



February 8, 2021

District Supervisor  
Oil Conservation Division, District 1  
1625 North French Drive  
Hobbs, New Mexico 88240

**Re: Release Characterization and Remediation Work Plan  
ConocoPhillips  
Philhex Battery #4 Circulating Pump Release  
Unit Letter N, Section 26, Township 17 South, Range 33 East  
Lea County, New Mexico  
1RP-1236  
Incident ID nPAC0707427342**

Sir or Madam:

Tetra Tech, Inc. (Tetra Tech) was contacted by ConocoPhillips (COP) to assess a historical release that occurred from a discharge line at the Philhex Battery #4. The release footprint is located in Public Land Survey System (PLSS) Unit Letter N, Section 26, Township 17 South, Range 33 East, in Lea County, New Mexico (Site). The approximate release point occurred at coordinates 32.800221°, -103.635564°, as shown on Figures 1 and 2.

## BACKGROUND

According to the State of New Mexico C-141 Initial Report (Attachment A), the release was discovered on March 10, 2007. According to the C-141, the release occurred due to a leak resulted from internal corrosion to a 2-inch steel line on the discharge of the circulating pump. The release consisted of 47 barrels (bbls) of oil and affected a 75-foot (ft) by 170-ft area of pad and pasture. During immediate response actions, a vacuum truck was used to recover 35 bbls of oil. The New Mexico Oil Conservation District (NMOCD) received the C-141 report form for the release on March 13, 2007. The release was subsequently assigned Remediation Permit (RP) number 1RP-1236 and the Incident ID nPAC0707427342. The 1RP-1236 release is included in an Agreed Compliance Order-Releases (ACO-R) between COP and the NMOCD signed on May 7 and 9, 2019, respectively.

## SITE CHARACTERIZATION

A site characterization was performed and no watercourses, sinkholes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, springs, playa lakes, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the distances specified in 19.15.29 New Mexico Administrative Code (NMAC). The Site is in an area of low karst potential.

According to the New Mexico Office of the State Engineers (NMOSE) reporting system, there are four (4) water wells within 800 meters (approximately ½ mile) of the Site. The average depth to groundwater is 153 ft below ground surface (bgs). The site characterization data is included in Appendix B.

## REGULATORY FRAMEWORK

Based upon the release footprint and in accordance with Subsection E of 19.15.29.12 NMAC, per 19.15.29.11 NMAC, the site characterization data was used to determine recommended remedial action

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levels (RRALs) for benzene, toluene, ethylbenzene, and xylene (collectively referred to as BTEX), total petroleum hydrocarbons (TPH), and chlorides in soil.

Based on the site characterization and in accordance with Table I of 19.15.29.12 NMAC, the remediation RRALs for the Site are as follows:

Constituent	Remediation RRAL
Chloride	20,000 mg/kg
TPH	2,500 mg/kg
BTEX	50 mg/kg

Additionally, in accordance with the NMOCD guidance *Procedures for Implementation of the Spill Rule (19.15.29 NMAC)* (September 6, 2019), the following reclamation RRALs for surface soils (0-4 ft bgs) outside of active oil and gas operations are as follows:

Constituent	Reclamation RRAL
Chloride	600 mg/kg
TPH	100 mg/kg
BTEX	50 mg/kg

## INITIAL ASSESSMENT ACTIVITIES AND SAMPLING RESULTS

Tetra Tech was contracted by COP to assess the release in 2007. As a portion of initial response, on June 8, 2007, Tetra Tech submitted a Findings Report to the New Mexico Oil Conservation Division (NMOCD) that documented initial assessment activities taken at the site (Appendix C). To vertically delineate the release extent, Tetra Tech advanced three (3) borings (SB-1 through SB-3) using a truck-mounted air rotary drilling rig to depths ranging from 6 ft bgs (SB-1 and SB-3) to 8 ft bgs (SB-2). Soil samples were collected at 2-ft intervals from 0-10 ft bgs. Each sample was screened for volatile organics in the field using a PetroFLAG System. Sampling locations are presented in Figures of the Findings Report.

Tetra Tech personnel collected a total of six (6) samples from the three (3) borings (SB-1 through SB-3) and sent them to Severn Trent Laboratories (STL) in Houston, Texas to be analyzed for TPH via EPA Method 8015M and BTEX via EPA Method 8021B. The laboratory analytical report is included as Attachment C of the Findings Report (Appendix C). Analytical results associated with the three (3) borings (SB-1 through SB-3) had concentrations of TPH above the regulatory action level identified in this report of 1,000 mg/kg in near surface samples (0-6 inches bgs). There were no detections of BTEX exceeding the regulatory action level in any of the analyzed samples. Field screening results and laboratory analytical results from the initial assessment are summarized in Tables 1 and 2 of the Findings Report (Appendix C).

Tetra Tech concluded that the release area was approximately 8,600 square ft (SF) in size and impacted with TPH to approximately 4 ft bgs. However, the release extent was not delineated horizontally during the initial assessment. Additionally, Tetra Tech has amended the proposed Site RRALs to reflect the most recent NMOCD requirements for remediation and restoration, which are more stringent than the remedial thresholds identified in the 2007 Findings Report. Results from the initial assessment show that the release was not vertically delineated to these updated RRALs at sample location SB-1.

Remedial activities recommended in the Findings Report included excavating approximately 6 inches below the lines in the area of above ground flowlines and treating the entire release extent with a 3% Micro-Blaze solution to encourage bioremediation. The NMOCD approved the Findings Report and remediation work plan contained therein on June 26, 2007.

Tetra Tech conducted a records review and Site visit in June 2020 to determine whether the recommended remedial activities had occurred at the Site. A review of the aerial imagery from 2012 shows slight soil discoloration and disturbed soils in the release area. There is evidence in 2017 aerial imagery of additional soil disturbance in the vicinity of the Site. It appears that the impacted surface area footprint in the pasture

has not been fully remediated or reclaimed. Photographic documentation of Site conditions taken during a June 2020 Site visit conducted by Tetra Tech is presented in Appendix D.

### ADDITIONAL SITE ASSESSMENT

Tetra Tech personnel returned to the Site in November and December 2020 to conduct soil sampling to achieve complete delineation of the release. Three (3) borings (BH-1 through BH-3) were installed using an air rotary drilling rig. Two (2) borings (BH-1 and BH-2) were installed to a depth of 20 ft bgs inside the release extent, and one (1) boring (BH-3) was installed to a depth of 4 ft bgs outside the release extent to delineate vertically to the north. Four (4) hand auger borings (AH-1 through AH-4) were advanced along the perimeter of the release extent to a depth of 1 ft bgs. Soils at the Site consist of light brown to tan loose silty sands from the surface down to 20 ft bgs. Figure 3 depicts the release extent and the 2020 soil boring locations, and GPS coordinates for the boring locations are presented in Table 1.

Soils were field screened for salinity using an ExTech EC400 ExStik and for volatile organics using a photoionization detector (PID) to determine sampling intervals. A total of twenty (20) samples were collected from the seven (7) borings (BH-1 through BH-3 and AH-1 through AH-4) and submitted to Pace Analytical National Center for Testing & Innovation (Pace) in Nashville, Tennessee to be analyzed for chlorides via EPA Method 300.0, TPH via EPA Method 8015M, and BTEX via EPA Method 8021B. A copy of the laboratory analytical report and chain-of-custody documentation are included in Appendix E.

### SUMMARY OF SAMPLING RESULTS

Results from the November and December soil sampling event are summarized in Table 2. The analytical results associated with the interior boring locations (BH-1 and BH-2) exceeded the off-pad Site reclamation RRAL for TPH (100 mg/kg) in the sample intervals from the top 4 ft. There were no other analytical results which exceeded the Site RRALs for TPH, chlorides, or BTEX in the interior boring locations. The analytical results associated with the sample collected from the perimeter borings (BH-3 and AH-1 through AH-4) were below the Site RRALs for all analyzed constituents. Both vertical and horizontal delineation were achieved during the November and December 2020 sampling event.

### REMEDIATION WORK PLAN

Based on the analytical results, ConocoPhillips proposes to remove the remaining impacted material as shown in Figure 4. Impacted soils will be excavated using heavy equipment (backhoes, hoe rams, and track hoes) to a maximum depth of 4 ft below the surrounding surface or until a representative sample from the walls and bottom of the excavation is below the RRALs.

Excavated soils will be transported offsite and disposed of at an NMOCD-approved or permitted facility. Confirmation bottom and sidewall samples will be collected for verification of remedial activities, and analyzed for TPH, BTEX, and chloride. Once results are received, NMOCD will be notified and the excavation backfilled with clean material to surface grade. The estimated volume of material to be remediated is approximately 1,570 cubic yards.

### ALTERNATIVE CONFIRMATION SAMPLING PLAN

In accordance with 19.15.29.12(D)(1)(b) NMAC, ConocoPhillips proposes the following alternative confirmation sampling plan to adhere with NMOCD requirements. The proposed confirmation sample locations are depicted in Figure 5. Twenty-two (22) confirmation floor samples and twenty-one (21) confirmation sidewall samples are proposed for verification of remedial activities. The proposed excavation encompasses a surface area of approximately 10,590 SF.

These confirmation sidewall and floor samples will be representative of no more than approximately 500 SF of excavated area. Confirmation samples will be sent to an accredited laboratory for analysis of TPH (Method 8015 modified), BTEX (Method 8260B), and chloride (USEPA Method 300.0).

**SITE RECLAMATION AND RESTORATION PLAN**

The backfilled areas will be seeded Spring 2021 (or first favorable growing season) to aid revegetation. Based on soils at the site, the New Mexico State Land Office (NMSLO) Loamy (L) Sites Seed Mixture will be used for seeding and will be planted in the amount specified in the pounds pure live seed (PLS) per acre. The seed mixture will be spread by a drill equipped with a depth regulator or a hand-held broadcaster and raked. If a hand-held broadcaster is used for dispersal, the pounds pure live seed per acre will be doubled.

Site inspections will be performed to assess the revegetation progress and evaluate the Site for the presence of primary or secondary noxious weeds. If noxious weeds are identified, the NMSLO will be contacted to determine an effective method for eradication. If the Site does not show revegetation after one growing season, the area will be reseeded as appropriate. The NMSLO seed mixture details and corresponding pounds pure live seed per acre are included in Appendix F.

**CONCLUSION**

ConocoPhillips proposes to begin remediation activities at the Site within 1 year of NMOCD plan approval. The Philmex Battery #4 Circulating Pump Release (1RP-1236) is included in an Agreed Compliance Order-Releases (ACO-R) between COP and the NMOCD signed on May 7 and 9, 2019, respectively. COP is dedicated to addressing and closing all historical releases included in the ACO-R, and given the number of releases to be addressed, 1 year is anticipated to be a practicable timeline. Upon completion of the proposed work, a final closure report detailing the remediation activities and the results of the confirmation sampling will be submitted to NMOCD.

If you have any questions concerning the soil assessment or the proposed remediation activities for the Site, please call me at (512) 739-7874 or Christian at (512) 338-2861.

Sincerely,

**Tetra Tech, Inc.**



Samantha K. Abbott, P.G.  
Senior Staff Geologist



Christian M. Llull, P.G.  
Project Manager

cc:

Mr. Marvin Soriwei, RMR – ConocoPhillips

Mr. Charles Beauvais, GPBU - ConocoPhillips

## LIST OF ATTACHMENTS

### Figures:

- Figure 1 – Site Location Map
- Figure 2 – Topographic Map
- Figure 3 – Release Extent and Site Assessment
- Figure 4 – Proposed Remediation Extent
- Figure 5 – Alternative Confirmation Sampling Plan

### Tables:

- Table 1 – Boring Location Coordinates
- Table 2 – Summary of Analytical Results – Additional Soil Assessment

### Appendices:


- Appendix A – C-141 Forms
- Appendix B – Site Characterization Data
- Appendix C – Environmental Site Investigation Report (Tetra Tech, June 8, 2007)
- Appendix D – Photographic Documentation
- Appendix E – Laboratory Analytical Report
- Appendix F – NMSLO Seed Mixture Details

## **FIGURES**



Source: Google Earth Pro, February 2019.

DOCUMENT PATH: D:\CONOCOPHILLIPS\MXD\1RP-1236\FIGURE 1 SITE LOCATION\_1RP-1236.MXD

 <p><b>TETRA TECH</b></p> <p>www.tetrattech.com</p> <p>901 West Wall Street, Suite 100 Midland, Texas 79701 Phone: (432) 682-4559 Fax: (432) 682-3946</p>	<p><b>CONOCOPHILLIPS</b></p>	<p>PROJECT NO.: 212C-MD-02334</p>
	<p>1RP-1236 (32.800221°, -103.635564°) LEA COUNTY, NEW MEXICO</p>	<p>DATE: JANUARY 04, 2021</p> <p>DESIGNED BY: AJW</p>
	<p><b>PHILMEX BATTERY #4 CIRCULATING PUMP RELEASE SITE LOCATION MAP</b></p>	<p>Figure No. <b>1</b></p>





