Laboratory: Eurofins Carlsbad

Narrative**Job Narrative
890-5480-1**

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 10/18/2023 2:26 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 11.0°C

Receipt Exceptions

The following samples were received and analyzed from an unpreserved bulk soil jar: SE-NF-01 (890-5480-1), S-NF-02 (890-5480-2) and SW-NF-03 (890-5480-3).

GC VOA

Method 8021B: Surrogate recovery for the following samples were outside control limits: SE-NF-01 (890-5480-1), S-NF-02 (890-5480-2), (MB 880-65335/5-A) and (880-34727-A-11-G). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

GC Semi VOA

Method 8015MOD_NM: The surrogate recovery for the blank associated with preparation batch 880-65263 and analytical batch 880-65282 was outside the upper control limits.

Method 8015MOD_NM: Surrogate recovery for the following samples were outside control limits: (CCV 880-65282/31) and (CCV 880-65282/47). Evidence of matrix interferences is not obvious.

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

HPLC/IC

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

Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW

Job ID: 890-5480-1
SDG: AR207106

Client Sample ID: SE-NF-01

Lab Sample ID: 890-5480-1

Date Collected: 10/18/23 10:56

Matrix: Solid

Date Received: 10/18/23 14:26

Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		10/23/23 09:14	10/23/23 13:26	1
Toluene	<0.00198	U	0.00198		mg/Kg		10/23/23 09:14	10/23/23 13:26	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		10/23/23 09:14	10/23/23 13:26	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		10/23/23 09:14	10/23/23 13:26	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		10/23/23 09:14	10/23/23 13:26	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		10/23/23 09:14	10/23/23 13:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		70 - 130	10/23/23 09:14	10/23/23 13:26	1
1,4-Difluorobenzene (Surr)	62	S1-	70 - 130	10/23/23 09:14	10/23/23 13:26	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			10/23/23 13:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.6	U	49.6		mg/Kg			10/22/23 21:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.6	U	49.6		mg/Kg		10/20/23 18:14	10/22/23 21:10	1
Diesel Range Organics (Over C10-C28)	<49.6	U	49.6		mg/Kg		10/20/23 18:14	10/22/23 21:10	1
Oil Range Organics (Over C28-C36)	<49.6	U	49.6		mg/Kg		10/20/23 18:14	10/22/23 21:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	130		70 - 130	10/20/23 18:14	10/22/23 21:10	1
o-Terphenyl	111		70 - 130	10/20/23 18:14	10/22/23 21:10	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	183		5.00		mg/Kg			10/20/23 12:45	1

Client Sample ID: S-NF-02

Lab Sample ID: 890-5480-2

Date Collected: 10/18/23 10:59

Matrix: Solid

Date Received: 10/18/23 14:26

Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		10/23/23 09:14	10/23/23 13:46	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/23/23 09:14	10/23/23 13:46	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/23/23 09:14	10/23/23 13:46	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/23/23 09:14	10/23/23 13:46	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/23/23 09:14	10/23/23 13:46	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/23/23 09:14	10/23/23 13:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		70 - 130	10/23/23 09:14	10/23/23 13:46	1

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Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW

Job ID: 890-5480-1
SDG: AR207106

Client Sample ID: S-NF-02

Lab Sample ID: 890-5480-2

Date Collected: 10/18/23 10:59

Matrix: Solid

Date Received: 10/18/23 14:26

Sample Depth: 2

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	59	S1-	70 - 130	10/23/23 09:14	10/23/23 13:46	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			10/23/23 13:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.3	U	50.3		mg/Kg			10/22/23 22:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.3	U	50.3		mg/Kg		10/20/23 18:14	10/22/23 22:18	1
Diesel Range Organics (Over C10-C28)	<50.3	U	50.3		mg/Kg		10/20/23 18:14	10/22/23 22:18	1
Oil Range Organics (Over C28-C36)	<50.3	U	50.3		mg/Kg		10/20/23 18:14	10/22/23 22:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	128		70 - 130				10/20/23 18:14	10/22/23 22:18	1
o-Terphenyl	111		70 - 130				10/20/23 18:14	10/22/23 22:18	1

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	113		5.01		mg/Kg			10/20/23 12:51	1

Client Sample ID: SW-NF-03

Lab Sample ID: 890-5480-3

Date Collected: 10/18/23 11:04

Matrix: Solid

Date Received: 10/18/23 14:26

Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/23/23 09:14	10/23/23 14:07	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/23/23 09:14	10/23/23 14:07	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/23/23 09:14	10/23/23 14:07	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		10/23/23 09:14	10/23/23 14:07	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/23/23 09:14	10/23/23 14:07	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		10/23/23 09:14	10/23/23 14:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		70 - 130	10/23/23 09:14	10/23/23 14:07	1
1,4-Difluorobenzene (Surr)	78		70 - 130	10/23/23 09:14	10/23/23 14:07	1

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			10/23/23 14:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.5	U	50.5		mg/Kg			10/22/23 22:39	1

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Client Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW

Job ID: 890-5480-1
SDG: AR207106

Client Sample ID: SW-NF-03
Date Collected: 10/18/23 11:04
Date Received: 10/18/23 14:26
Sample Depth: 2

Lab Sample ID: 890-5480-3
Matrix: Solid

Method: SW846 8015B NM - Diesel Range Organics (DRO) (GC)										
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)-C6-C10	<50.5	U	50.5		mg/Kg		10/20/23 18:14	10/22/23 22:39	1	
Diesel Range Organics (Over C10-C28)	<50.5	U	50.5		mg/Kg		10/20/23 18:14	10/22/23 22:39	1	
OII Range Organics (Over C28-C36)	<50.5	U	50.5		mg/Kg		10/20/23 18:14	10/22/23 22:39	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
1-Chlorooctane	111		70 - 130				10/20/23 18:14	10/22/23 22:39	1	
o-Terphenyl	97		70 - 130				10/20/23 18:14	10/22/23 22:39	1	

Method: EPA 300.0 - Anions, Ion Chromatography - Soluble										
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	62.0		5.00		mg/Kg			10/20/23 12:56	1	

Surrogate Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW

Job ID: 890-5480-1
SDG: AR207106

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-5480-1	SE-NF-01	90	62 S1-
890-5480-2	S-NF-02	89	59 S1-
890-5480-3	SW-NF-03	88	78
LCS 880-65335/1-A	Lab Control Sample	107	111
LCSD 880-65335/2-A	Lab Control Sample Dup	105	114
MB 880-65335/5-A	Method Blank	66 S1-	101
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-5480-1	SE-NF-01	130	111
890-5480-1 MS	SE-NF-01	123	96
890-5480-1 MSD	SE-NF-01	128	99
890-5480-2	S-NF-02	128	111
890-5480-3	SW-NF-03	111	97
LCS 880-65263/2-A	Lab Control Sample	121	125
LCSD 880-65263/3-A	Lab Control Sample Dup	110	107
MB 880-65263/1-A	Method Blank	216 S1+	196 S1+
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

QC Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW

Job ID: 890-5480-1
SDG: AR207106

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-65335/5-A

Matrix: Solid

Analysis Batch: 65321

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 65335

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/23/23 09:14	10/23/23 11:42	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/23/23 09:14	10/23/23 11:42	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/23/23 09:14	10/23/23 11:42	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/23/23 09:14	10/23/23 11:42	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/23/23 09:14	10/23/23 11:42	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/23/23 09:14	10/23/23 11:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	66	S1-	70 - 130	10/23/23 09:14	10/23/23 11:42	1
1,4-Difluorobenzene (Surr)	101		70 - 130	10/23/23 09:14	10/23/23 11:42	1

Lab Sample ID: LCS 880-65335/1-A

Matrix: Solid

Analysis Batch: 65321

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 65335

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1038		mg/Kg		104	70 - 130
Toluene	0.100	0.1094		mg/Kg		109	70 - 130
Ethylbenzene	0.100	0.1078		mg/Kg		108	70 - 130
m-Xylene & p-Xylene	0.200	0.2334		mg/Kg		117	70 - 130
o-Xylene	0.100	0.1112		mg/Kg		111	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	111		70 - 130

Lab Sample ID: LCSD 880-65335/2-A

Matrix: Solid

Analysis Batch: 65321

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 65335

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1087		mg/Kg		109	70 - 130	5	35
Toluene	0.100	0.1097		mg/Kg		110	70 - 130	0	35
Ethylbenzene	0.100	0.1077		mg/Kg		108	70 - 130	0	35
m-Xylene & p-Xylene	0.200	0.2300		mg/Kg		115	70 - 130	1	35
o-Xylene	0.100	0.1100		mg/Kg		110	70 - 130	1	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	114		70 - 130

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QC Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW

Job ID: 890-5480-1
SDG: AR207106

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

Lab Sample ID: MB 880-65263/1-A

Matrix: Solid

Analysis Batch: 65282

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 65263

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		10/20/23 18:14	10/22/23 20:03	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/20/23 18:14	10/22/23 20:03	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/20/23 18:14	10/22/23 20:03	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	216	S1+	70 - 130				10/20/23 18:14	10/22/23 20:03	1
o-Terphenyl	196	S1+	70 - 130				10/20/23 18:14	10/22/23 20:03	1

Lab Sample ID: LCS 880-65263/2-A

Matrix: Solid

Analysis Batch: 65282

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 65263

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	1062		mg/Kg		106	70 - 130
Diesel Range Organics (Over C10-C28)	1000	991.0		mg/Kg		99	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	121		70 - 130				
o-Terphenyl	125		70 - 130				

Lab Sample ID: LCSD 880-65263/3-A

Matrix: Solid

Analysis Batch: 65282

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 65263

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1032		mg/Kg		103	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	1000	949.9		mg/Kg		95	70 - 130	4	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	110		70 - 130						
o-Terphenyl	107		70 - 130						

Lab Sample ID: 890-5480-1 MS

Matrix: Solid

Analysis Batch: 65282

Client Sample ID: SE-NF-01

Prep Type: Total/NA

Prep Batch: 65263

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.6	U	998	897.0		mg/Kg		87	70 - 130
Diesel Range Organics (Over C10-C28)	<49.6	U	998	1215		mg/Kg		120	70 - 130

Eurofins Carlsbad

QC Sample Results

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW

Job ID: 890-5480-1
SDG: AR207106

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

Lab Sample ID: 890-5480-1 MS

Matrix: Solid

Analysis Batch: 65282

Client Sample ID: SE-NF-01

Prep Type: Total/NA

Prep Batch: 65263

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	123		70 - 130
o-Terphenyl	96		70 - 130

Lab Sample ID: 890-5480-1 MSD

Matrix: Solid

Analysis Batch: 65282

Client Sample ID: SE-NF-01

Prep Type: Total/NA

Prep Batch: 65263

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	<49.6	U	998	933.8		mg/Kg		91	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	<49.6	U	998	1269		mg/Kg		125	70 - 130	4	20
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1-Chlorooctane	128		70 - 130								
o-Terphenyl	99		70 - 130								

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-65175/1-A

Matrix: Solid

Analysis Batch: 65226

Client Sample ID: Method Blank

Prep Type: Soluble

	MB	MB								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	<5.00	U	5.00		mg/Kg			10/20/23 12:06	1	

Lab Sample ID: LCS 880-65175/2-A

Matrix: Solid

Analysis Batch: 65226

Client Sample ID: Lab Control Sample

Prep Type: Soluble

	Spike	LCS	LCS					%Rec		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits			
Chloride	250	244.5		mg/Kg		98	90 - 110			

Lab Sample ID: LCSD 880-65175/3-A

Matrix: Solid

Analysis Batch: 65226

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

	Spike	LCSD	LCSD					%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Chloride	250	244.9		mg/Kg		98	90 - 110	0	20	

Eurofins Carlsbad

QC Association Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW

Job ID: 890-5480-1
SDG: AR207106

GC VOA

Analysis Batch: 65321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5480-1	SE-NF-01	Total/NA	Solid	8021B	65335
890-5480-2	S-NF-02	Total/NA	Solid	8021B	65335
890-5480-3	SW-NF-03	Total/NA	Solid	8021B	65335
MB 880-65335/5-A	Method Blank	Total/NA	Solid	8021B	65335
LCS 880-65335/1-A	Lab Control Sample	Total/NA	Solid	8021B	65335
LCSD 880-65335/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	65335

Prep Batch: 65335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5480-1	SE-NF-01	Total/NA	Solid	5035	
890-5480-2	S-NF-02	Total/NA	Solid	5035	
890-5480-3	SW-NF-03	Total/NA	Solid	5035	
MB 880-65335/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-65335/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-65335/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

Analysis Batch: 65411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5480-1	SE-NF-01	Total/NA	Solid	Total BTEX	
890-5480-2	S-NF-02	Total/NA	Solid	Total BTEX	
890-5480-3	SW-NF-03	Total/NA	Solid	Total BTEX	

GC Semi VOA

Prep Batch: 65263

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5480-1	SE-NF-01	Total/NA	Solid	8015NM Prep	
890-5480-2	S-NF-02	Total/NA	Solid	8015NM Prep	
890-5480-3	SW-NF-03	Total/NA	Solid	8015NM Prep	
MB 880-65263/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-65263/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-65263/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-5480-1 MS	SE-NF-01	Total/NA	Solid	8015NM Prep	
890-5480-1 MSD	SE-NF-01	Total/NA	Solid	8015NM Prep	

Analysis Batch: 65282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5480-1	SE-NF-01	Total/NA	Solid	8015B NM	65263
890-5480-2	S-NF-02	Total/NA	Solid	8015B NM	65263
890-5480-3	SW-NF-03	Total/NA	Solid	8015B NM	65263
MB 880-65263/1-A	Method Blank	Total/NA	Solid	8015B NM	65263
LCS 880-65263/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	65263
LCSD 880-65263/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	65263
890-5480-1 MS	SE-NF-01	Total/NA	Solid	8015B NM	65263
890-5480-1 MSD	SE-NF-01	Total/NA	Solid	8015B NM	65263

Analysis Batch: 65377

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5480-1	SE-NF-01	Total/NA	Solid	8015 NM	
890-5480-2	S-NF-02	Total/NA	Solid	8015 NM	
890-5480-3	SW-NF-03	Total/NA	Solid	8015 NM	

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QC Association Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW

Job ID: 890-5480-1
SDG: AR207106

HPLC/IC

Leach Batch: 65175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5480-1	SE-NF-01	Soluble	Solid	DI Leach	
890-5480-2	S-NF-02	Soluble	Solid	DI Leach	
890-5480-3	SW-NF-03	Soluble	Solid	DI Leach	
MB 880-65175/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-65175/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-65175/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Analysis Batch: 65226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-5480-1	SE-NF-01	Soluble	Solid	300.0	65175
890-5480-2	S-NF-02	Soluble	Solid	300.0	65175
890-5480-3	SW-NF-03	Soluble	Solid	300.0	65175
MB 880-65175/1-A	Method Blank	Soluble	Solid	300.0	65175
LCS 880-65175/2-A	Lab Control Sample	Soluble	Solid	300.0	65175
LCSD 880-65175/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	65175

Lab Chronicle

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW

Job ID: 890-5480-1
SDG: AR207106

Client Sample ID: SE-NF-01

Lab Sample ID: 890-5480-1

Date Collected: 10/18/23 10:56

Matrix: Solid

Date Received: 10/18/23 14:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	65335	10/23/23 09:14	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	65321	10/23/23 13:26	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			65411	10/23/23 13:26	SM	EET MID
Total/NA	Analysis	8015 NM		1			65377	10/22/23 21:10	SM	EET MID
Total/NA	Prep	8015NM Prep			10.09 g	10 mL	65263	10/20/23 18:14	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	65282	10/22/23 21:10	SM	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	65175	10/20/23 10:50	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	65226	10/20/23 12:45	CH	EET MID

Client Sample ID: S-NF-02

Lab Sample ID: 890-5480-2

Date Collected: 10/18/23 10:59

Matrix: Solid

Date Received: 10/18/23 14:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	65335	10/23/23 09:14	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	65321	10/23/23 13:46	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			65411	10/23/23 13:46	SM	EET MID
Total/NA	Analysis	8015 NM		1			65377	10/22/23 22:18	SM	EET MID
Total/NA	Prep	8015NM Prep			9.94 g	10 mL	65263	10/20/23 18:14	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	65282	10/22/23 22:18	SM	EET MID
Soluble	Leach	DI Leach			4.99 g	50 mL	65175	10/20/23 10:50	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	65226	10/20/23 12:51	CH	EET MID

Client Sample ID: SW-NF-03

Lab Sample ID: 890-5480-3

Date Collected: 10/18/23 11:04

Matrix: Solid

Date Received: 10/18/23 14:26

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	65335	10/23/23 09:14	MNR	EET MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	65321	10/23/23 14:07	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			65411	10/23/23 14:07	SM	EET MID
Total/NA	Analysis	8015 NM		1			65377	10/22/23 22:39	SM	EET MID
Total/NA	Prep	8015NM Prep			9.90 g	10 mL	65263	10/20/23 18:14	TKC	EET MID
Total/NA	Analysis	8015B NM		1	1 uL	1 uL	65282	10/22/23 22:39	SM	EET MID
Soluble	Leach	DI Leach			5.00 g	50 mL	65175	10/20/23 10:50	SMC	EET MID
Soluble	Analysis	300.0		1	50 mL	50 mL	65226	10/20/23 12:56	CH	EET MID

Laboratory References:

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

Eurofins Carlsbad

Accreditation/Certification Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW

Job ID: 890-5480-1
SDG: AR207106

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW

Job ID: 890-5480-1
SDG: AR207106

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

Protocol References:

- ASTM = ASTM International
- EPA = US Environmental Protection Agency
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
- TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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

Sample Summary

Client: Terracon Consulting Eng & Scientists
Project/Site: Antelope PW

Job ID: 890-5480-1
SDG: AR207106

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-5480-1	SE-NF-01	Solid	10/18/23 10:56	10/18/23 14:26	2
890-5480-2	S-NF-02	Solid	10/18/23 10:59	10/18/23 14:26	2
890-5480-3	SW-NF-03	Solid	10/18/23 11:04	10/18/23 14:26	2

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



Environment Testing

Xenco

Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300

Midland, TX (432) 704-5440, San Antonio, TX (210) 589-3334

El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296

Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Work Order No.

www.xenco.com Page of

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 Manager:	Joseph Gugsnier	Bill to: (if different)	
Company Name:	Terracon	Company Name:	
Address:	4526 W. Pierce St.	Address:	
City, State ZIP:	Carlsbad NM 88220	City, State ZIP:	
Phone:	806 544 9276	Email:	

Project Name:		Antelope pw		Turn Around		ANALYSIS REQUEST										Preservative Codes			
Project Number:		AR207106		☐ Routine ☒ Rush 4/8		Pres. Code												None: NO DI Water: H ₂ O	
Project Location:				Due Date:														Cool: Cool MeOH: Me	
Sampler's Name:		Travis Casey		TAT starts the day received by the lab, if received by 4:30pm														HCL: HC HNO ₃ : HN	
PO #:																		H ₂ SO ₄ : H ₂ NaOH: Na	
SAMPLE RECEIPT		Temp Blank: (Yes) No (Yes) No		Wet Ice: (Yes) No (Yes) No														H ₃ PO ₄ : HP	
Samples Received Intact:		(Yes) No (Yes) No		Thermometer ID:		TWR002												NaHSO ₄ : NABIS	
Cooler Custody Seals:		Yes No (N/A)		Correction Factor:		-0.2												Na ₂ S ₂ O ₃ : NaSO ₃	
Sample Custody Seals:		Yes No (N/A)		Temperature Reading:		11.2												Zn Acetate+NaOH: Zn	
Total Containers:				Corrected Temperature:		11.0												NaOH+Ascorbic Acid: SAPC	
Sample Identification		Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont											Sample Comments	
SE-NF-01		S	10-18	1056	2'	Comp	1												
S-NF-02		S	10-18	1059	2'	Comp	1												
SW-NF-03		S	10-18	1104	2'	Comp	1												

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 Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed		TCLP / SPLP 6010 : 8RCRA	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Eurofins Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins 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 Eurofins Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins 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		10-18 1:42 PM			
5					

Revised Date: 08/25/2020 Rev. 2020.2

Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

Job Number: 890-5480-1

SDG Number: AR207106

Login Number: 5480

List Number: 1

Creator: Lopez, Abraham

List Source: Eurofins Carlsbad

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

Login Sample Receipt Checklist

Client: Terracon Consulting Eng & Scientists

Job Number: 890-5480-1

SDG Number: AR207106

Login Number: 5480

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 10/20/23 11:02 AM

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



February 14, 2023

Spur Energy Partners LLC
920 Memorial City Way, Suite 1000
Houston, Texas 77024

Attn: New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: Amended Closure Report
Pronghorn Riser
Lot 2, Section 30, T17S, R32E
Eddy County, New Mexico
Terracon Project No. AR207106

To Whom It May Concern:

On June 12, 2020, Terracon was requested to oversee the remediation of a reportable release at the Pronghorn Riser site. Terracon personnel were informed that a release of produced water of a reportable quantity had taken place at the site. Surface ownership is held by the Bureau of Land Management (BLM). The release was 300 bbls, which 300 bbls were produced water the New Mexico Oil Conservation District (NMOCD) was notified on July 20, 2019.

Action Items

Completed Actions

- 1) All aspects of the closure were approved on June 29, 2021, with the exception being the depth of groundwater at the site.
- 2) An exploratory boring was installed at the site on April 13, 2022, to determine depth to groundwater to a depth of 105 ft bgs and no groundwater was discovered.
- 3) The soil boring log has been included in appendix A.

Anticipated Actions

- 1) NMOCD's confirmation of closure at the site.

Remedial Activities

On April 13, 2022, Terracon mobilized to the site to meet HCI Drilling (HCI), who were to soil boring activities at the site. HCI performed soil boring activities at the site and Terracon personnel logged soils every 15 ft to determine the different soil geology as the boring was installed. Terracon returned on April 15, 2022 to perform water depth analysis at the site to determine the depth of water within the exploratory boring. Terracon's water level meter showed no evidence of water within the exploratory boring.

Terracon personnel found no evidence of a water bearing unit from surface to 105 ft bgs at the site.

See Appendix A for the soil boring log.

Amended Closure Report

Pronghorn Riser ■ Eddy County, New Mexico

November 10, 2022 ■ Terracon Project No. AR207106



Conclusion

In accordance with NMAC 19.15.29.12, remediation of the remaining impacted material proximate to excavation is below the NMOCD RALs. Terracon recommends no further action be taken regarding the incident number nRM2017440778, for the Pronghorn Riser site.

Should you have any questions, please contact the undersigned at (806) 300 0140.

Sincerely,

Terracon

Prepared by:

Reviewed by:

Joseph Guesnier
Senior Staff Scientist
Office Manager - Carlsbad

Erin Loyd, P.G. (TX)
Principal
Office Manager – Lubbock

Attachments

Appendix A – Exhibits

Exhibit 1 – Soil Boring / Monitoring Well Log

Responsive ■ Resourceful ■ Reliable

APPENDIX A – EXHIBITS

SOIL BORING / MONITORING WELL LOG

PROJECT: Pipeline 03 Antelope Riser		DRILLING COMPANY: HCI	
PROJECT NUMBER: AR207106		DRILLER: Kenny Cooper	
CLIENT: Spur Energy Partners		DRILLING METHOD: Air Rotary	
BORING/WELL NUMBER: B-1		BORE HOLE DIAMETER: 4"	
TOTAL DEPTH: 105'		SCREEN: 0.1"	
CASING: PVC		CASING: 2"	
PERSONNEL: J. Guesnier		DATE DRILLED: 4/13/2022	

DEPTH (FT)	SOIL SYMBOL	WELL CONSTRUCTION	PID	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM	DEPTH (FT)
0								0
15			0			X	light redish orange, sand with calcareous nodules, moist no odor	15
30			0			X	light pinkish orange, arenaceous clayey sand, moist, no odor	30
45			0			X	pinkish orange, clayey sand with gravel, moist, no odor	45
60			0			X	orangish red, sand, moist, no odor	60
75			0			X	orangish red, sand, moist, no odor	75
90			0			X	orangish brown, sandy clay, moist, no odor	90
105			0			X	orangish red, clayey sand, moist, no odor	105
Boring Gauged - 4/17/2022 (Dry)								105

REMARKS:

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Closure Report

General Site Information:

Antelope Release
NMOCD Reference No. NRM2017440778

Site Contact:

Braidy Moulder, Spur Energy Partners
920 Memorial City Way, Suite 1000, Houston, Texas 77024
(713) 264-2517

Depth to Ground Water

Greater than 100 feet below grade surface

Distance to Nearest Surface Water

Laguna Plata (West-Central Lea County), approximately 14.60 miles to the south

Driving Directions

From Hwy 82, South on Hwy 529 4.52 mi, North on Lease Road 0.2 mi.,
West 0.50 mi, North 0.35 mi, then West 100 Yards to location.

Legal Description

Lot 2, Section 30, T17S, R32E, Lea County, New Mexico

May 11, 2021

Terracon Project No. AR207106

Prepared for:

Spur Energy Partners
Houston, Texas

Prepared by:

Terracon Consultants, Inc.
Lubbock, Texas
TBPG Firm No. 50058

Offices Nationwide
Employee-Owned

Established in 1965
terracon.com

Terracon

Geotechnical ■ Environmental ■ Construction Materials ■ Facilities

May 11, 2021



Spur Energy Partners LLC
920 Memorial City Way, Suite 1000
Houston, Texas 77024

Attn: Mr. Braidy Moulder
P: 713-264-2517
E: bmoulder@spurepllc.com

RE: **Closure Report**
Antelope Release
Lot 2, Section 30, T17S, R32E, Lea County, New Mexico
Terracon Project No. AR207106

Dear Mr. Moulder,

Terracon Consultants, Inc. (Terracon) is pleased to submit our Closure Report for the site referenced above. The Closure Report was developed in accordance with the New Mexico Oil Conservation Division (NMOCD) regulations concerning clean-up actions required for releases of crude oil and produced water. The Closure Report presents a description of the release incident and OCD notification, site characteristics, potential receptors, and remedial actions required for the site. Terracon developed the Closure Report in general accordance with our Master Service Agreement dated April 29, 2019.

Terracon appreciates this opportunity to provide environmental services to Spur Energy Partners LLC (Spur). Should you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,
Terracon Consultants, Inc.

Joseph Guesnier
Staff Scientist
Lubbock

Erin Loyd, P.G.
Principal
Office Manager – Lubbock



Terracon Consultants, Inc. 5847 50th St. Lubbock, Texas 79424
P (806) 300 0140 F (806) 797 0947 terracon.com

Geotechnical

Environmental

Construction Materials

Facilities



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- Figure 5 – NMOSE POD Location Map
- Figure 6 – Cave Karst Public UCP

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- Exhibit 1 – Soil Sampling Procedures
- Table 1 – Closure Criteria for Soils Impacted by a Release
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APPENDIX D – ANALYTICAL REPORT AND CHAIN OF CUSTODY

APPENDIX E – TERRACON STANDARD OF CARE, LIMITATION, AND RELIANCE

**Closure Report
Antelope Release
Lot 2 Section 30, Township 17 South, Range 32 East
Lea County, New Mexico
NMOCD Reference No. NRM2017440778
Terracon Project No. AR207106
May 11, 2021**

1.0 SITE DESCRIPTION

The site is an approximate 1.5-acre tract of land within the Unit L2 Section 30, Township 17 South, Range 32 East, Lea County, New Mexico (hereinafter, the site). The site consists primarily of undeveloped land except for an Oil Well to the east. A Topographic Map illustrating the site location is included in Figure 1 and a Site Map is included as Figure 2 in Appendix A.

2.0 SCOPE OF SERVICES

Terracon's scope of services is to investigate the magnitude and extent of the documented release, remediation, and restoration and develop a Closure Report in accordance with the NMOCD requirements that detail site closure activities to be completed. This Closure Report addresses the June 12, 2020 release of approximately 300 barrels (bbls) of produced water originating from a 6" poly Y split, which ruptured on a water line owned by Spur.

3.0 INTRODUCTION AND NOTIFICATION

A release of produced water occurred on June 12, 2020, at the Antelope/Pronghorn SWD site in Lea County, New Mexico:

Required Information	Site and Release information	
Responsible party	The facility is operated by Spur Energy Partners LLC	
Local contact	Contact: Mr. Braidy Moulder	P: (281) 795-2286 E: bmoulder@spurepllc.com
NMOCD Notification	Notice of the release was provided to the NMOCD District 1 Hobbs Office by Jerry Mathews (Spur) on June 12, 2020.	
Facility description	The facility is the Antelope/Pronghorn SWD site in Lea County, New Mexico. It is an approximate 1.5-acre well located within Lot 2, Section 30, Township 17 South, Range 32 East, N.M.P.M., approximately 9 miles southwest of Maljamar, New Mexico. The site is undeveloped.	
Time of incident	June 12, 2020, discovered at 11:00 a.m.	

Responsive ■ Resourceful ■ Reliable

Release Investigation and Remedial Action Plan

Antelope/Pronghorn SWD Line ■ Lea County, New Mexico

May 11, 2021 ■ Terracon Project No. AR207106



Required Information	Site and Release information	
Discharge event	Release of produced water originating from a 6" poly Y split, which ruptured on a water line owned by Spur. The release area, near the origin of the release, was limited to an approximately 25,000 sq. ft area. The entirety of the release is located within a pasture. The release is illustrated in Figure 2 of Appendix A	
Type of discharge	The documented fluids release occurred at the surface and appears to be surficial to depth.	
Quantity of spilled material	Total Fluids: 300 bbls	Produced Water: 300 bbls
Site characteristics	Relatively flat with drainage following the native ground surface; very gently sloping to the south.	
Immediate corrective actions	Valves were isolated to shut off flow, and Terracon Remediation Construction Services (RCS) scraped up and stockpiled affected materials proximate to the release origin.	

4.0 INITIAL RESPONSE ACTIONS

4.1 Source Elimination and Site Security

Initial source elimination was accomplished by the Spur foreman isolating valves to shut off flow. Terracon's remediation construction services (RCS) secured the site and performed containment and site stabilization activities. RCS consolidated and stockpiled affected soils proximate to the release origin, comprising an area measuring approximately 20,500-square-feet (sf). From this area, the affected materials stockpile totaled an estimated 3,000-cubic yards (cy). Following the consolidation of these materials, RCS fenced off the stockpile to deter inadvertent contact with the materials.

Release Investigation and Remedial Action Plan
 Antelope/Pronghorn SWD Line ■ Lea County, New Mexico
 May 11, 2021 ■ Terracon Project No. AR207106



5.0 GENERAL SITE CHARACTERISTICS

Remediation Determining Information	Site Ranking Characteristics
Groundwater	<u>POD Number:</u> RA 10175 <u>Depth to Groundwater:</u> 158 ft. bgs <u>Distance to Well:</u> 2.30 miles to the west <u>Date Drilled:</u> February 3, 2002 <u>Groundwater Quality:</u> The well-referenced above, was originally drilled for use as a drinking and sanitation well.
Surface Water	Laguna Plata (West-Central Lea County), approximately 14.60 miles to the south.
Soil Characteristics	Soils at the site are mapped as Kermit Series, 0 to 12 percent slopes. This soil has a surface layer of fine sand 0 to 12 inches, fine sand continues from 12 to 84 inches. Kermit series soils are categorized as very deep and excessively drained.
Karst Characterization	Terracon evaluated data from the NMOCD Public FTP Site, Karst map designations in reference to the site location. The site appears to be within a low-level Karst risk area. Based on on-site observations within the extent of the release margins, the potential for Karst formations in this specific area is of low potential. The site has a layer of solid competent rock from 60 to 72 inches bgs.
Depth of Remediation	The full extent of release quantities and excavation activities were not greater than 36 inches bgs.

6.0 SOIL REMEDIAL ACTION LEVELS

Crude oil facilities in New Mexico are generally regulated by the NMOCD. Terracon proposes to remediate produced water impacted soil of the Antelope/Pronghorn SWD Main Line Release consistent with the remediation/abatement goals and objectives outlined in the New Mexico Oil Conservation Division (NMOCD) *Closure Criteria for Soils Impacted by a Release, June 21, 2018*.