DOCUMENT PATH: D:\CONOCOPHILLIPS\MD\1RP-1236\FIGURE 2 TOPO. 1RP-1236.MXD


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**CONOCOPHILLIPS**

1RP-1236

 (32.800221°, -103.635564°)  
 LEA COUNTY, NEW MEXICO

**PHILMEX BATTERY #4 CIRCULATING PUMP RELEASE  
 TOPOGRAPHIC MAP**

PROJECT NO.: 212C-MD-02334

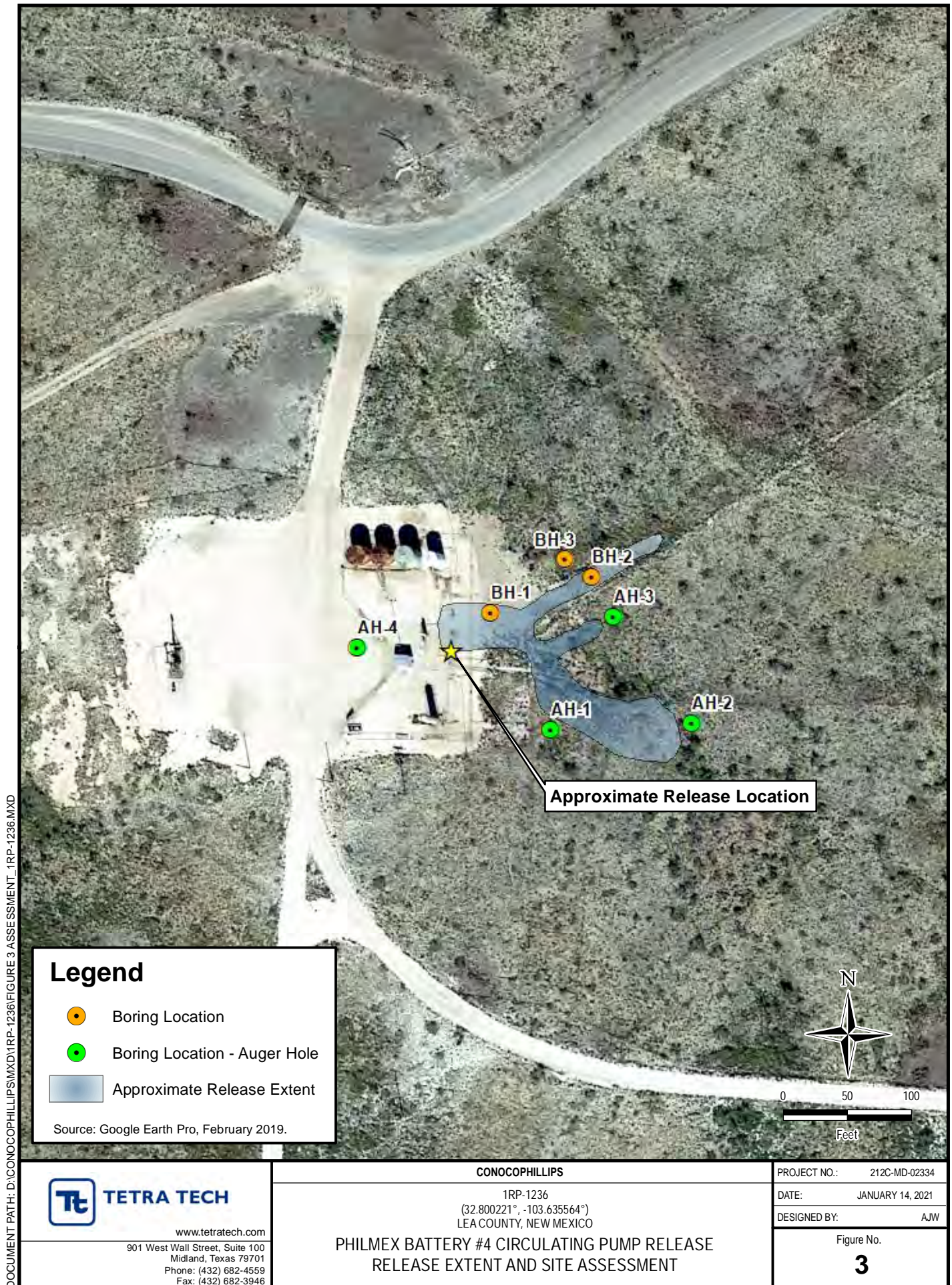
DATE: JANUARY 04, 2021

DESIGNED BY: AJW

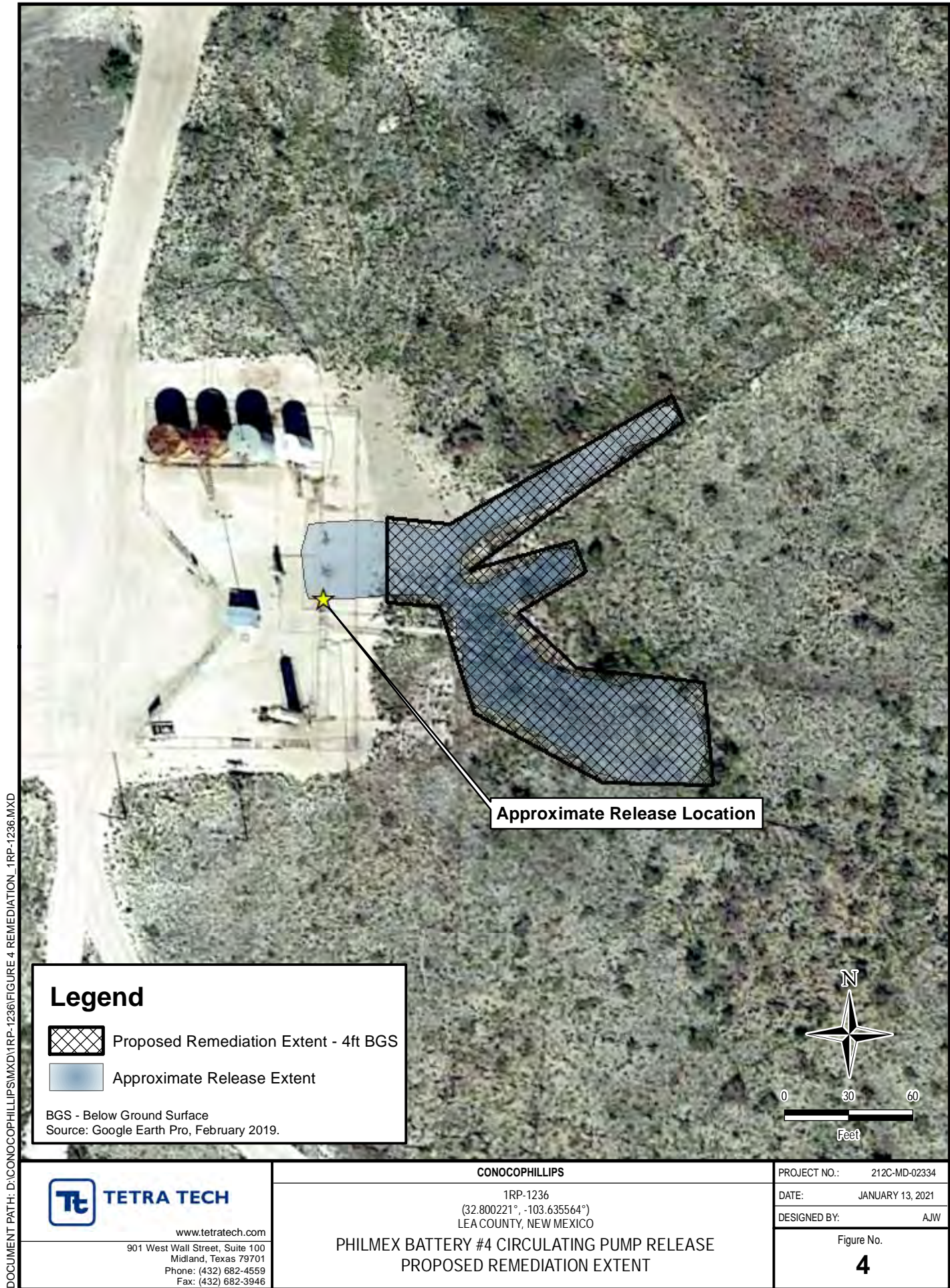
Figure No.

**2**

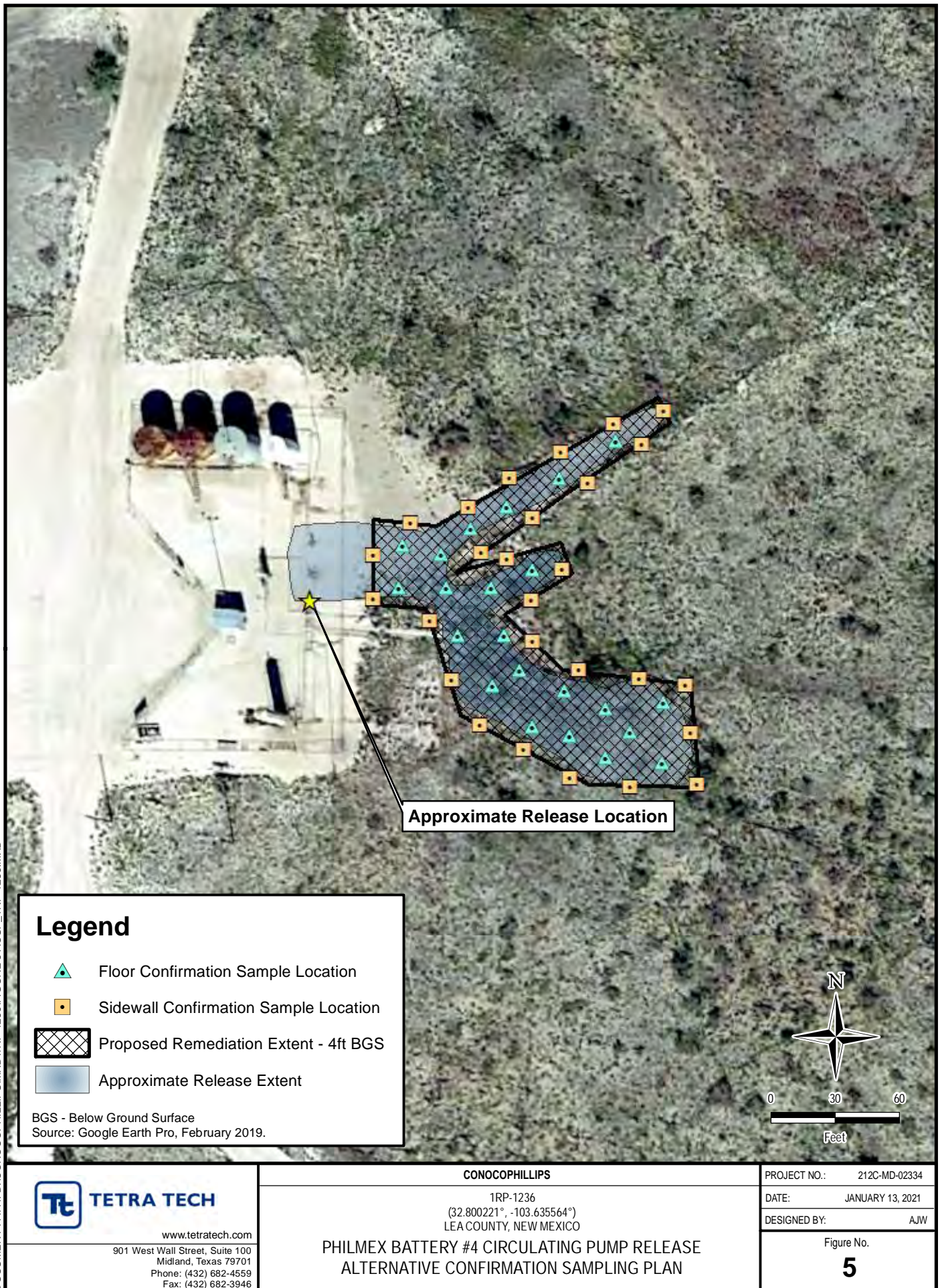












## **TABLES**

TABLE 1  
BORING LOCATION COORDINATES  
SOIL ASSESSMENT - 1RP-1236  
CONOCOPHILLIPS  
PHILMEX BATTERY #4 CIRCULATING PUMP RELEASE  
LEA COUNTY, NM

Boring ID	Latitude	Longitude
AH-1	32.800075	-103.635301
AH-2	32.800074	-103.635025
AH-3	32.800303	-103.635164
AH-4	32.800240	-103.635801
BH-1	32.800267	-103.635440
BH-2	32.800386	-103.635206
BH-3	32.800425	-103.635274



TABLE 2  
SUMMARY OF ANALYTICAL RESULTS  
SOIL ASSESSMENT - 1RP-1236  
CONOCOPHILLIPS  
PHILMEX BATTERY #4 CIRCULATING PUMP RELEASE  
LEA COUNTY, NM

Sample ID	Sample Date	Sample Depth Interval	Field Screening Results		Chloride <sup>1</sup>		BTEX <sup>2</sup>										TPH <sup>3</sup>							
							Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO <sup>4</sup>		DRO		ORO		Total TPH (GRO+DRO+ORO)	
			C <sub>3</sub> - C <sub>10</sub>														C <sub>10</sub> - C <sub>28</sub>		C <sub>28</sub> - C <sub>40</sub>					
		ft. bgs	ppm		mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q		
BH-1	11/11/2020	0-1	-	-	99.9		0.00123	B	< 0.00566		< 0.00283		0.00331	J	0.00454		0.0333	B J	235		744		979	
		2-3	-	-	88.3		0.00126	B	< 0.00553		< 0.00277		< 0.00720		0.00126		0.336		348		471		819	
		4-5	-	-	40.0		0.00101	B J	< 0.00562		< 0.00281		< 0.00731		0.00101		0.0354	B J	82.4		118		200	
		6-7	-	-	36.4		0.00106	B J	< 0.00534		< 0.00267		< 0.00694		0.00106		0.0287	B J	18.2		45.7		63.9	
		9-10	-	-	74.8		0.00116	B	< 0.00549		< 0.00274		< 0.00714		0.00116		0.0292	B J	< 4.20		1.25	J	1.28	
		14-15	-	-	36.1		0.000972	B J	< 0.00555		< 0.00278		< 0.00722		0.000972		0.0317	B J	< 4.22		< 4.22		0.0317	
		19-20	54.3	0.2	35.3		0.00112	B J	< 0.00559		< 0.00279		< 0.00726		0.00112		0.0274	B J	< 4.24		< 4.24		0.0274	
BH-2	11/11/2020	0-1	-	-	275		0.000959	B J	< 0.00554		< 0.00277		< 0.00720		0.000959		0.0251	B J	86.3		278		364	
		2-3	-	-	197		0.00104	B J	< 0.00550		< 0.00275		< 0.00715		0.00104		0.0554	B J	272		547		819	
		4-5	-	-	156		0.00121	B	< 0.00555		< 0.00277		< 0.00721		0.00121		0.217	B	133		167		300	
		6-7	-	-	119		0.00102	B J	< 0.00555		< 0.00278		< 0.00722		0.00102		0.0363	B J	< 4.22		0.673	J	0.709	
		9-10	-	-	71.1		0.00105	B J	< 0.00558		< 0.00279		< 0.00726		0.00105		0.0294	B J	< 4.23		0.766	J	0.795	
		14-15	-	-	50.8		< 0.00109		< 0.00544		< 0.00272		< 0.00707		-		0.0297	B J	< 4.18		1.04	B J	1.07	
		19-20	109	0.0	16.9	J	< 0.00109		< 0.00544		< 0.00272		< 0.00707		-		0.0252	B J	< 4.18		< 4.18		0.0252	
BH-3	11/11/2020	0-1	101	0.3	102		< 0.00105		< 0.00527		< 0.00264		< 0.00685		-		0.0286	B J	1.84	J	12.4	B	14.3	
		3-4	64.5	0.2	204		< 0.00106		< 0.00530		< 0.00265		< 0.00689		-		< 0.103		< 4.12		2.80	B J	2.80	
AH-1 (BH-4)	12/2/2020	0-1	-	-	< 20.8		< 0.00108		< 0.00539		< 0.00270		< 0.00701		-		< 0.104		7.79	B	34.6		42.4	
AH-2 (BH-7)	12/2/2020	0-1	-	-	< 20.9		< 0.00109		< 0.00543		< 0.00271		< 0.00706		-		0.0250	J	5.12	B	20.4		25.5	
AH-3 (BH-6)	12/2/2020	0-1	-	-	10.2	J	< 0.00102		< 0.00509		< 0.00255		< 0.00662		-		0.0315	J	18.3		78.9		97.2	
AH-4 (BH-5)	12/2/2020	0-1	-	-	79.3		< 0.00103		< 0.00513		< 0.00257		< 0.00667		-		< 0.101		< 4.05		2.04	B J	2.04	

NOTES:

ft. Feet  
bgs Below ground surface  
ppm Parts per million  
mg/kg Milligrams per kilogram  
TPH Total Petroleum Hydrocarbons  
GRO Gasoline range organics  
DRO Diesel range organics  
ORO Oil range organics

***Bold and italicized values indicate exceedance of proposed RRALs***

Shaded rows indicate intervals proposed for excavation

- 1 EPA Method 300.0  
2 EPA Method 8260B  
3 EPA Method 8015  
4 EPA Method 8015D/GRO

QUALIFIERS:

- B The same analyte is found in the associated blank.  
J The identification of the analyte is acceptable; the reported value is an estimate.

## **APPENDIX A**

### **C-141 Forms**

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

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

Form C-141  
Revised October 10, 2003

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

## Release Notification and Corrective Action

### OPERATOR

☒ Initial Report ☐ Final Report

Name of Company <b>ConocoPhillips Company</b>	Contact <b>Mickey Garner</b>
Address <b>3300 North A St. Bldg 6, Midland, TX 79705-5406</b>	Telephone No. <b>505.391.3158</b>
Facility Name <b>Philmex Battery #4</b>	Facility Type <b>Oil and Gas</b>

Surface Owner <b>State of New Mexico</b>	Mineral Owner <b>State of New Mexico</b>	Lease No
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### LOCATION OF RELEASE

Unit Letter <b>N</b>	Section <b>26</b>	Township <b>17S</b>	Range <b>33E</b>	Feet from the	North/South Line	Feet from the	East/West Line	County <b>Lea</b>
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Latitude **N 32.80006** Longitude **W 103.63585**

### NATURE OF RELEASE

Type of Release <b>Crude Oil</b>	Volume of Release <b>47bbl (47oil, 0water)</b>	Volume Recovered <b>(35oil, 0water)</b>
Source of Release <b>2" steel line on discharge of circulating pump.</b>	Date and Hour of Occurrence <b>03-10-2007 1:00 am</b>	Date and Hour of Discovery <b>03-10-2007 9:35 am</b>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>Pat Caperton via voice mail</b>	
By Whom? <b>Mickey Garner</b>	Date and Hour <b>03-12-2007 10:40 am</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. <b>N/A</b>	

If a Watercourse was Impacted, Describe Fully.\*  
**N/A**


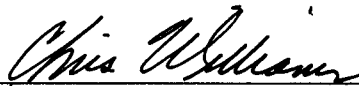
Describe Cause of Problem and Remedial Action Taken.\*

**The leak resulted from internal corrosion to a 2" steel line on the discharge of the circulating pump. The MSO shut down the pump and called a vacuum truck to pick up the free liquids.**

Describe Area Affected and Cleanup Action Taken.\*

**A 75' X 170' area of pad and pasture were affected. No cows were present. The spill site will be delineated and remediated in accordance with NMOCD guidelines.**

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

Signature: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: <b>Mickey Garner</b>	Approved by District Supervisor: 	
Title: <b>HSER Lead</b>	Approval Date: <b>3/13/07</b>	Expiration Date: <b>3/13/08</b>
E-mail Address: <b>Mickey.D.Garner@conocophillips.com</b>	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <b>03-12-2007</b>	Phone: <b>505.391.3158</b>	

- Attach Additional Sheets If Necessary

Facility - FPAC 0707427248  
Incident - FPAC 0707427342  
Applicant - FPAC 0707427473

RP#1236

Incident ID	
District RP	
Facility ID	
Application ID	

## Site Assessment/Characterization

*This information must be provided to the appropriate district office no later than 90 days after the release discovery date.*

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

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

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

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

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

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	
District RP	
Facility ID	
Application ID	

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

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: Charles R. Beauvais II Date: \_\_\_\_\_

email: \_\_\_\_\_ Telephone: \_\_\_\_\_

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_



Incident ID	
District RP	
Facility ID	
Application ID	

## Remediation Plan

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

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

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

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

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

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: Charles R. Beauvais II Date: \_\_\_\_\_

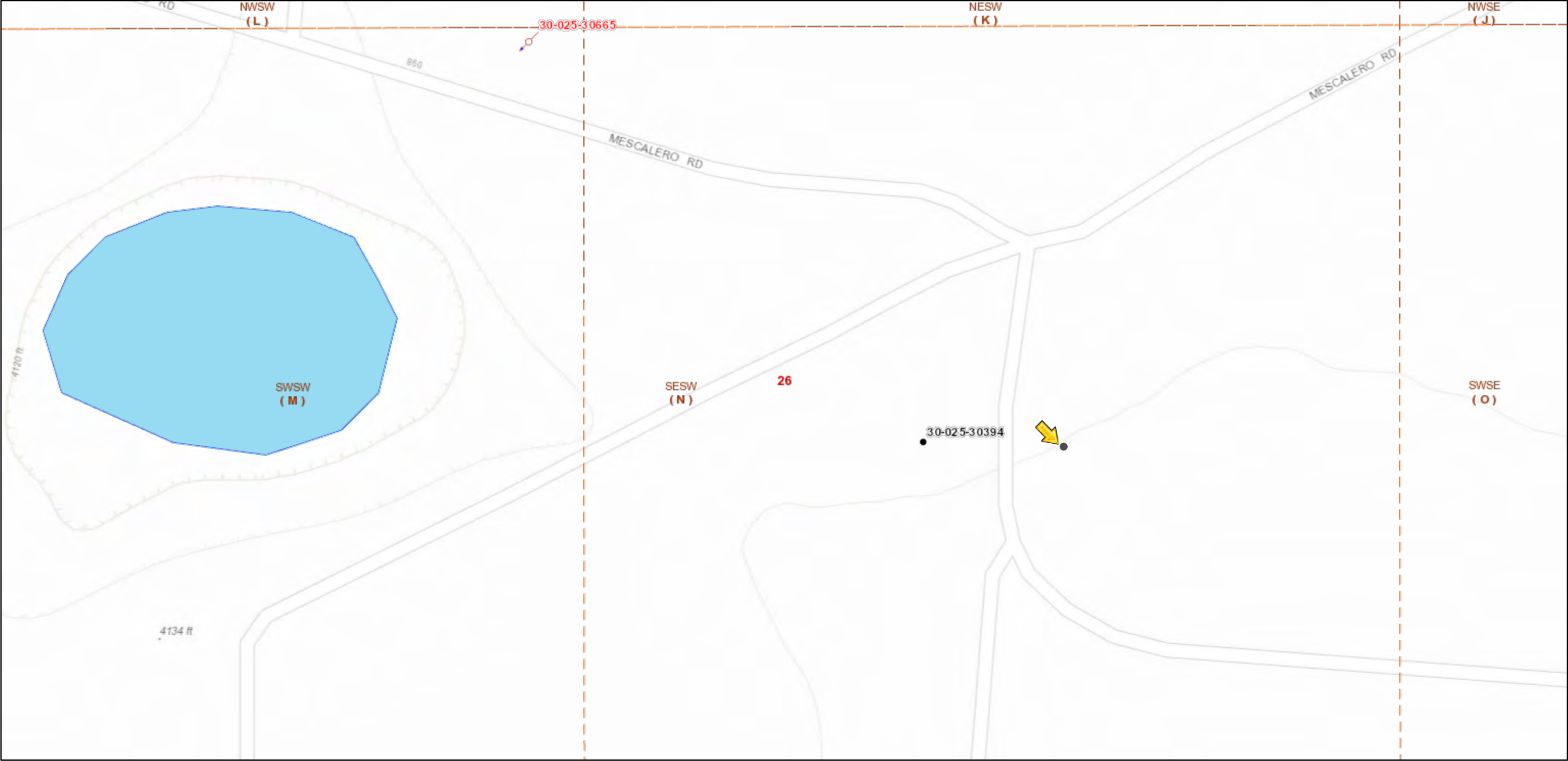
email: \_\_\_\_\_ Telephone: \_\_\_\_\_

**OCD Only**Received by: Jocelyn Harimon Date: 04/21/2023☐ Approved ☒ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral ApprovedSignature:  Date: 04/21/2023

## **APPENDIX B**

### **Site Characterization Data**

1RP-1236



7/27/2020, 2:20:05 PM

- Override 1
- Wells - Large Scale

CO2, New

CO2, Plugged

CO2, Temporarily Abandoned

Miscellaneous

CO2, Active

CO2, Cancelled

Gas, Plugged

Gas, Temporarily Abandoned

Gas, Active

Gas, Cancelled

Gas, New

Injection, Temporarily Abandoned

Oil, Active

Oil, Cancelled

Oil, New

Oil, Plugged

Oil, Temporarily Abandoned

Injection, Active

Injection, Cancelled

Injection, New

Injection, Plugged

Salt Water Injection, Active

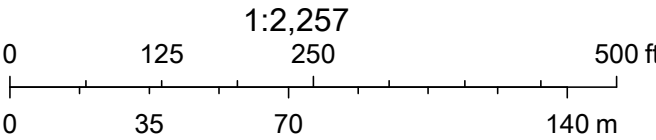
Salt Water Injection, Cancelled

Salt Water Injection, New

Salt Water Injection, Plugged

Salt Water Injection, Temporarily Abandoned

Water, Active



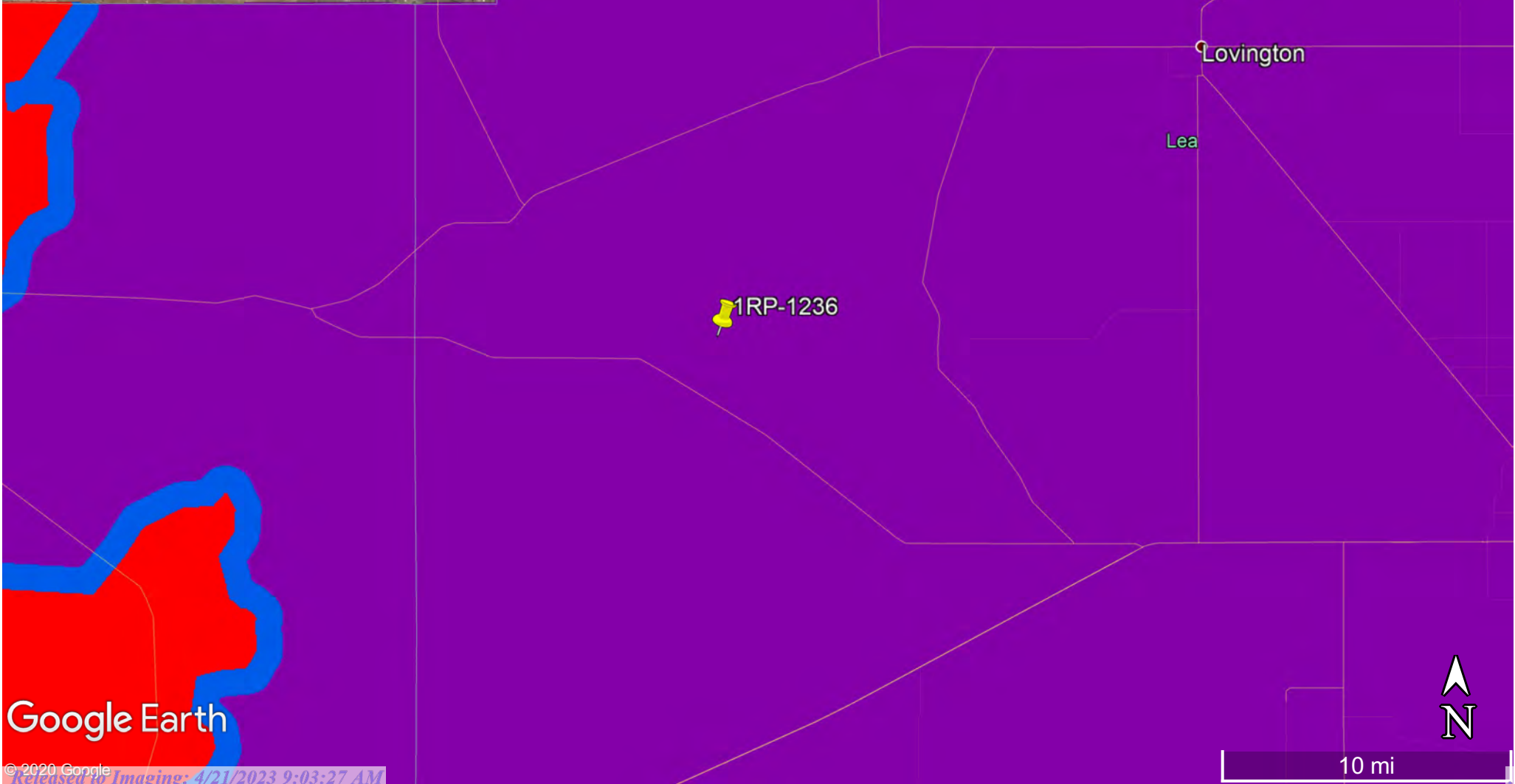
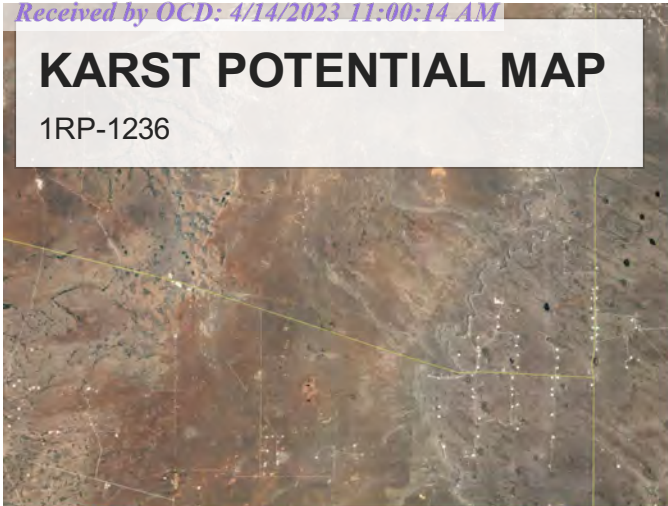
Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department., Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI,

# KARST POTENTIAL MAP

1RP-1236

## Legend

-  1RP-1236
-  High
-  Low
-  Medium



Google Earth



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
<a href="#">L 04363</a>	L	LE		1	2	3	35	17S	33E	627634	3628855*	1115	226	160	66
<a href="#">L 05055</a>	L	LE		3	3	4	35	17S	33E	628042	3628259*	1729	233	150	83
<a href="#">L 05096</a>	L	LE		3	3	4	35	17S	33E	628042	3628259*	1729	233	150	83
<a href="#">L 03133</a>	L	LE		3	1	3	23	17S	33E	627188	3631868*	1985	230		

Average Depth to Water: **153 feet**

Minimum Depth: **150 feet**

Maximum Depth: **160 feet**

Record Count: 4

UTM NAD83 Radius Search (in meters):

**Easting (X):** 627751.42

**Northing (Y):** 3629963.92

**Radius:** 2000

\*UTM location was derived from PLSS - see Help

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

7/24/20 11:42 AM

Page 1 of 1

WATER COLUMN/ AVERAGE  
DEPTH TO WATER



**APPENDIX C  
Environmental Site  
Investigation Report  
(Tetra Tech, June 8, 2007)**



TETRA TECH, INC.

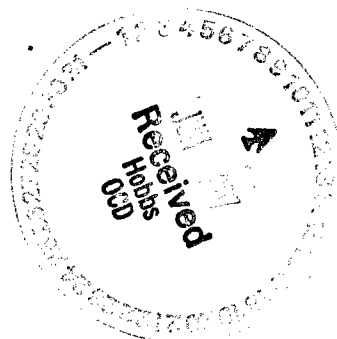
June 8, 2007

Mr. Mark Whitaker  
New Mexico Oil Conservation Division  
1625 N. French Dr.  
Hobbs, New Mexico 88240

RE: Findings Report  
MCA Philmex #4 Battery  
Lea County, New Mexico  
Unit N, Sec. 26, T17S, R33E  
Tetra Tech Project No. 7640024

RPT#  
1236

1703 W. Industrial Ave.  
Midland, Texas 79701  
(432) 686-8081



Dear Mr. Whitaker:

Tetra Tech, Inc. (Tetra Tech) is pleased to submit this findings report for the delineation of a crude oil release at ConocoPhillips' MCA Philmex #4 Battery (Site; Figure 1). This work is in support of ConocoPhillips' efforts to remediate a recent 47 barrel crude oil release at this location. The Site is located above the Mescalero Ridge, approximately 8.1 miles east of the ConocoPhillips MCA Unit office in Lea County, New Mexico (32.80006°N, 103.63585°W). The New Mexico State Land Office is the land administrator. A C141 report for this release is on file with the New Mexico Oil Conservation Division (NMOCD; Attachment A).

### Exposure Pathway Analysis

There are no water well records for Section 27, Township 17 South, Range 33 East (New Mexico Office of the State Engineer, iWater database). The nearest records are in the Southeast ¼ of the Southeast ¼ of the Northeast ¼ of Section 35, immediately South of Section 26. These data indicate groundwater to be approximately 150 to 160 feet below ground surface (fbgs). The nearest playa is approximately 850 feet east northeast of the battery (Figure 1).

As per the subsurface site assessment characterization protocol outlined in NMOCD's "Guidelines for Remediation of Leaks, Spills and Releases," dated August 13, 1993 and information provided in this report, the site is assigned the following score:

Criteria		Ranking Score
Depth to groundwater	>100 feet	0
Distance from water source	>1,000 feet	0
Distance from domestic water source	>200 feet	0
Distance from surface water body	200 – 1,000 feet	10
<b>Total Ranking Score</b>		<b>10</b>

The remediation action level for a ranking score of 1-19 is 10 parts per million (ppm) for benzene, 50 ppm for total benzene, toluene, ethylbenzene and total xylenes (BTEX), and 1,000 ppm for total petroleum hydrocarbons (TPH).

### Scope of Work

The crude oil footprint delineated the lateral extent of the affected area (approximately 8,600 square feet) by the petroleum stained edge (Figure 2). To delineate the vertical crude oil affected soil:

- Tetra Tech advanced three (3) borings using a truck mounted air rotary drilling unit at Philmex #4 to find the TPH clean boundary (Figure 2).

Mr. Mark Whitaker  
June 8, 2007  
Page 2

MCA Philmex #4 Battery

- The borings were logged so that observations concerning soil types, lithologic changes, and the environmental condition of the encountered soils were noted (See Attachment B – Boring Logs).
- Soil samples were taken at 2 foot intervals from 0-10 fbs. Each sample was field screened for TPH using the PetroFLAG System (USEPA, 2001<sup>1</sup>). The photo-ionization detector (PID) malfunctioned and was not used measure volatile organic carbon concentrations.
- Two (2) soil samples from each boring were retained and submitted to a laboratory for analyses. The sampling intervals were based on PetroFLAG measurements, and on the judgment of the field geologist. The soil sample with the highest PetroFLAG measurement and the sample from the boring total depth (TD) were retained for chemical analysis.
- Soil samples were placed into appropriate sample containers, placed on ice and transported, under a chain of custody, to an analytical laboratory where they were analyzed for TPH (Method 8015 GRO-DRO), and BTEX (Method 8260B).

## Findings

The Site is nearly level to gently sloping and has Jal series soils. The Jal series has a 0-12 inches sandy loam surface overlaying 12-60 inches of soft caliche. Fragmental platy caliche is observed in the area (Turner et al<sup>2</sup>). The soils encountered during excavation activities at the Site consisted of mostly dark grayish-brown gravelly loam overlying indurated caliche (See Attachment B – Boring Logs).

The Site is located above the Mescalero Ridge. In this area of the High Plains, the Ogallala sands are overlain by sediments of the lower Pliocene to middle Miocene Group. The general character of the sediment is semi-consolidated, fine-grained, calcareous sand, capped with thick a layer of caliche. Depth to water in the vicinity of the Site is approximately 160 fbs (Nicholson and Clebsch, 1961<sup>3</sup>).

Summaries of subsurface soil conditions are presented in Tables 1 and 2 and on excavation logs (Appendix A). A complete analytical report is presented in Appendix C.

PetroFlag analyses for diesel range hydrocarbons (TPH<sub>D</sub>) are presented in Table 1. TPH<sub>D</sub> concentrations were used to preliminarily describe the extent of vertical migration of hydrocarbons.

The laboratory analyses of soils confirmed the extent of vertical migration of TPH constituents (Table 2). All three borings had concentrations of TPH above the regulatory action level of 1,000 milligrams per kilogram (mg/Kg) in near surface samples. TPH concentrations in the bottom sampling depths were below the regulatory action level and ranged from 34 to 925 mg/Kg in borings SB-2, and -1, respectively.

BTEX data are presented in Table 2. Benzene concentrations were detected in all three near surface soil boring samples and were below the regulatory action level of 10 ppm. Benzene was reported as non-detect in all three boring TD soil samples. BTEX concentrations were above the regulatory action level of 50 ppm in all near surface soil samples. BTEX concentrations in the bottom sampling depths were below the regulatory action level and ranged from non-detect in borings SB-2 and -3 to 0.06 mg/Kg in SB-1.

---

<sup>1</sup> U.S. Environmental Protection Agency, 2001. Innovative Technology Verification Report, Dexsil Corporation PetroFLAG™ System. Prepared by Tetra Tech EM Inc. for USEPA National Exposure Research Laboratory Office of Research and Development. EPA/R-01/092.

<sup>2</sup> Turner, Millard T., Dellon N. Cox, Brice C. Mickelson, Archie J. Roath, and Carl D. Wilson. 1974. Soil Survey Lea County, New Mexico. USDA Soil Conser. Serv., Washington DC. 20402. p. 89.

<sup>3</sup> Nicholson, A. and A. Clebsch, 1961. Geological and Ground-Water Conditions in Southern Lea County, New Mexico. NM Bur. of Mines & Mineral Res. Ground-Water Rpt 6. p. 123.

Mr. Mark Whitaker  
June 8, 2007  
Page 3

MCA Philmex #4 Battery

## Conclusions

According to laboratory analysis of soils collected during this investigation, petroleum hydrocarbon constituents were reported above the regulatory action levels for TPH and BTEX in the three (3) boring near surface soil samples. TPH and BTEX concentrations attenuated to below the regulatory action levels with depth. Since groundwater is greater than 100 feet below the affected depth and the nearest water source is greater than 1,000 feet away, the site-specific remediation levels through laboratory analysis are 1,000 mg/Kg for TPH, 50 mg/Kg for BTEX and 10 mg/Kg for benzene.

It is estimated that the affected area is approximately 8,600 square feet and penetration of petroleum hydrocarbon constituents is approximately 4 fogs (Figure 2).

## Recommendations

Tetra Tech recommends the following actions be taken at Philmex #4 Battery crude oil release site:

- Soil in the area of above ground flowlines will be excavated approximately 6-inches below the lines. This soil will be thinly spread over the release site area.
- The affected soil in the area of the release will be treated with a three percent (%) Micro-Blaze® solution to encourage bioremediation. Micro-Blaze® contains surfactants, nutrients and non-pathogenic bacteria. When applied to a hydrocarbon-based contaminant, the surfactant starts emulsifying (breaking down) the contaminants into smaller molecules for more efficient degradation by the microbes. Photographs will be taken to document the before and after treatment at the site.
- To achieve a 3% application, it is estimated that for every 10 cubic yards of affected soil, one gallon of the concentrated Micro-Blaze® diluted with 333 gallons of water will be required. Approximately 1,274 cubic yards of affected soil will be flooded by 128 gallons of Micro-Blaze® diluted with 100 barrels of water. A small berm will be constructed around the release site to ensure the weight of the application solution forces penetration into the affected soil.
- Tetra Tech will supervise and direct all subcontractor activities, and following the application of Micro-Blaze®, prepare a report describing and documenting what was done at the site, including a site map. This report on activities and results will be submitted for NMOCD's review and ultimate closure of this site following remediation.