The guidance document provides direction for initial response actions, site assessment, sampling procedures and provides closure criteria based on the depth to groundwater, distance to private and domestic water sources, and the distance to the nearest surface water body as follows:

Release Investigation and Remedial Action Plan

Antelope/Pronghorn SWD Line ■ Lea County, New Mexico

May 11, 2021 ■ Terracon Project No. AR207106

**6.1 Remediation Levels**

Remediation limits for Chlorides, TPH (GRO+DRO+MRO), GRO+DRO, BTEX (includes benzene, toluene, ethylbenzene, and xylenes), and Benzene are selected based on *Restoration, Reclamation, and Re-vegetation* (19.15.29.13) NMAC – D (Reclamation of areas no longer in use) being >100 feet:

Constituent	Remediation Limits
Chloride (Soils from the Surface to 4 ft. Below Grade Surface)	600 mg/kg
Chloride (Soils at Depths Greater than 4 ft. Below Grade Surface)	20,000 mg/kg
TPH (GRO+DRO+MRO)	100 mg/kg
BTEX	50 mg/kg
Benzene	10 mg/kg

7.0 SOIL SAMPLING PROCEDURES

Soil sampling procedures are detailed as Exhibit 1 in Appendix B.

8.0 RELEASE INVESTIGATION DATA EVALUATION

During Terracon's June 17, 2020 release investigation activities, a total of 30 soil samples were collected from the site and analyzed for BTEX, chloride, and/or TPH. 22 of the 30 soil samples were collected from within the release margins.

8.1 Release Margins Data Evaluation

Benzene was not detected above applicable laboratory SDLs any of the 22 soil samples analyzed within the release margins. The samples collected within the release margins did not exhibit Benzene concentrations above NMOC D RAL for benzene of 10 mg/kg, as summarized in Table 2.

Total BTEX was detected above applicable laboratory SDLs in two of the 22 soil samples analyzed within the release margins. Total BTEX concentrations ranged from 0.000815 mg/kg in soil sample HA-6 (1.5 to 2 ft bgs) to 0.0014 in soil sample HA-1 (surface to 0.5 ft bgs). The

Release Investigation and Remedial Action Plan

Antelope/Pronghorn SWD Line ■ Lea County, New Mexico

May 11, 2021 ■ Terracon Project No. AR207106



detected Total BTEX concentrations did not exceed the applicable NMOCD RAL for Total BTEX of 50 mg/kg, as summarized in Table 2.

Total TPH was detected above applicable laboratory SDLs in 15 of the 22 soil samples analyzed within the release margins. Total TPH concentrations ranged from 16.3 mg/kg in soil sample HA-3 (4.5 to 5 ft bgs) to 59.8 mg/kg in soil sample HA-2 (0.5-1ft bgs). The samples collected within the release margins did not exhibit Total TPH concentrations above the NMOCD RAL of 100 mg/kg for Total TPH, as summarized in Table 2.

Chloride was detected above applicable laboratory SDLs in each of the 22 soil samples analyzed within the release margins. The Chloride concentrations ranged from 90.03 mg/kg in soil sample HA-1 (3.5 ft bgs to 4.0 ft bgs) to 14,000 mg/kg in soil sample HA-2 (1.5 ft bgs to 2 ft bgs). The samples analyzed within the release margins did exhibit chloride concentrations above the applicable NMOCD RAL for chloride of 600 mg/kg (soils from the Surface to 4 ft. Below Grade Surface) and NMOCD RAL for chloride of 20,000 mg/kg (Soils at Depths Greater than 4 ft. Below Grade Surface), in 14 of the 22 soil samples, as summarized in Table 2.

8.2 Release Investigation Data Summary

Based on the review of the above release investigation analytical results, the areas within the release margins exhibited chloride concentrations in multiple locations above NMOCD RALs. Based on these exceedances above NMOCD RALs, Sections 9.0 and subsequent detail recommended remedial response actions to be implemented at the site.

8.3 Confirmation Margins Data Evaluation

During Terracon's confirmation sampling on December 9, 2020 composite soil samples were taken from the sidewalls and floor of the open excavation where previously installed plastic liner was not encountered, post reclamation activities. Resulting in 17 total soil samples being collected from the site and analyzed for BTEX, chloride, and TPH.

8.3.1 Confirmation Assessment Data Evaluation

Benzene was not detected above the applicable laboratory SDL in the confirmation soil samples within the remediated margins. Benzene concentration did not exceed the applicable NMOCD RAL for benzene of 10 mg/kg, as summarized in Table 2.

Total BTEX was not detected above the applicable laboratory SDL in the of the confirmation soil samples within the remediated margins. The detected Total BTEX concentrations did not exceed the applicable NMOCD RAL for BTEX of 50 mg/kg, as summarized in Table 2.

Release Investigation and Remedial Action Plan

Antelope/Pronghorn SWD Line ■ Lea County, New Mexico

May 11, 2021 ■ Terracon Project No. AR207106



Total TPH was not detected above applicable laboratory SDLs in the confirmation soil samples analyzed within the remediated margins. The detected Total TPH concentrations did not exceed the applicable NMOCD RAL of 100 mg/kg for Total TPH, as summarized in Table 2.

Chloride was detected above applicable laboratory SDLs in 15 of the 17 soil samples analyzed within the remediated margins. The chloride concentrations ranged from 5.93 mg/kg in soil sample NW (0.5 ft bgs to 1 ft bgs) to 19.3 mg/kg in soil sample EW-2 (2 ft bgs to 2.5 ft bgs). The samples analyzed within the release margins did not exhibit chloride concentrations above the applicable NMOCD RAL for chloride of 600 mg/kg, as summarized in Table 2.

8.3.2 Confirmation Data Summary

Based on the review of the above confirmation analytical results, the areas within and surrounding the remediation do not exhibit concentrations above the NMOCD RAL for benzene, Total BTEX, chloride, and Total TPH. Based on these results below NMOCD RALs, Sections 9.0 and subsequent detail recommended closure of response actions to be implemented at the site. Terracon recommends beginning the restoration of the above-mentioned site and disposing of the stockpiled material.

9.0 SOIL REMEDIATION

Impacted soil will be remediated and managed according to the criteria described below which will remove contaminants to protect freshwaters, public health, and the environment.

9.1 Contaminated Soils

Soils exceeding the designated NMOCD RALs described in Section 6 will be remediated as follows:

- Highly impacted soils within the release margins, illustrated in Figure 2 of Appendix A, will be excavated either to a maximum depth of 3.5 feet bgs, or upon refusal due to encountering a restrictive barrier, or field evidence demonstrates that impacted materials have been sufficiently mitigated, whichever occurs first.
- Following excavation, vertical and horizontal delineation samples will be collected from the base and walls of the excavation to confirm the remaining levels of soil contaminants are below the desired NMOCD RALs.

Release Investigation and Remedial Action Plan
Antelope/Pronghorn SWD Line ■ Lea County, New Mexico
May 11, 2021 ■ Terracon Project No. AR207106



9.2 Soil Management

The selected method of soil management is removal and disposal at a NMOCD-approved facility. Excavated soils will be transported by truck (20 cubic yard capacity) and disposed of at the Lea Land dump facility operated by Lea Land, LLC. located in Carlsbad, New Mexico.

10.0 TERMINATION OF REMEDIAL ACTIONS, FINAL CLOSURE AND REPORTING

10.1 Termination of Remedial Action

Remedial action of soils at the site will be terminated when the following criteria have been met. Contaminated soils will be removed from the site. Sufficient contaminated soil will be removed so that residual contaminant concentrations are below the soil remediation action levels.

If soil action levels cannot practicably be attained, an evaluation of risk will be performed and provided to NMOCD for approval showing that the remaining contaminants will not pose a threat to present or foreseeable beneficial use of freshwater, public health, and the environment.

10.2 Final Closure

Upon termination of remedial actions (Sections 6 and 9), the area of the release has been closed by backfilling the excavated area, contouring to surrounding area topography, and reseeding the area with approved-native vegetative seed.

10.3 Final Report

Upon completion of remedial activities, a final report summarizing actions taken to mitigate environmental damage related to the release has been provided to NMOCD for approval.

APPENDIX A – FIGURES

Figure 1 – Topographic Map

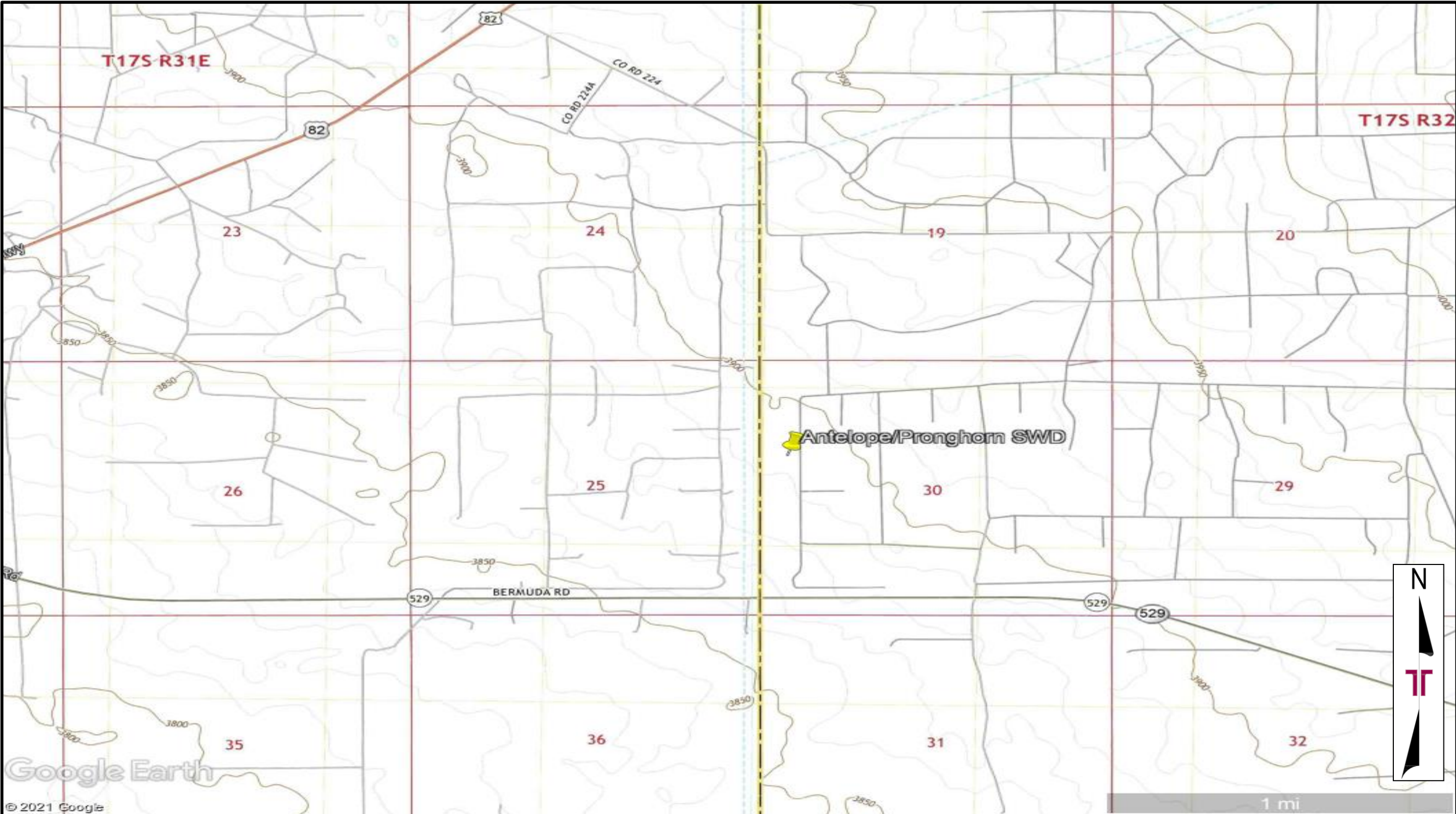
Figure 2 – Site Map

Figure 3 – Contamination Concentration Map

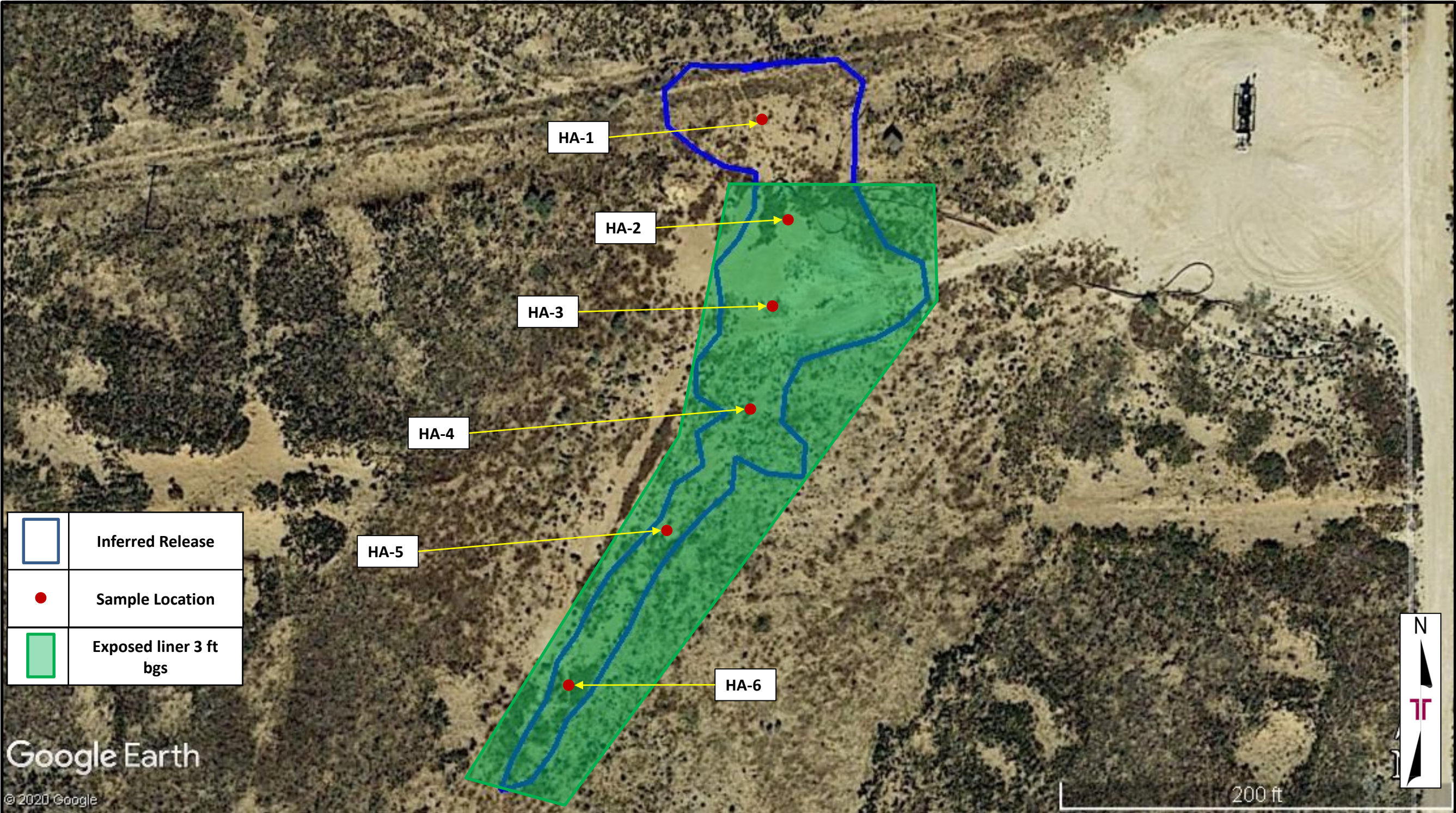
Figure 4 – Remediation Concentration Map

Figure 5 – NMOSE POD Location Map

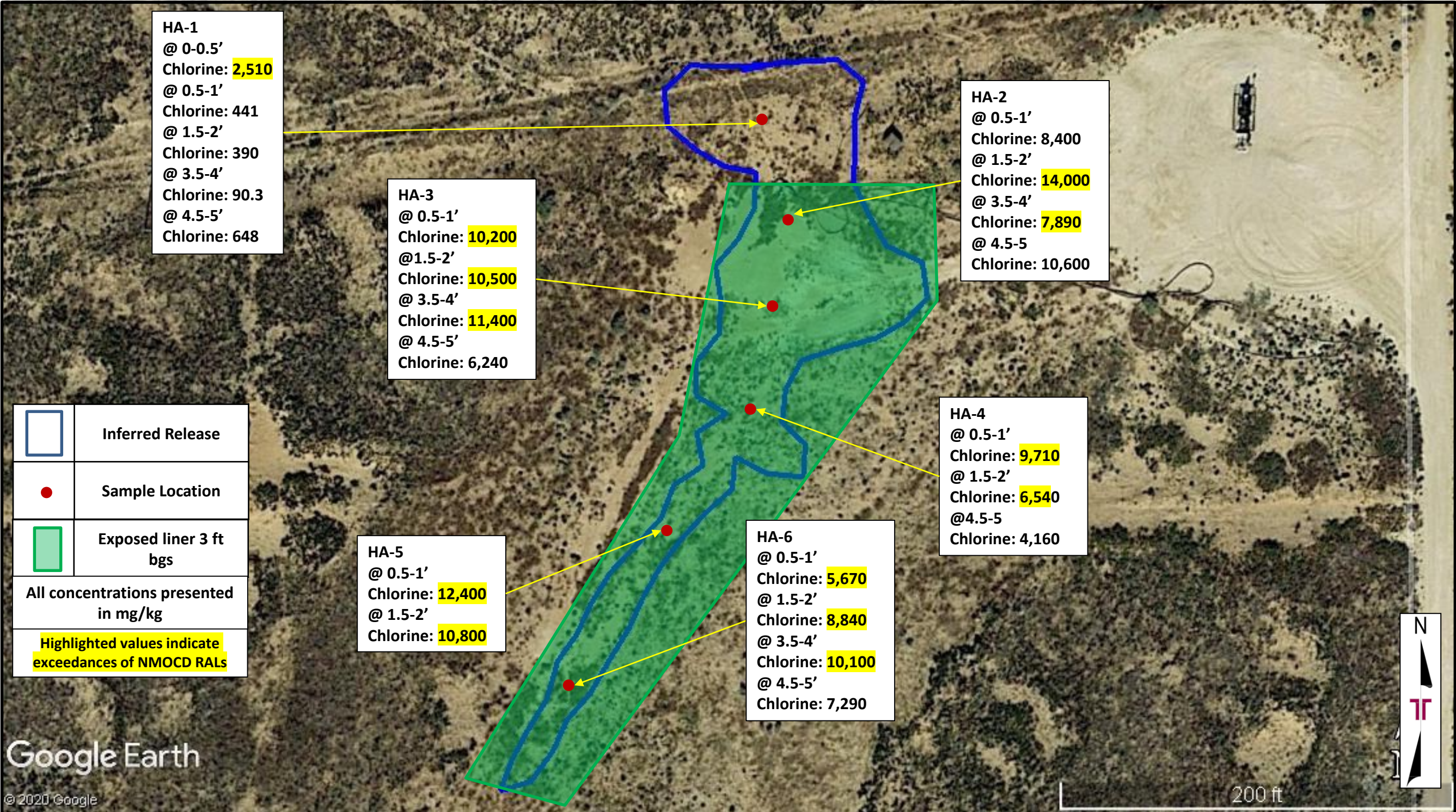
Figure 6 – Cave Karst Public UCP



Project No. AR207106		Figure 1 – Topographical Map Antelope PW Release 32.807408°, -103.813111° Lea County, New Mexico	
Scale:	As Shown		
Source:	USGS topoView		
Image Date:	01/08/2020		
Terracon Consulting Engineers & Scientists 5827 50th St. Suite 1 PH. (806) 300-0104 Lubbock, Texas 79424 FAX. (806) 797 0947			



Project No.	AR207106	 5827 50th St. Suite 1 PH. (806) 300-0104 Lubbock, Texas 79424 FAX. (806) 797 0947	Figure 1 – Site Map	
Scale:	As Shown		Antelope PW Release	
Source:	Google Earth		32.807408°, -103.813111°	
Image Date:	11/02/2017		Lea County, New Mexico	



Project No.	AR207106
Scale:	As Shown
Source:	Google Earth
Image Date:	11/02/2017

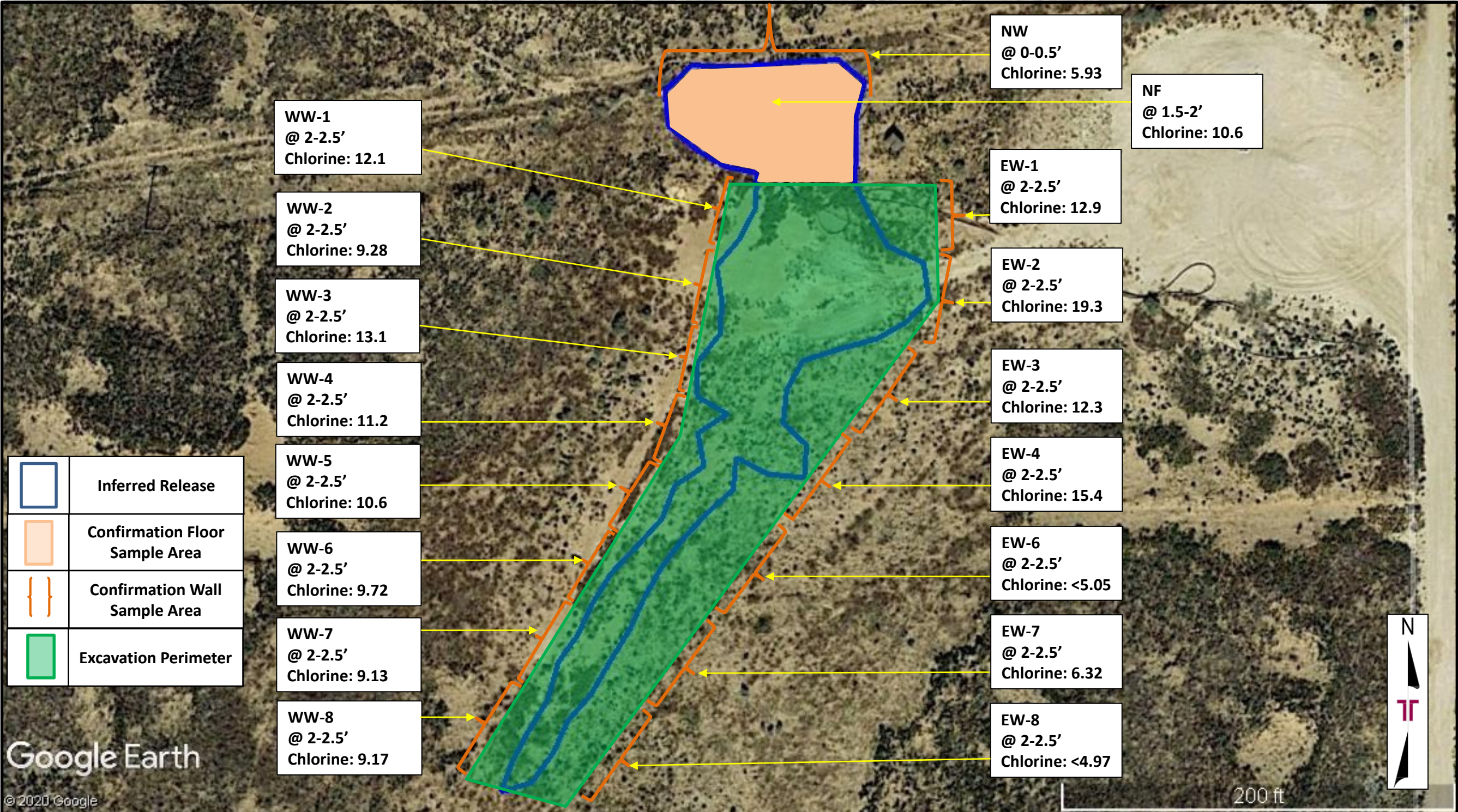
Terracon
Consulting Engineers & Scientists

5827 50th St. Suite 1
PH. (806) 300-0104

Lubbock, Texas 79424
FAX. (806) 797 0947

Figure 3 – Chlorine Contamination Concentration Map

Antelope PW Release
32.807408°, -103.813111°
Lea County, New Mexico



Project No.	AR207106
Scale:	As Shown
Source:	Google Earth
Image Date:	11/02/2017

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Consulting Engineers & Scientists

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Lubbock, Texas 79424
FAX. (806) 797 0947

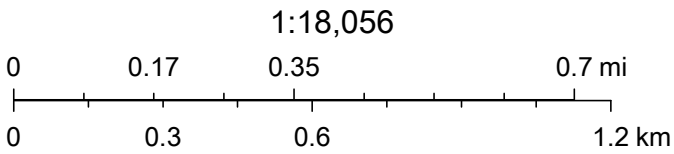
Figure 4 – Remediation Concentration Map
Antelope PW Release 32.807408°, -103.813111° Lea County, New Mexico

NMOSE POD Location Map

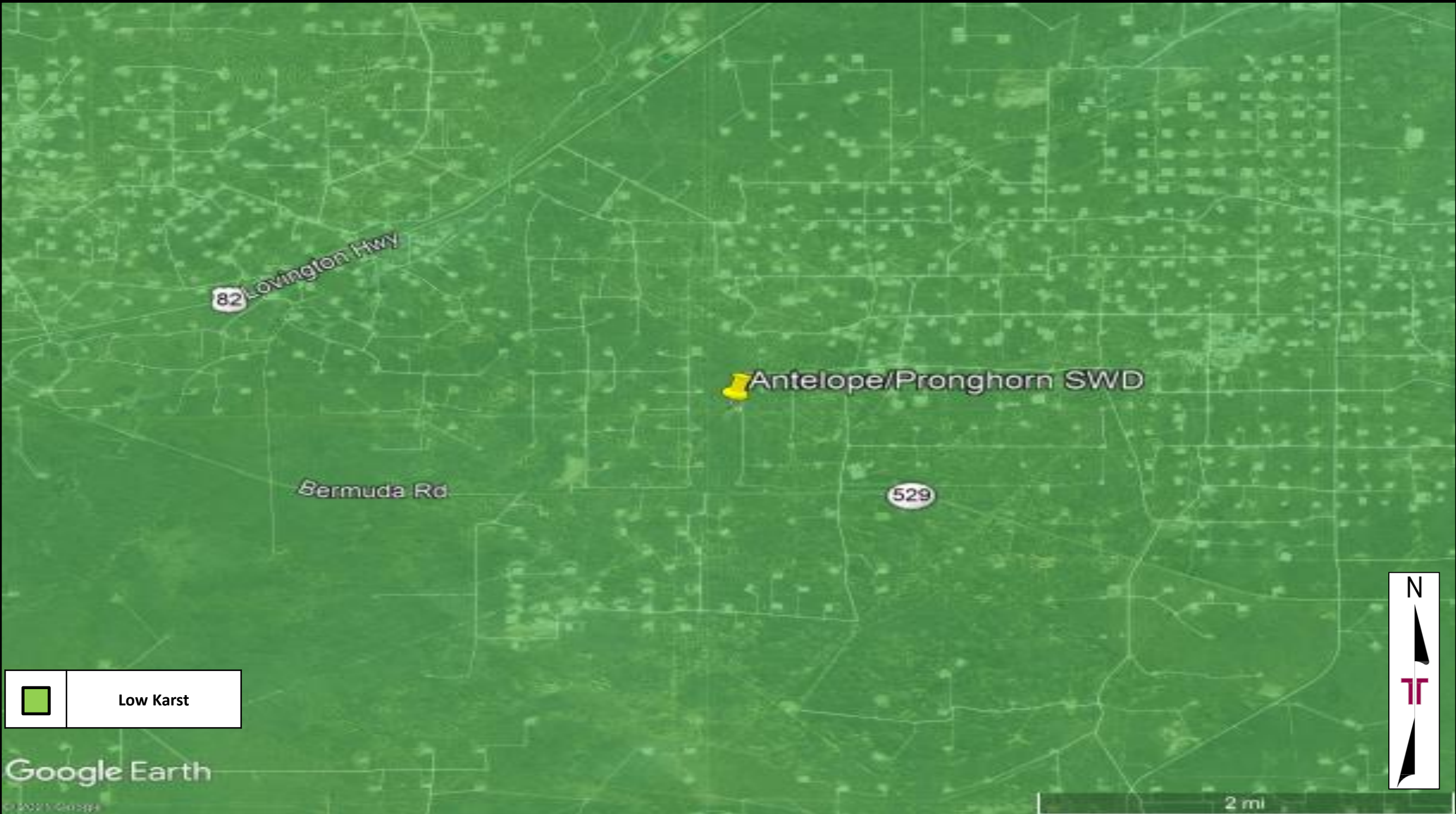


3/9/2021, 12:53:03 PM

-  Override 1
-  Pending
-  Plugged
-  Active
-  OSE District Boundary
-  Both Estates
-  SiteBoundaries
-  New Mexico State Trust Lands



USDA FSA, GeoEye, Maxar, Esri, HERE, iPC, U.S. Department of Energy Office of Legacy Management, Esri, HERE, Garmin, iPC



Project No.	AR207106	Figure 6 – Cave Karst Public UCP Map	
Scale:	As Shown	Antelope Release	
Source:	USGS	32.80751 °,-103.81314°	
Date:	2017	Lea County, New Mexico	
		Terracon Consulting Engineers & Scientists 5847 50th St. Lubbock, Texas 79424 PH. (806) 300-0104 FAX. (806) 797 0947	

APPENDIX B – TABLES & PROCEDURES

Exhibit 1 – Soil Sampling Procedures

Table 1 – Closure Criteria for Soils Impacted by a Release

Table 2 – Soil Sample Analytical Results

EXHIBIT 1**SOIL SAMPLING PROCEDURES**Soil Sampling Procedures

Soil sampling for laboratory analysis was conducted according to NMOCD-approved industry standards or other NMOCD-approved procedures. Accepted NMOCD soil sampling procedures and laboratory analytical methods are as follows:

- Collect samples in clean, air-tight glass jars supplied by the laboratory which will conduct the analysis or from a reliable laboratory equipment supplier.
- Label the samples with a unique code for each sample.
- Cool and store samples with cold packs or on ice.
- Promptly ship the sample to the lab for analysis following chain of custody procedures.
- All samples must be analyzed within the holding times for the laboratory analytical method specified by EPA.

Analytical Methods

All soil samples must be analyzed using EPA methods, or by other NMOCD-approved methods and must be analyzed within the holding time specified by the method. Below are laboratory analytical methods the selected laboratory will use for analysis of soil samples analyzed for petroleum-related constituents.