Based on the above information, Tetra Tech requests NMOCD's approval on the recommended remediation action. ConocoPhillips has directed Tetra Tech to commence work on this project immediately following receipt of your notification to proceed. If you have any questions concerning this request please call Mr. Mickey Garner (505-391-3158) or me.

Sincerely,

Tetra Tech, Inc.

  
Greg W. Pope, P.G.  
Project Manager

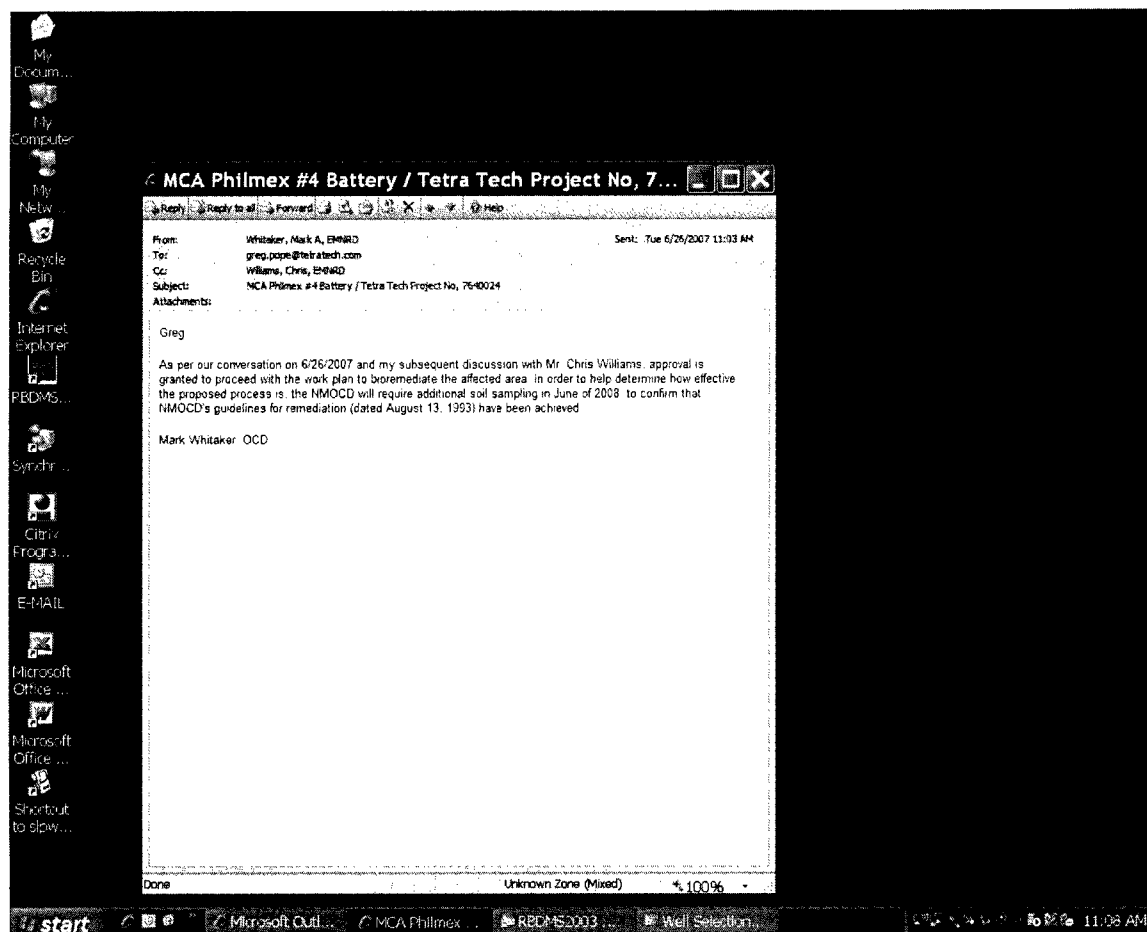
Attachments

Approved by  
Chris Williams  
6/26/07

06/26/2007

Sent e-mail  
allowing to proceed  
with work. ~~work~~  
requested additional  
testing in 1 yr. MW







**TABLES**

**Table 1**  
**ConocoPhillips**  
**Philmex #4 Battery**  
**Soil Field Analysis**  
**May 14, 2007**

Sample Location	Depth (ft)	TPH (ppm)	VOC* (ppm)
SB-1	0-0.5	<4,000	
	2	1,011	
	4	621	
	6	219	
SB-2	0-0.5	<4,000	
	2	2204	
	4	499	
	6	357	
	8	212	
SB-3	0-0.5	<4,000	
	2	<4,000	
	4	642	
	6	240	

TPH = total petroleum hydrocarbons

VOC = volatile organic compounds

ft = feet

ppm = parts per million

\* Equipment malfunction, no data

**Table 2**  
**ConocoPhillips**  
**Philmex #4 Battery**  
**Soil Lab Analysis**  
**May 14, 2007**

Parameter	Boring Location					
	SB-1		SB-2		SB-3	
Sample Depth (ft)	0-0.5	2	0-0.5	8	0-0.5	6
<b>Total Petroleum Hydrocarbons (mg/Kg)</b>						
TPH GRO	8,890	325	2,070	ND	6,320	1.91
TPH DRO	29,000	600	12,000	34	37,000	42
TPH Total	37,890	925	14,070	34	43,320	44
<b>Volatile Organic Compounds (mg/Kg)</b>						
Benzene	8.20	ND	1.00	ND	2.4	ND
Ethylbenzene	23.50	ND	7.20	ND	8.9	ND
Toluene	132.00	ND	21.10	ND	70	ND
Xylenes (Total)	289.00	0.059	115.00	ND	161.00	ND
BTEX Total	452.70	0.06	144.30	0.00	242.30	0.00

ft = feet

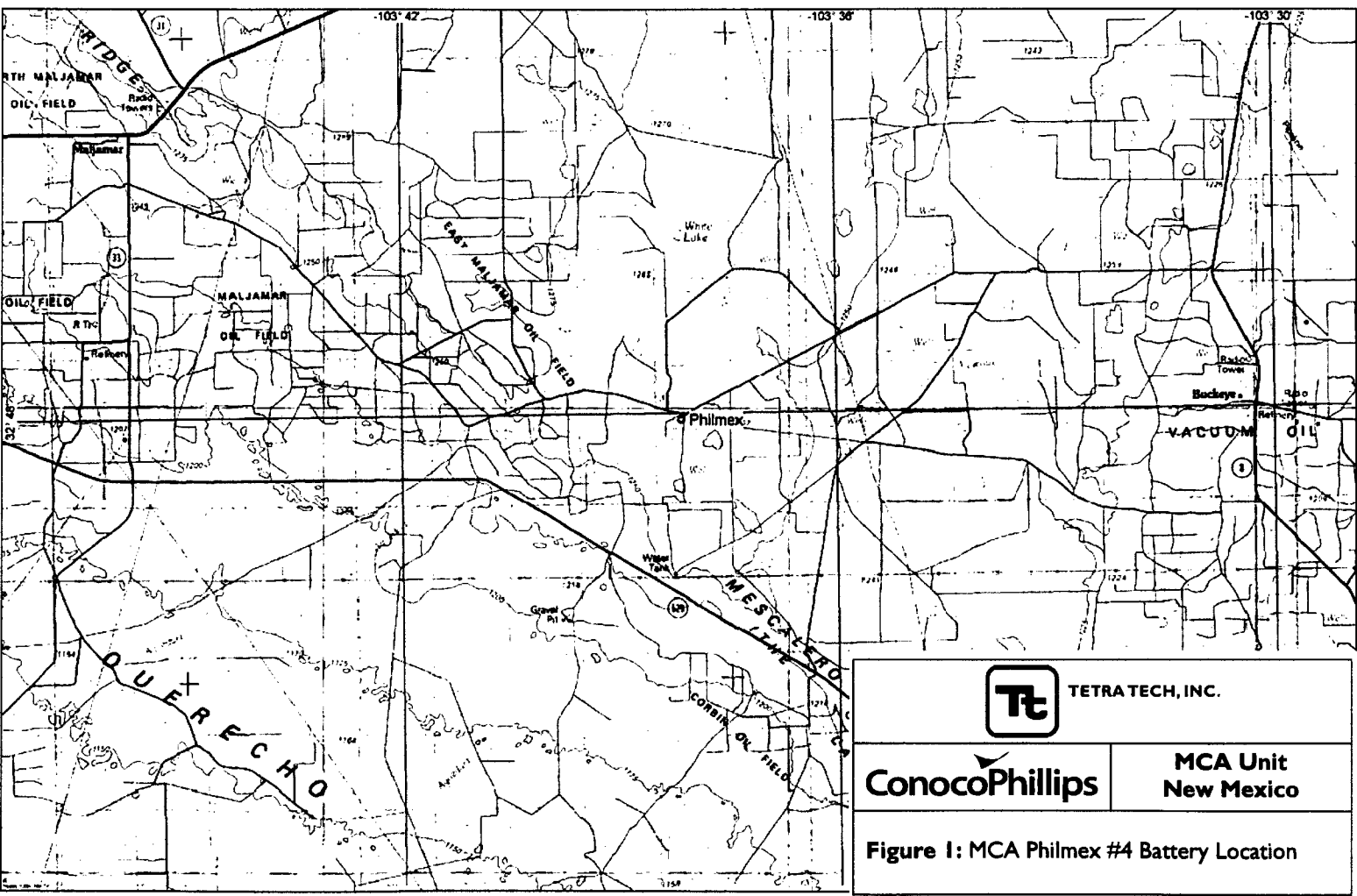
GRO = gasoline range hydrocarbons

DRO = diesel range hydrocarbons

mg/Kg = milligrams per kilogram

ND = not detected at or above laboratory detection levels

**FIGURES**







TETRA TECH, INC.

ConocoPhillips

MCA  
Unit  
New  
Mexico

Figure 2. Philmex #4 Crude Oil  
Release Site Sampling Locations ○

**ATTACHMENT A  
C141 Form**

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

State of New Mexico  
Energy Minerals and Natural Resources

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

Form C-14  
Revised October 10, 2004

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

### Release Notification and Corrective Action

#### OPERATOR

☒ Initial Report ☐ Final Report

Name of Company <b>ConocoPhillips Company</b>	Contact <b>Mickey Garner</b>
Address <b>3300 North A St. Bldg 6, Midland, TX 79705-5406</b>	Telephone No. <b>505.391.3158</b>
Facility Name <b>Philmex Battery #4</b>	Facility Type <b>Oil and Gas</b>
Surface Owner <b>State of New Mexico</b>	Mineral Owner <b>State of New Mexico</b>
Lease No	

#### LOCATION OF RELEASE

Unit Letter <b>N</b>	Section <b>26</b>	Township <b>17S</b>	Range <b>33E</b>	Feet from the	North/South Line	Feet from the	East/West Line	County <b>Lea</b>
-------------------------	----------------------	------------------------	---------------------	---------------	------------------	---------------	----------------	----------------------

Latitude **N 32.80006** Longitude **W 103.63585**

#### NATURE OF RELEASE

Type of Release <b>Crude Oil</b>	Volume of Release <b>47bbl (47oil, 0water)</b>	Volume Recovered <b>(35oil, 0water)</b>
Source of Release <b>2" steel line on discharge of circulating pump.</b>	Date and Hour of Occurrence <b>03-10-2007 1:00 am</b>	Date and Hour of Discovery <b>03-10-2007 9:35 am</b>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>Pat Caperton via voice mail</b>	
By Whom? <b>Mickey Garner</b>	Date and Hour <b>03-12-2007 10:40 am</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. <b>N/A</b>	

If a Watercourse was Impacted, Describe Fully.\*



Describe Cause of Problem and Remedial Action Taken.\*

**The leak resulted from internal corrosion to a 2" steel line on the discharge of the circulating pump. The MSO shut down the pump and called a vacuum truck to pick up the free liquids.**

Describe Area Affected and Cleanup Action Taken.\*

**A 75' X 170' area of pad and pasture were affected. No cows were present. The spill site will be delineated and remediated in accordance with NMOCD guidelines.**

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

Signature: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: <b>Mickey Garner</b>	Approved by District Supervisor: 	
Title: <b>HSER Lead</b>	Approval Date: <b>3/13/07</b>	Expiration Date: <b>3/13/08</b>
E-mail Address: <b>Mickey.D.Garner@conocophillips.com</b>	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <b>03-12-2007</b>	Phone: <b>505.391.3158</b>	

- Attach Additional Sheets If Necessary

Facility - PHAC 0707427248  
Incident - PHAC 0707427342  
Application - PHAC 0707427473

RP

RP#1236

**ATTACHMENT B  
Boring Logs**






TETRA TECH, INC.

**SOIL BORING LOG****SB-1**

CLIENT/PROJECT: ConocoPhillips  
 LOCATION: Philhex #4 Battery  
 COUNTY, STATE: Lea County, New Mexico  
 DRILLED BY: Laura Strumness  
 DATE/TIME START: 5/14/07 9:30  
 DATE/TIME FINISH: 5/14/07 10:00

PROJECT NUMBER: 7640024  
 DRILLING CO: Scarborough Drilling  
 DRILL TYPE: Air Rotary  
 BORING DIAMETER: 5-inch  
 GROUND SURFACE ELEVATION: unknown  
 GPS COORDINATES (N/E): 0 0

**BORING NO.**

(feet-bgs)	SAMPLE NUMBER	SAMPLE INTERVAL	PID READING (ppm)	LITHOLOGIC DESCRIPTION	USCS SYMBOL	LITHOLOGY	FIELD TEST ANALYSIS AND DRILLING NOTES	% RECOVERY	SYMBOLS	ELEVATION (feet-msl)
				TOPSOIL: clayey sand, brown (7.5YR 4/2), coated with oil	SC					0
	0-1									
		1-2		CALICHE: pale yellow (2.5Y 8/3), fine grained, dense-very dense, dry, hydrocarbon odor 1-4 fbgs						-2
		2-4								-4
		4-6			LS					-6
										-8
										-10

**WELL COMPLETION INFORMATION**

Page 1 of 1

Drilling Point Description: Ground Surface  
 Measuring Point Elevation (ft MSL): NA  
 Drilling Total Depth (ft BGS): 10  
 Initial Water Level (ft BTOC): NA

Type of Casing / Screen: NA  
 Casing Diameter (inches): NA  
 Well Screen Slot Size (inch): NA  
 Well Completion: Bentonite backfill to surface



TETRA TECH, INC.


## SOIL BORING LOG

SB-2

CLIENT/PROJECT: ConocoPhillips  
 LOCATION: Philhex #4 Battery  
 COUNTY, STATE: Lea County, New Mexico  
 DRILLED BY: Laura Strumness  
 DATE/TIME START: 5/14/07 10:30  
 DATE/TIME FINISH: 5/14/07 10:58

PROJECT NUMBER: 7640024  
 DRILLING CO: Scarborough Drilling  
 DRILL TYPE: Air Rotary  
 BORING DIAMETER: 5-inch  
 GROUND SURFACE ELEVATION: unknown  
 GPS COORDINATES (N/E): 0 0

BORING NO.

(feet-bgs)	SAMPLE NUMBER	SAMPLE INTERVAL	PID READING (ppm)	LITHOLOGIC DESCRIPTION	USCS SYMBOL	LITHOLOGY	FIELD TEST ANALYSIS AND DRILLING NOTES	% RECOVERY	SYMBOLS	ELEVATION (feet-msl)
				TOPSOIL: clayey sand, brown (7.5YR 4/2), coated with oil	SC					0
	0-1									
		1-2		CALICHE: pale yellow (2.5Y 8/3), fine grained, dense-very dense, dry, hydrocarbon odor 1-4 fbg						-2
		2-4								-4
		4-6			LS					-6
		6-8								-8
										-10

## WELL COMPLETION INFORMATION

Page 1 of 1

Drilling Point Description : Ground Surface  
 Measuring Point Elevation (ft MSL): NA  
 Drilling Total Depth (ft BGS): 10  
 Initial Water Level (ft BTOC): NA

Type of Casing / Screen: NA  
 Casing Diameter (inches): NA  
 Well Screen Slot Size (inch): NA  
 Well Completion: Bentonite backfill to surface



TETRA TECH, INC.


## SOIL BORING LOG

SB-3

CLIENT/PROJECT: ConocoPhillips  
 LOCATION: Philmex #4 Battery  
 COUNTY, STATE: Lea County, New Mexico  
 CREATED BY: Laura Strumness  
 START TIME: 5/14/07 11:30  
 END TIME: 5/14/07 11:45

PROJECT NUMBER: 7640024  
 DRILLING CO: Scarborough Drilling  
 DRILL TYPE: Air Rotary  
 BORING DIAMETER: 5-inch  
 GROUND SURFACE ELEVATION: unknown  
 GPS COORDINATES (N/E): 0 0

BORING NO.

(feet-bgs)	SAMPLE NUMBER	SAMPLE INTERVAL	PID READING (ppm)	LITHOLOGIC DESCRIPTION	USCS SYMBOL	LITHOLOGY	FIELD TEST ANALYSIS AND DRILLING NOTES	% RECOVERY	SYMBOLS	ELEVATION (feet-msl)
										0
	0-1			TOPSOIL: clayey sand, brown (7.5YR 4/2), coated with oil	SC					
	1-2			CALICHE: pale yellow (2.5Y 8/3), fine grained, dense-very dense, dry, hydrocarbon odor 1-4 fbgs						-2
	2-4									-4
	4-6				LS					-6
										-8
										-10

## WELL COMPLETION INFORMATION

Page 1 of 1

Drilling Point Description: Ground Surface  
 Drilling Point Elevation (ft MSL): NA  
 Drilling Total Depth (ft BGS): 10  
 Initial Water Level (ft BTOC): NA

Type of Casing / Screen: NA  
 Casing Diameter (inches): NA  
 Well Screen Slot Size (inch): NA  
 Well Completion: Bentonite backfill to surface

**ATTACHMENT C**  
**Laboratory Analytical Report**





STL

## ANALYTICAL REPORT

JOB NUMBER: 335383  
Project ID: PHILMEX

Prepared For:

Maxim Technologies, Inc.  
1703 West Industrial  
Midland, TX 79701

Attention: Charlie Durret

Date: 05/22/2007

A handwritten signature in black ink, appearing to read "Sachin G. Kudchadkar", written over a horizontal line.

Signature

Name: Sachin G. Kudchadkar

Title: Project Manager III

E-Mail: skudchadkar@stl-inc.com

A handwritten date in black ink, "08/22/07", written over a horizontal line.

Date

Severn Trent Laboratories  
6310 Rothway Drive  
Houston, TX 77040

PHONE: 713-690-4444

TOTAL NO. OF PAGES 25



05/22/2007

Charlie Durret  
Maxim Technologies, Inc.  
1703 West Industrial  
Midland, TX 79701

## Reference:

Project : PHILMEX  
Project No. : 335383  
Date Received : 05/16/2007  
STL Job : 335383

Dear Charlie Durret:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

1. SB1 0-6"
2. SB1 2'
3. SB2 0-6"
4. SB2 8'
5. SB3 0-6"
6. SB3 6'
7. TRIP BLANK

All holding times were met for the tests performed on these samples.

Enclosed, please find the Quality Control Summary. All quality control results for the QC batch that are applicable to the sample(s) are acceptable except as noted in the QC batch reports.

The test results in this report meet all NELAP requirements for STL Houston's NELAP accredited parameters. Any exceptions to NELAP requirements will be noted and included in a case narrative as a part of this report.

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Severn-Trent Laboratories to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

Sincerely,

A handwritten signature in black ink, appearing to read "Sachin G. Kudchadkar".

Sachin G. Kudchadkar  
Project Manager



## SAMPLE INFORMATION

Date: 05/22/2007

Job Number.: 335383  
 Customer...: Maxim Technologies, Inc.  
 Attn.....: Charlie Durret

Project Number.....: 99003817  
 Customer Project ID....: PHILMEX  
 Project Description....: Conoco Phillips

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
335383-1	SB1 0-6"	Soil	05/14/2007	08:00	05/16/2007	08:51
335383-2	SB1 2'	Soil	05/14/2007	10:30	05/16/2007	08:51
335383-3	SB2 0-6"	Soil	05/14/2007	08:30	05/16/2007	08:51
335383-4	SB2 8'	Soil	05/14/2007	10:51	05/16/2007	08:51
335383-5	SB3 0-6"	Soil	05/14/2007	09:00	05/16/2007	08:51
335383-6	SB3 6'	Soil	05/14/2007	11:41	05/16/2007	08:51
335383-7	TRIP BLANK	Trip Blank	05/14/2007	00:00	05/16/2007	08:51

SEVERN  
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STL

## LABORATORY TEST RESULTS

Job Number: 335383

Date: 05/22/2007

CUSTOMER: Maxim Technologies, Inc.

PROJECT: PHILMEX

ATTN: Charlie Durret

Customer Sample ID: SB1 0-6"  
Date Sampled.....: 05/14/2007  
Time Sampled.....: 08:00  
Sample Matrix.....: SoilLaboratory Sample ID: 335383-1  
Date Received.....: 05/16/2007  
Time Received.....: 08:51

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8015B	Total Volatile Petroleum Hydrocarbons TVPH as GRO, Soil	8890000		1000000	ug/Kg	05/17/07	cad
SW-846 3550B	Extraction (Ultrasonic) DRO Ultrasonic Extraction, Soil	Complete				05/16/07	mra
SW-846 8015B	Total Extractable Petroleum Hydrocarbons TEPH - as Diesel, Soil	29000		5000	mg/Kg	05/17/07	jps
SW-846 8260B	Volatile Organics						
	Benzene, Soil	8200		600	ug/Kg	05/17/07	zfl
	Ethylbenzene, Soil	23500		600	ug/Kg	05/17/07	zfl
	Toluene, Soil	132000		6000	ug/Kg	05/18/07	zfl
	Xylenes (total), Soil	289000		19000	ug/Kg	05/18/07	zfl

\* In Description = Dry Wgt.

Page 2



SEVERN  
TRENT

STL

## LABORATORY TEST RESULTS

Job Number: 335383

Date: 05/22/2007

CUSTOMER: Maxim Technologies, Inc.

PROJECT: PHILMEX

ATTN: Charlie Durrett

Customer Sample ID: SB1 2'  
Date Sampled.....: 05/14/2007  
Time Sampled.....: 10:30  
Sample Matrix.....: SoilLaboratory Sample ID: 335383-2  
Date Received.....: 05/16/2007  
Time Received.....: 08:51

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8015B	Total Volatile Petroleum Hydrocarbons TVPH as GRO, Soil	325000		250000	ug/Kg	05/16/07	cad
SW-846 3550B	Extraction (Ultrasonic) DRO Ultrasonic Extraction, Soil	Complete				05/16/07	mra
SW-846 8015B	Total Extractable Petroleum Hydrocarbons TEPH - as Diesel, Soil	600		83	mg/Kg	05/17/07	jps
SW-846 8260B	Volatile Organics						
	Benzene, Soil	ND		5	ug/Kg	05/16/07	ysl
	Ethylbenzene, Soil	ND		5	ug/Kg	05/16/07	ysl
	Toluene, Soil	ND		5	ug/Kg	05/16/07	ysl
	Xylenes (total), Soil	59.5		15	ug/Kg	05/16/07	ysl

\* In Description = Dry Wgt.

Page 3



## LABORATORY TEST RESULTS

Job Number: 335383

Date: 05/22/2007

CUSTOMER: Maxim Technologies, Inc.

PROJECT: PHILMEX

ATTN: Charlie Durret

Customer Sample ID: SB2 0-6"  
 Date Sampled.....: 05/14/2007  
 Time Sampled.....: 08:30  
 Sample Matrix.....: Soil

Laboratory Sample ID: 335383-3  
 Date Received.....: 05/16/2007  
 Time Received.....: 08:51

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8015B	Total Volatile Petroleum Hydrocarbons TVPH as GRO, Soil	2070000		500000	ug/Kg	05/16/07	cad
SW-846 3550B	Extraction (Ultrasonic) DRO Ultrasonic Extraction, Soil	Complete				05/16/07	mra
SW-846 8015B	Total Extractable Petroleum Hydrocarbons TEPH - as Diesel, Soil	12000		830	mg/Kg	05/17/07	jps
SW-846 8260B	Volatile Organics						
	Benzene, Soil	1000		600	ug/Kg	05/17/07	zfl
	Ethylbenzene, Soil	7200		600	ug/Kg	05/17/07	zfl
	Toluene, Soil	21100		600	ug/Kg	05/17/07	zfl
	Xylenes (total), Soil	115000		19000	ug/Kg	05/18/07	zfl

\* In Description = Dry Wgt.

Page 4



## LABORATORY TEST RESULTS

Job Number: 335383

Date: 05/22/2007

CUSTOMER: Maxim Technologies, Inc.

PROJECT: PHILMEX

ATTN: Charlie Durret

Customer Sample ID: SB2 8'  
 Date Sampled.....: 05/14/2007  
 Time Sampled.....: 10:51  
 Sample Matrix.....: Soil

Laboratory Sample ID: 335383-4  
 Date Received.....: 05/16/2007  
 Time Received.....: 08:51

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8015B	Total Volatile Petroleum Hydrocarbons TVPH as GRO, Soil	ND		1000.00	ug/Kg	05/16/07	cad
SW-846 3550B	Extraction (Ultrasonic) DRO Ultrasonic Extraction, Soil	Complete				05/16/07	mra
SW-846 8015B	Total Extractable Petroleum Hydrocarbons TEPH - as Diesel, Soil	34		8.3	mg/Kg	05/17/07	jps
SW-846 8260B	Volatile Organics						
	Benzene, Soil	ND		5	ug/Kg	05/16/07	yx1
	Ethylbenzene, Soil	ND		5	ug/Kg	05/16/07	yx1
	Toluene, Soil	ND		5	ug/Kg	05/16/07	yx1
	Xylenes (total), Soil	ND		15	ug/Kg	05/16/07	yx1

\* In Description = Dry Wgt.

Page 5



## LABORATORY TEST RESULTS

Job Number: 335383

Date: 05/22/2007

CUSTOMER: Maxim Technologies, Inc.

PROJECT: PHILMEX

ATTN: Charlie Durrett

Customer Sample ID: SB3 0-6"  
 Date Sampled.....: 05/14/2007  
 Time Sampled.....: 09:00  
 Sample Matrix.....: Soil

Laboratory Sample ID: 335383-5  
 Date Received.....: 05/16/2007  
 Time Received.....: 08:51

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8015B	Total Volatile Petroleum Hydrocarbons TVPH as GRO, Soil	6320000		1000000	ug/Kg	05/17/07	cad
SW-846 3550B	Extraction (Ultrasonic) DRO Ultrasonic Extraction, Soil	Complete				05/16/07	mra
SW-846 8015B	Total Extractable Petroleum Hydrocarbons TEPH - as Diesel, Soil	37000		5000	mg/Kg	05/17/07	jps
SW-846 8260B	Volatile Organics						
	Benzene, Soil	2400		600	ug/Kg	05/17/07	zfl
	Ethylbenzene, Soil	8900		600	ug/Kg	05/17/07	zfl
	Toluene, Soil	70000		6000	ug/Kg	05/18/07	zfl
	Xylenes (total), Soil	161000		19000	ug/Kg	05/18/07	zfl

\* In Description = Dry Wgt.

Page 6



## LABORATORY TEST RESULTS

Job Number: 335383

Date: 05/22/2007

CUSTOMER: Maxim Technologies, Inc.

PROJECT: PHILMEX

ATTN: Charlie Durret

Customer Sample ID: SB3 6'  
 Date Sampled.....: 05/14/2007  
 Time Sampled.....: 11:41  
 Sample Matrix.....: Soil

Laboratory Sample ID: 335383-6  
 Date Received.....: 05/16/2007  
 Time Received.....: 08:51

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8015B	Total Volatile Petroleum Hydrocarbons TVPH as GRO, Soil	1910		1000.00	ug/Kg	05/16/07	cad
SW-846 3550B	Extraction (Ultrasonic) DRO Ultrasonic Extraction, Soil	Complete				05/16/07	mra
SW-846 8015B	Total Extractable Petroleum Hydrocarbons TEPH - as Diesel, Soil	42		8.3	mg/Kg	05/17/07	jps
SW-846 8260B	Volatile Organics						
	Benzene, Soil	ND		5	ug/Kg	05/16/07	yx1
	Ethylbenzene, Soil	ND		5	ug/Kg	05/16/07	yx1
	Toluene, Soil	ND		5	ug/Kg	05/16/07	yx1
	Xylenes (total), Soil	ND		15	ug/Kg	05/16/07	yx1

\* In Description = Dry Wgt.

Page 7





## LABORATORY TEST RESULTS

Job Number: 335383

Date: 05/22/2007

CUSTOMER: Maxim Technologies, Inc.

PROJECT: PHILMEX

ATTN: Charlie Durret

Customer Sample ID: TRIP BLANK  
 Date Sampled.....: 05/14/2007  
 Time Sampled.....: 00:00  
 Sample Matrix.....: Trip Blank

Laboratory Sample ID: 335383-7  
 Date Received.....: 05/16/2007  
 Time Received.....: 08:51

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8260B	Volatile Organics						
	Benzene, Water	ND		5	ug/L	05/17/07	zfl
	Ethylbenzene, Water	ND		5	ug/L	05/17/07	zfl
	Toluene, Water	ND		5	ug/L	05/17/07	zfl
	Xylenes (total), Water	ND		15	ug/L	05/17/07	zfl

\* In Description = Dry Wgt.

Page 8



QUALITY CONTROL RESULTS						
Job Number.: 335383			Report Date.: 05/22/2007			
CUSTOMER: Maxim Technologies, Inc.		PROJECT: PHILMEX		ATTN: Charlie Durret		
QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time

Test Method.....: SW-846 8015B      Units.....: ug/L      Analyst....: cad  
 Method Description.: Total Volatile Petroleum Hydrocarbons      Batch(s)....: 177765 177862

LCS	Laboratory Control Sample	BXS050107F	177765-1		05/15/2007	0956
Parameter/Test Description		QC Result	QC Result	True Value	Orig. Value	Calc. Result * Limits F
TVPH as GRO, Soil		335.311		250.000000		134.1 49-151

LCS	Laboratory Control Sample	BXS051607G	177765-2		05/16/2007	1340
Parameter/Test Description		QC Result	QC Result	True Value	Orig. Value	Calc. Result * Limits F
TVPH as GRO, Soil		286.125		250.000000		114.5 49-151

MB	Method Blank		177765-1		05/15/2007	1150
Parameter/Test Description		QC Result	QC Result	True Value	Orig. Value	Calc. Result * Limits F
as GRO, Soil		ND				

MB	Method Blank		177765-2		05/16/2007	1422
Parameter/Test Description		QC Result	QC Result	True Value	Orig. Value	Calc. Result * Limits F
TVPH as GRO, Soil		ND				

MS	Matrix Spike	BX120706A	335230-2		05/15/2007	2144
Parameter/Test Description		QC Result	QC Result	True Value	Orig. Value	Calc. Result * Limits F
TVPH as GRO, Soil		270.172		250.000000	ND	108.1 50.0-150.0

MS	Matrix Spike	BX120706A	335383-4		05/16/2007	2112
Parameter/Test Description		QC Result	QC Result	True Value	Orig. Value	Calc. Result * Limits F
TVPH as GRO, Soil		293.350		250.000000	26.3016	106.8 50.0-150.0

MSD	Matrix Spike Duplicate	BX120706A	335230-2		05/15/2007	2209
Parameter/Test Description		QC Result	QC Result	True Value	Orig. Value	Calc. Result * Limits F
TVPH as GRO, Soil		285.121	270.172	250.000000	ND	114.0 50-150 5.4 20



QUALITY CONTROL RESULTS						
Job Number.: 335383			Report Date.: 05/22/2007			
CUSTOMER: Maxim Technologies, Inc.			PROJECT: PHILMEX		ATTN:	
QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time

MSD	Matrix Spike Duplicate	BX120706A	335383-4		05/16/2007	2137
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
TVPH as GRO, Soil	341.432	293.350	250.000000	26.3016	126.1 15.1	50-150 20	

LCS	Laboratory Control Sample	BXS051607G	177862-1		05/17/2007	1258
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
TVPH as GRO, Soil	361.618		250.000000		144.6	49-151	

MB	Method Blank		177862-1		05/17/2007	1424
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
TVPH as GRO, Soil	11.9177						

	Matrix Spike	BX120706A	335232-1		05/17/2007	1913
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
TVPH as GRO, Soil	281.407		250.000000	53.7493	91.1	50.0-150.0	

MSD	Matrix Spike Duplicate	BX120706A	335232-1		05/17/2007	1938
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
TVPH as GRO, Soil	292.610	281.407	250.000000	53.7493	95.5 3.9	50-150 20	

Test Method.....: SW-846 8015B Units.....: mg/L Analyst....: jps  
Method Description.: Total Extractable Petroleum Hydrocarbons Batch(s)....: 177864

LCS	Laboratory Control Sample	GC010907	177714		05/17/2007	1917
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
TEPH - as Diesel, Soil	1064.52		1000.000000		106.5	70-130	

MB	Method Blank	GC051507	177714		05/17/2007	1834
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
TEPH - as Diesel, Soil	ND						

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QUALITY CONTROL RESULTS						
Job Number.: 335383			Report Date.: 05/22/2007			
CUSTOMER: Maxim Technologies, Inc.		PROJECT: PHILMEX		ATTN:		
QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time

MS	Matrix Spike	QC041707	335383-6		05/17/2007	1834
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
TEPH - as Diesel, Soil	1778.24		1000.000000	1266.86	51	70-130	A

MSD	Matrix Spike Duplicate	QC041707	335383-6		05/17/2007	1917
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
TEPH - as Diesel, Soil	1592.57	1778.24	1000.000000	1266.86	33 11.0	70-130 30.0	A

Test Method.....: SW-846 8260B  
Method Description.: Volatile Organics

Units.....: ug/L  
Batch(s)....: 177788 177920 177928

Analyst....: yxl

LCS	Laboratory Control Sample	VS051507H			05/16/2007	1201
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
Benzene, Soil	52.9221		50.00	ND	105.8	68-121	
Ethylbenzene, Soil	55.7420		50.00	ND	111.5	66-130	
Toluene, Soil	55.9816		50.00	ND	112.0	66-127	
Xylenes (total), Soil	168.284		150.	ND	112.2	37-160	

MB	Method Blank	VS051507C			05/16/2007	1254
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
Benzene, Soil	ND						
Ethylbenzene, Soil	ND						
Toluene, Soil	ND						
Xylenes (total), Soil	ND						

MS	Matrix Spike	VS051507E	335383-2		05/16/2007	1346
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
Benzene, Soil	49.3540		50.00	ND	99	65-135	
Ethylbenzene, Soil	43.5689		50.00	ND	87	60-140	
Toluene, Soil	48.5359		50.00	ND	97	64-135	
Xylenes (total), Soil	183.791		150.0	59.4783	83	60-140	

MSD	Matrix Spike Duplicate	VS051507E	335383-2		05/16/2007	1411
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
Benzene, Soil	45.8229	49.3540	50.00	ND	92 7.4	65-135 30.0	
F benzene, Soil	38.9086	43.5689	50.00	ND	78 11.3	60-140 30.0	
Toluene, Soil	43.6871	48.5359	50.00	ND	87 10.5	64-135 30.0	

Page 11 \* % = REC, R = RPD, A = ABS Diff., D = % Diff.