- Chloride – EPA Method 300.0
- Total Petroleum Hydrocarbons - TPH (GRO+DRO+MRO) – EPA Method 8015M
- Benzene, toluene, ethylbenzene and total xylenes (BTEX) – EPA Method 8021B
- Benzene – EPA Method 8021B

Table 1			
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 8015 M	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
51 feet-100 feet	Chloride***	EPA 300.0 or SM4500 Cl B	10,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015 M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015 M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
>100 feet	Chloride***	EPA 300.0 or SM4500 Cl B	20,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015 M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015 M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

**Numerical limits or natural background level, whichever is greater

***This applies to releases of produced water or other fluids, which may contain chloride

TABLE 2 SOIL SAMPLE ANALYTICAL RESULTS - BTEX ¹ , Chloride ² , and TPH ³ Pronghorn SWD Pipeline Release Terracon Project No. AR207106									
Sample I.D.	Sample Depth (ft. bgs)	Sample Type	Sample Date	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
						GRO	DRO	MRO	TOTAL
Background Samples									
BG-1 (0.5-1)	0.5-1	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	9.06	ND	22.2	ND	22.2
BG-1 (1.5-2)	1.5-2	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	12.5	17.2	ND	ND	17.2
BG-1 (3.5-4)	3.5-4	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	8.64	ND	ND	ND	ND
BG-1 (4.5-5)	4.5-5	Grab	06/17/20	Benzene - ND Toluene - 0.000465 Ethylbenzene - ND Total Xylenes - ND Total BTEX - 0.000465	11.2	ND	ND	ND	ND
BG-2 (0.5-1)	0.5-1	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	13.3	16.5 J	ND	ND	16.5
BG-2 (1.5-2)	1.5-2	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	10.3	18.2 J	ND	ND	18.2
BG-2 (3.5-4)	3.5-4	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	12.4	ND	ND	ND	ND
BG-2 (4.5-5)	4.5-5	Grab	06/17/20	Benzene - ND Toluene - 0.000699 Ethylbenzene - N Total Xylenes - ND Total BTEX - 0.000699	23.9	ND	ND	ND	ND
NMOCD Reclamation Standards ⁴ (Applicable for Soils from the Surface to 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	N/A			100
NMOCD Remediation and Delineation Standards ⁵ (Applicable for Soils at Depths Greater than 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	20,000	1,000	N/A		2,500

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B

2. Chloride = Chloride analyzed by EPA Method 300.

3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/MRO)

4. New Mexico Administration Code (NMAC) Restoration, Reclamation, and Re-vegetation (19.15.29.13) New Mexico Administration Code (NMAC) – D (Reclamation of areas no longer in use) for soils extending to 4 ft. bgs

5. New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards are proposed in 19.15.29.12 NMAC - N, 8/14/2018

< = Constituent not detected above the indicated laboratory SDL

NA = Not Analyzed

N/A = Not Applicable

Bold and Highlight denotes concentrations that exceed the New Mexico Oil Conservation Division (NMOCD) Reclamation and/or Remediation and Delineation Standards.

TABLE 2 SOIL SAMPLE ANALYTICAL RESULTS - BTEX ¹ , Chloride ² , and TPH ³ Pronghorn SWD Pipeline Release Terracon Project No. AR207106									
Sample I.D.	Sample Depth (ft. bgs)	Sample Type	Sample Date	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
						GRO	DRO	MRO	TOTAL
Release Margins Samples (Off Pad)									
HA-1 (0-0.5)	0-0.5	Grab	06/17/20	Benzene - ND Toluene - 0.0014 Ethylbenzene - ND Total Xylenes - ND Total BTEX - 0.0014	2,510	15.3	15.9	ND	31.2
HA-1 (0.5-1)	0.5-1	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	441	26.3	ND	ND	26.3
HA-1 (1.5-2)	1.5-2	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	390	34.1	ND	ND	34.1
HA-1 (3.5-4)	3.5-4	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	90.3	30.0	ND	ND	30.0
HA-1 (4.5-5)	4.5-5	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	648	ND	ND	ND	ND
HA-2 (0.5-1)	0.5-1	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	8,400	28.9	30.9	ND	59.8
HA-2 (1.5-2)	1.5-2	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	14,000	22.5	ND	ND	22.5
Liner Encountered at approximately 3 feet bgs									
HA-2 (3.5-4)	3.5-4	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	7,890	20.0	ND	ND	20.0
HA-2 (4.5-5)	4.5-5	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	10,600	ND	ND	ND	ND
HA-3 (0.5-1)	0.5-1	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	10,200	26.1	ND	ND	26.1
HA-3 (1.5-2)	1.5-2	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	10,500	24.6	ND	ND	24.6
Liner Encountered at approximately 3 feet bgs									
HA-3 (3.5-4)	3.5-4	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	11,400	21.1	ND	ND	21.1
HA-3 (4.5-5)	4.5-5	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	6,240	16.3	ND	ND	16.3
NMOCD Reclamation Standards ⁴ (Applicable for Soils from the Surface to 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	N/A			100
NMOCD Remediation and Delineation Standards ⁵ (Applicable for Soils at Depths Greater than 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	20,000	1,000	N/A	2,500	

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B

2. Chloride = Chloride analyzed by EPA Method 300.

3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/MRO)

4. New Mexico Administration Code (NMAC) Restoration, Reclamation, and Re-vegetation (19.15.29.13) New Mexico Administration Code (NMAC) – D (Reclamation of areas no longer in use) for soils extending to 4 ft. bgs

5. New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards are proposed in 19.15.29.12 NMAC - N, 8/14/2018

< = Constituent not detected above the indicated laboratory SDL.

NA = Not Analyzed

N/A = Not Applicable

Bold and Highlight denotes concentrations that exceed the New Mexico Oil Conservation Division (NMOCD) Reclamation and/or Remediation and Delineation Standards.

TABLE 2 SOIL SAMPLE ANALYTICAL RESULTS - BTEX ¹ , Chloride ² , and TPH ³ Pronghorn SWD Pipeline Release Terracon Project No. AR207106									
Sample I.D.	Sample Depth (ft. bgs)	Sample Type	Sample Date	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
						GRO	DRO	MRO	TOTAL
Release Margins Samples (Off Pad)									
HA-4 (0.5-1)	0.5-1	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	9,710	26.2 J	ND	ND	26.2
HA-4 (1.5-2)	1.5-2	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	6,540	29.9	ND	ND	29.9
Liner Encountered at approximately 3 feet bgs									
HA-4 (4.5-5)	4.5-5	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	4,160	ND	ND	ND	ND
HA-5 (0.5-1)	0.5-1	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	12,400	22.0	ND	ND	22.0
HA-5 (1.5-2)	1.5-2	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	10,800	25.2	ND	ND	25.2
Liner Encountered at approximately 3 feet bgs									
HA-6 (0.5-1)	0.5-1	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	5,670	32.4	ND	ND	32.4
HA-6 (1.5-2)	1.5-2	Grab	06/17/20	Benzene - ND Toluene - 0.000815 Ethylbenzene - ND Total Xylenes - ND Total BTEX - 0.000815	8,840	ND	ND	ND	ND
Liner Encountered at approximately 3 feet bgs									
HA-6 (3.5-4)	3.5-4	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	10,100	ND	ND	ND	ND
HA-6 (4.5-5)	4.5-5	Grab	06/17/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	7,290	ND	ND	ND	ND
NMOCD Reclamation Standards ⁴ (Applicable for Soils from the Surface to 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	N/A			100
NMOCD Remediation and Delineation Standards ⁵ (Applicable for Soils at Depths Greater than 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	20,000	1,000	N/A		2,500

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B

2. Chloride = Chloride analyzed by EPA Method 300.

3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/MRO)

4. New Mexico Administration Code (NMAC) Restoration, Reclamation, and Re-vegetation (19.15.29.13) New Mexico Administration Code (NMAC) – D (Reclamation of areas no longer in use) for soils extending to 4 ft. bgs

5. New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards are proposed in 19.15.29.12 NMAC - N, 8/14/2018

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TABLE 2 SOIL SAMPLE ANALYTICAL RESULTS - BTEX ¹ , Chloride ² , and TPH ³ Pronghorn SWD Pipeline Release Terracon Project No. AR207106									
Sample I.D.	Sample Depth (ft. bgs)	Sample Type	Sample Date	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
						GRO	DRO	MRO	TOTAL
Confirmation Samples									
NF (1.5-2)	1.5-2	Composite	12/09/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	10.6	ND	ND	ND	ND
NW (0.5-1)	0.5-1	Composite	12/09/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	5.93	ND	ND	ND	ND
WW-1 (2-2.5)	2-2.5	Composite	12/09/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	12.1	ND	ND	ND	ND
WW-2 (2-2.5)	2-2.5	Composite	12/09/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	9.28	ND	ND	ND	ND
WW-3 (2-2.5)	2-2.5	Composite	12/09/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	13.1	ND	ND	ND	ND
WW-4 (2-2.5)	2-2.5	Composite	12/09/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	11.2	ND	ND	ND	ND
WW-5 (2-2.5)	2-2.5	Composite	12/09/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	10.6	ND	ND	ND	ND
WW-6 (2-2.5)	2-2.5	Composite	12/09/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	9.72	ND	ND	ND	ND
WW-7 (2-2.5)	2-2.5	Composite	12/09/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	9.13	ND	ND	ND	ND
WW-8 (2-2.5)	2-2.5	Composite	12/09/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	9.17	ND	ND	ND	ND
EW-1 (2-2.5)	2-2.5	Composite	12/09/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	12.9	ND	ND	ND	ND
EW-2 (2-2.5)	2-2.5	Composite	12/09/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	19.3	ND	ND	ND	ND
EW-3 (2-2.5)	2-2.5	Composite	12/09/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	12.3	ND	ND	ND	ND
EW-4 (2-2.5)	2-2.5	Composite	12/09/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	15.4	ND	ND	ND	ND
EW-6 (2-2.5)	2-2.5	Composite	12/09/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	ND	ND	ND	ND	ND
EW-7 (2-2.5)	2-2.5	Composite	12/09/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	6.32	ND	ND	ND	ND
EW-8 (2-2.5)	2-2.5	Composite	12/09/20	Benzene - ND Toluene - ND Ethylbenzene - ND Total Xylenes - ND Total BTEX - ND	ND	ND	ND	ND	ND
NMOCD Reclamation Standards ⁴ (Applicable for Soils from the Surface to 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	600	N/A			100
NMOCD Remediation and Delineation Standards ⁵ (Applicable for Soils at Depths Greater than 4 ft. Below Grade Surface)				Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50	20,000	1,000	N/A	2,500	

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B

2. Chloride = Chloride analyzed by EPA Method 300.

3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/MRO)

4. New Mexico Administration Code (NMAC) Restoration, Reclamation, and Re-vegetation (19.15.29.13) New Mexico Administration Code (NMAC) -- D (Reclamation of areas no longer in use) for soils extending to 4 ft. bgs

5. New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards are proposed in 19.15.29.12 NMAC - N, 8/14/2018

< = Constituent not detected above the indicated laboratory SDL

NA = Not Analyzed

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APPENDIX C – PHOTOGRAPHIC LOG

Antelope PW Release ■ Lea County, New Mexico
May 11, 2021 ■ Terracon Project No. AR207106

Terracon



PHOTO 1: View of release point and flat topography, facing south. 6/17/2020



PHOTO 2: View of overspray and natural topography, facing northwest. 6/17/2020

Responsive ■ Resourceful ■ Reliable

Antelope PW Release ■ Lea County, New Mexico
May 11, 2021 ■ Terracon Project No. AR207106

Terracon



PHOTO 3: View of liner edges near HA-3, facing south. 6/17/2020



PHOTO 4: View of liner edges near HA-4, facing southeast. 6/17/2020

Responsive ■ Resourceful ■ Reliable

Antelope PW Release ■ Lea County, New Mexico
May 11, 2021 ■ Terracon Project No. AR207106

Terracon



PHOTO 5: View of liner edges near HA-5, facing southeast. 6/17/2020



PHOTO 6: View of the excavated area and exposed liner 3 feet bgs, facing northeast .10/7/2020

Responsive ■ Resourceful ■ Reliable

Antelope PW Release ■ Lea County, New Mexico
May 11, 2021 ■ Terracon Project No. AR207106

Terracon



PHOTO 7: View of the excavated area and exposed liner 3 feet bgs, facing northwest .10/7/2020



PHOTO 8: View of the excavated area and exposed liner 3 feet bgs, facing north .10/7/2020

Responsive ■ Resourceful ■ Reliable

Antelope PW Release ■ Lea County, New Mexico
May 11, 2021 ■ Terracon Project No. AR207106

Terracon



PHOTO 9: View of the excavated area and exposed liner 3 feet bgs, facing northeast .10/7/2020



PHOTO 11: View of hydrovacted area and exposed connector, facing east .10/7/2020

Responsive ■ Resourceful ■ Reliable

Antelope PW Release ■ Lea County, New Mexico
May 11, 2021 ■ Terracon Project No. AR207106

Terracon



PHOTO 12: View of the surrounding area and exposed liner, facing south .10/7/2020

Responsive ■ Resourceful ■ Reliable

APPENDIX D – ANALYTICAL REPORT AND CHAIN OF CUSTODY



Certificate of Analysis Summary 664998

Terracon-Lubbock, Lubbock, TX

Project Name: Pronghorn SWD Pipeline Release

Project Id: AR207106

Date Received in Lab: Fri 06.19.2020 16:43

Contact: Joseph Guesnier

Report Date: 06.26.2020 13:26

Project Location: Client: Spur Energy Partners

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	664998-002	664998-003	664998-004	664998-005	664998-007	664998-008
	<i>Field Id:</i>	BG-1 (0.5-1)	BG-1 (1.5-2)	BG-1 (3.5-4)	BG-1 (4.5-5)	BG-2 (0.5-1)	BG-2 (1.5-2)
	<i>Depth:</i>	0.5-1 ft	1.5-2 ft	3.5-4 ft	4.5-5 ft	0.5-1 ft	1.5-2 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	06.17.2020 11:05	06.17.2020 11:10	06.17.2020 11:15	06.17.2020 11:20	06.17.2020 11:30	06.17.2020 11:35
BTEX by EPA 8021B SUB: T104704400-19-19	<i>Extracted:</i>	06.23.2020 13:00	06.23.2020 13:00	06.23.2020 13:00	06.26.2020 10:13	06.23.2020 13:00	06.23.2020 13:00
	<i>Analyzed:</i>	06.24.2020 10:00	06.24.2020 10:21	06.24.2020 10:41	*** **	06.24.2020 11:01	06.24.2020 11:22
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000383 0.00199	<0.000382 0.00198	<0.000383 0.00199	<0.000389 0.00202	<0.000383 0.00199	<0.000384 0.00200
Toluene		<0.000453 0.00199	<0.000452 0.00198	<0.000454 0.00199	0.000465 J 0.00202	<0.000453 0.00199	<0.000455 0.00200
Ethylbenzene		<0.000561 0.00199	<0.000560 0.00198	<0.000563 0.00199	<0.000570 0.00202	<0.000561 0.00199	<0.000564 0.00200
m,p-Xylenes		<0.00101 0.00398	<0.00101 0.00397	<0.00101 0.00398	<0.00102 0.00404	<0.00101 0.00398	<0.00101 0.00399
o-Xylene		<0.000342 0.00199	<0.000342 0.00198	<0.000343 0.00199	<0.000348 0.00202	<0.000342 0.00199	<0.000344 0.00200
Total Xylenes		<0.000342 0.00199	<0.000342 0.00198	<0.000343 0.00199	<0.000348 0.00202	<0.000342 0.00199	<0.000344 0.00200
Total BTEX		<0.000342 0.00199	<0.000342 0.00198	<0.000343 0.00199	0.000465 J 0.00202	<0.000342 0.00199	<0.000344 0.00200
Inorganic Anions by EPA 300/300.1 SUB: T104704400-19-19	<i>Extracted:</i>	06.23.2020 14:50	06.23.2020 14:50	06.23.2020 14:50	06.23.2020 14:50	06.23.2020 14:50	06.23.2020 14:50
	<i>Analyzed:</i>	06.23.2020 16:29	06.23.2020 16:24	06.23.2020 16:34	06.23.2020 16:39	06.23.2020 17:00	06.23.2020 17:05
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		9.06 4.99	12.5 5.05	8.64 4.96	11.2 4.98	13.3 5.00	10.3 5.04
TPH By SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	06.23.2020 11:00	06.23.2020 11:00	06.23.2020 11:00	06.24.2020 12:00	06.23.2020 11:00	06.23.2020 11:00
	<i>Analyzed:</i>	06.23.2020 12:47	06.23.2020 13:52	06.23.2020 14:14	06.24.2020 16:55	06.23.2020 14:35	06.23.2020 14:57
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 50.0	17.2 J 49.9	<15.0 49.9	<15.0 49.9	16.5 J 50.0	18.2 J 50.0
Diesel Range Organics (DRO)		22.2 J 50.0	<15.0 49.9	<15.0 49.9	<15.0 49.9	<15.0 50.0	<15.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 50.0	<15.0 49.9	<15.0 49.9	<15.0 49.9	<15.0 50.0	<15.0 50.0
Total TPH		22.2 J 50.0	17.2 J 49.9	<15.0 49.9	<15.0 49.9	16.5 J 50.0	18.2 J 50.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

Jessica Kramer
Project Manager



Certificate of Analysis Summary 664998

Terracon-Lubbock, Lubbock, TX

Project Name: Pronghorn SWD Pipeline Release

Project Id: AR207106
Contact: Joseph Guesnier
Project Location: Client: Spur Energy Partners

Date Received in Lab: Fri 06.19.2020 16:43
Report Date: 06.26.2020 13:26
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	664998-009	664998-010	664998-011	664998-012	664998-013	664998-014
	<i>Field Id:</i>	BG-2 (3.5-4)	BG-2 (4.5-5)	HA-1 (0-0.5)	HA-1 (0-5-1)	HA-1 (1-5-2)	HA-1 (3-5-4)
	<i>Depth:</i>	3.5-4 ft	4.5-5 ft	0-0.5 ft	0.5-1 ft	1.5-2 ft	3.5-4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	06.17.2020 11:40	06.17.2020 11:45	06.17.2020 11:50	06.17.2020 11:55	06.17.2020 12:00	06.17.2020 12:05
BTEX by EPA 8021B SUB: T104704400-19-19	<i>Extracted:</i>	06.23.2020 16:30	06.26.2020 10:13	06.26.2020 10:13	06.23.2020 16:30	06.23.2020 16:30	06.23.2020 16:30
	<i>Analyzed:</i>	06.24.2020 10:02	*** ** *	*** ** *	06.24.2020 10:22	06.24.2020 10:42	06.24.2020 11:03
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000383 0.00199	<0.000384 0.00200	<0.000381 0.00198	<0.000388 0.00202	<0.000386 0.00200	<0.000386 0.00201
Toluene		<0.000453 0.00199	0.000699 J 0.00200	0.00140 J 0.00198	<0.000459 0.00202	<0.000457 0.00200	<0.000457 0.00201
Ethylbenzene		<0.000561 0.00199	<0.000564 0.00200	<0.000559 0.00198	<0.000569 0.00202	<0.000566 0.00200	<0.000567 0.00201
m,p-Xylenes		<0.00101 0.00398	<0.00101 0.00399	<0.00100 0.00396	<0.00102 0.00403	<0.00102 0.00401	<0.00102 0.00402
o-Xylene		<0.000342 0.00199	<0.000344 0.00200	<0.000341 0.00198	<0.000347 0.00202	<0.000345 0.00200	<0.000346 0.00201
Total Xylenes		<0.000342 0.00199	<0.000344 0.00200	<0.000341 0.00198	<0.000347 0.00202	<0.000345 0.00200	<0.000346 0.00201
Total BTEX		<0.000342 0.00199	0.000699 J 0.00200	0.00140 J 0.00198	<0.000347 0.00202	<0.000345 0.00200	<0.000346 0.00201
Inorganic Anions by EPA 300/300.1 SUB: T104704400-19-19	<i>Extracted:</i>	06.23.2020 14:50	06.23.2020 14:50	06.23.2020 14:50	06.23.2020 14:50	06.23.2020 14:50	06.23.2020 14:50
	<i>Analyzed:</i>	06.23.2020 17:10	06.23.2020 17:20	06.23.2020 17:15	06.23.2020 17:35	06.23.2020 17:40	06.23.2020 17:55
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		12.4 4.95	23.9 5.03	2510 25.0	441 X 4.96	390 5.00	90.3 5.04
TPH By SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	06.23.2020 11:00	06.24.2020 12:00	06.24.2020 12:00	06.23.2020 11:00	06.23.2020 11:00	06.23.2020 11:00
	<i>Analyzed:</i>	06.23.2020 15:19	06.24.2020 17:14	06.24.2020 17:52	06.23.2020 15:41	06.23.2020 16:03	06.23.2020 16:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 50.0	<15.0 50.0	15.3 J 49.9	26.3 J 49.9	34.1 J 49.8	30.0 J 50.0
Diesel Range Organics (DRO)		<15.0 50.0	<15.0 50.0	15.9 J 49.9	<15.0 49.9	<14.9 49.8	<15.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 50.0	<15.0 50.0	<15.0 49.9	<15.0 49.9	<14.9 49.8	<15.0 50.0
Total TPH		<15.0 50.0	<15.0 50.0	31.2 J 49.9	26.3 J 49.9	34.1 J 49.8	30.0 J 50.0

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Jessica Kramer
Project Manager



Certificate of Analysis Summary 664998

Terracon-Lubbock, Lubbock, TX

Project Name: Pronghorn SWD Pipeline Release

Project Id: AR207106

Date Received in Lab: Fri 06.19.2020 16:43

Contact: Joseph Guesnier

Report Date: 06.26.2020 13:26

Project Location: Client: Spur Energy Partners

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	664998-015	664998-017	664998-018	664998-019	664998-020	664998-022
	<i>Field Id:</i>	HA-1 (4-5-5)	HA-2 (0.5-1)	HA-2 (1-5-2)	HA-2 (3-5-4)	HA-2 (4.5-5)	HA-3 (0-5-1)
	<i>Depth:</i>	4.5-5 ft	0.5-1 ft	1.5-2 ft	3.5-4 ft	4.5-5 ft	1.5-2 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	06.17.2020 12:10	06.17.2020 12:20	06.17.2020 12:25	06.17.2020 12:30	06.17.2020 12:35	06.17.2020 12:45
BTEX by EPA 8021B SUB: T104704400-19-19	<i>Extracted:</i>	06.26.2020 10:13	06.23.2020 16:30	06.23.2020 16:30	06.23.2020 16:45	06.26.2020 10:13	06.23.2020 16:45
	<i>Analyzed:</i>	*** ** *	06.24.2020 11:49	06.24.2020 12:09	06.24.2020 10:00	*** ** *	06.24.2020 10:20
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000383 0.00199	<0.000383 0.00199	<0.000384 0.00200	<0.000384 0.00200	<0.000383 0.00199	<0.000383 0.00199
Toluene		<0.000454 0.00199	<0.000454 0.00199	<0.000455 0.00200	<0.000455 0.00200	<0.000454 0.00199	<0.000453 0.00199
Ethylbenzene		<0.000563 0.00199	<0.000563 0.00199	<0.000564 0.00200	<0.000564 0.00200	<0.000563 0.00199	<0.000561 0.00199
m,p-Xylenes		<0.00101 0.00398	<0.00101 0.00398	<0.00101 0.00399	<0.00101 0.00399	<0.00101 0.00398	<0.00101 0.00398
o-Xylene		<0.000343 0.00199	<0.000343 0.00199	<0.000344 0.00200	<0.000344 0.00200	<0.000343 0.00199	<0.000342 0.00199
Total Xylenes		<0.000343 0.00199	<0.000343 0.00199	<0.000344 0.00200	<0.000344 0.00200	<0.000343 0.00199	<0.000342 0.00199
Total BTEX		<0.000343 0.00199	<0.000343 0.00199	<0.000344 0.00200	<0.000344 0.00200	<0.000343 0.00199	<0.000342 0.00199
Inorganic Anions by EPA 300/300.1 SUB: T104704400-19-19	<i>Extracted:</i>	06.23.2020 14:50	06.23.2020 14:50	06.23.2020 14:50	06.23.2020 14:50	06.23.2020 14:50	06.23.2020 15:25
	<i>Analyzed:</i>	06.23.2020 18:00	06.23.2020 18:11	06.23.2020 18:16	06.23.2020 18:21	06.23.2020 18:26	06.23.2020 16:11
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		648 4.99	8400 49.9	14000 249	7890 50.3	10600 99.2	10200 50.3
TPH By SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	06.24.2020 12:00	06.23.2020 11:00	06.23.2020 11:00	06.23.2020 11:00	06.24.2020 12:00	06.23.2020 11:00
	<i>Analyzed:</i>	06.24.2020 18:12	06.23.2020 16:46	06.23.2020 17:29	06.23.2020 17:51	06.24.2020 18:31	06.23.2020 18:12
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 50.0	28.9 J 49.9	22.5 J 50.0	20.0 J 49.9	<15.0 50.0	26.1 J 50.0
Diesel Range Organics (DRO)		<15.0 50.0	30.9 J 49.9	<15.0 50.0	<15.0 49.9	<15.0 50.0	<15.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 50.0	<15.0 49.9	<15.0 50.0	<15.0 49.9	<15.0 50.0	<15.0 50.0
Total TPH		<15.0 50.0	59.8 49.9	22.5 J 50.0	20.0 J 49.9	<15.0 50.0	26.1 J 50.0

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Jessica Kramer
Project Manager



Certificate of Analysis Summary 664998

Terracon-Lubbock, Lubbock, TX

Project Name: Pronghorn SWD Pipeline Release

Project Id: AR207106
Contact: Joseph Guesnier
Project Location: Client: Spur Energy Partners

Date Received in Lab: Fri 06.19.2020 16:43
Report Date: 06.26.2020 13:26
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	664998-023	664998-024	664998-025	664998-027	664998-028	664998-029
	<i>Field Id:</i>	HA-3 (1-5-2)	HA-3 (3-5-4)	HA-3 (4.5-5)	HA-4 (0.5-1)	HA-4 (1.5-2)	HA-4 (4.5-5)
	<i>Depth:</i>	3.5-4 ft	4.5-5 ft	0-0.5 ft	1.5-2 ft	1.5-2 ft	4.5-5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	06.17.2020 12:50	06.17.2020 12:55	06.17.2020 13:00	06.17.2020 13:10	06.17.2020 13:15	06.17.2020 13:25
BTEX by EPA 8021B SUB: T104704400-19-19	<i>Extracted:</i>	06.23.2020 16:45	06.23.2020 16:45	06.26.2020 10:13	06.23.2020 16:45	06.23.2020 16:45	06.26.2020 10:13
	<i>Analyzed:</i>	06.24.2020 10:41	06.24.2020 11:01	*** ** *	06.24.2020 11:22	06.24.2020 11:42	*** ** *
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000385 0.00200	<0.000387 0.00201	<0.000386 0.00201	<0.000387 0.00201	<0.000385 0.00200	<0.000383 0.00199
Toluene		<0.000456 0.00200	<0.000458 0.00201	<0.000457 0.00201	<0.000458 0.00201	<0.000456 0.00200	<0.000454 0.00199
Ethylbenzene		<0.000565 0.00200	<0.000568 0.00201	<0.000567 0.00201	<0.000568 0.00201	<0.000565 0.00200	<0.000563 0.00199
m,p-Xylenes		<0.00101 0.00400	<0.00102 0.00402	<0.00102 0.00402	<0.00102 0.00402	<0.00101 0.00400	<0.00101 0.00398
o-Xylene		<0.000344 0.00200	<0.000346 0.00201	<0.000346 0.00201	<0.000346 0.00201	<0.000344 0.00200	<0.000343 0.00199
Total Xylenes		<0.000344 0.00200	<0.000346 0.00201	<0.000346 0.00201	<0.000346 0.00201	<0.000344 0.00200	<0.000343 0.00199
Total BTEX		<0.000344 0.00200	<0.000346 0.00201	<0.000346 0.00201	<0.000346 0.00201	<0.000344 0.00200	<0.000343 0.00199
Inorganic Anions by EPA 300/300.1 SUB: T104704400-19-19	<i>Extracted:</i>	06.23.2020 15:25	06.23.2020 15:25	06.23.2020 15:25	06.23.2020 15:25	06.23.2020 15:25	06.23.2020 15:25
	<i>Analyzed:</i>	06.23.2020 16:17	06.23.2020 16:24	06.23.2020 16:43	06.23.2020 16:56	06.23.2020 17:02	06.23.2020 17:08
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		10500 99.6	11400 101	6240 50.5	9710 50.0	6540 50.1	4160 24.8
TPH By SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	06.23.2020 11:00	06.23.2020 11:00	06.24.2020 12:00	06.23.2020 11:00	06.23.2020 11:00	06.24.2020 12:00
	<i>Analyzed:</i>	06.23.2020 18:34	06.23.2020 18:55	06.25.2020 07:29	06.23.2020 19:16	06.23.2020 19:38	06.24.2020 19:09
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		24.6 J 50.0	21.1 J 49.9	16.3 J 49.9	26.2 J 50.0	29.9 J 50.0	<15.0 50.0
Diesel Range Organics (DRO)		<15.0 50.0	<15.0 49.9	<15.0 49.9	<15.0 50.0	<15.0 50.0	<15.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 50.0	<15.0 49.9	<15.0 49.9	<15.0 50.0	<15.0 50.0	<15.0 50.0
Total TPH		24.6 J 50.0	21.1 J 49.9	16.3 J 49.9	26.2 J 50.0	29.9 J 50.0	<15.0 50.0

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Jessica Kramer
Project Manager



Certificate of Analysis Summary 664998

Terracon-Lubbock, Lubbock, TX

Project Name: Pronghorn SWD Pipeline Release

Project Id: AR207106

Date Received in Lab: Fri 06.19.2020 16:43

Contact: Joseph Guesnier

Report Date: 06.26.2020 13:26

Project Location: Client: Spur Energy Partners

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	664998-031	664998-032	664998-034	664998-035	664998-036	664998-037
	<i>Field Id:</i>	HA-5 (0.5-1)	HA-5 (1.5-2)	HA-6 (0.5-1)	HA-6 (1.5-2)	HA-6 (3.5-4)	HA-6 (4.5-5)
	<i>Depth:</i>	0.5-1 ft	1.5-2 ft	0.5-1 ft	1.5-2 ft	3.5-4 ft	4.5-5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	06.17.2020 13:35	06.17.2020 13:15	06.17.2020 14:00	06.17.2020 14:05	06.17.2020 14:10	06.17.2020 14:15
BTEX by EPA 8021B SUB: T104704400-19-19	<i>Extracted:</i>	06.23.2020 16:45	06.23.2020 16:45	06.23.2020 16:45	06.23.2020 16:30	06.23.2020 16:30	06.26.2020 10:13
	<i>Analyzed:</i>	06.24.2020 12:03	06.24.2020 12:23	06.24.2020 12:43	06.24.2020 04:12	06.24.2020 04:33	** ** *
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.000383 0.00199	<0.000384 0.00200	<0.000384 0.00200	<0.000383 0.00199	<0.000383 0.00199	<0.000384 0.00200
Toluene		<0.000454 0.00199	<0.000455 0.00200	<0.000455 0.00200	0.000815 J 0.00199	<0.000454 0.00199	<0.000455 0.00200
Ethylbenzene		<0.000563 0.00199	<0.000564 0.00200	<0.000564 0.00200	<0.000561 0.00199	<0.000563 0.00199	<0.000564 0.00200
m,p-Xylenes		<0.00101 0.00398	<0.00101 0.00399	<0.00101 0.00399	<0.00101 0.00398	<0.00101 0.00398	<0.00101 0.00399
o-Xylene		<0.000343 0.00199	<0.000344 0.00200	<0.000344 0.00200	<0.000342 0.00199	<0.000343 0.00199	<0.000344 0.00200
Total Xylenes		<0.000343 0.00199	<0.000344 0.00200	<0.000344 0.00200	<0.000342 0.00199	<0.000343 0.00199	<0.000344 0.00200
Total BTEX		<0.000343 0.00199	<0.000344 0.00200	<0.000344 0.00200	0.000815 J 0.00199	<0.000343 0.00199	<0.000344 0.00200
Inorganic Anions by EPA 300/300.1 SUB: T104704400-19-19	<i>Extracted:</i>	06.23.2020 15:25	06.23.2020 15:25	06.23.2020 15:25	06.23.2020 15:25	06.23.2020 15:25	06.23.2020 15:25
	<i>Analyzed:</i>	06.23.2020 17:40	06.23.2020 17:59	06.23.2020 18:12	06.23.2020 18:18	06.23.2020 18:24	06.23.2020 18:31
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		12400 101	10800 99.2	5670 49.9	8840 49.7	10100 50.5	7290 50.5
TPH By SW8015 Mod SUB: T104704400-19-19	<i>Extracted:</i>	06.23.2020 11:00	06.23.2020 11:00	06.23.2020 11:00	06.23.2020 11:00	06.23.2020 11:00	06.24.2020 12:00
	<i>Analyzed:</i>	06.23.2020 19:59	06.23.2020 20:20	06.23.2020 20:41	06.23.2020 18:55	06.23.2020 19:16	06.24.2020 19:28
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		22.0 J 49.9	25.2 J 50.0	32.4 J 49.9	<15.0 50.0	<15.0 49.9	<15.0 49.9
Diesel Range Organics (DRO)		<15.0 49.9	<15.0 50.0	<15.0 49.9	<15.0 50.0	<15.0 49.9	<15.0 49.9
Motor Oil Range Hydrocarbons (MRO)		<15.0 49.9	<15.0 50.0	<15.0 49.9	<15.0 50.0	<15.0 49.9	<15.0 49.9
Total TPH		22.0 J 49.9	25.2 J 50.0	32.4 J 49.9	<15.0 50.0	<15.0 49.9	<15.0 49.9

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Jessica Kramer
Project Manager



Analytical Report 664998

for

Terracon-Lubbock

Project Manager: Joseph Guesnier

Pronghorn SWD Pipeline Release

AR207106

06.26.2020

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

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)



06.26.2020

Project Manager: **Joseph Guesnier**

Terracon-Lubbock

5827 50th st, Suite 1

Lubbock, TX 79424

Reference: XENCO Report No(s): **664998**

Pronghorn SWD Pipeline Release

Project Address: Client: Spur Energy Partners

Joseph Guesnier:

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) 664998. 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. 664998 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,

A handwritten signature in black ink that reads 'Jessica Kramer'. The signature is written in a cursive, flowing style.