## QUALITY CONTROL RESULTS

Job Number.: 335383

Report Date.: 05/22/2007

CUSTOMER: Maxim Technologies, Inc.

PROJECT: PHILMEX

ATTN:

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
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MSD	Matrix Spike Duplicate	VS051507E	335383-2		05/16/2007	1411
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
Xylenes (total), Soil	204.618	183.791	150.0	59.4783	97 10.7	60-140 30.0	

LCS	Laboratory Control Sample	VS051507E			05/17/2007	1132
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
Benzene, Soil	44.7123		50.00	ND	89.4	68-121	
Ethylbenzene, Soil	49.2793		50.00	ND	98.6	66-130	
Toluene, Soil	50.4183		50.00	ND	100.8	66-127	
Xylenes (total), Soil	155.124		150.0	ND	103.4	37-160	

MB	Method Blank	VS051507C			05/17/2007	1222
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
Benzene, Soil	ND						
Ethylbenzene, Soil	ND						
Toluene, Soil	ND						
Xylenes (total), Soil	ND						

MS	Matrix Spike	VS051507E	335383-1		05/17/2007	1927
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
Benzene, Soil	108.498		50.00	65.9435	85	65-135	
Ethylbenzene, Soil	232.322		50.00	188.073	88	60-140	
Toluene, Soil	779.060		50.00	764.931	28	64-135	A
Xylenes (total), Soil	1771.62		150.0	1640.57	87	60-140	

MSD	Matrix Spike Duplicate	VS051507E	335383-1		05/17/2007	1952
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
Benzene, Soil	111.667	108.498	50.00	65.9435	91 2.9	65-135 30.0	
Toluene, Soil	803.693	779.060	50.00	764.931	78 3.1	64-135 30.0	





QUALITY CONTROL RESULTS					
Job Number.: 335383			Report Date.: 05/22/2007		
CUSTOMER: Maxim Technologies, Inc.		PROJECT: PHILMEX		ATTN:	
QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date Time

LCS	Laboratory Control Sample	VS051507H			05/17/2007 1107
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
Benzene, Water	48.4500		50.00	ND	96.9	68-127	
Ethylbenzene, Water	50.3416		50.00	ND	100.7	64-132	
Toluene, Water	49.5921		50.00	ND	99.2	63-127	
Xylenes (total), Water	152.038		150.	ND	101.4	37-161	

MB	Method Blank	VS051507C				05/17/2007 1312
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
Benzene, Water	ND						
Ethylbenzene, Water	ND						
Toluene, Water	ND						
Xylenes (total), Water	ND						

MS	Matrix Spike	VS051507E	334953-1	20.00000		05/17/2007 1403
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Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
Benzene, TCLP	46.4988		50.00	ND	93	63-123	

MSD	Matrix Spike Duplicate	VS051507E	334953-1	20.00000		05/17/2007 1428
-----	------------------------	-----------	----------	----------	--	-----------------

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	* Limits	F
Benzene, TCLP	46.9964	46.4988	50.00	ND	94 1.1	63-123 30.0	



## SURROGATE RECOVERIES REPORT

Job Number.: 335383

Report Date.: 05/22/2007

CUSTOMER: Maxim Technologies, Inc.

PROJECT: PHILMEX

ATTN: Charlie Durret

 Method.....: Total Extractable Petroleum Hydrocarbons  
 Batch(s).....: 177864

 Method Code...: 8015D  
 Test Matrix...: Soil

 Prep Batch....: 177714  
 Equipment Code: EXTGC01

Lab ID	DT	Sample ID	Date	OTERPH
335383- 1		SB1 0-6"	05/17/2007	600A
335383- 2		SB1 2'	05/17/2007	55A
335383- 3		SB2 0-6"	05/17/2007	202A
335383- 4		SB2 8'	05/17/2007	82
335383- 5		SB3 0-6"	05/17/2007	23868A
335383- 6		SB3 6'	05/17/2007	84
335383- 6 MS		SB3 6'	05/17/2007	80
335383- 6 MSD		SB3 6'	05/17/2007	83
177714--21 LCS			05/17/2007	84
177714--21 MB			05/17/2007	92

Test	Test Description	Limits
OTERPH	o-Terphenyl	60 - 140



## SURROGATE RECOVERIES REPORT

Job Number.: 335383

Report Date.: 05/22/2007

CUSTOMER: 483648

PROJECT: PHILMEX

ATTN: Charlie Durret

Method.....: Total Volatile Petroleum Hydrocarbons  
 Batch(s).....: 177765 177862

Method Code...: 8015G  
 Test Matrix...: Soil

Prep Batch....:  
 Equipment Code: BTEX07

Lab ID	DT	Sample ID	Date	ATFT	BFB
177765-	1	LCS	05/15/2007	101.1	100.6
177765-	1	MB	05/15/2007	95.9	96.5
177765-	2	LCS	05/16/2007	95.5	99.2
177765-	2	MB	05/16/2007	92.7	97.3
177862-	1	LCS	05/17/2007	128.7	134.4
177862-	1	MB	05/17/2007	75.7	95.4
335230-	2	MS BKG-SB20	05/15/2007	96.4	90.2
335230-	2	MSD BKG-SB20	05/15/2007	96.8	90.8
335232-	1	MS BKG-SB05	05/17/2007	92.4	84.4
335232-	1	MSD BKG-SB05	05/17/2007	93.4	87.1
335383-	1	SB1 0-6"	05/17/2007	1159.d	9340.d
335383-	2	SB1 2'	05/16/2007	127.6	153.4d
335383-	3	SB2 0-6"	05/16/2007	143.4	693.1d
335383-	4	SB2 8'	05/16/2007	97.0	95.5
335383-	4	MS SB2 8'	05/16/2007	97.1	89.2
335383-	4	MSD SB2 8'	05/16/2007	97.8	97.9
335383-	5	SB3 0-6"	05/17/2007	330.6d	6185.d
335383-	6	SB3 6'	05/16/2007	98.7	93.8

Test	Test Description	Limits
ATFT	a,a,a-Trifluorotoluene	50 - 150
BFB	BFB (Surrogate)	50 - 150



## SURROGATE RECOVERIES REPORT

Job Number.: 335383

Report Date.: 05/22/2007

CUSTOMER: 483648

PROJECT: PHILMEX

ATTN: Charlie Durret

Method.....: Volatile Organics  
Batch(s).....: 177928

Method Code...: 8260  
Test Matrix....: Water

Prep Batch.....  
Equipment Code: GCMSVOA05

Lab ID	DT	Sample ID	Date	12DCED	BRFLBE	DBRFLM	TOLD8
177928--21	LCS		05/17/2007	94.9	96.6	103.3	96.6
177928--21	MB		05/17/2007	95.9	106.8	101.2	95.1
335383- 7		TRIP BLANK	05/17/2007	92.6	95.0	92.4	88.2

Test	Test Description	Limits
12DCED	1,2-Dichloroethane-d4	70 - 130
BRFLBE	4-Bromofluorobenzene	70 - 130
DBRFLM	Dibromofluoromethane	70 - 130
TOLD8	Toluene-d8	70 - 130

Method.....: Volatile Organics  
Batch(s).....: 177788 177920

Method Code...: 8260  
Test Matrix....: Soil

Prep Batch.....  
Equipment Code: GCMSVOA05

Lab ID	DT	Sample ID	Date	12DCED	BRFLBE	DBRFLM	TOLD8
177788--21	LCS		05/16/2007	96.0	106.0	104.6	109.3
788--21	MB		05/16/2007	72.6	84.8	71.1	79.2
177920--21	LCS		05/17/2007	83.2	103.7	90.9	104.0
177920--21	MB		05/17/2007	100.0	108.2	99.5	97.8
335383- 1		SB1 0-6"	05/17/2007	87.7	104.0	85.9	105.6
335383- 1		SB1 0-6"	05/18/2007	73.4	137.3	67.0A	96.6
335383- 1	MS	SB1 0-6"	05/17/2007	79.3	89.2	79.9	88.1
335383- 1	MSD	SB1 0-6"	05/17/2007	83.9	102.2	94.7	100.5
335383- 2		SB1 2'	05/16/2007	70.9	97.4	83.3	94.4
335383- 2	MS	SB1 2'	05/16/2007	60.2A	86.7	68.7	81.8
335383- 2	MSD	SB1 2'	05/16/2007	73.1	106.7	84.3	95.3
335383- 3		SB2 0-6"	05/17/2007	73.7	110.5	77.1	91.5
335383- 3		SB2 0-6"	05/18/2007	75.1	79.1	68.8	87.7
335383- 4		SB2 8'	05/16/2007	65.5	88.6	73.2	83.2
335383- 5		SB3 0-6"	05/17/2007	84.0	129.5	88.5	104.0
335383- 5		SB3 0-6"	05/18/2007	82.0	78.4	79.5	86.2
335383- 6		SB3 6'	05/16/2007	68.2	87.2	79.9	92.9

Test	Test Description	Limits
12DCED	1,2-Dichloroethane-d4	61 - 130
BRFLBE	4-Bromofluorobenzene	57 - 140
DBRFLM	Dibromofluoromethane	68 - 130
TOLD8	Toluene-d8	50 - 130

Method.....: Volatile Organics  
Batch(s).....: 177928

Method Code...: 8260  
Test Matrix....: TCLP

Prep Batch.....  
Equipment Code: GCMSVOA05

Lab ID	DT	Sample ID	Date	12DCED	BRFLBE	DBRFLM	TOLD8
334953- 1	MS	SANITARY SEWER SOLIDS	05/17/2007	85.5	93.4	92.7	96.3
334953- 1	MSD	SANITARY SEWER SOLIDS	05/17/2007	87.0	100.1	91.4	92.9

Test	Test Description	Limits
12DCED	1,2-Dichloroethane-d4	70 - 130
BRFLBE	4-Bromofluorobenzene	70 - 130



## SURROGATE RECOVERIES REPORT

Job Number.: 335383

Report Date.: 05/22/2007

CUSTOMER: 483648

PROJECT: PHILMEX

ATTN: Charlie Durret

Method.....: Volatile Organics  
Batch(s).....: 177928Method Code...: 8260  
Test Matrix...: TCLPPrep Batch....:  
Equipment Code: GCMSVOA05

Test	Test Description	Limits
DBRFLM	Dibromofluoromethane	70 - 130
TOLD8	Toluene-d8	70 - 130





## QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 05/22/2007

## REPORT COMMENTS

- 1) All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.
- 2) Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.
- 3) According to 40CFR Part 136.3, pH, Chlorine Residual, and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field, (e.g. pH Field) they were not analyzed immediately, but as soon as possible on laboratory receipt.
- 4) For all USACE projects, the QC limits are based on "mean +/- 2 sigma", which are the warning limits.

## General Information:

- Cresylic Acid is the combination of o,m and p-Cresol. The combination is reported as the final result.
- m-Cresol and p-Cresol co-elute. The result of the two is reported as either m&p-cresol or as p-cresol.
- m-Xylene and p-Xylene co-elute. The result of the two is reported as m,p-Xylene.
- N-Nitrosodiphenylamine decomposes in the gas chromatograph inlet forming dipheylamine and, consequently, may be detected as diphenylamine.
- Methylene Chloride and Acetone are recognized potential laboratory contaminants. Its presence in the sample up to five times the amount reported in the blank may be attributed to laboratory contamination.
- Trimethylsilyl(Diazomethane) is used to esterify acid herbicides in Method SW-846 8151A.
- For Inorganic analyses, duplicate QC limits are determined as follows: If the sample result is less than or equal to 5 times the reporting limit, the RPD limit is equal to the reporting limit. If the sample result is greater than 5 times the reporting limit, the RPD limit is the method defined RPD.
- For TRRP reports, the header on the column RL is equivalent to a MQL/PQL.
- Results for LCS and MS/MSD recoveries listed in the report are reported as ug/L on-column values which are not corrected for variables such as sample volumes or weights extracted, final volume of extracts and dilutions. To correct QC on-column recoveries to reflect actual spiking volumes for soils, multiply the values reported for Diesel Range Organics and Semivolatiles by 33.3 and Gasoline Range Organics by 20. The 8260 and 1006 results will not require correction. The only correction required for water analysis is for method 1006 where the reported concentration must be multiplied by 0.1.
- Due to limitation of the reporting software, results for the Method blank in the Semivolatile fraction are reported as "0". Which indicates there was no compound detected at the reporting limit for the compound reviewed.

## Explanation of Qualifiers:

- U - This qualifier indicates that the analyte was analyzed but not detected.
- J - (Organics only) This qualifier indicates that the analyte is an estimated value between the RL and the MDL.
- B - (Inorganics only) This Qualifier indicates that the analyte is an estimated value between the RL and the MDL.
- N - (Organics only) This flag indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as "chlorinated hydrocarbon", the "N" flag is not used.

## Explanation of General QC Outliers:

- A - Matrix interference present in sample.
- a - MS/MSD analyses yielded comparable poor recoveries, indicating a possible matrix interference. Method performance is demonstrated by acceptable LCS recoveries.
- b - Target analyte was found in the method blank.
- M - QC sample analysis yielded recoveries outside QC acceptance criteria. This sample was reanalyzed.
- L - LCS analysis yielded high recoveries, indicating a potential high bias. No target analytes were observed above the RL in the associated samples.
- G - Marginal outlier within 1% of acceptance criteria.
- r - RPD value is outside method acceptance criteria.
- C - Poor RPD values observed due to the non-homogenous nature of the sample.



## QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 05/22/2007

- O - Sample required dilution due to matrix interference.
- D - Sample reported from a dilution.
- d - Spike and/or surrogate diluted.
- P - The recovery of this analyte is outside default QC limits. The data is accepted and will be used to calculate in-house statistical limits.
- E - The reported concentration exceeds the instrument calibration.
- F - The analyte is outside QC limits. The sample data is accepted since this analyte is not reported in associated samples.
- H - Continuing Calibration Verification (CCV) standard is not associated with the samples reported.
- q - See the subcontract final report for qualifier explanation.
- W - The MS/MSD recoveries are outside QC acceptance criteria because the amount spiked is much less than the amount found in the sample.
- K - High recovery will not affect the quality of reported results.
- Z - See case narrative.

## Explanation of Organic QC Outliers:

- e - Method blank analysis yielded phthalate concentrations above the RL. Phthalates are recognized potential laboratory contaminants. Its presence in the sample up to five times the amount reported in the blank may be attributed to laboratory contamination.
- S - Sample reanalyzed/reextracted due to poor surrogate recovery. Reanalysis confirmed original analysis indicating a possible matrix interference.
- T - Sample analysis yielded poor surrogate recovery.
- R - The RPD between the two GC columns is greater than 40% and no anomalies are present. The higher result is reported as per EPA Method 8000B.
- I - The RPD between the two GC columns is greater than 40% and anomalies are present. The lower of the two results has been reported.
- X - Gaseous compound. In-house QC limits are advisory.
- Y - Ketone compounds have poor purge efficiency. In-house QC limits are advisory.
- f - Surrogate not associated with reported analytes.

## Explanation of Inorganic QC Outliers:

- Q - Method blank analysis yielded target analytes above the RL. Associated sample results are greater than 10 times the concentrations observed in the method blank.
- V - The RPD control limit for sample results less than 5 times the RL is +/- the RL value. Sample and duplicate results are within method acceptance criteria.
- e - Serial dilution failed due to matrix interference.
- g - Sample result quantitated by Method of Standard Additions (MSA) due to the analytical spike recovery being below 85 percent. The correlation coefficient for the MSA is greater than or equal to 0.995.
- s - BOD/cBOD seed value is not within method acceptance criteria. Due to the nature of the test method, the sample cannot be reanalyzed.
- l - BOD/cBOD LCS value is not within method acceptance criteria. Due to the nature of the test method, sample cannot be reanalyzed.
- N - Spiked sample recovery is not within control limits.
- n - Sample result quantitated by Method of Standard Additions (MSA) due to the analytical spike recovery being below 85 percent. The correlation coefficient for the MSA is less than 0.995.
- \* - Duplicate analysis is not within control limits.

## Abbreviations:

- Batch - Designation given to identify a specific extraction, digestion, preparation, or analysis set.
- CCV - Continuing Calibration Verification
- CRA - Low level standard check - GFAA, Mercury
- CR1 - Low level standard check - ICP
- Dil Fac - Dilution Factor - Secondary dilution analysis
- DLFac - Detection Limit Factor



## QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 05/22/2007

DU - Duplicate  
 EB - Extraction Blank (TCLP, SPLP, etc.)  
 ICAL - Initial Calibration  
 ICB - Initial Calibration Blank  
 ICV - Initial Calibration Verification  
 ISA - Interference Check Sample A - ICP  
 ISB - Interference Check Sample B - ICP  
 LCD - Laboratory Control Duplicate  
 LCS - Laboratory Control Sample  
 MB - Method Blank  
 MD - Method Duplicate  
 MDL - Method Detection Limit  
 MQL - Method Quantitation Limit (TRRP)  
 MS - Matrix Spike  
 MSD - Matrix Spike Duplicate  
 ND - Not Detected  
 PB - Preparation Blank  
 PREPF - Preparation Factor  
 RL - Reporting Limit  
 RPD - Relative Percent Difference  
 RRF - Relative Response Factor  
 RT - Retention Time  
 SQL - Sample Quantitation Limit (TRRP)  
 TIC - Tentatively Identified Compound

## Method References:

- (1) EPA 600/4-79-020 Methods for the Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-94-111 Methods for the Determination of Metals in Environmental Samples, Supplement I, May 1994.
- (3) EPA SW846 Test Methods for Evaluating Solid Waste, Third Edition, September 1986; Update I July 1992; Update II, September 1994, Update IIA August 1993; Update IIB, January 1995; Update III, December 1996, Update IVA January 1998, Update IVB November 2000.
- (4) Standard Methods for the Examination of Water and Wastewater, 16th Edition (1985), 17th Edition (1989), 18th Edition (1992), 19th Edition (1995), 20th Edition (1998).
- (5) HACH Water Analysis Handbook 3rd Edition (1997).
- (6) Federal Register, July 1, 1990 (40 CFR Part 136 Appendix A).
- (7) Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, January 1997.
- (9) Diagnosis and Improvement of Saline and Alkali Soils, Agriculture Handbook No. 60, United States Department of Agriculture, 1954.



## LABORATORY CHRONICLE

Job Number: 335383

Date: 05/22/2007

CUSTOMER: Maxim Technologies, Inc.

PROJECT: PHILMEX

ATTN: Charlie Durret

Lab ID: 335383-1	Client ID: SB1 0-6"	Date Recvd: 05/16/2007	Sample Date: 05/14/2007		
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)
SW-846 3550B	Extraction (Ultrasonic) DRO	1	177714		
SW-846 8015B	Total Extractable Petroleum Hydrocarbons	1	177864	177714	
SW-846 8015B	Total Volatile Petroleum Hydrocarbons	1	177862		
SW-846 8260B	Volatile Organics	1	177920		
SW-846 8260B	Volatile Organics	1	177920		
					DATE/TIME ANALYZED
					DILUTION
					05/16/2007 1600
					05/17/2007 2128 60
					05/17/2007 1645 1000.0
					05/17/2007 2017 1.00000
					05/18/2007 1258 10.0000
Lab ID: 335383-2	Client ID: SB1 2'	Date Recvd: 05/16/2007	Sample Date: 05/14/2007		
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)
SW-846 3550B	Extraction (Ultrasonic) DRO	1	177714		
SW-846 8015B	Total Extractable Petroleum Hydrocarbons	1	177864	177714	
SW-846 8015B	Total Volatile Petroleum Hydrocarbons	1	177765		
SW-846 8260B	Volatile Organics	1	177788		
					DATE/TIME ANALYZED
					DILUTION
					05/16/2007 1600
					05/17/2007 2213 10
					05/16/2007 1905 250.00
					05/16/2007 1437 1.00000
Lab ID: 335383-3	Client ID: SB2 0-6"	Date Recvd: 05/16/2007	Sample Date: 05/14/2007		
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)
SW-846 3550B	Extraction (Ultrasonic) DRO	1	177714		
SW-846 8015B	Total Extractable Petroleum Hydrocarbons	1	177864	177714	
SW-846 8015B	Total Volatile Petroleum Hydrocarbons	1	177765		
SW-846 8260B	Volatile Organics	1	177920		
SW-846 8260B	Volatile Organics	1	177920		
					DATE/TIME ANALYZED
					DILUTION
					05/16/2007 1600
					05/17/2007 1712 20
					05/16/2007 1930 500.00
					05/17/2007 2042 1.00000
					05/18/2007 1323 10.0000
Lab ID: 335383-4	Client ID: SB2 8'	Date Recvd: 05/16/2007	Sample Date: 05/14/2007		
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)
SW-846 3550B	Extraction (Ultrasonic) DRO	1	177714		
SW-846 8015B	Total Extractable Petroleum Hydrocarbons	1	177864	177714	
SW-846 8015B	Total Volatile Petroleum Hydrocarbons	1	177765		
SW-846 8260B	Volatile Organics	1	177788		
					DATE/TIME ANALYZED
					DILUTION
					05/16/2007 1600
					05/17/2007 1546
					05/16/2007 2047 1.0000
					05/16/2007 1503 1.00000
Lab ID: 335383-5	Client ID: SB3 0-6"	Date Recvd: 05/16/2007	Sample Date: 05/14/2007		
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)
SW-846 3550B	Extraction (Ultrasonic) DRO	1	177714		
SW-846 8015B	Total Extractable Petroleum Hydrocarbons	1	177864	177714	
SW-846 8015B	Total Volatile Petroleum Hydrocarbons	1	177862		
SW-846 8260B	Volatile Organics	1	177920		
SW-846 8260B	Volatile Organics	1	177920		
					DATE/TIME ANALYZED
					DILUTION
					05/16/2007 1600
					05/17/2007 2128 60
					05/17/2007 1715 1000.0
					05/17/2007 2106 1.00000
					05/18/2007 1348 10.0000
Lab ID: 335383-6	Client ID: SB3 6'	Date Recvd: 05/16/2007	Sample Date: 05/14/2007		
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)
SW-846 3550B	Extraction (Ultrasonic) DRO	1	177714		
SW-846 8015B	Total Extractable Petroleum Hydrocarbons	1	177864	177714	
SW-846 8015B	Total Volatile Petroleum Hydrocarbons	1	177765		
SW-846 8260B	Volatile Organics	1	177788		
					DATE/TIME ANALYZED
					DILUTION
					05/16/2007 1600
					05/17/2007 1712
					05/16/2007 2021 1.0000
					05/16/2007 1528 1.00000
Lab ID: 335383-7	Client ID: TRIP BLANK	Date Recvd: 05/16/2007	Sample Date: 05/14/2007		
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)
SW-846 8260B	Volatile Organics	1	177928		
					DATE/TIME ANALYZED
					DILUTION
					05/17/2007 1838 1.00000



CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION		PROJECT INFORMATION				ANALYSIS/METHOD REQUEST		REMARKS/PRECAUTIONS											
COMPANY: Tetra Tech		PROJECT NAME/NUMBER: 7640024				8615 DRO - GPO													
SEND REPORT TO: Charles Durrett		BILLING INFORMATION				8260 D		LAB JOB NO. 335383											
ADDRESS: 1703 W Industrial Ave		BILL TO: Micken Garner																	
Midland, TX 79701		ADDRESS: 60000 Phillips Rd																	
		Levellington NM 88260																	
PHONE: 432-686-8065		PHONE: 505-391-3158																	
FAX: 432-686-8065		FAX: 505-391-3158																	
SAMPLE NO.		SAMPLE DESCRIPTION		SAMPLE DATE		SAMPLE TIME		SAMPLE MATRIX		CONTAINER		PRESERV.		NUMBER OF CONTAINERS		ANALYSIS/METHOD REQUEST		REMARKS/PRECAUTIONS	
SB 1		0-6"		5-14-07		8:00		S		Glass		N		3		8615 DRO - GPO			
SB 1		2'		5-14-07		10:30		S		Glass		N		3		8615 DRO - GPO			
SB 2		0-6"		5-14-07		8:30		S		Glass		N		3		8615 DRO - GPO			
SB 2		8'		5-14-07		10:51		S		Glass		N		3		8615 DRO - GPO			
SB 3		0-6"		5-14-07		9:00		S		Glass		N		3		8615 DRO - GPO			
SB 3		6'		5-14-07		11:41		S		Glass		N		3		8615 DRO - GPO			
SAMPLER:																			
SHIPMENT METHOD:																			
AIRBILL NO.:																			
REQUIRED TURNAROUND*		<input type="checkbox"/> SAME DAY		<input type="checkbox"/> 24 HOURS		<input type="checkbox"/> 48 HOURS		<input type="checkbox"/> 72 HOURS		<input type="checkbox"/> 5 DAYS		<input type="checkbox"/> 10 DAYS		<input type="checkbox"/> ROUTINE		<input type="checkbox"/> OTHER		ASAP	
1. RELINQUISHED BY:		DATE		5-15-07		SIGNATURE:		2. RELINQUISHED BY:		DATE		5/16/07		SIGNATURE:		3. RELINQUISHED BY:		DATE	
PRINTED NAME/COMPANY:		Tetra Tech		TIME		5:00 PM		PRINTED NAME/COMPANY:		TIME		5/16/07		PRINTED NAME/COMPANY:		TIME		DATE	
1. RECEIVED BY:		DATE		5/16/07		SIGNATURE:		2. RECEIVED BY:		DATE		5/16/07		SIGNATURE:		3. RECEIVED BY:		DATE	
PRINTED NAME/COMPANY:		Tetra Tech		TIME		5:00 PM		PRINTED NAME/COMPANY:		TIME		5/16/07		PRINTED NAME/COMPANY:		TIME		DATE	

STL8222H600 (0803)

STL Houston  
6310 Rothway Drive  
Houston, TX 77040



Job Sample Receipt Checklist Report		V2
Job Number.: 335383    Location.: 57216    Check List Number.: 1    Description.: Customer Job ID.....    Job Check List Date.: 05/16/2007    Date of the Report.: 05/16/2007 Project Number.: 99003817    Project Description.: Conoco Phillips    Project Manager.....: sgk Customer.....: Maxim Technologies, Inc.    Contact.: Charlie Durret		
Questions ?	(Y/N)	Comments
Chain of Custody Received?.....	Y	
...If "yes", completed properly?.....	Y	
Custody seal on shipping container?.....	N	
...If "yes", custody seal intact?.....		
Custody seals on sample containers?.....	N	
...If "yes", custody seal intact?.....		
Samples chilled?.....	Y	
Temperature of cooler acceptable? (4 deg C +/- 2). Y	3.5	
...If "no", is sample an air matrix?(no temp req.)		
Thermometer ID?.....	Y	464
Samples received intact (good condition)?.....	Y	
Volatile samples acceptable? (no headspace).....	Y	
Correct containers used?.....	Y	
Adequate sample volume provided?.....	Y	
Samples preserved correctly?.....	Y	
Samples received within holding-time?.....	Y	
Agreement between COC and sample labels?.....	Y	
Radioactivity at or below background levels?.....	Y	
Additional.....		
Comments.....		
Sample Custodian Signature/Date.....	Y	tfc

Handwritten signature and date 5/16/07

## **APPENDIX D**

# **Photographic Documentation**



TETRA TECH, INC. PROJECT NO. 212C-MD-02152	DESCRIPTION	View facing north of tank battery.	1
	SITE NAME	Philmex Battery #4 Circulating Pump Release	6/9/2020



TETRA TECH, INC. PROJECT NO. 212C-MD-02152	DESCRIPTION	View facing west of tank battery.	2
	SITE NAME	Philmex Battery #4 Circulating Pump Release	6/9/2020





TETRA TECH, INC. PROJECT NO. 212C-MD-02152	DESCRIPTION	View facing southwest of release area.	3
	SITE NAME	Philmex Battery #4 Circulating Pump Release	6/9/2020



TETRA TECH, INC. PROJECT NO. 212C-MD-02152	DESCRIPTION	View facing east of above ground piping.	4
	SITE NAME	Philmex Battery #4 Circulating Pump Release	6/9/2020

## **APPENDIX E**

# **Laboratory Analytical Report**





## ANALYTICAL REPORT

November 27, 2020

**ConocoPhillips - Tetra Tech**

Sample Delivery Group: L1286037  
Samples Received: 11/14/2020  
Project Number: 212C-MD-02334 TASK09  
Description: Philmex Battery #4 Circulating Pump Release (IRP-1236)  
  
Report To: Christian Llull  
901 West Wall  
Suite 100  
Midland, TX 79701



Entire Report Reviewed By:

Erica McNeese  
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



<b>Cp: Cover Page</b>	<b>1</b>
<b>Tc: Table of Contents</b>	<b>2</b>
<b>Ss: Sample Summary</b>	<b>3</b>
<b>Cn: Case Narrative</b>	<b>7</b>
<b>Sr: Sample Results</b>	<b>8</b>
BH-1 (0-1') L1286037-01	8
BH-1 (2-3') L1286037-02	9
BH-1 (4-5') L1286037-03	10
BH-1 (6-7') L1286037-04	11
BH-1 (9-10') L1286037-05	12
BH-1 (14-15') L1286037-06	13
BH-1 (19-20') L1286037-07	14
BH-2 (0-1') L1286037-08	15
BH-2 (2-3') L1286037-09	16
BH-2 (4-5') L1286037-10	17
BH-2 (6-7') L1286037-11	18
BH-2 (9-10') L1286037-12	19
BH-2 (14-15') L1286037-13	20
BH-2 (19-20') L1286037-14	21
BH-3 (0-1') L1286037-15	22
BH-3 (3-4') L1286037-16	23
<b>Qc: Quality Control Summary</b>	<b>24</b>
Total Solids by Method 2540 G-2011	24
Wet Chemistry by Method 300.0	26
Volatile Organic Compounds (GC) by Method 8015D/GRO	28
Volatile Organic Compounds (GC/MS) by Method 8260B	30
Semi-Volatile Organic Compounds (GC) by Method 8015	32
<b>Gl: Glossary of Terms</b>	<b>34</b>
<b>Al: Accreditations &amp; Locations</b>	<b>35</b>
<b>Sc: Sample Chain of Custody</b>	<b>36</b>



## BH-1 (0-1') L1286037-01 Solid

Collected by  
Joe Tyler

Collected date/time  
11/11/20 12:00

Received date/time  
11/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579962	1	11/21/20 03:52	11/21/20 04:06	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1581717	1	11/24/20 16:54	11/24/20 21:09	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1580870	1	11/19/20 22:23	11/23/20 06:23	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1580602	1	11/19/20 22:23	11/22/20 05:20	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1582399	20	11/25/20 16:37	11/26/20 03:38	JN	Mt. Juliet, TN

<sup>1</sup> Cp<sup>2</sup> Tc<sup>3</sup> Ss<sup>4</sup> Cn

## BH-1 (2-3') L1286037-02 Solid

Collected by  
Joe Tyler

Collected date/time  
11/11/20 12:10

Received date/time  
11/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579962	1	11/21/20 03:52	11/21/20 04:06	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1581717	1	11/24/20 16:54	11/24/20 21:38	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1580870	1	11/19/20 22:23	11/23/20 06:43	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1580602	1	11/19/20 22:23	11/22/20 05:39	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1582399	20	11/25/20 16:37	11/26/20 03:12	JN	Mt. Juliet, TN

<sup>5</sup> Sr<sup>6</sup> Qc<sup>7</sup> Gl<sup>8</sup> Al

## BH-1 (4-5') L1286037-03 Solid

Collected by  
Joe Tyler

Collected date/time  
11/11/20 12:20

Received date/time  
11/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579962	1	11/21/20 03:52	11/21/20 04:06	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1581717	1	11/24/20 16:54	11/24/20 21:48	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1580870	1	11/19/20 22:23	11/23/20 07:04	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1580602	1	11/19/20 22:23	11/22/20 05:58	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1582399	2	11/25/20 16:37	11/26/20 02:47	JN	Mt. Juliet, TN

<sup>9</sup> Sc

## BH-1 (6-7') L1286037-04 Solid

Collected by  
Joe Tyler

Collected date/time  
11/11/20 12:30

Received date/time  
11/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579962	1	11/21/20 03:52	11/21/20 04:06	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1581717	1	11/24/20 16:54	11/24/20 21:57	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1580870	1	11/19/20 22:23	11/23/20 07:25	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1580602	1	11/19/20 22:23	11/22/20 06:17	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1582399	1	11/25/20 16:37	11/26/20 02:21	JN	Mt. Juliet, TN

## BH-1 (9-10') L1286037-05 Solid

Collected by  
Joe Tyler

Collected date/time  
11/11/20 12:40

Received date/time  
11/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579962	1	11/21/20 03:52	11/21/20 04:06	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1581717	1	11/24/20 16:54	11/24/20 22:07	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1580870	1	11/19/20 22:23	11/23/20 07:45	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1580602	1	11/19/20 22:23	11/22/20 06:36	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1582399	1	11/25/20 16:37	11/26/20 01:17	JN	Mt. Juliet, TN

## BH-1 (14-15') L1286037-06 Solid

Collected by  
Joe Tyler

Collected date/time  
11/11/20 12:50

Received date/time  
11/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579962	1	11/21/20 03:52	11/21/20 04:06	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1581717	1	11/24/20 16:54	11/24/20 22:16	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1580870	1	11/19/20 22:23	11/23/20 08:06	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1580602	1	11/19/20 22:23	11/22/20 06:55	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1582399	1	11/25/20 16:37	11/26/20 01:30	JN	Mt. Juliet, TN

<sup>1</sup> Cp<sup>2</sup> Tc<sup>3</sup> Ss<sup>4</sup> Cn

## BH-1 (19-20') L1286037-07 Solid

Collected by  
Joe Tyler

Collected date/time  
11/11/20 13:00

Received date/time  
11/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579962	1	11/21/20 03:52	11/21/20 04:06	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1581719	1	11/24/20 11:31	11/24/20 13:01	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1580870	1	11/19/20 22:23	11/23/20 08:27	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1580602	1	11/19/20 22:23	11/22/20 07:14	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1582399	1	11/25/20 16:37	11/26/20 01:43	JN	Mt. Juliet, TN

<sup>5</sup> Sr<sup>6</sup> Qc<sup>7</sup> Gl<sup>8</sup> Al

## BH-2 (0-1') L1286037-08 Solid

Collected by  
Joe Tyler

Collected date/time  
11/11/20 13:30

Received date/time  
11/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579963	1	11/21/20 03:34	11/21/20 03:43	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1581719	1	11/24/20 11:31	11/24/20 13:20	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1580870	1	11/19/20 22:23	11/23/20 08:48	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1580602	1	11/19/20 22:23	11/22/20 07:33	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1582399	20.1	11/25/20 16:37	11/26/20 02:59	JN	Mt. Juliet, TN