Jessica Kramer

Project Manager

A Small Business and Minority Company

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Sample Cross Reference 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BG-1 (0.5-1)	S	06.17.2020 11:05	0.5 - 1 ft	664998-002
BG-1 (1.5-2)	S	06.17.2020 11:10	1.5 - 2 ft	664998-003
BG-1 (3.5-4)	S	06.17.2020 11:15	3.5 - 4 ft	664998-004
BG-1 (4.5-5)	S	06.17.2020 11:20	4.5 - 5 ft	664998-005
BG-2 (0.5-1)	S	06.17.2020 11:30	0.5 - 1 ft	664998-007
BG-2 (1.5-2)	S	06.17.2020 11:35	1.5 - 2 ft	664998-008
BG-2 (3.5-4)	S	06.17.2020 11:40	3.5 - 4 ft	664998-009
BG-2 (4.5-5)	S	06.17.2020 11:45	4.5 - 5 ft	664998-010
HA-1 (0-0.5)	S	06.17.2020 11:50	0 - 0.5 ft	664998-011
HA-1 (0.5-1)	S	06.17.2020 11:55	0.5 - 1 ft	664998-012
HA-1 (1.5-2)	S	06.17.2020 12:00	1.5 - 2 ft	664998-013
HA-1 (3.5-4)	S	06.17.2020 12:05	3.5 - 4 ft	664998-014
HA-1 (4.5-5)	S	06.17.2020 12:10	4.5 - 5 ft	664998-015
HA-2 (0.5-1)	S	06.17.2020 12:20	0.5 - 1 ft	664998-017
HA-2 (1.5-2)	S	06.17.2020 12:25	1.5 - 2 ft	664998-018
HA-2 (3.5-4)	S	06.17.2020 12:30	3.5 - 4 ft	664998-019
HA-2 (4.5-5)	S	06.17.2020 12:35	4.5 - 5 ft	664998-020
HA-3 (0.5-1)	S	06.17.2020 12:45	1.5 - 2 ft	664998-022
HA-3 (1.5-2)	S	06.17.2020 12:50	3.5 - 4 ft	664998-023
HA-3 (3.5-4)	S	06.17.2020 12:55	4.5 - 5 ft	664998-024
HA-3 (4.5-5)	S	06.17.2020 13:00	0 - 0.5 ft	664998-025
HA-4 (0.5-1)	S	06.17.2020 13:10	1.5 - 2 ft	664998-027
HA-4 (1.5-2)	S	06.17.2020 13:15	1.5 - 2 ft	664998-028
HA-4 (4.5-5)	S	06.17.2020 13:25	4.5 - 5 ft	664998-029
HA-5 (0.5-1)	S	06.17.2020 13:35	0.5 - 1 ft	664998-031
HA-5 (1.5-2)	S	06.17.2020 13:15	1.5 - 2 ft	664998-032
HA-6 (0.5-1)	S	06.17.2020 14:00	0.5 - 1 ft	664998-034
HA-6 (1.5-2)	S	06.17.2020 14:05	1.5 - 2 ft	664998-035
HA-6 (3.5-4)	S	06.17.2020 14:10	3.5 - 4 ft	664998-036
HA-6 (4.5-5)	S	06.17.2020 14:15	4.5 - 5 ft	664998-037
BG-1 (0-0.5)	S	06.17.2020 11:00	0 - 0.5 ft	Not Analyzed
BG-2 (0-0.5)	S	06.17.2020 11:25	0 - 0.5 ft	Not Analyzed
HA-2 (0-0.5)	S	06.17.2020 11:55	0 - 0.5 ft	Not Analyzed
HA-3 (0-0.5)	S	06.17.2020 12:40	0.5 - 1 ft	Not Analyzed
HA-4 (0-0.5)	S	06.17.2020 13:05	0 - 0.5 ft	Not Analyzed
HA-5 (0.0-5)	S	06.17.2020 13:30	0 - 0.5 ft	Not Analyzed
HA-6 (0-0.5)	S	06.17.2020 13:55	0 - 0.5 ft	Not Analyzed

**CASE NARRATIVE****Client Name: Terracon-Lubbock****Project Name: Pronghorn SWD Pipeline Release**Project ID: AR207106
Work Order Number(s): 664998Report Date: 06.26.2020
Date Received: 06.19.2020

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

Analytical non conformances and comments:

Batch: LBA-3129771 Inorganic Anions by EPA 300/300.1

Lab Sample ID 664998-012 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 664998-002, -003, -004, -005, -007, -008, -009, -010, -012, -013, -014, -015, -017, -018, -019, -020.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3129823 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.

Samples affected are: 664998-002,664998-003,664998-008,664998-007,664998-004.



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **BG-1 (0.5-1)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-002

Date Collected: 06.17.2020 11:05

Sample Depth: 0.5 - 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 14:50

Basis: Wet Weight

Seq Number: 3129771

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.06	4.99	0.857	mg/kg	06.23.2020 16:29		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	06.23.2020 12:47	U	1
Diesel Range Organics (DRO)	C10C28DRO	22.2	50.0	15.0	mg/kg	06.23.2020 12:47	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	06.23.2020 12:47	U	1
Total TPH	PHC635	22.2	50.0	15.0	mg/kg	06.23.2020 12:47	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-130	06.23.2020 12:47	
o-Terphenyl	84-15-1	89	%	70-130	06.23.2020 12:47	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **BG-1 (0.5-1)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-002

Date Collected: 06.17.2020 11:05

Sample Depth: 0.5 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 06.23.2020 13:00

Basis: Wet Weight

Seq Number: 3129823

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.24.2020 10:00	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	06.24.2020 10:00	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	06.24.2020 10:00	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.24.2020 10:00	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	06.24.2020 10:00	U	1
Total Xylenes	1330-20-7	<0.000342	0.00199	0.000342	mg/kg	06.24.2020 10:00	U	1
Total BTEX		<0.000342	0.00199	0.000342	mg/kg	06.24.2020 10:00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	88	%	70-130	06.24.2020 10:00			
4-Bromofluorobenzene	460-00-4	139	%	70-130	06.24.2020 10:00	**		



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **BG-1 (1.5-2)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-003

Date Collected: 06.17.2020 11:10

Sample Depth: 1.5 - 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 14:50

Basis: Wet Weight

Seq Number: 3129771

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.5	5.05	0.867	mg/kg	06.23.2020 16:24		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	17.2	49.9	15.0	mg/kg	06.23.2020 13:52	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	49.9	15.0	mg/kg	06.23.2020 13:52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	06.23.2020 13:52	U	1
Total TPH	PHC635	17.2	49.9	15.0	mg/kg	06.23.2020 13:52	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-130	06.23.2020 13:52	
o-Terphenyl	84-15-1	94	%	70-130	06.23.2020 13:52	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **BG-1 (1.5-2)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-003

Date Collected: 06.17.2020 11:10

Sample Depth: 1.5 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 06.23.2020 13:00

Basis: Wet Weight

Seq Number: 3129823

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000382	0.00198	0.000382	mg/kg	06.24.2020 10:21	U	1
Toluene	108-88-3	<0.000452	0.00198	0.000452	mg/kg	06.24.2020 10:21	U	1
Ethylbenzene	100-41-4	<0.000560	0.00198	0.000560	mg/kg	06.24.2020 10:21	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00397	0.00101	mg/kg	06.24.2020 10:21	U	1
o-Xylene	95-47-6	<0.000342	0.00198	0.000342	mg/kg	06.24.2020 10:21	U	1
Total Xylenes	1330-20-7	<0.000342	0.00198	0.000342	mg/kg	06.24.2020 10:21	U	1
Total BTEX		<0.000342	0.00198	0.000342	mg/kg	06.24.2020 10:21	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	85	%	70-130	06.24.2020 10:21			
4-Bromofluorobenzene	460-00-4	139	%	70-130	06.24.2020 10:21	**		



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **BG-1 (3.5-4)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-004

Date Collected: 06.17.2020 11:15

Sample Depth: 3.5 - 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 14:50

Basis: Wet Weight

Seq Number: 3129771

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.64	4.96	0.852	mg/kg	06.23.2020 16:34		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	49.9	15.0	mg/kg	06.23.2020 14:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	49.9	15.0	mg/kg	06.23.2020 14:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	06.23.2020 14:14	U	1
Total TPH	PHC635	<15.0	49.9	15.0	mg/kg	06.23.2020 14:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-130	06.23.2020 14:14	
o-Terphenyl	84-15-1	91	%	70-130	06.23.2020 14:14	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **BG-1 (3.5-4)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-004

Date Collected: 06.17.2020 11:15

Sample Depth: 3.5 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 06.23.2020 13:00

Basis: Wet Weight

Seq Number: 3129823

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.24.2020 10:41	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	06.24.2020 10:41	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	06.24.2020 10:41	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.24.2020 10:41	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	06.24.2020 10:41	U	1
Total Xylenes	1330-20-7	<0.000343	0.00199	0.000343	mg/kg	06.24.2020 10:41	U	1
Total BTEX		<0.000343	0.00199	0.000343	mg/kg	06.24.2020 10:41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	91	%	70-130	06.24.2020 10:41			
4-Bromofluorobenzene	460-00-4	143	%	70-130	06.24.2020 10:41	**		



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **BG-1 (4.5-5)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-005

Date Collected: 06.17.2020 11:20

Sample Depth: 4.5 - 5 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 14:50

Basis: Wet Weight

Seq Number: 3129771

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.2	4.98	0.855	mg/kg	06.23.2020 16:39		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.24.2020 12:00

Basis: Wet Weight

Seq Number: 3129969

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	49.9	15.0	mg/kg	06.24.2020 16:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	49.9	15.0	mg/kg	06.24.2020 16:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	06.24.2020 16:55	U	1
Total TPH	PHC635	<15.0	49.9	15.0	mg/kg	06.24.2020 16:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-130	06.24.2020 16:55	
o-Terphenyl	84-15-1	105	%	70-130	06.24.2020 16:55	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **BG-1 (4.5-5)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-005

Date Collected: 06.17.2020 11:20

Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.26.2020 10:13

Basis: Wet Weight

Seq Number: 3130047

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000389	0.00202	0.000389	mg/kg	06.25.2020 17:11	U	1
Toluene	108-88-3	0.000465	0.00202	0.000460	mg/kg	06.25.2020 17:11	J	1
Ethylbenzene	100-41-4	<0.000570	0.00202	0.000570	mg/kg	06.25.2020 17:11	U	1
m,p-Xylenes	179601-23-1	<0.00102	0.00404	0.00102	mg/kg	06.25.2020 17:11	U	1
o-Xylene	95-47-6	<0.000348	0.00202	0.000348	mg/kg	06.25.2020 17:11	U	1
Total Xylenes	1330-20-7	<0.000348	0.00202	0.000348	mg/kg	06.25.2020 17:11	U	1
Total BTEX		0.000465	0.00202	0.000348	mg/kg	06.25.2020 17:11	J	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	103	%	70-130	06.25.2020 17:11			
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.25.2020 17:11			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **BG-2 (0.5-1)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-007

Date Collected: 06.17.2020 11:30

Sample Depth: 0.5 - 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 14:50

Basis: Wet Weight

Seq Number: 3129771

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.3	5.00	0.858	mg/kg	06.23.2020 17:00		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	16.5	50.0	15.0	mg/kg	06.23.2020 14:35	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	06.23.2020 14:35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	06.23.2020 14:35	U	1
Total TPH	PHC635	16.5	50.0	15.0	mg/kg	06.23.2020 14:35	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-130	06.23.2020 14:35	
o-Terphenyl	84-15-1	87	%	70-130	06.23.2020 14:35	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **BG-2 (0.5-1)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-007

Date Collected: 06.17.2020 11:30

Sample Depth: 0.5 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 06.23.2020 13:00

Basis: Wet Weight

Seq Number: 3129823

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.24.2020 11:01	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	06.24.2020 11:01	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	06.24.2020 11:01	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.24.2020 11:01	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	06.24.2020 11:01	U	1
Total Xylenes	1330-20-7	<0.000342	0.00199	0.000342	mg/kg	06.24.2020 11:01	U	1
Total BTEX		<0.000342	0.00199	0.000342	mg/kg	06.24.2020 11:01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	132	%	70-130	06.24.2020 11:01	**		
1,4-Difluorobenzene	540-36-3	91	%	70-130	06.24.2020 11:01			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **BG-2 (1.5-2)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-008

Date Collected: 06.17.2020 11:35

Sample Depth: 1.5 - 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 14:50

Basis: Wet Weight

Seq Number: 3129771

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.3	5.04	0.865	mg/kg	06.23.2020 17:05		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	18.2	50.0	15.0	mg/kg	06.23.2020 14:57	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	06.23.2020 14:57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	06.23.2020 14:57	U	1
Total TPH	PHC635	18.2	50.0	15.0	mg/kg	06.23.2020 14:57	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-130	06.23.2020 14:57	
o-Terphenyl	84-15-1	92	%	70-130	06.23.2020 14:57	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **BG-2 (1.5-2)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-008

Date Collected: 06.17.2020 11:35

Sample Depth: 1.5 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: AMF

% Moisture:

Analyst: AMF

Date Prep: 06.23.2020 13:00

Basis: Wet Weight

Seq Number: 3129823

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.24.2020 11:22	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	06.24.2020 11:22	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.24.2020 11:22	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.24.2020 11:22	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.24.2020 11:22	U	1
Total Xylenes	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	06.24.2020 11:22	U	1
Total BTEX		<0.000344	0.00200	0.000344	mg/kg	06.24.2020 11:22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	141	%	70-130	06.24.2020 11:22	**		
1,4-Difluorobenzene	540-36-3	84	%	70-130	06.24.2020 11:22			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **BG-2 (3.5-4)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-009

Date Collected: 06.17.2020 11:40

Sample Depth: 3.5 - 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 14:50

Basis: Wet Weight

Seq Number: 3129771

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.4	4.95	0.850	mg/kg	06.23.2020 17:10		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	06.23.2020 15:19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	06.23.2020 15:19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	06.23.2020 15:19	U	1
Total TPH	PHC635	<15.0	50.0	15.0	mg/kg	06.23.2020 15:19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-130	06.23.2020 15:19	
o-Terphenyl	84-15-1	95	%	70-130	06.23.2020 15:19	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **BG-2 (3.5-4)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-009

Date Collected: 06.17.2020 11:40

Sample Depth: 3.5 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.23.2020 16:30

Basis: Wet Weight

Seq Number: 3129825

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.24.2020 10:02	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	06.24.2020 10:02	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	06.24.2020 10:02	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.24.2020 10:02	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	06.24.2020 10:02	U	1
Total Xylenes	1330-20-7	<0.000342	0.00199	0.000342	mg/kg	06.24.2020 10:02	U	1
Total BTEX		<0.000342	0.00199	0.000342	mg/kg	06.24.2020 10:02	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.24.2020 10:02			
4-Bromofluorobenzene	460-00-4	102	%	70-130	06.24.2020 10:02			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **BG-2 (4.5-5)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-010

Date Collected: 06.17.2020 11:45

Sample Depth: 4.5 - 5 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 14:50

Basis: Wet Weight

Seq Number: 3129771

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23.9	5.03	0.864	mg/kg	06.23.2020 17:20		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.24.2020 12:00

Basis: Wet Weight

Seq Number: 3129969

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	06.24.2020 17:14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	06.24.2020 17:14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	06.24.2020 17:14	U	1
Total TPH	PHC635	<15.0	50.0	15.0	mg/kg	06.24.2020 17:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-130	06.24.2020 17:14	
o-Terphenyl	84-15-1	105	%	70-130	06.24.2020 17:14	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **BG-2 (4.5-5)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-010

Date Collected: 06.17.2020 11:45

Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.26.2020 10:13

Basis: Wet Weight

Seq Number: 3130047

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.25.2020 17:32	U	1
Toluene	108-88-3	0.000699	0.00200	0.000455	mg/kg	06.25.2020 17:32	J	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.25.2020 17:32	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.25.2020 17:32	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.25.2020 17:32	U	1
Total Xylenes	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	06.25.2020 17:32	U	1
Total BTEX		0.000699	0.00200	0.000344	mg/kg	06.25.2020 17:32	J	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.25.2020 17:32			
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.25.2020 17:32			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-1 (0-0.5)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-011

Date Collected: 06.17.2020 11:50

Sample Depth: 0 - 0.5 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 14:50

Basis: Wet Weight

Seq Number: 3129779

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2510	25.0	4.29	mg/kg	06.23.2020 17:15		5

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.24.2020 12:00

Basis: Wet Weight

Seq Number: 3129969

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	15.3	49.9	15.0	mg/kg	06.24.2020 17:52	J	1
Diesel Range Organics (DRO)	C10C28DRO	15.9	49.9	15.0	mg/kg	06.24.2020 17:52	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	06.24.2020 17:52	U	1
Total TPH	PHC635	31.2	49.9	15.0	mg/kg	06.24.2020 17:52	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-130	06.24.2020 17:52	
o-Terphenyl	84-15-1	101	%	70-130	06.24.2020 17:52	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-1 (0-0.5)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-011

Date Collected: 06.17.2020 11:50

Sample Depth: 0 - 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.26.2020 10:13

Basis: Wet Weight

Seq Number: 3130047

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000381	0.00198	0.000381	mg/kg	06.25.2020 17:52	U	1
Toluene	108-88-3	0.00140	0.00198	0.000451	mg/kg	06.25.2020 17:52	J	1
Ethylbenzene	100-41-4	<0.000559	0.00198	0.000559	mg/kg	06.25.2020 17:52	U	1
m,p-Xylenes	179601-23-1	<0.00100	0.00396	0.00100	mg/kg	06.25.2020 17:52	U	1
o-Xylene	95-47-6	<0.000341	0.00198	0.000341	mg/kg	06.25.2020 17:52	U	1
Total Xylenes	1330-20-7	<0.000341	0.00198	0.000341	mg/kg	06.25.2020 17:52	U	1
Total BTEX		0.00140	0.00198	0.000341	mg/kg	06.25.2020 17:52	J	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.25.2020 17:52			
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.25.2020 17:52			



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Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-1 (0-5-1)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-012

Date Collected: 06.17.2020 11:55

Sample Depth: 0.5 - 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 14:50

Basis: Wet Weight

Seq Number: 3129771

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	441	4.96	0.852	mg/kg	06.23.2020 17:35	X	1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	26.3	49.9	15.0	mg/kg	06.23.2020 15:41	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	49.9	15.0	mg/kg	06.23.2020 15:41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	06.23.2020 15:41	U	1
Total TPH	PHC635	26.3	49.9	15.0	mg/kg	06.23.2020 15:41	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-130	06.23.2020 15:41	
o-Terphenyl	84-15-1	95	%	70-130	06.23.2020 15:41	



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Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-1 (0-5-1)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-012

Date Collected: 06.17.2020 11:55

Sample Depth: 0.5 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.23.2020 16:30

Basis: Wet Weight

Seq Number: 3129825

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000388	0.00202	0.000388	mg/kg	06.24.2020 10:22	U	1
Toluene	108-88-3	<0.000459	0.00202	0.000459	mg/kg	06.24.2020 10:22	U	1
Ethylbenzene	100-41-4	<0.000569	0.00202	0.000569	mg/kg	06.24.2020 10:22	U	1
m,p-Xylenes	179601-23-1	<0.00102	0.00403	0.00102	mg/kg	06.24.2020 10:22	U	1
o-Xylene	95-47-6	<0.000347	0.00202	0.000347	mg/kg	06.24.2020 10:22	U	1
Total Xylenes	1330-20-7	<0.000347	0.00202	0.000347	mg/kg	06.24.2020 10:22	U	1
Total BTEX		<0.000347	0.00202	0.000347	mg/kg	06.24.2020 10:22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	109	%	70-130	06.24.2020 10:22			
1,4-Difluorobenzene	540-36-3	94	%	70-130	06.24.2020 10:22			



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Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-1 (1-5-2)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-013

Date Collected: 06.17.2020 12:00

Sample Depth: 1.5 - 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 14:50

Basis: Wet Weight

Seq Number: 3129771

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	390	5.00	0.858	mg/kg	06.23.2020 17:40		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	34.1	49.8	14.9	mg/kg	06.23.2020 16:03	J	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	49.8	14.9	mg/kg	06.23.2020 16:03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	49.8	14.9	mg/kg	06.23.2020 16:03	U	1
Total TPH	PHC635	34.1	49.8	14.9	mg/kg	06.23.2020 16:03	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-130	06.23.2020 16:03	
o-Terphenyl	84-15-1	93	%	70-130	06.23.2020 16:03	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-1 (1-5-2)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-013

Date Collected: 06.17.2020 12:00

Sample Depth: 1.5 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.23.2020 16:30

Basis: Wet Weight

Seq Number: 3129825

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	06.24.2020 10:42	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	06.24.2020 10:42	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	06.24.2020 10:42	U	1
m,p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	06.24.2020 10:42	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	06.24.2020 10:42	U	1
Total Xylenes	1330-20-7	<0.000345	0.00200	0.000345	mg/kg	06.24.2020 10:42	U	1
Total BTEX		<0.000345	0.00200	0.000345	mg/kg	06.24.2020 10:42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	113	%	70-130	06.24.2020 10:42			
1,4-Difluorobenzene	540-36-3	97	%	70-130	06.24.2020 10:42			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: HA-1 (3-5-4)

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-014

Date Collected: 06.17.2020 12:05

Sample Depth: 3.5 - 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 14:50

Basis: Wet Weight

Seq Number: 3129771

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	90.3	5.04	0.865	mg/kg	06.23.2020 17:55		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	30.0	50.0	15.0	mg/kg	06.23.2020 16:24	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	06.23.2020 16:24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	06.23.2020 16:24	U	1
Total TPH	PHC635	30.0	50.0	15.0	mg/kg	06.23.2020 16:24	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-130	06.23.2020 16:24	
o-Terphenyl	84-15-1	97	%	70-130	06.23.2020 16:24	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-1 (3-5-4)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-014

Date Collected: 06.17.2020 12:05

Sample Depth: 3.5 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.23.2020 16:30

Basis: Wet Weight

Seq Number: 3129825

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	06.24.2020 11:03	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	06.24.2020 11:03	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	06.24.2020 11:03	U	1
m,p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.24.2020 11:03	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.24.2020 11:03	U	1
Total Xylenes	1330-20-7	<0.000346	0.00201	0.000346	mg/kg	06.24.2020 11:03	U	1
Total BTEX		<0.000346	0.00201	0.000346	mg/kg	06.24.2020 11:03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	85	%	70-130	06.24.2020 11:03			
4-Bromofluorobenzene	460-00-4	98	%	70-130	06.24.2020 11:03			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-1 (4-5-5)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-015

Date Collected: 06.17.2020 12:10

Sample Depth: 4.5 - 5 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 14:50

Basis: Wet Weight

Seq Number: 3129771

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	648	4.99	0.857	mg/kg	06.23.2020 18:00		1

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.24.2020 12:00

Basis: Wet Weight

Seq Number: 3129969

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	06.24.2020 18:12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	06.24.2020 18:12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	06.24.2020 18:12	U	1
Total TPH	PHC635	<15.0	50.0	15.0	mg/kg	06.24.2020 18:12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-130	06.24.2020 18:12	
o-Terphenyl	84-15-1	107	%	70-130	06.24.2020 18:12	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-1 (4-5-5)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-015

Date Collected: 06.17.2020 12:10

Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.26.2020 10:13

Basis: Wet Weight

Seq Number: 3130047

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.25.2020 18:13	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	06.25.2020 18:13	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	06.25.2020 18:13	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.25.2020 18:13	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	06.25.2020 18:13	U	1
Total Xylenes	1330-20-7	<0.000343	0.00199	0.000343	mg/kg	06.25.2020 18:13	U	1
Total BTEX		<0.000343	0.00199	0.000343	mg/kg	06.25.2020 18:13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.25.2020 18:13			
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.25.2020 18:13			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-2 (0.5-1)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-017

Date Collected: 06.17.2020 12:20

Sample Depth: 0.5 - 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 14:50

Basis: Wet Weight

Seq Number: 3129771

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8400	49.9	8.57	mg/kg	06.23.2020 18:11		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	28.9	49.9	15.0	mg/kg	06.23.2020 16:46	J	1
Diesel Range Organics (DRO)	C10C28DRO	30.9	49.9	15.0	mg/kg	06.23.2020 16:46	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	06.23.2020 16:46	U	1
Total TPH	PHC635	59.8	49.9	15.0	mg/kg	06.23.2020 16:46		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-130	06.23.2020 16:46	
o-Terphenyl	84-15-1	99	%	70-130	06.23.2020 16:46	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-2 (0.5-1)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-017

Date Collected: 06.17.2020 12:20

Sample Depth: 0.5 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.23.2020 16:30

Basis: Wet Weight

Seq Number: 3129825

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.24.2020 11:49	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	06.24.2020 11:49	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	06.24.2020 11:49	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.24.2020 11:49	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	06.24.2020 11:49	U	1
Total Xylenes	1330-20-7	<0.000343	0.00199	0.000343	mg/kg	06.24.2020 11:49	U	1
Total BTEX		<0.000343	0.00199	0.000343	mg/kg	06.24.2020 11:49	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	103	%	70-130	06.24.2020 11:49			
4-Bromofluorobenzene	460-00-4	107	%	70-130	06.24.2020 11:49			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: HA-2 (1-5-2)

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-018

Date Collected: 06.17.2020 12:25

Sample Depth: 1.5 - 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 14:50

Basis: Wet Weight

Seq Number: 3129771

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14000	249	42.7	mg/kg	06.23.2020 18:16		50

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	22.5	50.0	15.0	mg/kg	06.23.2020 17:29	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	06.23.2020 17:29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	06.23.2020 17:29	U	1
Total TPH	PHC635	22.5	50.0	15.0	mg/kg	06.23.2020 17:29	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-130	06.23.2020 17:29	
o-Terphenyl	84-15-1	101	%	70-130	06.23.2020 17:29	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-2 (1-5-2)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-018

Date Collected: 06.17.2020 12:25

Sample Depth: 1.5 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.23.2020 16:30

Basis: Wet Weight

Seq Number: 3129825

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.24.2020 12:09	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	06.24.2020 12:09	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.24.2020 12:09	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.24.2020 12:09	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.24.2020 12:09	U	1
Total Xylenes	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	06.24.2020 12:09	U	1
Total BTEX		<0.000344	0.00200	0.000344	mg/kg	06.24.2020 12:09	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	104	%	70-130	06.24.2020 12:09			
1,4-Difluorobenzene	540-36-3	103	%	70-130	06.24.2020 12:09			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: HA-2 (3-5-4)

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-019

Date Collected: 06.17.2020 12:30

Sample Depth: 3.5 - 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 14:50

Basis: Wet Weight

Seq Number: 3129771

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7890	50.3	8.64	mg/kg	06.23.2020 18:21		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	20.0	49.9	15.0	mg/kg	06.23.2020 17:51	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	49.9	15.0	mg/kg	06.23.2020 17:51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	06.23.2020 17:51	U	1
Total TPH	PHC635	20.0	49.9	15.0	mg/kg	06.23.2020 17:51	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-130	06.23.2020 17:51	
o-Terphenyl	84-15-1	99	%	70-130	06.23.2020 17:51	



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Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: HA-2 (3-5-4)

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-019

Date Collected: 06.17.2020 12:30

Sample Depth: 3.5 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.23.2020 16:45

Basis: Wet Weight

Seq Number: 3129828

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.24.2020 10:00	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	06.24.2020 10:00	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.24.2020 10:00	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.24.2020 10:00	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.24.2020 10:00	U	1
Total Xylenes	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	06.24.2020 10:00	U	1
Total BTEX		<0.000344	0.00200	0.000344	mg/kg	06.24.2020 10:00	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	99	%	70-130	06.24.2020 10:00			
4-Bromofluorobenzene	460-00-4	120	%	70-130	06.24.2020 10:00			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: HA-2 (4.5-5)

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-020

Date Collected: 06.17.2020 12:35

Sample Depth: 4.5 - 5 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 14:50

Basis: Wet Weight

Seq Number: 3129771

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10600	99.2	17.0	mg/kg	06.23.2020 18:26		20

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.24.2020 12:00

Basis: Wet Weight

Seq Number: 3129969

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	06.24.2020 18:31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	06.24.2020 18:31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	06.24.2020 18:31	U	1
Total TPH	PHC635	<15.0	50.0	15.0	mg/kg	06.24.2020 18:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-130	06.24.2020 18:31	
o-Terphenyl	84-15-1	107	%	70-130	06.24.2020 18:31	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-2 (4.5-5)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-020

Date Collected: 06.17.2020 12:35

Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.26.2020 10:13

Basis: Wet Weight

Seq Number: 3130047

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.25.2020 18:33	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	06.25.2020 18:33	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	06.25.2020 18:33	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.25.2020 18:33	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	06.25.2020 18:33	U	1
Total Xylenes	1330-20-7	<0.000343	0.00199	0.000343	mg/kg	06.25.2020 18:33	U	1
Total BTEX		<0.000343	0.00199	0.000343	mg/kg	06.25.2020 18:33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	102	%	70-130	06.25.2020 18:33			
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.25.2020 18:33			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-3 (0-5-1)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-022

Date Collected: 06.17.2020 12:45

Sample Depth: 1.5 - 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 15:25

Basis: Wet Weight

Seq Number: 3129772

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10200	50.3	8.64	mg/kg	06.23.2020 16:11		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	26.1	50.0	15.0	mg/kg	06.23.2020 18:12	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	06.23.2020 18:12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	06.23.2020 18:12	U	1
Total TPH	PHC635	26.1	50.0	15.0	mg/kg	06.23.2020 18:12	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-130	06.23.2020 18:12	
o-Terphenyl	84-15-1	104	%	70-130	06.23.2020 18:12	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-3 (0-5-1)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-022

Date Collected: 06.17.2020 12:45

Sample Depth: 1.5 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.23.2020 16:45

Basis: Wet Weight

Seq Number: 3129828

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.24.2020 10:20	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	06.24.2020 10:20	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	06.24.2020 10:20	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.24.2020 10:20	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	06.24.2020 10:20	U	1
Total Xylenes	1330-20-7	<0.000342	0.00199	0.000342	mg/kg	06.24.2020 10:20	U	1
Total BTEX		<0.000342	0.00199	0.000342	mg/kg	06.24.2020 10:20	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	116	%	70-130	06.24.2020 10:20			
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.24.2020 10:20			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: HA-3 (1-5-2)

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-023

Date Collected: 06.17.2020 12:50

Sample Depth: 3.5 - 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 15:25

Basis: Wet Weight

Seq Number: 3129772

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10500	99.6	17.1	mg/kg	06.23.2020 16:17		20

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	24.6	50.0	15.0	mg/kg	06.23.2020 18:34	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	06.23.2020 18:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	06.23.2020 18:34	U	1
Total TPH	PHC635	24.6	50.0	15.0	mg/kg	06.23.2020 18:34	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-130	06.23.2020 18:34	
o-Terphenyl	84-15-1	99	%	70-130	06.23.2020 18:34	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-3 (1-5-2)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-023

Date Collected: 06.17.2020 12:50

Sample Depth: 3.5 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.23.2020 16:45

Basis: Wet Weight

Seq Number: 3129828

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	06.24.2020 10:41	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	06.24.2020 10:41	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	06.24.2020 10:41	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	06.24.2020 10:41	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.24.2020 10:41	U	1
Total Xylenes	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	06.24.2020 10:41	U	1
Total BTEX		<0.000344	0.00200	0.000344	mg/kg	06.24.2020 10:41	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	106	%	70-130	06.24.2020 10:41			
1,4-Difluorobenzene	540-36-3	106	%	70-130	06.24.2020 10:41			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-3 (3-5-4)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-024

Date Collected: 06.17.2020 12:55

Sample Depth: 4.5 - 5 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 15:25

Basis: Wet Weight

Seq Number: 3129772

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11400	101	17.3	mg/kg	06.23.2020 16:24		20

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	21.1	49.9	15.0	mg/kg	06.23.2020 18:55	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	49.9	15.0	mg/kg	06.23.2020 18:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	06.23.2020 18:55	U	1
Total TPH	PHC635	21.1	49.9	15.0	mg/kg	06.23.2020 18:55	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-130	06.23.2020 18:55	
o-Terphenyl	84-15-1	99	%	70-130	06.23.2020 18:55	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-3 (3-5-4)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-024

Date Collected: 06.17.2020 12:55

Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.23.2020 16:45

Basis: Wet Weight

Seq Number: 3129828

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	06.24.2020 11:01	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	06.24.2020 11:01	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	06.24.2020 11:01	U	1
m,p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.24.2020 11:01	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.24.2020 11:01	U	1
Total Xylenes	1330-20-7	<0.000346	0.00201	0.000346	mg/kg	06.24.2020 11:01	U	1
Total BTEX		<0.000346	0.00201	0.000346	mg/kg	06.24.2020 11:01	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	99	%	70-130	06.24.2020 11:01			
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.24.2020 11:01			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-3 (4.5-5)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-025

Date Collected: 06.17.2020 13:00

Sample Depth: 0 - 0.5 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 15:25

Basis: Wet Weight

Seq Number: 3129772

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6240	50.5	8.67	mg/kg	06.23.2020 16:43		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.24.2020 12:00

Basis: Wet Weight

Seq Number: 3129969

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	16.3	49.9	15.0	mg/kg	06.25.2020 07:29	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	49.9	15.0	mg/kg	06.25.2020 07:29	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	06.25.2020 07:29	U	1
Total TPH	PHC635	16.3	49.9	15.0	mg/kg	06.25.2020 07:29	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-130	06.25.2020 07:29	
o-Terphenyl	84-15-1	107	%	70-130	06.25.2020 07:29	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-3 (4.5-5)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-025

Date Collected: 06.17.2020 13:00

Sample Depth: 0 - 0.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.26.2020 10:13

Basis: Wet Weight

Seq Number: 3130047

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	06.25.2020 18:54	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	06.25.2020 18:54	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	06.25.2020 18:54	U	1
m,p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.25.2020 18:54	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.25.2020 18:54	U	1
Total Xylenes	1330-20-7	<0.000346	0.00201	0.000346	mg/kg	06.25.2020 18:54	U	1
Total BTEX		<0.000346	0.00201	0.000346	mg/kg	06.25.2020 18:54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.25.2020 18:54			
4-Bromofluorobenzene	460-00-4	101	%	70-130	06.25.2020 18:54			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-4 (0.5-1)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-027

Date Collected: 06.17.2020 13:10

Sample Depth: 1.5 - 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 15:25

Basis: Wet Weight

Seq Number: 3129772

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9710	50.0	8.58	mg/kg	06.23.2020 16:56		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	26.2	50.0	15.0	mg/kg	06.23.2020 19:16	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	06.23.2020 19:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	06.23.2020 19:16	U	1
Total TPH	PHC635	26.2	50.0	15.0	mg/kg	06.23.2020 19:16	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-130	06.23.2020 19:16	
o-Terphenyl	84-15-1	101	%	70-130	06.23.2020 19:16	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-4 (0.5-1)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-027

Date Collected: 06.17.2020 13:10

Sample Depth: 1.5 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.23.2020 16:45

Basis: Wet Weight

Seq Number: 3129828

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	06.24.2020 11:22	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	06.24.2020 11:22	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	06.24.2020 11:22	U	1
m,p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	06.24.2020 11:22	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	06.24.2020 11:22	U	1
Total Xylenes	1330-20-7	<0.000346	0.00201	0.000346	mg/kg	06.24.2020 11:22	U	1
Total BTEX		<0.000346	0.00201	0.000346	mg/kg	06.24.2020 11:22	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	104	%	70-130	06.24.2020 11:22			
1,4-Difluorobenzene	540-36-3	108	%	70-130	06.24.2020 11:22			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-4 (1.5-2)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-028

Date Collected: 06.17.2020 13:15

Sample Depth: 1.5 - 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 15:25

Basis: Wet Weight

Seq Number: 3129772

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6540	50.1	8.60	mg/kg	06.23.2020 17:02		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	29.9	50.0	15.0	mg/kg	06.23.2020 19:38	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	06.23.2020 19:38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	06.23.2020 19:38	U	1
Total TPH	PHC635	29.9	50.0	15.0	mg/kg	06.23.2020 19:38	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-130	06.23.2020 19:38	
o-Terphenyl	84-15-1	105	%	70-130	06.23.2020 19:38	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-4 (1.5-2)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-028

Date Collected: 06.17.2020 13:15

Sample Depth: 1.5 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.23.2020 16:45

Basis: Wet Weight

Seq Number: 3129828

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000385	0.00200	0.000385	mg/kg	06.24.2020 11:42	U	1
Toluene	108-88-3	<0.000456	0.00200	0.000456	mg/kg	06.24.2020 11:42	U	1
Ethylbenzene	100-41-4	<0.000565	0.00200	0.000565	mg/kg	06.24.2020 11:42	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00400	0.00101	mg/kg	06.24.2020 11:42	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.24.2020 11:42	U	1
Total Xylenes	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	06.24.2020 11:42	U	1
Total BTEX		<0.000344	0.00200	0.000344	mg/kg	06.24.2020 11:42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	105	%	70-130	06.24.2020 11:42			
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.24.2020 11:42			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-4 (4.5-5)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-029

Date Collected: 06.17.2020 13:25

Sample Depth: 4.5 - 5 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 15:25

Basis: Wet Weight

Seq Number: 3129772

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4160	24.8	4.26	mg/kg	06.23.2020 17:08		5

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.24.2020 12:00

Basis: Wet Weight

Seq Number: 3129969

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	06.24.2020 19:09	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	06.24.2020 19:09	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	06.24.2020 19:09	U	1
Total TPH	PHC635	<15.0	50.0	15.0	mg/kg	06.24.2020 19:09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-130	06.24.2020 19:09	
o-Terphenyl	84-15-1	108	%	70-130	06.24.2020 19:09	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-4 (4.5-5)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-029

Date Collected: 06.17.2020 13:25

Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.26.2020 10:13

Basis: Wet Weight

Seq Number: 3130047

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.25.2020 19:14	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	06.25.2020 19:14	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	06.25.2020 19:14	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.25.2020 19:14	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	06.25.2020 19:14	U	1
Total Xylenes	1330-20-7	<0.000343	0.00199	0.000343	mg/kg	06.25.2020 19:14	U	1
Total BTEX		<0.000343	0.00199	0.000343	mg/kg	06.25.2020 19:14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.25.2020 19:14			
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.25.2020 19:14			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-5 (0.5-1)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-031

Date Collected: 06.17.2020 13:35

Sample Depth: 0.5 - 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 15:25

Basis: Wet Weight

Seq Number: 3129772

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12400	101	17.3	mg/kg	06.23.2020 17:40		20

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	22.0	49.9	15.0	mg/kg	06.23.2020 19:59	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	49.9	15.0	mg/kg	06.23.2020 19:59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	06.23.2020 19:59	U	1
Total TPH	PHC635	22.0	49.9	15.0	mg/kg	06.23.2020 19:59	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-130	06.23.2020 19:59	
o-Terphenyl	84-15-1	101	%	70-130	06.23.2020 19:59	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-5 (0.5-1)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-031

Date Collected: 06.17.2020 13:35

Sample Depth: 0.5 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.23.2020 16:45

Basis: Wet Weight

Seq Number: 3129828

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.24.2020 12:03	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	06.24.2020 12:03	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	06.24.2020 12:03	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.24.2020 12:03	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	06.24.2020 12:03	U	1
Total Xylenes	1330-20-7	<0.000343	0.00199	0.000343	mg/kg	06.24.2020 12:03	U	1
Total BTEX		<0.000343	0.00199	0.000343	mg/kg	06.24.2020 12:03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	107	%	70-130	06.24.2020 12:03			
1,4-Difluorobenzene	540-36-3	107	%	70-130	06.24.2020 12:03			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-5 (1.5-2)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-032

Date Collected: 06.17.2020 13:15

Sample Depth: 1.5 - 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 15:25

Basis: Wet Weight

Seq Number: 3129772

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10800	99.2	17.0	mg/kg	06.23.2020 17:59		20

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	25.2	50.0	15.0	mg/kg	06.23.2020 20:20	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	06.23.2020 20:20	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	06.23.2020 20:20	U	1
Total TPH	PHC635	25.2	50.0	15.0	mg/kg	06.23.2020 20:20	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-130	06.23.2020 20:20	
o-Terphenyl	84-15-1	99	%	70-130	06.23.2020 20:20	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-5 (1.5-2)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-032

Date Collected: 06.17.2020 13:15

Sample Depth: 1.5 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.23.2020 16:45

Basis: Wet Weight

Seq Number: 3129828

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.24.2020 12:23	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	06.24.2020 12:23	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.24.2020 12:23	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.24.2020 12:23	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.24.2020 12:23	U	1
Total Xylenes	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	06.24.2020 12:23	U	1
Total BTEX		<0.000344	0.00200	0.000344	mg/kg	06.24.2020 12:23	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.24.2020 12:23			
1,4-Difluorobenzene	540-36-3	110	%	70-130	06.24.2020 12:23			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-6 (0.5-1)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-034

Date Collected: 06.17.2020 14:00

Sample Depth: 0.5 - 1 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 15:25

Basis: Wet Weight

Seq Number: 3129772

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5670	49.9	8.57	mg/kg	06.23.2020 18:12		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129790

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	32.4	49.9	15.0	mg/kg	06.23.2020 20:41	J	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	49.9	15.0	mg/kg	06.23.2020 20:41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	06.23.2020 20:41	U	1
Total TPH	PHC635	32.4	49.9	15.0	mg/kg	06.23.2020 20:41	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-130	06.23.2020 20:41	
o-Terphenyl	84-15-1	96	%	70-130	06.23.2020 20:41	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-6 (0.5-1)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-034

Date Collected: 06.17.2020 14:00

Sample Depth: 0.5 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.23.2020 16:45

Basis: Wet Weight

Seq Number: 3129828

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.24.2020 12:43	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	06.24.2020 12:43	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.24.2020 12:43	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.24.2020 12:43	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.24.2020 12:43	U	1
Total Xylenes	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	06.24.2020 12:43	U	1
Total BTEX		<0.000344	0.00200	0.000344	mg/kg	06.24.2020 12:43	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	107	%	70-130	06.24.2020 12:43			
4-Bromofluorobenzene	460-00-4	104	%	70-130	06.24.2020 12:43			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-6 (1.5-2)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-035

Date Collected: 06.17.2020 14:05

Sample Depth: 1.5 - 2 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 15:25

Basis: Wet Weight

Seq Number: 3129772

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8840	49.7	8.53	mg/kg	06.23.2020 18:18		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129788

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	50.0	15.0	mg/kg	06.23.2020 18:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	50.0	15.0	mg/kg	06.23.2020 18:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	50.0	15.0	mg/kg	06.23.2020 18:55	U	1
Total TPH	PHC635	<15.0	50.0	15.0	mg/kg	06.23.2020 18:55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-130	06.23.2020 18:55	
o-Terphenyl	84-15-1	104	%	70-130	06.23.2020 18:55	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-6 (1.5-2)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-035

Date Collected: 06.17.2020 14:05

Sample Depth: 1.5 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.23.2020 16:30

Basis: Wet Weight

Seq Number: 3129825

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.24.2020 04:12	U	1
Toluene	108-88-3	0.000815	0.00199	0.000453	mg/kg	06.24.2020 04:12	J	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	06.24.2020 04:12	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.24.2020 04:12	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	06.24.2020 04:12	U	1
Total Xylenes	1330-20-7	<0.000342	0.00199	0.000342	mg/kg	06.24.2020 04:12	U	1
Total BTEX		0.000815	0.00199	0.000342	mg/kg	06.24.2020 04:12	J	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
1,4-Difluorobenzene	540-36-3	100	%	70-130	06.24.2020 04:12			
4-Bromofluorobenzene	460-00-4	101	%	70-130	06.24.2020 04:12			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-6 (3.5-4)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-036

Date Collected: 06.17.2020 14:10

Sample Depth: 3.5 - 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 15:25

Basis: Wet Weight

Seq Number: 3129772

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10100	50.5	8.67	mg/kg	06.23.2020 18:24		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.23.2020 11:00

Basis: Wet Weight

Seq Number: 3129788

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	49.9	15.0	mg/kg	06.23.2020 19:16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	49.9	15.0	mg/kg	06.23.2020 19:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	06.23.2020 19:16	U	1
Total TPH	PHC635	<15.0	49.9	15.0	mg/kg	06.23.2020 19:16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-130	06.23.2020 19:16	
o-Terphenyl	84-15-1	108	%	70-130	06.23.2020 19:16	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-6 (3.5-4)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-036

Date Collected: 06.17.2020 14:10

Sample Depth: 3.5 - 4 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.23.2020 16:30

Basis: Wet Weight

Seq Number: 3129825

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	06.24.2020 04:33	U	1
Toluene	108-88-3	<0.000454	0.00199	0.000454	mg/kg	06.24.2020 04:33	U	1
Ethylbenzene	100-41-4	<0.000563	0.00199	0.000563	mg/kg	06.24.2020 04:33	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	06.24.2020 04:33	U	1
o-Xylene	95-47-6	<0.000343	0.00199	0.000343	mg/kg	06.24.2020 04:33	U	1
Total Xylenes	1330-20-7	<0.000343	0.00199	0.000343	mg/kg	06.24.2020 04:33	U	1
Total BTEX		<0.000343	0.00199	0.000343	mg/kg	06.24.2020 04:33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	102	%	70-130	06.24.2020 04:33			
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.24.2020 04:33			



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-6 (4.5-5)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-037

Date Collected: 06.17.2020 14:15

Sample Depth: 4.5 - 5 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst: CHE

Date Prep: 06.23.2020 15:25

Basis: Wet Weight

Seq Number: 3129772

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7290	50.5	8.67	mg/kg	06.23.2020 18:31		10

Analytical Method: TPH By SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 06.24.2020 12:00

Basis: Wet Weight

Seq Number: 3129969

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	49.9	15.0	mg/kg	06.24.2020 19:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	49.9	15.0	mg/kg	06.24.2020 19:28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	49.9	15.0	mg/kg	06.24.2020 19:28	U	1
Total TPH	PHC635	<15.0	49.9	15.0	mg/kg	06.24.2020 19:28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-130	06.24.2020 19:28	
o-Terphenyl	84-15-1	106	%	70-130	06.24.2020 19:28	



Certificate of Analytical Results 664998

Terracon-Lubbock, Lubbock, TX

Pronghorn SWD Pipeline Release

Sample Id: **HA-6 (4.5-5)**

Matrix: Soil

Date Received: 06.19.2020 16:43

Lab Sample Id: 664998-037

Date Collected: 06.17.2020 14:15

Sample Depth: 4.5 - 5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

% Moisture:

Analyst: KTL

Date Prep: 06.26.2020 10:13

Basis: Wet Weight

Seq Number: 3130047

SUB: T104704400-19-19

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	06.25.2020 19:35	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	06.25.2020 19:35	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	06.25.2020 19:35	U	1
m,p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	06.25.2020 19:35	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	06.25.2020 19:35	U	1
Total Xylenes	1330-20-7	<0.000344	0.00200	0.000344	mg/kg	06.25.2020 19:35	U	1
Total BTEX		<0.000344	0.00200	0.000344	mg/kg	06.25.2020 19:35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag		
4-Bromofluorobenzene	460-00-4	100	%	70-130	06.25.2020 19:35			
1,4-Difluorobenzene	540-36-3	101	%	70-130	06.25.2020 19:35			



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



Terracon-Lubbock

Pronghorn SWD Pipeline Release

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3129771

Matrix: Solid

Prep Method: E300P

Date Prep: 06.23.2020

MB Sample Id: 7706027-1-BLK

LCS Sample Id: 7706027-1-BKS

LCSD Sample Id: 7706027-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	254	102	262	105	90-110	3	20	mg/kg	06.23.2020 15:59	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3129772

Matrix: Solid

Prep Method: E300P

Date Prep: 06.23.2020

MB Sample Id: 7706028-1-BLK

LCS Sample Id: 7706028-1-BKS

LCSD Sample Id: 7706028-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	256	102	257	103	90-110	0	20	mg/kg	06.23.2020 15:32	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3129771

Matrix: Soil

Prep Method: E300P

Date Prep: 06.23.2020

Parent Sample Id: 664998-002

MS Sample Id: 664998-002 S

MSD Sample Id: 664998-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	9.06	250	277	107	271	105	90-110	2	20	mg/kg	06.23.2020 21:39	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3129771

Matrix: Soil

Prep Method: E300P

Date Prep: 06.23.2020

Parent Sample Id: 664998-012

MS Sample Id: 664998-012 S

MSD Sample Id: 664998-012 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	441	248	638	79	623	73	90-110	2	20	mg/kg	06.23.2020 21:49	X

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3129772

Matrix: Soil

Prep Method: E300P

Date Prep: 06.23.2020

Parent Sample Id: 665090-001

MS Sample Id: 665090-001 S

MSD Sample Id: 665090-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	527	250	760	93	775	99	90-110	2	20	mg/kg	06.23.2020 15:52	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3129772

Matrix: Soil

Prep Method: E300P

Date Prep: 06.23.2020

Parent Sample Id: 665090-002

MS Sample Id: 665090-002 S

MSD Sample Id: 665090-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	294	250	562	107	544	100	90-110	3	20	mg/kg	06.23.2020 17:21	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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



Terracon-Lubbock

Pronghorn SWD Pipeline Release

Analytical Method: TPH By SW8015 Mod

Seq Number: 3129788

MB Sample Id: 7706004-1-BLK

Matrix: Solid

LCS Sample Id: 7706004-1-BKS

Prep Method: SW8015P

Date Prep: 06.23.2020

LCSD Sample Id: 7706004-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	883	88	851	85	70-130	4	20	mg/kg	06.23.2020 12:04	
Diesel Range Organics (DRO)	<15.0	1000	870	87	867	87	70-130	0	20	mg/kg	06.23.2020 12:04	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	104		110		106		70-130	%	06.23.2020 12:04			
o-Terphenyl	103		105		99		70-130	%	06.23.2020 12:04			

Analytical Method: TPH By SW8015 Mod

Seq Number: 3129790

MB Sample Id: 7706006-1-BLK

Matrix: Solid

LCS Sample Id: 7706006-1-BKS

Prep Method: SW8015P

Date Prep: 06.23.2020

LCSD Sample Id: 7706006-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	839	84	860	86	70-130	2	20	mg/kg	06.23.2020 12:04	
Diesel Range Organics (DRO)	<15.0	1000	869	87	830	83	70-130	5	20	mg/kg	06.23.2020 12:04	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	97		102		99		70-130	%	06.23.2020 12:04			
o-Terphenyl	97		100		94		70-130	%	06.23.2020 12:04			

Analytical Method: TPH By SW8015 Mod

Seq Number: 3129969

MB Sample Id: 7706147-1-BLK

Matrix: Solid

LCS Sample Id: 7706147-1-BKS

Prep Method: SW8015P

Date Prep: 06.24.2020

LCSD Sample Id: 7706147-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	972	97	912	91	70-130	6	20	mg/kg	06.24.2020 13:06	
Diesel Range Organics (DRO)	<15.0	1000	967	97	897	90	70-130	8	20	mg/kg	06.24.2020 13:06	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	124		127		127		70-130	%	06.24.2020 13:06			
o-Terphenyl	130		122		122		70-130	%	06.24.2020 13:06			

Analytical Method: TPH By SW8015 Mod

Seq Number: 3129788

Matrix: Solid
MB Sample Id: 7706004-1-BLK

Prep Method: SW8015P

Date Prep: 06.23.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<15.0	mg/kg	06.23.2020 11:43	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C-A) / B$
 $RPD = 200 * |(C-E) / (C+E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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



Terracon-Lubbock

Pronghorn SWD Pipeline Release

Analytical Method: TPH By SW8015 Mod

Seq Number: 3129790

Matrix: Solid

Prep Method: SW8015P

Date Prep: 06.23.2020

MB Sample Id: 7706006-1-BLK

Parameter

Motor Oil Range Hydrocarbons (MRO)

**MB
Result**

<15.0

Units

mg/kg

**Analysis
Date**

06.23.2020 11:43

Flag**Analytical Method:** TPH By SW8015 Mod

Seq Number: 3129969

Matrix: Solid

Prep Method: SW8015P

Date Prep: 06.24.2020

MB Sample Id: 7706147-1-BLK

Parameter

Motor Oil Range Hydrocarbons (MRO)

**MB
Result**

<15.0

Units

mg/kg

**Analysis
Date**

06.24.2020 12:47

Flag**Analytical Method:** TPH By SW8015 Mod

Seq Number: 3129788

Matrix: Soil

Prep Method: SW8015P

Date Prep: 06.23.2020

Parent Sample Id: 665085-001

MS Sample Id: 665085-001 S

MSD Sample Id: 665085-001 SD

Parameter

Gasoline Range Hydrocarbons (GRO)

**Parent
Result**

<15.0

**Spike
Amount**

997

**MS
Result**

840

**MS
%Rec**

84

**MSD
Result**

844

**MSD
%Rec**

84

Limits

70-130

%RPD

0

**RPD
Limit**

20

Units

mg/kg

**Analysis
Date**

06.23.2020 13:09

Flag

Diesel Range Organics (DRO)

<15.0

997

872

87

881

88

70-130

1

20

mg/kg

06.23.2020 13:09

Surrogate

1-Chlorooctane

**MS
%Rec**

111

**MS
Flag****MSD
%Rec**

111

**MSD
Flag****Limits**

70-130

Units

%

**Analysis
Date**

06.23.2020 13:09

o-Terphenyl

103

102

70-130

%

06.23.2020 13:09

Analytical Method: TPH By SW8015 Mod

Seq Number: 3129790

Matrix: Soil

Prep Method: SW8015P

Date Prep: 06.23.2020

Parent Sample Id: 664998-002

MS Sample Id: 664998-002 S

MSD Sample Id: 664998-002 SD

Parameter

Gasoline Range Hydrocarbons (GRO)

**Parent
Result**

<15.0

**Spike
Amount**

997

**MS
Result**

885

**MS
%Rec**

89

**MSD
Result**

861

**MSD
%Rec**

86

Limits

70-130

%RPD

3

**RPD
Limit**

20

Units

mg/kg

**Analysis
Date**

06.23.2020 13:09

Flag

Diesel Range Organics (DRO)

22.2

997

864

84

839

82

70-130

3

20

mg/kg

06.23.2020 13:09

Surrogate

1-Chlorooctane

**MS
%Rec**

103

**MS
Flag****MSD
%Rec**

100

**MSD
Flag****Limits**

70-130

Units

%

**Analysis
Date**

06.23.2020 13:09

o-Terphenyl

94

94

70-130

%

06.23.2020 13:09

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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



Terracon-Lubbock

Pronghorn SWD Pipeline Release

Analytical Method: TPH By SW8015 Mod

Seq Number: 3129969

Parent Sample Id: 665196-041

Matrix: Soil

MS Sample Id: 665196-041 S

Prep Method: SW8015P

Date Prep: 06.24.2020

MSD Sample Id: 665196-041 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	974	98	930	93	70-130	5	20	mg/kg	06.24.2020 14:03	
Diesel Range Organics (DRO)	<15.0	998	960	96	921	92	70-130	4	20	mg/kg	06.24.2020 14:03	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	128		129		70-130	%	06.24.2020 14:03
o-Terphenyl	129		122		70-130	%	06.24.2020 14:03

Analytical Method: BTEX by EPA 8021B

Seq Number: 3129823

MB Sample Id: 7706067-1-BLK

Matrix: Solid

LCS Sample Id: 7706067-1-BKS

Prep Method: SW5035A

Date Prep: 06.23.2020

LCSD Sample Id: 7706067-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0900	90	0.0914	91	70-130	2	35	mg/kg	06.24.2020 01:35	
Toluene	<0.000456	0.100	0.0853	85	0.0875	88	70-130	3	35	mg/kg	06.24.2020 01:35	
Ethylbenzene	<0.000565	0.100	0.0902	90	0.0916	92	70-130	2	35	mg/kg	06.24.2020 01:35	
m,p-Xylenes	<0.00101	0.200	0.181	91	0.185	93	70-130	2	35	mg/kg	06.24.2020 01:35	
o-Xylene	<0.000344	0.100	0.0916	92	0.0926	93	70-130	1	35	mg/kg	06.24.2020 01:35	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	86		98		97		70-130	%	06.24.2020 01:35
4-Bromofluorobenzene	108		110		113		70-130	%	06.24.2020 01:35

Analytical Method: BTEX by EPA 8021B

Seq Number: 3129825

MB Sample Id: 7706071-1-BLK

Matrix: Solid

LCS Sample Id: 7706071-1-BKS

Prep Method: SW5035A

Date Prep: 06.23.2020

LCSD Sample Id: 7706071-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0972	97	0.0960	96	70-130	1	35	mg/kg	06.24.2020 02:09	
Toluene	<0.000456	0.100	0.0900	90	0.0905	91	70-130	1	35	mg/kg	06.24.2020 02:09	
Ethylbenzene	<0.000565	0.100	0.0961	96	0.0957	96	70-130	0	35	mg/kg	06.24.2020 02:09	
m,p-Xylenes	<0.00101	0.200	0.193	97	0.193	97	70-130	0	35	mg/kg	06.24.2020 02:09	
o-Xylene	<0.000344	0.100	0.0976	98	0.0974	97	70-130	0	35	mg/kg	06.24.2020 02:09	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		99		98		70-130	%	06.24.2020 02:09
4-Bromofluorobenzene	101		98		98		70-130	%	06.24.2020 02:09

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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



Terracon-Lubbock

Pronghorn SWD Pipeline Release

Analytical Method: BTEX by EPA 8021B

Seq Number: 3129828

MB Sample Id: 7706072-1-BLK

Matrix: Solid

LCS Sample Id: 7706072-1-BKS

Prep Method: SW5035A

Date Prep: 06.23.2020

LCSD Sample Id: 7706072-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0805	81	0.0803	80	70-130	0	35	mg/kg	06.24.2020 00:16	
Toluene	<0.000456	0.100	0.100	100	0.0998	100	70-130	0	35	mg/kg	06.24.2020 00:16	
Ethylbenzene	<0.000565	0.100	0.109	109	0.110	110	70-130	1	35	mg/kg	06.24.2020 00:16	
m,p-Xylenes	<0.00101	0.200	0.217	109	0.216	108	70-130	0	35	mg/kg	06.24.2020 00:16	
o-Xylene	<0.000344	0.100	0.111	111	0.110	110	70-130	1	35	mg/kg	06.24.2020 00:16	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	93		96		95		70-130			%	06.24.2020 00:16	
4-Bromofluorobenzene	115		109		109		70-130			%	06.24.2020 00:16	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3130047

MB Sample Id: 7706238-1-BLK

Matrix: Solid

LCS Sample Id: 7706238-1-BKS

Prep Method: SW5035A

Date Prep: 06.26.2020

LCSD Sample Id: 7706238-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000385	0.100	0.0907	91	0.0949	95	70-130	5	35	mg/kg	06.25.2020 14:47	
Toluene	<0.000456	0.100	0.0821	82	0.0867	87	70-130	5	35	mg/kg	06.25.2020 14:47	
Ethylbenzene	<0.000565	0.100	0.0934	93	0.0990	99	70-130	6	35	mg/kg	06.25.2020 14:47	
m,p-Xylenes	<0.00101	0.200	0.189	95	0.200	100	70-130	6	35	mg/kg	06.25.2020 14:47	
o-Xylene	<0.000344	0.100	0.0944	94	0.100	100	70-130	6	35	mg/kg	06.25.2020 14:47	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene	102		98		98		70-130			%	06.25.2020 14:47	
4-Bromofluorobenzene	101		96		98		70-130			%	06.25.2020 14:47	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3129823

Parent Sample Id: 664765-026

Matrix: Soil

MS Sample Id: 664765-026 S

Prep Method: SW5035A

Date Prep: 06.23.2020

MSD Sample Id: 664765-026 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000384	0.0998	0.0588	59	0.0733	74	70-130	22	35	mg/kg	06.24.2020 02:15	X
Toluene	<0.000455	0.0998	0.0572	57	0.0670	67	70-130	16	35	mg/kg	06.24.2020 02:15	X
Ethylbenzene	<0.000564	0.0998	0.0611	61	0.0645	65	70-130	5	35	mg/kg	06.24.2020 02:15	X
m,p-Xylenes	<0.00101	0.200	0.124	62	0.127	64	70-130	2	35	mg/kg	06.24.2020 02:15	X
o-Xylene	<0.000344	0.0998	0.0630	63	0.0648	65	70-130	3	35	mg/kg	06.24.2020 02:15	X
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits			Units	Analysis Date	
1,4-Difluorobenzene			92		95		70-130			%	06.24.2020 02:15	
4-Bromofluorobenzene			111		112		70-130			%	06.24.2020 02:15	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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



Terracon-Lubbock

Pronghorn SWD Pipeline Release

Analytical Method: BTEX by EPA 8021B

Seq Number: 3129825

Parent Sample Id: 664998-035

Matrix: Soil

MS Sample Id: 664998-035 S

Prep Method: SW5035A

Date Prep: 06.23.2020

MSD Sample Id: 664998-035 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000383	0.0996	0.0801	80	0.0885	89	70-130	10	35	mg/kg	06.24.2020 02:50	
Toluene	0.000815	0.0996	0.0832	83	0.0833	82	70-130	0	35	mg/kg	06.24.2020 02:50	
Ethylbenzene	<0.000563	0.0996	0.0841	84	0.0756	76	70-130	11	35	mg/kg	06.24.2020 02:50	
m,p-Xylenes	<0.00101	0.199	0.174	87	0.148	74	70-130	16	35	mg/kg	06.24.2020 02:50	
o-Xylene	<0.000343	0.0996	0.0866	87	0.0714	71	70-130	19	35	mg/kg	06.24.2020 02:50	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	97		98		70-130	%	06.24.2020 02:50
4-Bromofluorobenzene	107		100		70-130	%	06.24.2020 02:50

Analytical Method: BTEX by EPA 8021B

Seq Number: 3129828

Parent Sample Id: 664765-006

Matrix: Soil

MS Sample Id: 664765-006 S

Prep Method: SW5035A

Date Prep: 06.23.2020

MSD Sample Id: 664765-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000388	0.101	0.0414	41	0.0242	24	70-130	52	35	mg/kg	06.24.2020 00:57	XF
Toluene	0.00303	0.101	0.0676	64	0.0281	25	70-130	83	35	mg/kg	06.24.2020 00:57	XF
Ethylbenzene	<0.000569	0.101	0.0773	77	0.0290	29	70-130	91	35	mg/kg	06.24.2020 00:57	XF
m,p-Xylenes	<0.00102	0.202	0.162	80	0.0570	29	70-130	96	35	mg/kg	06.24.2020 00:57	XF
o-Xylene	<0.000347	0.101	0.0837	83	0.0319	32	70-130	90	35	mg/kg	06.24.2020 00:57	XF

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	89		106		70-130	%	06.24.2020 00:57
4-Bromofluorobenzene	124		94		70-130	%	06.24.2020 00:57

Analytical Method: BTEX by EPA 8021B

Seq Number: 3130047

Parent Sample Id: 664765-048

Matrix: Soil

MS Sample Id: 664765-048 S

Prep Method: SW5035A

Date Prep: 06.26.2020

MSD Sample Id: 664765-048 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000388	0.101	0.0959	95	0.0955	96	70-130	0	35	mg/kg	06.25.2020 15:28	
Toluene	0.00225	0.101	0.0943	91	0.0991	97	70-130	5	35	mg/kg	06.25.2020 15:28	
Ethylbenzene	<0.000569	0.101	0.0969	96	0.0970	97	70-130	0	35	mg/kg	06.25.2020 15:28	
m,p-Xylenes	<0.00102	0.202	0.193	96	0.195	98	70-130	1	35	mg/kg	06.25.2020 15:28	
o-Xylene	<0.000347	0.101	0.0968	96	0.0976	98	70-130	1	35	mg/kg	06.25.2020 15:28	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		100		70-130	%	06.25.2020 15:28
4-Bromofluorobenzene	99		99		70-130	%	06.25.2020 15:28

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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

664998

664998

CHAIN OF CUSTODY RECORD

		Laboratory: Xenco Address: 6701 Aberdeen Lubbock, Texas 79424		ANALYSIS REQUESTED Chloride (EPA Method 300) TPH Extended 8015 BTEX (EPA Method 8021B) Hold										LAB USE ONLY DUE DATE: TEMP OF COOLER WHEN RECEIVED (°C) 1.2/1.03					
		Office Location: Lubbock Project Manager: B. McBrayer Sampler's Name: B. McBrayer		Phone: Contact: J. Guesnier 806-544-9276 SRS #: Sampler's Signature:												Page 1 of 2			
Project Number: AR207106 Project Name: Pronghorn SWD Pipeline Release				No. Type of Containers 4 oz Glass 40 ml VOA 60 ml VOA 5035 kit															
Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	4 oz Glass	40 ml VOA	60 ml VOA	5035 kit	Chloride (EPA Method 300)	TPH Extended 8015	BTEX (EPA Method 8021B)	Hold	Lab Sample ID			
S	6/17/2020	11:00	X		BG-1 (0-0.5)	0	0.5	X							X	1			
S	6/17/2020	11:05	X		BG-1 (0.5-1)	0.5	1	X				X	X	X		2			
S	6/17/2020	11:10	X		BG-1 (1.5-2)	1.5	2	X				X	X	X		3			
S	6/17/2020	11:15	X		BG-1 (3.5-4)	3.5	4	X				X	X	X		4			
S	6/17/2020	11:20	X		BG-1 (4.5-5)	4.5	5	X							X	5			
S	6/17/2020	11:25	X		BG-2 (0-0.5)	0	0.5	X							X	6			
S	6/17/2020	11:30	X		BG-2 (0.5-1)	0.5	1	X				X	X	X		7			
S	6/17/2020	11:35	X		BG-2 (1.5-2)	1.5	2	X				X	X	X		8			
S	6/17/2020	11:40	X		BG-2 (3.5-4)	3.5	4	X				X	X	X		9			
S	6/17/2020	11:45	X		BG-2 (4.5-5)	4.5	5	X							X	10			
S	6/17/2020	11:50	X		HA-1 (0-0.5)	0	0.5	X							X	11			
S	6/17/2020	11:55	X		HA-1 (0.5-1)	0.5	1	X				X	X	X		12			
S	6/17/2020	12:00	X		HA-1 (1.5-2)	1.5	2	X				X	X	X		13			
S	6/17/2020	12:05	X		HA-1 (3.5-4)	3.5	4	X				X	X	X		14			
S	6/17/2020	12:10	X		HA-1 (4.5-5)	4.5	5	X							X	15			
S	6/17/2020	12:15	X		HA-2 (0-0.5)	0	0.5	X							X	16			
S	6/17/2020	12:20	X		HA-2 (0.5-1)	0.5	1	X				X	X	X		17			
S	6/17/2020	12:25	X		HA-2 (1.5-2)	1.5	2	X				X	X	X		18			
S	6/17/2020	12:30	X		HA-2 (3.5-4)	3.5	4	X				X	X	X		19			
S	6/17/2020	12:35	X		HA-2 (4.5-5)	4.5	5	X							X	20			

TURNAROUND TIME ☐ Normal ☒ 48-Hour Rush ☐ 24-Hour Rush

Relinquished by (Signature) *[Signature]* Date: 8-19-20 Time: 4:43

Received by (Signature) *[Signature]* Date: Time:

Relinquished by (Signature) Date: Time:

Received by (Signature) Date: Time:

Relinquished by (Signature) Date: Time:

Received by (Signature) Date: Time:

Relinquished by (Signature) Date: Time:

Received by (Signature) Date: Time:

NOTES: Client: Spur Energy Partners
 e-mail results to:
bryant.mcbrayer@terracon.com
erin.loyd@terracon.com
jrguesnier@terracon.com

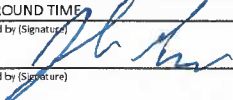
Matrix: WW-Wastewater W - Water S - Soil L - Liquid A - Air Bag C - Charcoal tube SL - Sludge
 Container: VOA - 40 ml vial A/G - Amber Glass 1L 250 ml - Glass wide mouth P/O - Plastic or other

Lubbock Office ■ 5827 50th Street, Suite 1 ■ Lubbock, Texas 79424 ■ 806-300-0140
 Responsive ■ Resourceful ■ Reliable

664998

CHAIN OF CUSTODY RECORD

		Laboratory: Xenco Address: 6701 Aberdeen Lubbock, Texas 79424		ANALYSIS REQUESTED										LAB USE ONLY DUE DATE: 1.2 / 11.03		
		Office Location: Lubbock		Phone: Contact: J. Guesnier 806-544-9276 SRS #: Sampler's Signature:		TEMP OF COOLER WHEN RECEIVED (°C) Page 2 of 2										
Project Manager: B. McBrayer Sampler's Name: B. McBrayer				Project Number: AR207106 Project Name: Pronghorn SWD Pipeline Release No. Type of Containers:												
Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	4 oz Glass	40 ml VOA	60 ml VOA	5035 kit	Chloride (EPA Method 300)	TPH Extended 8015	BTEX (EPA Method 8021B)	Hold	Lab Sample ID
S	6/17/2020	12:40	X		HA-3 (0-0.5)	0	0.5	X								21 28 Bu
S	6/17/2020	12:45	X		HA-3 (0.5-1)	0.5	1	X				X	X	X		22 29
S	6/17/2020	12:50	X		HA-3 (1.5-2)	1.5	2	X				X	X	X		23 30
S	6/17/2020	12:55	X		HA-3 (3.5-4)	3.5	4	X				X	X	X		24 31
S	6/17/2020	13:00	X		HA-3 (4.5-5)	4.5	5	X							X	25 32
S	6/17/2020	13:05	X		HA-4 (0-0.5)	0	0.5	X							X	26 33
S	6/17/2020	13:10	X		HA-4 (0.5-1)	0.5	1	X				X	X	X		27 34
S	6/17/2020	13:15	X		HA-4 (1.5-2)	1.5	2	X				X	X	X		28 35
S	6/17/2020	13:20	X		HA-4 (3.5-4)	3.5	4	X				X	X	X		
S	6/17/2020	13:25	X		HA-4 (4.5-5)	4.5	5	X							X	29 36
S	6/17/2020	13:30	X		HA-5 (0-0.5)	0	0.5	X							X	30 37
S	6/17/2020	13:35	X		HA-5 (0.5-1)	0.5	1	X				X	X	X		31 38
S	6/17/2020	13:40	X		HA-5 (1.5-2)	1.5	2	X				X	X	X		32 39
S	6/17/2020	13:45	X		HA-5 (3.5-4)	3.5	4	X				X	X	X		
S	6/17/2020	13:50	X		HA-5 (4.5-5)	4.5	5	X							X	
S	6/17/2020	13:55	X		HA-6 (0-0.5)	0	0.5	X							X	33 40
S	6/17/2020	14:00	X		HA-6 (0.5-1)	0.5	1	X				X	X	X		34 41
S	6/17/2020	14:05	X		HA-6 (1.5-2)	1.5	2	X				X	X	X		35 42
S	6/17/2020	14:10	X		HA-6 (3.5-4)	3.5	4	X				X	X	X		36 43
S	6/17/2020	14:15	X		HA-6 (4.5-5)	4.5	5	X							X	37 44

TURNAROUND TIME: ☐ Normal ☒ 48-Hour Rush ☐ 24-Hour Rush		TRRP Laboratory Review Checklist ☐ Yes ☐ No	
Relinquished by (Signature):  Date: 6-19-20 Time: 4:43	Received by (Signature): Brenda Ward Date: Time: 	NOTES: Client: Spur Energy Partners	
Relinquished by (Signature): Date: Time: 	Received by (Signature): Date: Time: 	e-mail results to:	
Relinquished by (Signature): Date: Time: 	Received by (Signature): Date: Time: 	bryant.mcbrayer@terracon.com erin.loyd@terracon.com jrguesnier@terracon.com	
Relinquished by (Signature): Date: Time: 	Received by (Signature): Date: Time: 		

Matrix: WW - Wastewater W - Water S - Soil L - Liquid A - Air Bag C - Charcoal tube SL - Sludge
 Container: VOA - 40 ml vial A/G - Amber Glass 1L 250 ml = Glass wide mouth P/O - Plastic or other

Lubbock Office ■ 5827 50th Street, Suite 1 ■ Lubbock, Texas 79424 ■ 806-300-0140

Responsive ■ Resourceful ■ Reliable

Inter-Office Shipment

IOS Number : **65738**

Date/Time: 06.22.2020

Created by: Brenda Ward

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
664998-001	S	BG-1 (0-0.5)	06.17.2020 11:00	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 11:00	JKR	CL F NO2N NO3N SO4	
664998-001	S	BG-1 (0-0.5)	06.17.2020 11:00	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-001	S	BG-1 (0-0.5)	06.17.2020 11:00	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-002	S	BG-1 (0.5-1)	06.17.2020 11:05	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 11:05	JKR	CL F NO2N NO3N SO4	
664998-002	S	BG-1 (0.5-1)	06.17.2020 11:05	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-002	S	BG-1 (0.5-1)	06.17.2020 11:05	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-003	S	BG-1 (1.5-2)	06.17.2020 11:10	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 11:10	JKR	CL F NO2N NO3N SO4	
664998-003	S	BG-1 (1.5-2)	06.17.2020 11:10	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-003	S	BG-1 (1.5-2)	06.17.2020 11:10	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-004	S	BG-1 (3.5-4)	06.17.2020 11:15	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 11:15	JKR	CL F NO2N NO3N SO4	
664998-004	S	BG-1 (3.5-4)	06.17.2020 11:15	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-004	S	BG-1 (3.5-4)	06.17.2020 11:15	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-005	S	BG-1 (4.5-5)	06.17.2020 11:20	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 11:20	JKR	CL F NO2N NO3N SO4	
664998-005	S	BG-1 (4.5-5)	06.17.2020 11:20	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-005	S	BG-1 (4.5-5)	06.17.2020 11:20	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-006	S	BG-2 (0-0.5)	06.17.2020 11:25	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 11:25	JKR	CL F NO2N NO3N SO4	
664998-006	S	BG-2 (0-0.5)	06.17.2020 11:25	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-006	S	BG-2 (0-0.5)	06.17.2020 11:25	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-007	S	BG-2 (0.5-1)	06.17.2020 11:30	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 11:30	JKR	CL F NO2N NO3N SO4	
664998-007	S	BG-2 (0.5-1)	06.17.2020 11:30	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-007	S	BG-2 (0.5-1)	06.17.2020 11:30	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-008	S	BG-2 (1.5-2)	06.17.2020 11:35	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 11:35	JKR	CL F NO2N NO3N SO4	
664998-008	S	BG-2 (1.5-2)	06.17.2020 11:35	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-008	S	BG-2 (1.5-2)	06.17.2020 11:35	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-009	S	BG-2 (3.5-4)	06.17.2020 11:40	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 11:40	JKR	CL F NO2N NO3N SO4	

Inter-Office Shipment

IOS Number : **65738**

Date/Time: 06.22.2020

Created by: Brenda Ward

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
664998-009	S	BG-2 (3.5-4)	06.17.2020 11:40	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-009	S	BG-2 (3.5-4)	06.17.2020 11:40	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-010	S	BG-2 (4.5-5)	06.17.2020 11:45	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 11:45	JKR	CL F NO2N NO3N SO4	
664998-010	S	BG-2 (4.5-5)	06.17.2020 11:45	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-010	S	BG-2 (4.5-5)	06.17.2020 11:45	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-011	S	HA-1 (0-0.5)	06.17.2020 11:50	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 11:50	JKR	CL F NO2N NO3N SO4	
664998-011	S	HA-1 (0-0.5)	06.17.2020 11:50	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-011	S	HA-1 (0-0.5)	06.17.2020 11:50	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-012	S	HA-1 (0-5-1)	06.17.2020 11:55	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 11:55	JKR	CL F NO2N NO3N SO4	
664998-012	S	HA-1 (0-5-1)	06.17.2020 11:55	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-012	S	HA-1 (0-5-1)	06.17.2020 11:55	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-013	S	HA-1 (1-5-2)	06.17.2020 12:00	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 12:00	JKR	CL F NO2N NO3N SO4	
664998-013	S	HA-1 (1-5-2)	06.17.2020 12:00	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-013	S	HA-1 (1-5-2)	06.17.2020 12:00	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-014	S	HA-1 (3-5-4)	06.17.2020 12:05	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 12:05	JKR	CL F NO2N NO3N SO4	
664998-014	S	HA-1 (3-5-4)	06.17.2020 12:05	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-014	S	HA-1 (3-5-4)	06.17.2020 12:05	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-015	S	HA-1 (4-5-5)	06.17.2020 12:10	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 12:10	JKR	CL F NO2N NO3N SO4	
664998-015	S	HA-1 (4-5-5)	06.17.2020 12:10	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-015	S	HA-1 (4-5-5)	06.17.2020 12:10	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-016	S	HA-2 (0-0.5)	06.17.2020 11:55	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 11:55	JKR	CL F NO2N NO3N SO4	
664998-016	S	HA-2 (0-0.5)	06.17.2020 11:55	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-016	S	HA-2 (0-0.5)	06.17.2020 11:55	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-017	S	HA-2 (0.5-1)	06.17.2020 12:20	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 12:20	JKR	CL F NO2N NO3N SO4	
664998-017	S	HA-2 (0.5-1)	06.17.2020 12:20	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C35	

Inter Office Shipment or Sample Comments:

Inter-Office Shipment

IOS Number : **65738**

Date/Time: 06.22.2020

Created by: Brenda Ward

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
664998-017	S	HA-2 (0.5-1)	06.17.2020 12:20	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-018	S	HA-2 (1-5-2)	06.17.2020 12:25	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 12:25	JKR	CL F NO2N NO3N SO4	
664998-018	S	HA-2 (1-5-2)	06.17.2020 12:25	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-018	S	HA-2 (1-5-2)	06.17.2020 12:25	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-019	S	HA-2 (3-5-4)	06.17.2020 12:30	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 12:30	JKR	CL F NO2N NO3N SO4	
664998-019	S	HA-2 (3-5-4)	06.17.2020 12:30	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-019	S	HA-2 (3-5-4)	06.17.2020 12:30	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-020	S	HA-2 (4.5-5)	06.17.2020 12:35	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 12:35	JKR	CL F NO2N NO3N SO4	
664998-020	S	HA-2 (4.5-5)	06.17.2020 12:35	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-020	S	HA-2 (4.5-5)	06.17.2020 12:35	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-021	S	HA-3 (0-0-5)	06.17.2020 12:40	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 12:40	JKR	CL F NO2N NO3N SO4	
664998-021	S	HA-3 (0-0-5)	06.17.2020 12:40	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-021	S	HA-3 (0-0-5)	06.17.2020 12:40	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-022	S	HA-3 (0.5-1)	06.17.2020 12:45	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 12:45	JKR	CL F NO2N NO3N SO4	
664998-022	S	HA-3 (0.5-1)	06.17.2020 12:45	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-022	S	HA-3 (0.5-1)	06.17.2020 12:45	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-023	S	HA-3 (1-5-2)	06.17.2020 12:50	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 12:50	JKR	CL F NO2N NO3N SO4	
664998-023	S	HA-3 (1-5-2)	06.17.2020 12:50	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-023	S	HA-3 (1-5-2)	06.17.2020 12:50	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-024	S	HA-3 (3-5-4)	06.17.2020 12:55	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 12:55	JKR	CL F NO2N NO3N SO4	
664998-024	S	HA-3 (3-5-4)	06.17.2020 12:55	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-024	S	HA-3 (3-5-4)	06.17.2020 12:55	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-025	S	HA-3 (4.5-5)	06.17.2020 13:00	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 13:00	JKR	CL F NO2N NO3N SO4	
664998-025	S	HA-3 (4.5-5)	06.17.2020 13:00	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-025	S	HA-3 (4.5-5)	06.17.2020 13:00	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	

Inter Office Shipment or Sample Comments:

Relinquished By:

Received By:

Inter-Office Shipment

IOS Number : **65738**

Date/Time: 06.22.2020

Created by: Brenda Ward

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
664998-026	S	HA-4 (0-0.5)	06.17.2020 13:05	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 13:05	JKR	CL F NO2N NO3N SO4	
664998-026	S	HA-4 (0-0.5)	06.17.2020 13:05	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-026	S	HA-4 (0-0.5)	06.17.2020 13:05	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-027	S	HA-4 (0.5-1)	06.17.2020 13:10	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 13:10	JKR	CL F NO2N NO3N SO4	
664998-027	S	HA-4 (0.5-1)	06.17.2020 13:10	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-027	S	HA-4 (0.5-1)	06.17.2020 13:10	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-028	S	HA-4 (1.5-2)	06.17.2020 13:15	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-028	S	HA-4 (1.5-2)	06.17.2020 13:15	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 13:15	JKR	CL F NO2N NO3N SO4	
664998-028	S	HA-4 (1.5-2)	06.17.2020 13:15	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-029	S	HA-4 (4.5-5)	06.17.2020 13:25	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 13:25	JKR	CL F NO2N NO3N SO4	
664998-029	S	HA-4 (4.5-5)	06.17.2020 13:25	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-029	S	HA-4 (4.5-5)	06.17.2020 13:25	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-030	S	HA-5 (0.0-5)	06.17.2020 13:30	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 13:30	JKR	CL F NO2N NO3N SO4	
664998-030	S	HA-5 (0.0-5)	06.17.2020 13:30	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-030	S	HA-5 (0.0-5)	06.17.2020 13:30	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-031	S	HA-5 (0.5-1)	06.17.2020 13:35	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 13:35	JKR	CL F NO2N NO3N SO4	
664998-031	S	HA-5 (0.5-1)	06.17.2020 13:35	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-031	S	HA-5 (0.5-1)	06.17.2020 13:35	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-032	S	HA-5 (1.5-2)	06.17.2020 13:15	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 13:15	JKR	CL F NO2N NO3N SO4	
664998-032	S	HA-5 (1.5-2)	06.17.2020 13:15	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-032	S	HA-5 (1.5-2)	06.17.2020 13:15	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-033	S	HA-6 (0-0.5)	06.17.2020 13:55	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 13:55	JKR	CL F NO2N NO3N SO4	
664998-033	S	HA-6 (0-0.5)	06.17.2020 13:55	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-033	S	HA-6 (0-0.5)	06.17.2020 13:55	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-034	S	HA-6 (0.5-1)	06.17.2020 14:00	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 14:00	JKR	CL F NO2N NO3N SO4	

Inter Office Shipment or Sample Comments:

Date Relinquished:

Date Received:

Inter-Office Shipment

IOS Number : **65738**

Date/Time: 06.22.2020

Created by: Brenda Ward

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
664998-034	S	HA-6 (0.5-1)	06.17.2020 14:00	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-034	S	HA-6 (0.5-1)	06.17.2020 14:00	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-035	S	HA-6 (1.5-2)	06.17.2020 14:05	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 14:05	JKR	CL F NO2N NO3N SO4	
664998-035	S	HA-6 (1.5-2)	06.17.2020 14:05	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-035	S	HA-6 (1.5-2)	06.17.2020 14:05	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-036	S	HA-6 (3.5-4)	06.17.2020 14:10	E300	Inorganic Anions by EPA 300/300.1	06.23.2020	06.19.2020 14:10	JKR	CL F NO2N NO3N SO4	
664998-036	S	HA-6 (3.5-4)	06.17.2020 14:10	SW8015MOD_NM	TPH By SW8015 Mod	06.23.2020	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-036	S	HA-6 (3.5-4)	06.17.2020 14:10	SW8021B	BTEX by EPA 8021B	06.23.2020	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-037	S	HA-6 (4.5-5)	06.17.2020 14:15	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 14:15	JKR	CL F NO2N NO3N SO4	
664998-037	S	HA-6 (4.5-5)	06.17.2020 14:15	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-037	S	HA-6 (4.5-5)	06.17.2020 14:15	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	

Inter Office Shipment or Sample Comments:



Michael J Turner

06.22.2020



Brianna Teel

06.23.2020

Cooler Temperature: 1.2

Inter-Office Shipment

IOS Number : **65793**

Date/Time: 06.22.2020

Created by: Michael J Turner

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
664998-001	S	BG-1 (0-0.5)	06.17.2020 11:00	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 11:00	JKR	CL F NO2N NO3N SO4	
664998-001	S	BG-1 (0-0.5)	06.17.2020 11:00	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-001	S	BG-1 (0-0.5)	06.17.2020 11:00	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-005	S	BG-1 (4.5-5)	06.17.2020 11:20	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 11:20	JKR	CL F NO2N NO3N SO4	
664998-005	S	BG-1 (4.5-5)	06.17.2020 11:20	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-005	S	BG-1 (4.5-5)	06.17.2020 11:20	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-006	S	BG-2 (0-0.5)	06.17.2020 11:25	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-006	S	BG-2 (0-0.5)	06.17.2020 11:25	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 11:25	JKR	CL F NO2N NO3N SO4	
664998-006	S	BG-2 (0-0.5)	06.17.2020 11:25	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-010	S	BG-2 (4.5-5)	06.17.2020 11:45	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-010	S	BG-2 (4.5-5)	06.17.2020 11:45	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 11:45	JKR	CL F NO2N NO3N SO4	
664998-010	S	BG-2 (4.5-5)	06.17.2020 11:45	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-011	S	HA-1 (0-0.5)	06.17.2020 11:50	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-011	S	HA-1 (0-0.5)	06.17.2020 11:50	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-011	S	HA-1 (0-0.5)	06.17.2020 11:50	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 11:50	JKR	CL F NO2N NO3N SO4	
664998-015	S	HA-1 (4.5-5)	06.17.2020 12:10	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-015	S	HA-1 (4.5-5)	06.17.2020 12:10	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-015	S	HA-1 (4.5-5)	06.17.2020 12:10	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 12:10	JKR	CL F NO2N NO3N SO4	
664998-016	S	HA-2 (0-0.5)	06.17.2020 11:55	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-016	S	HA-2 (0-0.5)	06.17.2020 11:55	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-016	S	HA-2 (0-0.5)	06.17.2020 11:55	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 11:55	JKR	CL F NO2N NO3N SO4	
664998-020	S	HA-2 (4.5-5)	06.17.2020 12:35	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 12:35	JKR	CL F NO2N NO3N SO4	
664998-020	S	HA-2 (4.5-5)	06.17.2020 12:35	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C35	
664998-020	S	HA-2 (4.5-5)	06.17.2020 12:35	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-021	S	HA-3 (0-0.5)	06.17.2020 12:40	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	

Inter-Office Shipment

IOS Number : **65793**

Date/Time: 06.22.2020

Created by: Michael J Turner

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
664998-021	S	HA-3 (0-0.5)	06.17.2020 12:40	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-021	S	HA-3 (0-0.5)	06.17.2020 12:40	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 12:40	JKR	CL F NO2N NO3N SO4	
664998-025	S	HA-3 (4.5-5)	06.17.2020 13:00	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-025	S	HA-3 (4.5-5)	06.17.2020 13:00	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-025	S	HA-3 (4.5-5)	06.17.2020 13:00	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 13:00	JKR	CL F NO2N NO3N SO4	
664998-026	S	HA-4 (0-0.5)	06.17.2020 13:05	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 13:05	JKR	CL F NO2N NO3N SO4	
664998-026	S	HA-4 (0-0.5)	06.17.2020 13:05	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-026	S	HA-4 (0-0.5)	06.17.2020 13:05	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-029	S	HA-4 (4.5-5)	06.17.2020 13:25	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-029	S	HA-4 (4.5-5)	06.17.2020 13:25	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 13:25	JKR	CL F NO2N NO3N SO4	
664998-029	S	HA-4 (4.5-5)	06.17.2020 13:25	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-030	S	HA-5 (0.0-5)	06.17.2020 13:30	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-030	S	HA-5 (0.0-5)	06.17.2020 13:30	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 13:30	JKR	CL F NO2N NO3N SO4	
664998-030	S	HA-5 (0.0-5)	06.17.2020 13:30	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-033	S	HA-6 (0-0.5)	06.17.2020 13:55	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-033	S	HA-6 (0-0.5)	06.17.2020 13:55	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 13:55	JKR	CL F NO2N NO3N SO4	
664998-033	S	HA-6 (0-0.5)	06.17.2020 13:55	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-037	S	HA-6 (4.5-5)	06.17.2020 14:15	SW8021B	BTEX by EPA 8021B	HOLD	07.01.2020	JKR	BR4FBZ BZ BZME EBZ	
664998-037	S	HA-6 (4.5-5)	06.17.2020 14:15	SW8015MOD_NM	TPH By SW8015 Mod	HOLD	07.01.2020	JKR	PHCC10C28 PHCC28C3	
664998-037	S	HA-6 (4.5-5)	06.17.2020 14:15	E300	Inorganic Anions by EPA 300/300.1	HOLD	06.19.2020 14:15	JKR	CL F NO2N NO3N SO4	

Inter Office Shipment or Sample Comments:

Relinquished By:



Michael J Turner

Received By:



Brianna Teel

Date Relinquished: 06.22.2020

Date Received: 06.23.2020

Inter-Office Shipment

IOS Number : 65793

Date/Time: 06.22.2020

Created by: Michael J Turner

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@xenco.com

Inter Office Shipment or Sample Comments:

Cooler Temperature: 1.2



XENCO Laboratories



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 65738

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-8

Sent By: Brenda Ward

Date Sent: 06.22.2020 11.08 AM

Received By: Brianna Teel

Date Received: 06.23.2020 10.59 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: 06.23.2020



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 65793

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-8

Sent By: Michael J Turner

Date Sent: 06.22.2020 03.21 PM

Received By: Brianna Teel

Date Received: 06.23.2020 10.59 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Brianna Teel

Date: 06.23.2020

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 06.19.2020 04.43.00 PM

Work Order #: 664998

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-4

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

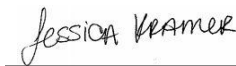
PH Device/Lot#:

Checklist completed by:


 Brenda Ward

Date: 06.22.2020

Checklist reviewed by:


 Jessica Kramer

Date: 06.24.2020

Certificate of Analysis Summary 680993



Terracon-Lubbock, Lubbock, TX

Project Name: Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Project Id: AR207106
Contact: Joseph Guesnier
Project Location:

Date Received in Lab: Fri 12.11.2020 16:45
Report Date: 12.18.2020 15:06
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	680993-001	680993-002	680993-003	680993-004	680993-005	680993-006
	<i>Field Id:</i>	NF-(1.5-2)	NW-(0.5-1)	WW-1 (2-2.5)	WW-2 (2-2.5)	WW-3 (2-2.5)	WW-4 (2-2.5)
	<i>Depth:</i>	1.5-2 ft	.5-1 ft	2-2.5 ft	2-2.5 ft	2-2.5 ft	2-2.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	12.09.2020 12:00	12.09.2020 12:05	12.09.2020 12:10	12.09.2020 12:15	12.09.2020 12:20	12.09.2020 12:25
BTEX by EPA 8021B SUB: T104704400-20-21	<i>Extracted:</i>	12.15.2020 13:00	12.15.2020 13:00	12.15.2020 13:00	12.15.2020 17:00	12.15.2020 13:00	12.15.2020 17:00
	<i>Analyzed:</i>	12.15.2020 19:19	12.15.2020 19:39	12.15.2020 20:00	12.16.2020 12:14	12.15.2020 20:41	12.16.2020 12:34
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199
Toluene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199
Ethylbenzene		<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199
m,p-Xylenes		<0.00404 0.00404	0.00423 0.00399	<0.00399 0.00399	<0.00403 0.00403	<0.00398 0.00398	<0.00398 0.00398
o-Xylene		<0.00202 0.00202	0.00201 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199
Xylenes, Total		<0.00202 0.00202	0.00624 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199
Total BTEX		<0.00202 0.00202	0.00624 0.00200	<0.00200 0.00200	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199
Chloride by EPA 300 SUB: T104704400-20-21	<i>Extracted:</i>	12.16.2020 10:20	12.16.2020 10:20	12.16.2020 10:20	12.16.2020 10:20	12.16.2020 10:20	12.16.2020 10:20
	<i>Analyzed:</i>	12.16.2020 11:45	12.16.2020 11:50	12.16.2020 11:55	12.16.2020 12:00	12.16.2020 12:06	12.16.2020 12:21
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		11.7 5.00	5.93 5.02	12.1 4.98	9.28 4.95	13.1 4.95	11.2 5.03
TPH by SW8015 Mod SUB: T104704400-20-21	<i>Extracted:</i>	12.17.2020 14:00	12.17.2020 14:00	12.17.2020 14:00	12.17.2020 14:00	12.17.2020 14:00	12.17.2020 14:00
	<i>Analyzed:</i>	12.17.2020 17:42	12.17.2020 18:37	12.17.2020 18:55	12.17.2020 19:13	12.18.2020 09:54	12.17.2020 19:50
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9
Diesel Range Organics (DRO)		<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9
Total TPH		<50.0 50.0	<49.9 49.9	<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 680993



Terracon-Lubbock, Lubbock, TX

Project Name: Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Project Id: AR207106
Contact: Joseph Guesnier
Project Location:

Date Received in Lab: Fri 12.11.2020 16:45
Report Date: 12.18.2020 15:06
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	680993-007	680993-008	680993-009	680993-010	680993-011	680993-012
	<i>Field Id:</i>	WW-5 (2-2.5)	WW-6 (2-2.5)	WW-7 (2-2.5)	WW-8 (2-2.5)	EW-1 (2-2.5)	EW-2 (2-2.5)
	<i>Depth:</i>	2-2.5 ft	2-2.5 ft	2-2.5 ft	2-2.5 ft	2-2.5 ft	2-2.5 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	12.09.2020 12:30	12.09.2020 12:35	12.09.2020 12:40	12.09.2020 12:45	12.09.2020 12:50	12.09.2020 12:55
BTEX by EPA 8021B SUB: T104704400-20-21	<i>Extracted:</i>	12.15.2020 13:00	12.15.2020 13:00	12.15.2020 13:00	12.15.2020 13:00	12.15.2020 13:00	12.15.2020 13:00
	<i>Analyzed:</i>	12.15.2020 21:22	12.15.2020 21:43	12.15.2020 23:08	12.15.2020 23:28	12.15.2020 23:49	12.16.2020 00:10
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202
Toluene		<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202
Ethylbenzene		<0.00200 0.00200	<0.00202 0.00202	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200	<0.00202 0.00202
m,p-Xylenes		0.00449 0.00400	0.00794 0.00403	0.00626 0.00401	0.00855 0.00401	0.0185 0.00401	0.00535 0.00404
o-Xylene		<0.00200 0.00200	0.00334 0.00202	0.00266 0.00200	0.00452 0.00200	0.00714 0.00200	0.00237 0.00202
Xylenes, Total		0.00449 0.00200	0.0113 0.00202	0.00892 0.00200	0.0131 0.00200	0.0256 0.00200	0.00772 0.00202
Total BTEX		0.00449 0.00200	0.0113 0.00202	0.00892 0.00200	0.0131 0.00200	0.0256 0.00200	0.00772 0.00202
Chloride by EPA 300 SUB: T104704400-20-21	<i>Extracted:</i>	12.16.2020 10:20	12.16.2020 10:20	12.16.2020 10:20	12.16.2020 10:20	12.16.2020 10:20	12.16.2020 10:20
	<i>Analyzed:</i>	12.16.2020 12:26	12.16.2020 12:42	12.16.2020 12:47	12.16.2020 12:53	12.16.2020 12:58	12.16.2020 13:03
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		10.6 4.96	9.72 4.98	9.13 5.00	9.17 5.00	12.9 4.97	19.3 5.05
TPH by SW8015 Mod SUB: T104704400-20-21	<i>Extracted:</i>	12.17.2020 14:00	12.17.2020 14:00	12.17.2020 14:00	12.17.2020 14:00	12.17.2020 14:00	12.17.2020 14:00
	<i>Analyzed:</i>	12.17.2020 20:08	12.17.2020 20:27	12.17.2020 20:45	12.17.2020 21:03	12.17.2020 21:40	12.17.2020 21:58
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0
Diesel Range Organics (DRO)		<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0
Total TPH		<49.9 49.9	<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0

BRL - Below Reporting Limit

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

Certificate of Analysis Summary 680993



Terracon-Lubbock, Lubbock, TX

Project Name: Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Project Id: AR207106
Contact: Joseph Guesnier
Project Location:

Date Received in Lab: Fri 12.11.2020 16:45
Report Date: 12.18.2020 15:06
Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	680993-013	680993-014	680993-016	680993-017	680993-018	
	Field Id:	EW-3 (2-2.5)	EW-4 (2-2.5)	EW-6 (2-2.5)	EW-7 (2-2.5)	EW-8 (2-2.5)	
	Depth:	2-2.5 ft	2-2.5 ft	2-2.5 ft	2-2.5 ft	2-2.5 ft	
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
	Sampled:	12.09.2020 13:00	12.09.2020 13:05	12.09.2020 13:15	12.09.2020 13:20	12.09.2020 13:25	
BTEX by EPA 8021B SUB: T104704400-20-21	Extracted:	12.15.2020 13:00	12.15.2020 13:00	12.15.2020 13:00	12.15.2020 13:00	12.15.2020 13:00	
	Analyzed:	12.16.2020 00:30	12.16.2020 00:51	12.16.2020 01:32	12.16.2020 01:53	12.16.2020 02:14	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	
Toluene		<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	
Ethylbenzene		<0.00199 0.00199	<0.00202 0.00202	<0.00199 0.00199	<0.00199 0.00199	<0.00201 0.00201	
m,p-Xylenes		0.00692 0.00398	0.0112 0.00403	0.00689 0.00398	<0.00398 0.00398	0.00584 0.00402	
o-Xylene		0.00280 0.00199	0.00431 0.00202	0.00306 0.00199	<0.00199 0.00199	0.00251 0.00201	
Xylenes, Total		0.00972 0.00199	0.0155 0.00202	0.00995 0.00199	<0.00199 0.00199	0.00835 0.00201	
Total BTEX		0.00972 0.00199	0.0155 0.00202	0.00995 0.00199	<0.00199 0.00199	0.00835 0.00201	
Chloride by EPA 300 SUB: T104704400-20-21	Extracted:	12.16.2020 10:20	12.16.2020 10:20	12.16.2020 10:40	12.16.2020 10:40	12.16.2020 10:40	
	Analyzed:	12.16.2020 13:08	12.16.2020 13:13	12.16.2020 10:58	12.16.2020 11:14	12.16.2020 11:19	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		12.3 5.05	15.4 4.98	<5.05 5.05	6.32 4.99	<4.97 4.97	
TPH by SW8015 Mod SUB: T104704400-20-21	Extracted:	12.17.2020 14:00	12.17.2020 14:00	12.17.2020 14:00	12.17.2020 14:00	12.17.2020 14:00	
	Analyzed:	12.17.2020 22:16	12.17.2020 22:34	12.17.2020 22:53	12.17.2020 23:12	12.17.2020 23:31	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)		<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8	
Diesel Range Organics (DRO)		<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8	
Motor Oil Range Hydrocarbons (MRO)		<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8	
Total TPH		<49.8 49.8	<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.8 49.8	

BRL - Below Reporting Limit

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

Analytical Report 680993

for

Terracon-Lubbock

Project Manager: Joseph Guesnier

Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

AR207106

12.18.2020

Collected By: Client



6701 Aberdeen, Suite 9 Lubbock, TX 79424

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

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)



12.18.2020

Project Manager: **Joseph Guesnier**

Terracon-Lubbock

5827 50th st, Suite 1

Lubbock, TX 79424

Reference: Eurofins Xenco, LLC Report No(s): **680993**

Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Project Address:

Joseph Guesnier:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 680993. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 680993 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads "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 680993

Terracon-Lubbock, Lubbock, TX

Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
NF-(1.5-2)	S	12.09.2020 12:00	1.5 - 2 ft	680993-001
NW-(0.5-1)	S	12.09.2020 12:05	.5 - 1 ft	680993-002
WW-1 (2-2.5)	S	12.09.2020 12:10	2 - 2.5 ft	680993-003
WW-2 (2-2.5)	S	12.09.2020 12:15	2 - 2.5 ft	680993-004
WW-3 (2-2.5)	S	12.09.2020 12:20	2 - 2.5 ft	680993-005
WW-4 (2-2.5)	S	12.09.2020 12:25	2 - 2.5 ft	680993-006
WW-5 (2-2.5)	S	12.09.2020 12:30	2 - 2.5 ft	680993-007
WW-6 (2-2.5)	S	12.09.2020 12:35	2 - 2.5 ft	680993-008
WW-7 (2-2.5)	S	12.09.2020 12:40	2 - 2.5 ft	680993-009
WW-8 (2-2.5)	S	12.09.2020 12:45	2 - 2.5 ft	680993-010
EW-1 (2-2.5)	S	12.09.2020 12:50	2 - 2.5 ft	680993-011
EW-2 (2-2.5)	S	12.09.2020 12:55	2 - 2.5 ft	680993-012
EW-3 (2-2.5)	S	12.09.2020 13:00	2 - 2.5 ft	680993-013
EW-4 (2-2.5)	S	12.09.2020 13:05	2 - 2.5 ft	680993-014
EW-6 (2-2.5)	S	12.09.2020 13:15	2 - 2.5 ft	680993-016
EW-7 (2-2.5)	S	12.09.2020 13:20	2 - 2.5 ft	680993-017
EW-8 (2-2.5)	S	12.09.2020 13:25	2 - 2.5 ft	680993-018
EW-5 (2-2.5)	S	12.09.2020 13:10	2 - 2.5 ft	Not Analyzed

**CASE NARRATIVE****Client Name: Terracon-Lubbock****Project Name: Pipeline 03 Antelope Riser - Maljamar SWD 30 #2**Project ID: AR207106
Work Order Number(s): 680993Report Date: 12.18.2020
Date Received: 12.11.2020**Sample receipt non conformances and comments:****Sample receipt non conformances and comments per sample:**

None

Analytical non conformances and comments:

Batch: LBA-3145062 BTEX by EPA 8021B

Surrogate 4-Bromofluorobenzene recovered below QC limits. Matrix interferences is suspected.

Samples affected are: 680993-005,680993-001.

Batch: LBA-3145174 Chloride by EPA 300

Lab Sample ID 681103-007 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Chloride recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.

Samples in the analytical batch are: 680993-016, -017, -018.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3145320 TPH by SW8015 Mod

Surrogate o-Terphenyl recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 680993-014,680993-007.



Certificate of Analytical Results 680993

Terracon-Lubbock, Lubbock, TX

Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **NF-(1.5-2)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-001

Date Collected: 12.09.2020 12:00

Sample Depth: 1.5 - 2 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.16.2020 10:20

% Moisture:

Basis: Wet Weight

Seq Number: 3145163

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.7	5.00	mg/kg	12.16.2020 11:45		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.17.2020 14:00

% Moisture:

Basis: Wet Weight

Seq Number: 3145320

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.17.2020 17:42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.17.2020 17:42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.17.2020 17:42	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.17.2020 17:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-130	12.17.2020 17:42	
o-Terphenyl	84-15-1	120	%	70-130	12.17.2020 17:42	



Certificate of Analytical Results 680993

Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **NF-(1.5-2)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-001

Date Collected: 12.09.2020 12:00

Sample Depth: 1.5 - 2 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.15.2020 13:00

% Moisture:

Seq Number: 3145062

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.15.2020 19:19	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.15.2020 19:19	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.15.2020 19:19	U	1
m,p-Xylenes	179601-23-1	<0.00404	0.00404	mg/kg	12.15.2020 19:19	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.15.2020 19:19	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	12.15.2020 19:19	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.15.2020 19:19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	91	%	70-130	12.15.2020 19:19	
4-Bromofluorobenzene	460-00-4	54	%	70-130	12.15.2020 19:19	**



Certificate of Analytical Results 680993

Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **NW-(0.5-1)** Matrix: Soil Date Received: 12.11.2020 16:45
 Lab Sample Id: 680993-002 Date Collected: 12.09.2020 12:05 Sample Depth: .5 - 1 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE
 Analyst: CHE Date Prep: 12.16.2020 10:20 % Moisture:
 Basis: Wet Weight
 Seq Number: 3145163 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.93	5.02	mg/kg	12.16.2020 11:50		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM
 Analyst: ARM Date Prep: 12.17.2020 14:00 % Moisture:
 Basis: Wet Weight
 Seq Number: 3145320 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.17.2020 18:37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.17.2020 18:37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.17.2020 18:37	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.17.2020 18:37	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	107	%	70-130	12.17.2020 18:37		
o-Terphenyl	84-15-1	116	%	70-130	12.17.2020 18:37		



Certificate of Analytical Results 680993

Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **NW-(0.5-1)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-002

Date Collected: 12.09.2020 12:05

Sample Depth: .5 - 1 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.15.2020 13:00

% Moisture:

Seq Number: 3145062

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.15.2020 19:39	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.15.2020 19:39	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.15.2020 19:39	U	1
m,p-Xylenes	179601-23-1	0.00423	0.00399	mg/kg	12.15.2020 19:39		1
o-Xylene	95-47-6	0.00201	0.00200	mg/kg	12.15.2020 19:39		1
Xylenes, Total	1330-20-7	0.00624	0.00200	mg/kg	12.15.2020 19:39		1
Total BTEX		0.00624	0.00200	mg/kg	12.15.2020 19:39		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	79	%	70-130	12.15.2020 19:39	
4-Bromofluorobenzene	460-00-4	104	%	70-130	12.15.2020 19:39	



Certificate of Analytical Results 680993

Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **WW-1 (2-2.5)** Matrix: Soil Date Received: 12.11.2020 16:45
 Lab Sample Id: 680993-003 Date Collected: 12.09.2020 12:10 Sample Depth: 2 - 2.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE
 Analyst: CHE Date Prep: 12.16.2020 10:20 % Moisture:
 Basis: Wet Weight
 Seq Number: 3145163 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.1	4.98	mg/kg	12.16.2020 11:55		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM
 Analyst: ARM Date Prep: 12.17.2020 14:00 % Moisture:
 Basis: Wet Weight
 Seq Number: 3145320 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.17.2020 18:55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.17.2020 18:55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.17.2020 18:55	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	12.17.2020 18:55	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	118	%	70-130	12.17.2020 18:55		
o-Terphenyl	84-15-1	125	%	70-130	12.17.2020 18:55		



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **WW-1 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-003

Date Collected: 12.09.2020 12:10

Sample Depth: 2 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.15.2020 13:00

% Moisture:

Seq Number: 3145062

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.15.2020 20:00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.15.2020 20:00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.15.2020 20:00	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.15.2020 20:00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.15.2020 20:00	U	1
Xylenes, Total	1330-20-7	<0.00200	0.00200	mg/kg	12.15.2020 20:00	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.15.2020 20:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	12.15.2020 20:00	
1,4-Difluorobenzene	540-36-3	82	%	70-130	12.15.2020 20:00	



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Terracon-Lubbock, Lubbock, TX

Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **WW-2 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-004

Date Collected: 12.09.2020 12:15

Sample Depth: 2 - 2.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.16.2020 10:20

% Moisture:

Basis: Wet Weight

Seq Number: 3145163

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.28	4.95	mg/kg	12.16.2020 12:00		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.17.2020 14:00

% Moisture:

Basis: Wet Weight

Seq Number: 3145320

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.17.2020 19:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.17.2020 19:13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.17.2020 19:13	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.17.2020 19:13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	121	%	70-130	12.17.2020 19:13	
o-Terphenyl	84-15-1	125	%	70-130	12.17.2020 19:13	



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **WW-2 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-004

Date Collected: 12.09.2020 12:15

Sample Depth: 2 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.15.2020 17:00

% Moisture:

Seq Number: 3145065

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.16.2020 12:14	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.16.2020 12:14	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.16.2020 12:14	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.16.2020 12:14	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.16.2020 12:14	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	12.16.2020 12:14	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.16.2020 12:14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	92	%	70-130	12.16.2020 12:14	
1,4-Difluorobenzene	540-36-3	80	%	70-130	12.16.2020 12:14	



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Terracon-Lubbock, Lubbock, TX

Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **WW-3 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-005

Date Collected: 12.09.2020 12:20

Sample Depth: 2 - 2.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.16.2020 10:20

% Moisture:

Basis: Wet Weight

Seq Number: 3145163

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.1	4.95	mg/kg	12.16.2020 12:06		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.17.2020 14:00

% Moisture:

Basis: Wet Weight

Seq Number: 3145320

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.18.2020 09:54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.18.2020 09:54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.18.2020 09:54	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.18.2020 09:54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-130	12.18.2020 09:54	
o-Terphenyl	84-15-1	121	%	70-130	12.18.2020 09:54	



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **WW-3 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-005

Date Collected: 12.09.2020 12:20

Sample Depth: 2 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.15.2020 13:00

% Moisture:

Seq Number: 3145062

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.15.2020 20:41	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.15.2020 20:41	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.15.2020 20:41	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.15.2020 20:41	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.15.2020 20:41	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	12.15.2020 20:41	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.15.2020 20:41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	52	%	70-130	12.15.2020 20:41	**
1,4-Difluorobenzene	540-36-3	114	%	70-130	12.15.2020 20:41	



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Terracon-Lubbock, Lubbock, TX

Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **WW-4 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-006

Date Collected: 12.09.2020 12:25

Sample Depth: 2 - 2.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.16.2020 10:20

% Moisture:

Basis: Wet Weight

Seq Number: 3145163

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.2	5.03	mg/kg	12.16.2020 12:21		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.17.2020 14:00

% Moisture:

Basis: Wet Weight

Seq Number: 3145320

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.17.2020 19:50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.17.2020 19:50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.17.2020 19:50	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.17.2020 19:50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	118	%	70-130	12.17.2020 19:50	
o-Terphenyl	84-15-1	124	%	70-130	12.17.2020 19:50	



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **WW-4 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-006

Date Collected: 12.09.2020 12:25

Sample Depth: 2 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.15.2020 17:00

% Moisture:

Seq Number: 3145065

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.16.2020 12:34	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.16.2020 12:34	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.16.2020 12:34	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.16.2020 12:34	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.16.2020 12:34	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	12.16.2020 12:34	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.16.2020 12:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	70-130	12.16.2020 12:34	
1,4-Difluorobenzene	540-36-3	80	%	70-130	12.16.2020 12:34	



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **WW-5 (2-2.5)** Matrix: Soil Date Received: 12.11.2020 16:45
 Lab Sample Id: 680993-007 Date Collected: 12.09.2020 12:30 Sample Depth: 2 - 2.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE
 Analyst: CHE Date Prep: 12.16.2020 10:20 % Moisture:
 Basis: Wet Weight
 Seq Number: 3145163 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.6	4.96	mg/kg	12.16.2020 12:26		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM
 Analyst: ARM Date Prep: 12.17.2020 14:00 % Moisture:
 Basis: Wet Weight
 Seq Number: 3145320 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.17.2020 20:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.17.2020 20:08	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.17.2020 20:08	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.17.2020 20:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	130	%	70-130	12.17.2020 20:08	
o-Terphenyl	84-15-1	139	%	70-130	12.17.2020 20:08	**



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **WW-5 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-007

Date Collected: 12.09.2020 12:30

Sample Depth: 2 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.15.2020 13:00

% Moisture:

Seq Number: 3145062

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.15.2020 21:22	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.15.2020 21:22	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.15.2020 21:22	U	1
m,p-Xylenes	179601-23-1	0.00449	0.00400	mg/kg	12.15.2020 21:22		1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.15.2020 21:22	U	1
Xylenes, Total	1330-20-7	0.00449	0.00200	mg/kg	12.15.2020 21:22		1
Total BTEX		0.00449	0.00200	mg/kg	12.15.2020 21:22		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	83	%	70-130	12.15.2020 21:22	
4-Bromofluorobenzene	460-00-4	98	%	70-130	12.15.2020 21:22	



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **WW-6 (2-2.5)** Matrix: Soil Date Received: 12.11.2020 16:45
 Lab Sample Id: 680993-008 Date Collected: 12.09.2020 12:35 Sample Depth: 2 - 2.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE
 Analyst: CHE Date Prep: 12.16.2020 10:20 % Moisture:
 Basis: Wet Weight
 Seq Number: 3145163 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.72	4.98	mg/kg	12.16.2020 12:42		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM
 Analyst: ARM Date Prep: 12.17.2020 14:00 % Moisture:
 Basis: Wet Weight
 Seq Number: 3145320 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.17.2020 20:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.17.2020 20:27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.17.2020 20:27	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.17.2020 20:27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-130	12.17.2020 20:27	
o-Terphenyl	84-15-1	122	%	70-130	12.17.2020 20:27	



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **WW-6 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-008

Date Collected: 12.09.2020 12:35

Sample Depth: 2 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.15.2020 13:00

% Moisture:

Seq Number: 3145062

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.15.2020 21:43	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.15.2020 21:43	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.15.2020 21:43	U	1
m,p-Xylenes	179601-23-1	0.00794	0.00403	mg/kg	12.15.2020 21:43		1
o-Xylene	95-47-6	0.00334	0.00202	mg/kg	12.15.2020 21:43		1
Xylenes, Total	1330-20-7	0.0113	0.00202	mg/kg	12.15.2020 21:43		1
Total BTEX		0.0113	0.00202	mg/kg	12.15.2020 21:43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	79	%	70-130	12.15.2020 21:43	
4-Bromofluorobenzene	460-00-4	102	%	70-130	12.15.2020 21:43	



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Terracon-Lubbock, Lubbock, TX

Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **WW-7 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-009

Date Collected: 12.09.2020 12:40

Sample Depth: 2 - 2.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.16.2020 10:20

% Moisture:

Basis: Wet Weight

Seq Number: 3145163

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.13	5.00	mg/kg	12.16.2020 12:47		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.17.2020 14:00

% Moisture:

Basis: Wet Weight

Seq Number: 3145320

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.17.2020 20:45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.17.2020 20:45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.17.2020 20:45	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.17.2020 20:45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-130	12.17.2020 20:45	
o-Terphenyl	84-15-1	123	%	70-130	12.17.2020 20:45	



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **WW-7 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-009

Date Collected: 12.09.2020 12:40

Sample Depth: 2 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.15.2020 13:00

% Moisture:

Seq Number: 3145062

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.15.2020 23:08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.15.2020 23:08	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.15.2020 23:08	U	1
m,p-Xylenes	179601-23-1	0.00626	0.00401	mg/kg	12.15.2020 23:08		1
o-Xylene	95-47-6	0.00266	0.00200	mg/kg	12.15.2020 23:08		1
Xylenes, Total	1330-20-7	0.00892	0.00200	mg/kg	12.15.2020 23:08		1
Total BTEX		0.00892	0.00200	mg/kg	12.15.2020 23:08		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	80	%	70-130	12.15.2020 23:08	
4-Bromofluorobenzene	460-00-4	91	%	70-130	12.15.2020 23:08	



Certificate of Analytical Results 680993

Terracon-Lubbock, Lubbock, TX

Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **WW-8 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-010

Date Collected: 12.09.2020 12:45

Sample Depth: 2 - 2.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.16.2020 10:20

% Moisture:

Basis: Wet Weight

Seq Number: 3145163

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.17	5.00	mg/kg	12.16.2020 12:53		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.17.2020 14:00

% Moisture:

Basis: Wet Weight

Seq Number: 3145320

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.17.2020 21:03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.17.2020 21:03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.17.2020 21:03	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.17.2020 21:03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	115	%	70-130	12.17.2020 21:03		
o-Terphenyl	84-15-1	122	%	70-130	12.17.2020 21:03		



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **WW-8 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-010

Date Collected: 12.09.2020 12:45

Sample Depth: 2 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.15.2020 13:00

% Moisture:

Seq Number: 3145062

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.15.2020 23:28	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.15.2020 23:28	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.15.2020 23:28	U	1
m,p-Xylenes	179601-23-1	0.00855	0.00401	mg/kg	12.15.2020 23:28		1
o-Xylene	95-47-6	0.00452	0.00200	mg/kg	12.15.2020 23:28		1
Xylenes, Total	1330-20-7	0.0131	0.00200	mg/kg	12.15.2020 23:28		1
Total BTEX		0.0131	0.00200	mg/kg	12.15.2020 23:28		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	78	%	70-130	12.15.2020 23:28	
4-Bromofluorobenzene	460-00-4	109	%	70-130	12.15.2020 23:28	



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **EW-1 (2-2.5)** Matrix: Soil Date Received: 12.11.2020 16:45
 Lab Sample Id: 680993-011 Date Collected: 12.09.2020 12:50 Sample Depth: 2 - 2.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE
 Analyst: CHE Date Prep: 12.16.2020 10:20 % Moisture:
 Basis: Wet Weight
 Seq Number: 3145163 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.9	4.97	mg/kg	12.16.2020 12:58		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM
 Analyst: ARM Date Prep: 12.17.2020 14:00 % Moisture:
 Basis: Wet Weight
 Seq Number: 3145320 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.17.2020 21:40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.17.2020 21:40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.17.2020 21:40	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.17.2020 21:40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	120	%	70-130	12.17.2020 21:40		
o-Terphenyl	84-15-1	125	%	70-130	12.17.2020 21:40		



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **EW-1 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-011

Date Collected: 12.09.2020 12:50

Sample Depth: 2 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.15.2020 13:00

% Moisture:

Seq Number: 3145062

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.15.2020 23:49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.15.2020 23:49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.15.2020 23:49	U	1
m,p-Xylenes	179601-23-1	0.0185	0.00401	mg/kg	12.15.2020 23:49		1
o-Xylene	95-47-6	0.00714	0.00200	mg/kg	12.15.2020 23:49		1
Xylenes, Total	1330-20-7	0.0256	0.00200	mg/kg	12.15.2020 23:49		1
Total BTEX		0.0256	0.00200	mg/kg	12.15.2020 23:49		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	76	%	70-130	12.15.2020 23:49	
4-Bromofluorobenzene	460-00-4	124	%	70-130	12.15.2020 23:49	



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Terracon-Lubbock, Lubbock, TX

Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **EW-2 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-012

Date Collected: 12.09.2020 12:55

Sample Depth: 2 - 2.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.16.2020 10:20

% Moisture:

Basis: Wet Weight

Seq Number: 3145163

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	19.3	5.05	mg/kg	12.16.2020 13:03		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.17.2020 14:00

% Moisture:

Basis: Wet Weight

Seq Number: 3145320

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.17.2020 21:58	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.17.2020 21:58	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.17.2020 21:58	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.17.2020 21:58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-130	12.17.2020 21:58	
o-Terphenyl	84-15-1	119	%	70-130	12.17.2020 21:58	



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **EW-2 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-012

Date Collected: 12.09.2020 12:55

Sample Depth: 2 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.15.2020 13:00

% Moisture:

Seq Number: 3145062

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.16.2020 00:10	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.16.2020 00:10	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.16.2020 00:10	U	1
m,p-Xylenes	179601-23-1	0.00535	0.00404	mg/kg	12.16.2020 00:10		1
o-Xylene	95-47-6	0.00237	0.00202	mg/kg	12.16.2020 00:10		1
Xylenes, Total	1330-20-7	0.00772	0.00202	mg/kg	12.16.2020 00:10		1
Total BTEX		0.00772	0.00202	mg/kg	12.16.2020 00:10		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	12.16.2020 00:10	
1,4-Difluorobenzene	540-36-3	81	%	70-130	12.16.2020 00:10	



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **EW-3 (2-2.5)** Matrix: Soil Date Received: 12.11.2020 16:45
 Lab Sample Id: 680993-013 Date Collected: 12.09.2020 13:00 Sample Depth: 2 - 2.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE
 Analyst: CHE Date Prep: 12.16.2020 10:20 % Moisture:
 Basis: Wet Weight
 Seq Number: 3145163 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.3	5.05	mg/kg	12.16.2020 13:08		1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM
 Analyst: ARM Date Prep: 12.17.2020 14:00 % Moisture:
 Basis: Wet Weight
 Seq Number: 3145320 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.17.2020 22:16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.17.2020 22:16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.17.2020 22:16	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	12.17.2020 22:16	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	111	%	70-130	12.17.2020 22:16		
o-Terphenyl	84-15-1	120	%	70-130	12.17.2020 22:16		



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **EW-3 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-013

Date Collected: 12.09.2020 13:00

Sample Depth: 2 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.15.2020 13:00

% Moisture:

Seq Number: 3145062

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.16.2020 00:30	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.16.2020 00:30	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.16.2020 00:30	U	1
m,p-Xylenes	179601-23-1	0.00692	0.00398	mg/kg	12.16.2020 00:30		1
o-Xylene	95-47-6	0.00280	0.00199	mg/kg	12.16.2020 00:30		1
Xylenes, Total	1330-20-7	0.00972	0.00199	mg/kg	12.16.2020 00:30		1
Total BTEX		0.00972	0.00199	mg/kg	12.16.2020 00:30		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	88	%	70-130	12.16.2020 00:30	
4-Bromofluorobenzene	460-00-4	102	%	70-130	12.16.2020 00:30	



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Terracon-Lubbock, Lubbock, TX

Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **EW-4 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-014

Date Collected: 12.09.2020 13:05

Sample Depth: 2 - 2.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.16.2020 10:20

% Moisture:

Basis: Wet Weight

Seq Number: 3145163

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.4	4.98	mg/kg	12.16.2020 13:13		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.17.2020 14:00

% Moisture:

Basis: Wet Weight

Seq Number: 3145320

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.17.2020 22:34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.17.2020 22:34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.17.2020 22:34	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.17.2020 22:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	129	%	70-130	12.17.2020 22:34	
o-Terphenyl	84-15-1	134	%	70-130	12.17.2020 22:34	**



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **EW-4 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-014

Date Collected: 12.09.2020 13:05

Sample Depth: 2 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.15.2020 13:00

% Moisture:

Seq Number: 3145062

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.16.2020 00:51	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.16.2020 00:51	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.16.2020 00:51	U	1
m,p-Xylenes	179601-23-1	0.0112	0.00403	mg/kg	12.16.2020 00:51		1
o-Xylene	95-47-6	0.00431	0.00202	mg/kg	12.16.2020 00:51		1
Xylenes, Total	1330-20-7	0.0155	0.00202	mg/kg	12.16.2020 00:51		1
Total BTEX		0.0155	0.00202	mg/kg	12.16.2020 00:51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	83	%	70-130	12.16.2020 00:51	
4-Bromofluorobenzene	460-00-4	101	%	70-130	12.16.2020 00:51	



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Terracon-Lubbock, Lubbock, TX

Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **EW-6 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-016

Date Collected: 12.09.2020 13:15

Sample Depth: 2 - 2.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.16.2020 10:40

% Moisture:

Basis: Wet Weight

Seq Number: 3145174

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.05	5.05	mg/kg	12.16.2020 10:58	UX	1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.17.2020 14:00

% Moisture:

Basis: Wet Weight

Seq Number: 3145320

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.17.2020 22:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.17.2020 22:53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.17.2020 22:53	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.17.2020 22:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-130	12.17.2020 22:53	
o-Terphenyl	84-15-1	118	%	70-130	12.17.2020 22:53	



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **EW-6 (2-2.5)** Matrix: Soil Date Received: 12.11.2020 16:45
 Lab Sample Id: 680993-016 Date Collected: 12.09.2020 13:15 Sample Depth: 2 - 2.5 ft
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5035A
 Tech: KTL
 Analyst: KTL Date Prep: 12.15.2020 13:00 % Moisture:
 Seq Number: 3145062 Basis: Wet Weight
 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.16.2020 01:32	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.16.2020 01:32	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.16.2020 01:32	U	1
m,p-Xylenes	179601-23-1	0.00689	0.00398	mg/kg	12.16.2020 01:32		1
o-Xylene	95-47-6	0.00306	0.00199	mg/kg	12.16.2020 01:32		1
Xylenes, Total	1330-20-7	0.00995	0.00199	mg/kg	12.16.2020 01:32		1
Total BTEX		0.00995	0.00199	mg/kg	12.16.2020 01:32		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	85	%	70-130	12.16.2020 01:32	
4-Bromofluorobenzene	460-00-4	98	%	70-130	12.16.2020 01:32	



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Terracon-Lubbock, Lubbock, TX

Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **EW-7 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-017

Date Collected: 12.09.2020 13:20

Sample Depth: 2 - 2.5 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst: CHE

Date Prep: 12.16.2020 10:40

% Moisture:

Basis: Wet Weight

Seq Number: 3145174

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.32	4.99	mg/kg	12.16.2020 11:14		1

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

Analyst: ARM

Date Prep: 12.17.2020 14:00

% Moisture:

Basis: Wet Weight

Seq Number: 3145320

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.17.2020 23:12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.17.2020 23:12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.17.2020 23:12	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.17.2020 23:12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	110	%	70-130	12.17.2020 23:12	
o-Terphenyl	84-15-1	115	%	70-130	12.17.2020 23:12	



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Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **EW-7 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-017

Date Collected: 12.09.2020 13:20

Sample Depth: 2 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.15.2020 13:00

% Moisture:

Seq Number: 3145062

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.16.2020 01:53	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.16.2020 01:53	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.16.2020 01:53	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.16.2020 01:53	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.16.2020 01:53	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	12.16.2020 01:53	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.16.2020 01:53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	75	%	70-130	12.16.2020 01:53	
4-Bromofluorobenzene	460-00-4	98	%	70-130	12.16.2020 01:53	



Certificate of Analytical Results 680993

Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **EW-8 (2-2.5)** Matrix: Soil Date Received: 12.11.2020 16:45
 Lab Sample Id: 680993-018 Date Collected: 12.09.2020 13:25 Sample Depth: 2 - 2.5 ft
 Analytical Method: Chloride by EPA 300 Prep Method: E300P
 Tech: CHE
 Analyst: CHE Date Prep: 12.16.2020 10:40 % Moisture:
 Basis: Wet Weight
 Seq Number: 3145174 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	12.16.2020 11:19	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: SW8015P
 Tech: DVM
 Analyst: ARM Date Prep: 12.17.2020 14:00 % Moisture:
 Basis: Wet Weight
 Seq Number: 3145320 SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.17.2020 23:31	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.17.2020 23:31	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.17.2020 23:31	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	12.17.2020 23:31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-130	12.17.2020 23:31	
o-Terphenyl	84-15-1	114	%	70-130	12.17.2020 23:31	



Certificate of Analytical Results 680993

Terracon-Lubbock, Lubbock, TX Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Sample Id: **EW-8 (2-2.5)**

Matrix: Soil

Date Received: 12.11.2020 16:45

Lab Sample Id: 680993-018

Date Collected: 12.09.2020 13:25

Sample Depth: 2 - 2.5 ft

Analytical Method: BTEX by EPA 8021B

Prep Method: SW5035A

Tech: KTL

Analyst: KTL

Date Prep: 12.15.2020 13:00

% Moisture:

Seq Number: 3145062

Basis: Wet Weight

SUB: T104704400-20-21

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.16.2020 02:14	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.16.2020 02:14	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.16.2020 02:14	U	1
m,p-Xylenes	179601-23-1	0.00584	0.00402	mg/kg	12.16.2020 02:14		1
o-Xylene	95-47-6	0.00251	0.00201	mg/kg	12.16.2020 02:14		1
Xylenes, Total	1330-20-7	0.00835	0.00201	mg/kg	12.16.2020 02:14		1
Total BTEX		0.00835	0.00201	mg/kg	12.16.2020 02:14		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	12.16.2020 02:14	
1,4-Difluorobenzene	540-36-3	85	%	70-130	12.16.2020 02:14	

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



Terracon-Lubbock

Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Analytical Method: Chloride by EPA 300

Seq Number: 3145163

Matrix: Solid

Prep Method: E300P

Date Prep: 12.16.2020

MB Sample Id: 7717240-1-BLK

LCS Sample Id: 7717240-1-BKS

LCSD Sample Id: 7717240-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	255	102	254	102	90-110	0	20	mg/kg	12.16.2020 10:42	

Analytical Method: Chloride by EPA 300

Seq Number: 3145174

Matrix: Solid

Prep Method: E300P

Date Prep: 12.16.2020

MB Sample Id: 7717244-1-BLK

LCS Sample Id: 7717244-1-BKS

LCSD Sample Id: 7717244-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	255	102	254	102	90-110	0	20	mg/kg	12.16.2020 10:48	

Analytical Method: Chloride by EPA 300

Seq Number: 3145163

Matrix: Soil

Prep Method: E300P

Date Prep: 12.16.2020

Parent Sample Id: 680993-005

MS Sample Id: 680993-005 S

MSD Sample Id: 680993-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	13.1	248	272	104	273	105	90-110	0	20	mg/kg	12.16.2020 12:11	

Analytical Method: Chloride by EPA 300

Seq Number: 3145163

Matrix: Soil

Prep Method: E300P

Date Prep: 12.16.2020

Parent Sample Id: 681035-003

MS Sample Id: 681035-003 S

MSD Sample Id: 681035-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	325	251	572	98	575	100	90-110	1	20	mg/kg	12.16.2020 10:58	

Analytical Method: Chloride by EPA 300

Seq Number: 3145174

Matrix: Soil

Prep Method: E300P

Date Prep: 12.16.2020

Parent Sample Id: 680993-016

MS Sample Id: 680993-016 S

MSD Sample Id: 680993-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.05	253	293	116	276	109	90-110	6	20	mg/kg	12.16.2020 11:03	X

Analytical Method: Chloride by EPA 300

Seq Number: 3145174

Matrix: Soil

Prep Method: E300P

Date Prep: 12.16.2020

Parent Sample Id: 681103-007

MS Sample Id: 681103-007 S

MSD Sample Id: 681103-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1240	1250	2630	111	2580	107	90-110	2	20	mg/kg	12.16.2020 12:16	X

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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



Terracon-Lubbock

Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Analytical Method: TPH by SW8015 Mod

Seq Number: 3145320

Matrix: Solid

Prep Method: SW8015P

Date Prep: 12.17.2020

MB Sample Id: 7717394-1-BLK

LCS Sample Id: 7717394-1-BKS

LCSD Sample Id: 7717394-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	956	96	971	97	70-130	2	20	mg/kg	12.17.2020 17:04	
Diesel Range Organics (DRO)	<50.0	1000	1050	105	1040	104	70-130	1	20	mg/kg	12.17.2020 17:04	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag		LCSD %Rec	LCSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane	111		129			128			70-130	%	12.17.2020 17:04	
o-Terphenyl	121		98			97			70-130	%	12.17.2020 17:04	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3145320

Matrix: Solid

Prep Method: SW8015P

Date Prep: 12.17.2020

MB Sample Id: 7717394-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.17.2020 16:46	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3145320

Matrix: Soil

Prep Method: SW8015P

Date Prep: 12.17.2020

Parent Sample Id: 680993-001

MS Sample Id: 680993-001 S

MSD Sample Id: 680993-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	999	1160	116	1190	119	70-130	3	20	mg/kg	12.17.2020 18:00	
Diesel Range Organics (DRO)	<50.0	999	1150	115	1190	119	70-130	3	20	mg/kg	12.17.2020 18:00	
Surrogate			MS %Rec	MS Flag		MSD %Rec	MSD Flag		Limits	Units	Analysis Date	
1-Chlorooctane			129			119			70-130	%	12.17.2020 18:00	
o-Terphenyl			97			128			70-130	%	12.17.2020 18:00	

Analytical Method: BTEX by EPA 8021B

Seq Number: 3145062

Matrix: Solid

Prep Method: SW5035A

Date Prep: 12.15.2020

MB Sample Id: 7717239-1-BLK

LCS Sample Id: 7717239-1-BKS

LCSD Sample Id: 7717239-1-BSD

Parameter	MB	Spike	LCS	LCS	LCSD	LCSD	Limits	%RPD	RPD	Units	Analysis	Flag
	Result	Amount	Result	%Rec	Result	%Rec			Limit		Date	
Benzene	<0.00200	0.100	0.0885	89	0.0866	87	70-130	2	35	mg/kg	12.15.2020 16:14	
Toluene	<0.00200	0.100	0.104	104	0.101	101	70-130	3	35	mg/kg	12.15.2020 16:14	
Ethylbenzene	<0.00200	0.100	0.101	101	0.0975	98	70-130	4	35	mg/kg	12.15.2020 16:14	
m,p-Xylenes	<0.00400	0.200	0.201	101	0.192	96	70-130	5	35	mg/kg	12.15.2020 16:14	
o-Xylene	<0.00200	0.100	0.0971	97	0.0934	93	70-130	4	35	mg/kg	12.15.2020 16:14	
Surrogate	MB	MB	LCS	LCS	LCSD	LCSD	Limits			Units	Analysis	
	%Rec	Flag	%Rec	Flag	%Rec	Flag					Date	
	76		85		83		70-130			%	12.15.2020 16:14	
	98		98		96		70-130			%	12.15.2020 16:14	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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



Terracon-Lubbock

Pipeline 03 Antelope Riser - Maljamar SWD 30 #2

Analytical Method: BTEX by EPA 8021B

Seq Number: 3145065

Matrix: Solid

Prep Method: SW5035A

Date Prep: 12.15.2020

MB Sample Id: 7717242-1-BLK

LCS Sample Id: 7717242-1-BKS

LCSD Sample Id: 7717242-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0875	88	0.0882	88	70-130	1	35	mg/kg	12.16.2020 03:17	
Toluene	<0.00200	0.100	0.103	103	0.0999	100	70-130	3	35	mg/kg	12.16.2020 03:17	
Ethylbenzene	<0.00200	0.100	0.107	107	0.102	102	70-130	5	35	mg/kg	12.16.2020 03:17	
m,p-Xylenes	<0.00400	0.200	0.194	97	0.183	92	70-130	6	35	mg/kg	12.16.2020 03:17	
o-Xylene	<0.00200	0.100	0.0972	97	0.0921	92	70-130	5	35	mg/kg	12.16.2020 03:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	78		84		86		70-130	%	12.16.2020 03:17
4-Bromofluorobenzene	96		103		101		70-130	%	12.16.2020 03:17

Analytical Method: BTEX by EPA 8021B

Seq Number: 3145062

Matrix: Soil

Prep Method: SW5035A

Date Prep: 12.15.2020

Parent Sample Id: 680993-001

MS Sample Id: 680993-001 S

MSD Sample Id: 680993-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0875	87	0.0839	85	70-130	4	35	mg/kg	12.15.2020 16:56	
Toluene	<0.00201	0.101	0.0994	98	0.0967	97	70-130	3	35	mg/kg	12.15.2020 16:56	
Ethylbenzene	<0.00201	0.101	0.106	105	0.103	104	70-130	3	35	mg/kg	12.15.2020 16:56	
m,p-Xylenes	<0.00402	0.201	0.190	95	0.185	93	70-130	3	35	mg/kg	12.15.2020 16:56	
o-Xylene	<0.00201	0.101	0.0921	91	0.0908	92	70-130	1	35	mg/kg	12.15.2020 16:56	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	86		85		70-130	%	12.15.2020 16:56
4-Bromofluorobenzene	103		102		70-130	%	12.15.2020 16:56

Analytical Method: BTEX by EPA 8021B

Seq Number: 3145065

Matrix: Soil

Prep Method: SW5035A

Date Prep: 12.15.2020

Parent Sample Id: 681056-001

MS Sample Id: 681056-001 S

MSD Sample Id: 681056-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0698	70	0.0730	74	70-130	4	35	mg/kg	12.16.2020 03:58	
Toluene	<0.00199	0.0994	0.0780	78	0.0815	82	70-130	4	35	mg/kg	12.16.2020 03:58	
Ethylbenzene	<0.00199	0.0994	0.0792	80	0.0841	85	70-130	6	35	mg/kg	12.16.2020 03:58	
m,p-Xylenes	<0.00398	0.199	0.141	71	0.152	77	70-130	8	35	mg/kg	12.16.2020 03:58	
o-Xylene	<0.00199	0.0994	0.0698	70	0.0758	76	70-130	8	35	mg/kg	12.16.2020 03:58	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	84		83		70-130	%	12.16.2020 03:58
4-Bromofluorobenzene	94		103		70-130	%	12.16.2020 03:58

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

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

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

680993

CHAIN OF CUSTODY RECORD

Terracon					Laboratory: Xenco Address: 6701 Aberdeen Lubbock, Texas 79424					ANALYSIS REQUESTED					LAB USE ONLY DUE DATE: TEMP OF COOLER WHEN RECEIVED (°C) <u>114</u> <u>-4.81-4.83</u>	
Office Location <u>Lubbock</u>					Phone: Contact: <u>J. Guesnier 806-544-9276</u> SRS #:										Page <u>1</u> of <u>1</u>	
Project Manager <u>J. Guesnier</u> Sampler's Name <u>B. Mcbrayer</u>					Sampler's Signature											
Project Number <u>AR207106</u>					Project Name <u>Pipeline 03 Antelope Riser - Maljamar SWD 30 #2</u>					No. Type of Containers					Lab Sample ID	
Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	4 oz Glass	40 ml VOA	60 ml VOA	5035 kit	Chloride (EPA Method 300)	TPH Extended 8015	BTEX (EPA Method 8021B)		
S	12/9/2020	12:00	X		NF - (1.5-2)	1.5	2	X				X	X	X		
S	12/9/2020	12:05	X		NW - (0.5-1)	0.5	1	X				X	X	X		
S	12/9/2020	12:10	X		WW-1 (2-2.5)	2	2.5	X				X	X	X		
S	12/9/2020	12:15	X		WW-2 (2-2.5)	2	2.5	X				X	X	X		
S	12/9/2020	12:20	X		WW-3 (2-2.5)	2	2.5	X				X	X	X		
S	12/9/2020	12:25	X		WW-4 (2-2.5)	2	2.5	X				X	X	X		
S	12/9/2020	12:30	X		WW-5 (2-2.5)	2	2.5	X				X	X	X		
S	12/9/2020	12:35	X		WW-6 (2-2.5)	2	2.5	X				X	X	X		
S	12/9/2020	12:40	X		WW-7 (2-2.5)	2	2.5	X				X	X	X		
S	12/9/2020	12:45	X		WW-8 (2-2.5)	2	2.5	X				X	X	X		
S	12/9/2020	12:50	X		EW-1 (2-2.5)	2	2.5	X				X	X	X		
S	12/9/2020	12:55	X		EW-2 (2-2.5)	2	2.5	X				X	X	X		
S	12/9/2020	13:00	X		EW-3 (2-2.5)	2	2.5	X				X	X	X		
S	12/9/2020	13:05	X		EW-4 (2-2.5)	2	2.5	X				X	X	X		
S	12/9/2020	13:10	X		EW-5 (2-2.5)	2	2.5	X				X	X	X		
S	12/9/2020	13:15	X		EW-6 (2-2.5)	2	2.5	X				X	X	X		
S	12/9/2020	13:20	X		EW-7 (2-2.5)	2	2.5	X				X	X	X		
S	12/9/2020	13:25	X		EW-8 (2-2.5)	2	2.5	X				X	X	X		
TURNAROUND TIME ☒ Normal ☐ 48-Hour Rush ☐ 24-Hour Rush TRRP Laboratory Review Checklist ☐ Yes ☐ No																
Relinquished by (Signature) <u>[Signature]</u>		Date: <u>12-11-20</u>		Time: <u>4:45</u>		Received by (Signature) <u>[Signature]</u>		Date: <u>12/11/20</u>		Time: <u>1645</u>		NOTES: Client: <u>Spur Energy Partners</u>				
Relinquished by (Signature)		Date:		Time:		Received by (Signature)		Date:		Time:		e-mail results to:				
Relinquished by (Signature)		Date:		Time:		Received by (Signature)		Date:		Time:		bryant.mcbrayer@terracon.com				
Relinquished by (Signature)		Date:		Time:		Received by (Signature)		Date:		Time:		erin.loyd@terracon.com				
Relinquished by (Signature)		Date:		Time:		Received by (Signature)		Date:		Time:		jrguesnier@terracon.com				

Matrix WW-Wastewater W - Water S - Soil L - Liquid A - Air Bag C - Charcoal tube SL - Sludge
Container VOA - 40 ml vial A/G - Amber Glass TL 250 ml = Glass wide mouth P/O - Plastic or other

Lubbock Office ■ 5827 50th Street, Suite 1 ■ Lubbock, Texas 79424 ■ 806-300-0140
Responsive ■ Resourceful ■ Reliable

Inter-Office Shipment

IOS Number : **74780**

Date/Time: 12.14.2020

Created by: Randall Lee

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@eurofinset.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
680993-001	S	NF-(1.5-2)	12.09.2020 12:00	E300_CL	Chloride by EPA 300	12.17.2020	01.06.2021	JKR	CL	
680993-001	S	NF-(1.5-2)	12.09.2020 12:00	SW8021B	BTEX by EPA 8021B	12.17.2020	12.23.2020	JKR	BR4FBZ BZ BZME EBZ	
680993-001	S	NF-(1.5-2)	12.09.2020 12:00	SW8015MOD_NM	TPH by SW8015 Mod	12.17.2020	12.23.2020	JKR	PHCC10C28 PHCC28C35	
680993-002	S	NW-(0.5-1)	12.09.2020 12:05	SW8021B	BTEX by EPA 8021B	12.17.2020	12.23.2020	JKR	BR4FBZ BZ BZME EBZ	
680993-002	S	NW-(0.5-1)	12.09.2020 12:05	E300_CL	Chloride by EPA 300	12.17.2020	01.06.2021	JKR	CL	
680993-002	S	NW-(0.5-1)	12.09.2020 12:05	SW8015MOD_NM	TPH by SW8015 Mod	12.17.2020	12.23.2020	JKR	PHCC10C28 PHCC28C35	
680993-003	S	WW-1 (2-2.5)	12.09.2020 12:10	E300_CL	Chloride by EPA 300	12.17.2020	01.06.2021	JKR	CL	
680993-003	S	WW-1 (2-2.5)	12.09.2020 12:10	SW8015MOD_NM	TPH by SW8015 Mod	12.17.2020	12.23.2020	JKR	PHCC10C28 PHCC28C35	
680993-003	S	WW-1 (2-2.5)	12.09.2020 12:10	SW8021B	BTEX by EPA 8021B	12.17.2020	12.23.2020	JKR	BR4FBZ BZ BZME EBZ	
680993-004	S	WW-2 (2-2.5)	12.09.2020 12:15	E300_CL	Chloride by EPA 300	12.17.2020	01.06.2021	JKR	CL	
680993-004	S	WW-2 (2-2.5)	12.09.2020 12:15	SW8015MOD_NM	TPH by SW8015 Mod	12.17.2020	12.23.2020	JKR	PHCC10C28 PHCC28C35	
680993-004	S	WW-2 (2-2.5)	12.09.2020 12:15	SW8021B	BTEX by EPA 8021B	12.17.2020	12.23.2020	JKR	BR4FBZ BZ BZME EBZ	
680993-005	S	WW-3 (2-2.5)	12.09.2020 12:20	SW8015MOD_NM	TPH by SW8015 Mod	12.17.2020	12.23.2020	JKR	PHCC10C28 PHCC28C35	
680993-005	S	WW-3 (2-2.5)	12.09.2020 12:20	E300_CL	Chloride by EPA 300	12.17.2020	01.06.2021	JKR	CL	
680993-005	S	WW-3 (2-2.5)	12.09.2020 12:20	SW8021B	BTEX by EPA 8021B	12.17.2020	12.23.2020	JKR	BR4FBZ BZ BZME EBZ	
680993-006	S	WW-4 (2-2.5)	12.09.2020 12:25	SW8021B	BTEX by EPA 8021B	12.17.2020	12.23.2020	JKR	BR4FBZ BZ BZME EBZ	
680993-006	S	WW-4 (2-2.5)	12.09.2020 12:25	E300_CL	Chloride by EPA 300	12.17.2020	01.06.2021	JKR	CL	
680993-006	S	WW-4 (2-2.5)	12.09.2020 12:25	SW8015MOD_NM	TPH by SW8015 Mod	12.17.2020	12.23.2020	JKR	PHCC10C28 PHCC28C35	
680993-007	S	WW-5 (2-2.5)	12.09.2020 12:30	E300_CL	Chloride by EPA 300	12.17.2020	01.06.2021	JKR	CL	
680993-007	S	WW-5 (2-2.5)	12.09.2020 12:30	SW8015MOD_NM	TPH by SW8015 Mod	12.17.2020	12.23.2020	JKR	PHCC10C28 PHCC28C35	
680993-007	S	WW-5 (2-2.5)	12.09.2020 12:30	SW8021B	BTEX by EPA 8021B	12.17.2020	12.23.2020	JKR	BR4FBZ BZ BZME EBZ	
680993-008	S	WW-6 (2-2.5)	12.09.2020 12:35	E300_CL	Chloride by EPA 300	12.17.2020	01.06.2021	JKR	CL	
680993-008	S	WW-6 (2-2.5)	12.09.2020 12:35	SW8021B	BTEX by EPA 8021B	12.17.2020	12.23.2020	JKR	BR4FBZ BZ BZME EBZ	
680993-008	S	WW-6 (2-2.5)	12.09.2020 12:35	SW8015MOD_NM	TPH by SW8015 Mod	12.17.2020	12.23.2020	JKR	PHCC10C28 PHCC28C35	
680993-009	S	WW-7 (2-2.5)	12.09.2020 12:40	SW8015MOD_NM	TPH by SW8015 Mod	12.17.2020	12.23.2020	JKR	PHCC10C28 PHCC28C35	

Inter-Office Shipment

IOS Number : **74780**

Date/Time: 12.14.2020

Created by: Randall Lee

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@eurofinset.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
680993-009	S	WW-7 (2-2.5)	12.09.2020 12:40	SW8021B	BTEX by EPA 8021B	12.17.2020	12.23.2020	JKR	BR4FBZ BZ BZME EBZ	
680993-009	S	WW-7 (2-2.5)	12.09.2020 12:40	E300_CL	Chloride by EPA 300	12.17.2020	01.06.2021	JKR	CL	
680993-010	S	WW-8 (2-2.5)	12.09.2020 12:45	E300_CL	Chloride by EPA 300	12.17.2020	01.06.2021	JKR	CL	
680993-010	S	WW-8 (2-2.5)	12.09.2020 12:45	SW8015MOD_NM	TPH by SW8015 Mod	12.17.2020	12.23.2020	JKR	PHCC10C28 PHCC28C35	
680993-010	S	WW-8 (2-2.5)	12.09.2020 12:45	SW8021B	BTEX by EPA 8021B	12.17.2020	12.23.2020	JKR	BR4FBZ BZ BZME EBZ	
680993-011	S	EW-1 (2-2.5)	12.09.2020 12:50	SW8021B	BTEX by EPA 8021B	12.17.2020	12.23.2020	JKR	BR4FBZ BZ BZME EBZ	
680993-011	S	EW-1 (2-2.5)	12.09.2020 12:50	SW8015MOD_NM	TPH by SW8015 Mod	12.17.2020	12.23.2020	JKR	PHCC10C28 PHCC28C35	
680993-011	S	EW-1 (2-2.5)	12.09.2020 12:50	E300_CL	Chloride by EPA 300	12.17.2020	01.06.2021	JKR	CL	
680993-012	S	EW-2 (2-2.5)	12.09.2020 12:55	SW8021B	BTEX by EPA 8021B	12.17.2020	12.23.2020	JKR	BR4FBZ BZ BZME EBZ	
680993-012	S	EW-2 (2-2.5)	12.09.2020 12:55	SW8015MOD_NM	TPH by SW8015 Mod	12.17.2020	12.23.2020	JKR	PHCC10C28 PHCC28C35	
680993-012	S	EW-2 (2-2.5)	12.09.2020 12:55	E300_CL	Chloride by EPA 300	12.17.2020	01.06.2021	JKR	CL	
680993-013	S	EW-3 (2-2.5)	12.09.2020 13:00	SW8015MOD_NM	TPH by SW8015 Mod	12.17.2020	12.23.2020	JKR	PHCC10C28 PHCC28C35	
680993-013	S	EW-3 (2-2.5)	12.09.2020 13:00	SW8021B	BTEX by EPA 8021B	12.17.2020	12.23.2020	JKR	BR4FBZ BZ BZME EBZ	
680993-013	S	EW-3 (2-2.5)	12.09.2020 13:00	E300_CL	Chloride by EPA 300	12.17.2020	01.06.2021	JKR	CL	
680993-014	S	EW-4 (2-2.5)	12.09.2020 13:05	E300_CL	Chloride by EPA 300	12.17.2020	01.06.2021	JKR	CL	
680993-014	S	EW-4 (2-2.5)	12.09.2020 13:05	SW8015MOD_NM	TPH by SW8015 Mod	12.17.2020	12.23.2020	JKR	PHCC10C28 PHCC28C35	
680993-014	S	EW-4 (2-2.5)	12.09.2020 13:05	SW8021B	BTEX by EPA 8021B	12.17.2020	12.23.2020	JKR	BR4FBZ BZ BZME EBZ	
680993-016	S	EW-6 (2-2.5)	12.09.2020 13:15	SW8015MOD_NM	TPH by SW8015 Mod	12.17.2020	12.23.2020	JKR	PHCC10C28 PHCC28C35	
680993-016	S	EW-6 (2-2.5)	12.09.2020 13:15	SW8021B	BTEX by EPA 8021B	12.17.2020	12.23.2020	JKR	BR4FBZ BZ BZME EBZ	
680993-016	S	EW-6 (2-2.5)	12.09.2020 13:15	E300_CL	Chloride by EPA 300	12.17.2020	01.06.2021	JKR	CL	
680993-017	S	EW-7 (2-2.5)	12.09.2020 13:20	SW8021B	BTEX by EPA 8021B	12.17.2020	12.23.2020	JKR	BR4FBZ BZ BZME EBZ	
680993-017	S	EW-7 (2-2.5)	12.09.2020 13:20	E300_CL	Chloride by EPA 300	12.17.2020	01.06.2021	JKR	CL	
680993-017	S	EW-7 (2-2.5)	12.09.2020 13:20	SW8015MOD_NM	TPH by SW8015 Mod	12.17.2020	12.23.2020	JKR	PHCC10C28 PHCC28C35	
680993-018	S	EW-8 (2-2.5)	12.09.2020 13:25	SW8021B	BTEX by EPA 8021B	12.17.2020	12.23.2020	JKR	BR4FBZ BZ BZME EBZ	
680993-018	S	EW-8 (2-2.5)	12.09.2020 13:25	E300_CL	Chloride by EPA 300	12.17.2020	01.06.2021	JKR	CL	

Inter Office Shipment or Sample Comments:

Inter-Office Shipment

IOS Number : **74780**

Date/Time: 12.14.2020

Created by: Randall Lee

Please send report to: Jessica Kramer

Lab# From: **Lubbock**

Delivery Priority:

Address: 6701 Aberdeen, Suite 9 Lubbock, TX 79424

Lab# To: **Midland**

Air Bill No.:

E-Mail: jessica.kramer@eurofinset.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
680993-018	S	EW-8 (2-2.5)	12.09.2020 13:25	SW8015MOD_NM	TPH by SW8015 Mod	12.17.2020	12.23.2020	JKR	PHCC10C28 PHCC28C3	

Inter Office Shipment or Sample Comments:

Relinquished By:



Received By:



Date Relinquished:

Randall Lee

Date Received:

Jessica Kramer

12.14.2020

12.16.2020

Cooler Temperature: 2.9



Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 74780

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sent By: Randall Lee

Date Sent: 12.14.2020 03.50 PM

Received By: Jessica Kramer

Date Received: 12.16.2020 09.10 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	2.9
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Jessica Kramer

Date: 12.16.2020

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 12.11.2020 04.45.00 PM

Work Order #: 680993

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-4

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-4.8
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	Yes
	EW-5 (2-2.5) is missing. Holly called and left Joseph a message. TRL 12/14/2020
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes
#18 Water VOC samples have zero headspace?	N/A
	Xenco Midland

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

Analyst:

PH Device/Lot#:

Checklist completed by:



Randall Lee

Date: 12.14.2020

Checklist reviewed by:



Jessica Kramer

Date: 12.15.2020

APPENDIX D – TERRACON STANDARD OF CARE, LIMITATION, AND RELIANCE

Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time. Terracon makes no warranties, either express or implied, regarding the findings, conclusions, or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report. These services were performed in accordance with the scope of work agreed with you, Solaris Water Midstream, as reflected in our proposal (PA4197040).

Additional Scope Limitations

The development of this RAP is based upon information provided by the Client and Terracon's remediation and construction services line. Such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable, or not present during these services. We cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those by information provided by the Client. The data, interpretations, findings, and recommendations are based solely upon reformation executed within the scope of these services.

Reliance

This report has been prepared for the exclusive use of Spur Energy Partners, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of Spur Energy Partners and Terracon. Any unauthorized distribution or reuse is at Spur Energy Partner's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions, and limitations stated in the proposal and Spur Energy Partners and Terracon's Master Services Agreement. The limitation of liability defined in the terms and conditions is the aggregate limit of Terracon's liability to Spur Energy Partners and all relying parties unless otherwise agreed in writing.

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS

Action 424286

QUESTIONS

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID: 328947
	Action Number: 424286
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	nRM2017440778
Incident Name	NRM2017440778 PRONGHORN SWD @ 0
Incident Type	Produced Water Release
Incident Status	Remediation Closure Report Received

Location of Release Source*Please answer all the questions in this group.*

Site Name	PRONGHORN SWD
Date Release Discovered	06/12/2020
Surface Owner	Federal

Incident Details*Please answer all the questions in this group.*

Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release*Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.*

Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Other Other (Specify) Produced Water Released: 300 BBL Recovered: 180 BBL Lost: 120 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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Energy, Minerals and Natural Resources
Oil Conservation Division
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QUESTIONS, Page 2

Action 424286

QUESTIONS (continued)

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID: 328947
	Action Number: 424286
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response

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

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	N/A

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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.

I hereby agree and sign off to the above statement	Name: Katherine Purvis Title: EHS Coordinator Email: katherine.purvis@spurenergy.com Date: 01/23/2025
--	--

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
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QUESTIONS, Page 3

Action 424286

QUESTIONS (continued)

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID:
	328947
	Action Number:
	424286
Action Type:	
[C-141] Remediation Closure Request C-141 (C-141-v-Closure)	

QUESTIONS**Site Characterization**

Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	Direct Measurement
Did this release impact groundwater or surface water	No
What is the minimum distance, between the closest lateral extents of the release and the following surface areas:	
A continuously flowing watercourse or any other significant watercourse	Greater than 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Greater than 5 (mi.)
Any other fresh water well or spring	Greater than 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Between 1 and 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

Remediation Plan

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No

Soil Contamination Sampling: (Provide the highest observable value for each, in milligrams per kilograms.)

Chloride (EPA 300.0 or SM4500 Cl B)	14000
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	59.8
GRO+DRO (EPA SW-846 Method 8015M)	59.8
BTEX (EPA SW-846 Method 8021B or 8260B)	0
Benzene (EPA SW-846 Method 8021B or 8260B)	0

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

On what estimated date will the remediation commence	10/05/2020
On what date will (or did) the final sampling or liner inspection occur	10/03/2023
On what date will (or was) the remediation complete(d)	10/09/2020
What is the estimated surface area (in square feet) that will be reclaimed	20500
What is the estimated volume (in cubic yards) that will be reclaimed	3000
What is the estimated surface area (in square feet) that will be remediated	20500
What is the estimated volume (in cubic yards) that will be remediated	3000

These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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Santa Fe, NM 87505

QUESTIONS, Page 4

Action 424286

QUESTIONS (continued)

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID:
	328947
	Action Number:
	424286
Action Type:	
[C-141] Remediation Closure Request C-141 (C-141-v-Closure)	

QUESTIONS

Remediation Plan (continued)	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:	
<i>(Select all answers below that apply.)</i>	
(Ex Situ) Excavation and off-site disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for off-site disposal	LEA LAND LANDFILL [fEEM0112342028]
OR which OCD approved well (API) will be used for off-site disposal	Not answered.
OR is the off-site disposal site, to be used, out-of-state	Not answered.
OR is the off-site disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and on-site remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
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.	
I hereby agree and sign off to the above statement	Name: Katherine Purvis Title: EHS Coordinator Email: katherine.purvis@spurenergy.com Date: 01/23/2025
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

QUESTIONS, Page 5

Action 424286

QUESTIONS (continued)

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID: 328947
	Action Number: 424286
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS, Page 6

Action 424286

QUESTIONS (continued)

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID: 328947
	Action Number: 424286
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Sampling Event Information	
Last sampling notification (C-141N) recorded	424301
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	10/03/2023
What was the (estimated) number of samples that were to be gathered	20
What was the sampling surface area in square feet	20500

Remediation Closure Request	
<i>Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.</i>	
Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	20500
What was the total volume (cubic yards) remediated	3000
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	20500
What was the total volume (in cubic yards) reclaimed	3000
Summarize any additional remediation activities not included by answers (above)	N/A
<i>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 (in .pdf format) 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.</i>	
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.	
I hereby agree and sign off to the above statement	Name: Katherine Purvis Title: EHS Coordinator Email: katherine.purvis@spurenergy.com Date: 01/23/2025

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QUESTIONS, Page 7

Action 424286

QUESTIONS (continued)

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID: 328947
	Action Number: 424286
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

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CONDITIONS

Action 424286

CONDITIONS

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID: 328947
	Action Number: 424286
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

CONDITIONS

Created By	Condition	Condition Date
nvez	None	5/2/2025