<sup>9</sup> Sc

## BH-2 (2-3') L1286037-09 Solid

Collected by  
Joe Tyler

Collected date/time  
11/11/20 13:40

Received date/time  
11/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579963	1	11/21/20 03:34	11/21/20 03:43	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1581719	1	11/24/20 11:31	11/24/20 13:29	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1580870	1	11/19/20 22:23	11/23/20 09:50	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1580602	1	11/19/20 22:23	11/22/20 07:52	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1582399	20.1	11/25/20 16:37	11/26/20 03:25	JN	Mt. Juliet, TN

## BH-2 (4-5') L1286037-10 Solid

Collected by  
Joe Tyler

Collected date/time  
11/11/20 13:50

Received date/time  
11/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579963	1	11/21/20 03:34	11/21/20 03:43	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1581719	1	11/24/20 11:31	11/24/20 13:39	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1580870	1	11/19/20 22:23	11/23/20 10:10	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1580602	1	11/19/20 22:23	11/22/20 08:11	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1582399	1	11/25/20 16:37	11/26/20 02:34	JN	Mt. Juliet, TN

## BH-2 (6-7') L1286037-11 Solid

Collected by  
Joe Tyler

Collected date/time  
11/11/20 14:00

Received date/time  
11/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579963	1	11/21/20 03:34	11/21/20 03:43	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1581719	1	11/24/20 11:31	11/24/20 13:48	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1580870	1	11/19/20 22:23	11/23/20 10:31	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1580602	1	11/19/20 22:23	11/22/20 08:30	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1582399	1	11/25/20 16:37	11/26/20 01:55	JN	Mt. Juliet, TN

<sup>1</sup> Cp<sup>2</sup> Tc<sup>3</sup> Ss<sup>4</sup> Cn

## BH-2 (9-10') L1286037-12 Solid

Collected by  
Joe Tyler

Collected date/time  
11/11/20 14:10

Received date/time  
11/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579963	1	11/21/20 03:34	11/21/20 03:43	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1581719	1	11/24/20 11:31	11/24/20 13:58	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1580870	1	11/19/20 22:23	11/23/20 10:51	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1580602	1	11/19/20 22:23	11/22/20 08:50	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1582399	1	11/25/20 16:37	11/26/20 02:08	JN	Mt. Juliet, TN

<sup>5</sup> Sr<sup>6</sup> Qc<sup>7</sup> Gl<sup>8</sup> Al

## BH-2 (14-15') L1286037-13 Solid

Collected by  
Joe Tyler

Collected date/time  
11/11/20 14:20

Received date/time  
11/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579963	1	11/21/20 03:34	11/21/20 03:43	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1581719	1	11/24/20 11:31	11/24/20 14:45	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1580870	1	11/19/20 22:23	11/23/20 11:12	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1580782	1	11/19/20 22:23	11/22/20 15:48	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1580903	1	11/24/20 09:24	11/24/20 14:04	TJD	Mt. Juliet, TN

<sup>9</sup> Sc

## BH-2 (19-20') L1286037-14 Solid

Collected by  
Joe Tyler

Collected date/time  
11/11/20 14:30

Received date/time  
11/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579963	1	11/21/20 03:34	11/21/20 03:43	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1581719	1	11/24/20 11:31	11/24/20 14:55	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1580870	1	11/19/20 22:23	11/23/20 11:33	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1580782	1	11/19/20 22:23	11/22/20 16:08	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1580903	1	11/24/20 09:24	11/24/20 14:17	TJD	Mt. Juliet, TN

## BH-3 (0-1') L1286037-15 Solid

Collected by  
Joe Tyler

Collected date/time  
11/11/20 15:00

Received date/time  
11/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579963	1	11/21/20 03:34	11/21/20 03:43	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1581719	1	11/24/20 11:31	11/24/20 15:04	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1580870	1	11/19/20 22:23	11/23/20 11:53	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1580782	1	11/19/20 22:23	11/22/20 16:27	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1580903	1	11/24/20 09:24	11/24/20 16:43	TJD	Mt. Juliet, TN



BH-3 (3-4') L1286037-16 Solid

Collected by  
Joe Tyler

Collected date/time  
11/11/20 15:10

Received date/time  
11/14/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579963	1	11/21/20 03:34	11/21/20 03:43	KDW	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1581719	1	11/24/20 11:31	11/24/20 15:14	ST	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1580865	1	11/19/20 22:23	11/23/20 06:28	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1580782	1	11/19/20 22:23	11/22/20 16:46	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1580903	1	11/24/20 09:24	11/24/20 14:30	TJD	Mt. Juliet, TN

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Erica McNeese  
Project Manager

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc

Collected date/time: 11/11/20 12:00

L1286037

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	93.8		1	11/21/2020 04:06	<a href="#">WG1579962</a>

## Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Chloride	99.9		9.81	21.3	1	11/24/2020 21:09	<a href="#">WG1581717</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0333	<a href="#">B J</a>	0.0231	0.107	1	11/23/2020 06:23	<a href="#">WG1580870</a>
(S) a,a,a-Trifluorotoluene(FID)	94.4			77.0-120		11/23/2020 06:23	<a href="#">WG1580870</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Benzene	0.00123	<a href="#">B</a>	0.000529	0.00113	1	11/22/2020 05:20	<a href="#">WG1580602</a>
Toluene	U		0.00147	0.00566	1	11/22/2020 05:20	<a href="#">WG1580602</a>
Ethylbenzene	U		0.000835	0.00283	1	11/22/2020 05:20	<a href="#">WG1580602</a>
Total Xylenes	0.00331	<a href="#">J</a>	0.000997	0.00736	1	11/22/2020 05:20	<a href="#">WG1580602</a>
(S) Toluene-d8	113			75.0-131		11/22/2020 05:20	<a href="#">WG1580602</a>
(S) 4-Bromofluorobenzene	99.4			67.0-138		11/22/2020 05:20	<a href="#">WG1580602</a>
(S) 1,2-Dichloroethane-d4	103			70.0-130		11/22/2020 05:20	<a href="#">WG1580602</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	235		34.3	85.3	20	11/26/2020 03:38	<a href="#">WG1582399</a>
C28-C40 Oil Range	744		5.84	85.3	20	11/26/2020 03:38	<a href="#">WG1582399</a>
(S) o-Terphenyl	59.9	<a href="#">J7</a>		18.0-148		11/26/2020 03:38	<a href="#">WG1582399</a>

Collected date/time: 11/11/20 12:10

L1286037

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	94.9		1	11/21/2020 04:06	<a href="#">WG1579962</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Chloride	88.3		9.69	21.1	1	11/24/2020 21:38	<a href="#">WG1581717</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.336		0.0229	0.105	1	11/23/2020 06:43	<a href="#">WG1580870</a>
(S) a,a,a-Trifluorotoluene(FID)	93.3			77.0-120		11/23/2020 06:43	<a href="#">WG1580870</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Benzene	0.00126	B	0.000517	0.00111	1	11/22/2020 05:39	<a href="#">WG1580602</a>
Toluene	U		0.00144	0.00553	1	11/22/2020 05:39	<a href="#">WG1580602</a>
Ethylbenzene	U		0.000816	0.00277	1	11/22/2020 05:39	<a href="#">WG1580602</a>
Total Xylenes	U		0.000974	0.00720	1	11/22/2020 05:39	<a href="#">WG1580602</a>
(S) Toluene-d8	113			75.0-131		11/22/2020 05:39	<a href="#">WG1580602</a>
(S) 4-Bromofluorobenzene	104			67.0-138		11/22/2020 05:39	<a href="#">WG1580602</a>
(S) 1,2-Dichloroethane-d4	102			70.0-130		11/22/2020 05:39	<a href="#">WG1580602</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	348		33.9	84.3	20	11/26/2020 03:12	<a href="#">WG1582399</a>
C28-C40 Oil Range	471		5.77	84.3	20	11/26/2020 03:12	<a href="#">WG1582399</a>
(S) o-Terphenyl	82.5	J7		18.0-148		11/26/2020 03:12	<a href="#">WG1582399</a>

Collected date/time: 11/11/20 12:20

L1286037

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	94.2		1	11/21/2020 04:06	<a href="#">WG1579962</a>

## Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Chloride	40.0		9.77	21.2	1	11/24/2020 21:48	<a href="#">WG1581717</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0354	<a href="#">B J</a>	0.0230	0.106	1	11/23/2020 07:04	<a href="#">WG1580870</a>
(S) a,a,a-Trifluorotoluene(FID)	93.8			77.0-120		11/23/2020 07:04	<a href="#">WG1580870</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Benzene	0.00101	<a href="#">B J</a>	0.000525	0.00112	1	11/22/2020 05:58	<a href="#">WG1580602</a>
Toluene	U		0.00146	0.00562	1	11/22/2020 05:58	<a href="#">WG1580602</a>
Ethylbenzene	U		0.000828	0.00281	1	11/22/2020 05:58	<a href="#">WG1580602</a>
Total Xylenes	U		0.000989	0.00731	1	11/22/2020 05:58	<a href="#">WG1580602</a>
(S) Toluene-d8	114			75.0-131		11/22/2020 05:58	<a href="#">WG1580602</a>
(S) 4-Bromofluorobenzene	96.8			67.0-138		11/22/2020 05:58	<a href="#">WG1580602</a>
(S) 1,2-Dichloroethane-d4	101			70.0-130		11/22/2020 05:58	<a href="#">WG1580602</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	82.4		3.42	8.50	2	11/26/2020 02:47	<a href="#">WG1582399</a>
C28-C40 Oil Range	118		0.582	8.50	2	11/26/2020 02:47	<a href="#">WG1582399</a>
(S) o-Terphenyl	53.5			18.0-148		11/26/2020 02:47	<a href="#">WG1582399</a>



Collected date/time: 11/11/20 12:30

L1286037

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	96.7		1	11/21/2020 04:06	<a href="#">WG1579962</a>

## Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Chloride	36.4		9.51	20.7	1	11/24/2020 21:57	<a href="#">WG1581717</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0287	<a href="#">B J</a>	0.0224	0.103	1	11/23/2020 07:25	<a href="#">WG1580870</a>
(S) a,a,a-Trifluorotoluene(FID)	93.4			77.0-120		11/23/2020 07:25	<a href="#">WG1580870</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Benzene	0.00106	<a href="#">B J</a>	0.000499	0.00107	1	11/22/2020 06:17	<a href="#">WG1580602</a>
Toluene	U		0.00139	0.00534	1	11/22/2020 06:17	<a href="#">WG1580602</a>
Ethylbenzene	U		0.000787	0.00267	1	11/22/2020 06:17	<a href="#">WG1580602</a>
Total Xylenes	U		0.000939	0.00694	1	11/22/2020 06:17	<a href="#">WG1580602</a>
(S) Toluene-d8	113			75.0-131		11/22/2020 06:17	<a href="#">WG1580602</a>
(S) 4-Bromofluorobenzene	95.9			67.0-138		11/22/2020 06:17	<a href="#">WG1580602</a>
(S) 1,2-Dichloroethane-d4	103			70.0-130		11/22/2020 06:17	<a href="#">WG1580602</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	18.2		1.66	4.13	1	11/26/2020 02:21	<a href="#">WG1582399</a>
C28-C40 Oil Range	45.7		0.283	4.13	1	11/26/2020 02:21	<a href="#">WG1582399</a>
(S) o-Terphenyl	49.7			18.0-148		11/26/2020 02:21	<a href="#">WG1582399</a>

Collected date/time: 11/11/20 12:40

L1286037

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	95.4		1	11/21/2020 04:06	<a href="#">WG1579962</a>

## Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Chloride	74.8		9.65	21.0	1	11/24/2020 22:07	<a href="#">WG1581717</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

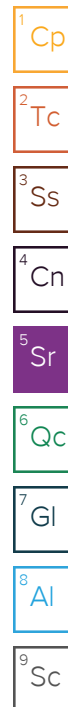
Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0292	<a href="#">B J</a>	0.0228	0.105	1	11/23/2020 07:45	<a href="#">WG1580870</a>
(S) a,a,a-Trifluorotoluene(FID)	93.5			77.0-120		11/23/2020 07:45	<a href="#">WG1580870</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Benzene	0.00116	<a href="#">B</a>	0.000513	0.00110	1	11/22/2020 06:36	<a href="#">WG1580602</a>
Toluene	U		0.00143	0.00549	1	11/22/2020 06:36	<a href="#">WG1580602</a>
Ethylbenzene	U		0.000809	0.00274	1	11/22/2020 06:36	<a href="#">WG1580602</a>
Total Xylenes	U		0.000966	0.00714	1	11/22/2020 06:36	<a href="#">WG1580602</a>
(S) Toluene-d8	113			75.0-131		11/22/2020 06:36	<a href="#">WG1580602</a>
(S) 4-Bromofluorobenzene	99.7			67.0-138		11/22/2020 06:36	<a href="#">WG1580602</a>
(S) 1,2-Dichloroethane-d4	105			70.0-130		11/22/2020 06:36	<a href="#">WG1580602</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.69	4.20	1	11/26/2020 01:17	<a href="#">WG1582399</a>
C28-C40 Oil Range	1.25	<a href="#">J</a>	0.287	4.20	1	11/26/2020 01:17	<a href="#">WG1582399</a>
(S) o-Terphenyl	68.9			18.0-148		11/26/2020 01:17	<a href="#">WG1582399</a>



Collected date/time: 11/11/20 12:50

L1286037

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	94.8		1	11/21/2020 04:06	<a href="#">WG1579962</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Chloride	36.1		9.71	21.1	1	11/24/2020 22:16	<a href="#">WG1581717</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0317	<a href="#">B J</a>	0.0229	0.106	1	11/23/2020 08:06	<a href="#">WG1580870</a>
(S) a,a,a-Trifluorotoluene(FID)	93.2			77.0-120		11/23/2020 08:06	<a href="#">WG1580870</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Benzene	0.000972	<a href="#">B J</a>	0.000519	0.00111	1	11/22/2020 06:55	<a href="#">WG1580602</a>
Toluene	U		0.00144	0.00555	1	11/22/2020 06:55	<a href="#">WG1580602</a>
Ethylbenzene	U		0.000819	0.00278	1	11/22/2020 06:55	<a href="#">WG1580602</a>
Total Xylenes	U		0.000978	0.00722	1	11/22/2020 06:55	<a href="#">WG1580602</a>
(S) Toluene-d8	111			75.0-131		11/22/2020 06:55	<a href="#">WG1580602</a>
(S) 4-Bromofluorobenzene	100			67.0-138		11/22/2020 06:55	<a href="#">WG1580602</a>
(S) 1,2-Dichloroethane-d4	103			70.0-130		11/22/2020 06:55	<a href="#">WG1580602</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.70	4.22	1	11/26/2020 01:30	<a href="#">WG1582399</a>
C28-C40 Oil Range	U		0.289	4.22	1	11/26/2020 01:30	<a href="#">WG1582399</a>
(S) o-Terphenyl	66.7			18.0-148		11/26/2020 01:30	<a href="#">WG1582399</a>

Collected date/time: 11/11/20 13:00

L1286037

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	94.4		1	11/21/2020 04:06	<a href="#">WG1579962</a>

## Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Chloride	35.3		9.74	21.2	1	11/24/2020 13:01	<a href="#">WG1581719</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0274	<a href="#">B J</a>	0.0230	0.106	1	11/23/2020 08:27	<a href="#">WG1580870</a>
(S) a,a,a-Trifluorotoluene(FID)	93.9			77.0-120		11/23/2020 08:27	<a href="#">WG1580870</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Benzene	0.00112	<a href="#">B J</a>	0.000522	0.00112	1	11/22/2020 07:14	<a href="#">WG1580602</a>
Toluene	U		0.00145	0.00559	1	11/22/2020 07:14	<a href="#">WG1580602</a>
Ethylbenzene	U		0.000824	0.00279	1	11/22/2020 07:14	<a href="#">WG1580602</a>
Total Xylenes	U		0.000984	0.00726	1	11/22/2020 07:14	<a href="#">WG1580602</a>
(S) Toluene-d8	114			75.0-131		11/22/2020 07:14	<a href="#">WG1580602</a>
(S) 4-Bromofluorobenzene	102			67.0-138		11/22/2020 07:14	<a href="#">WG1580602</a>
(S) 1,2-Dichloroethane-d4	106			70.0-130		11/22/2020 07:14	<a href="#">WG1580602</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.70	4.24	1	11/26/2020 01:43	<a href="#">WG1582399</a>
C28-C40 Oil Range	U		0.290	4.24	1	11/26/2020 01:43	<a href="#">WG1582399</a>
(S) o-Terphenyl	69.3			18.0-148		11/26/2020 01:43	<a href="#">WG1582399</a>

Collected date/time: 11/11/20 13:30

L1286037

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	94.9		1	11/21/2020 03:43	<a href="#">WG1579963</a>

## Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Chloride	275		9.69	21.1	1	11/24/2020 13:20	<a href="#">WG1581719</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0251	<a href="#">B J</a>	0.0229	0.105	1	11/23/2020 08:48	<a href="#">WG1580870</a>
(S) a,a,a-Trifluorotoluene(FID)	92.5			77.0-120		11/23/2020 08:48	<a href="#">WG1580870</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Benzene	0.000959	<a href="#">B J</a>	0.000517	0.00111	1	11/22/2020 07:33	<a href="#">WG1580602</a>
Toluene	U		0.00144	0.00554	1	11/22/2020 07:33	<a href="#">WG1580602</a>
Ethylbenzene	U		0.000817	0.00277	1	11/22/2020 07:33	<a href="#">WG1580602</a>
Total Xylenes	U		0.000975	0.00720	1	11/22/2020 07:33	<a href="#">WG1580602</a>
(S) Toluene-d8	111			75.0-131		11/22/2020 07:33	<a href="#">WG1580602</a>
(S) 4-Bromofluorobenzene	99.2			67.0-138		11/22/2020 07:33	<a href="#">WG1580602</a>
(S) 1,2-Dichloroethane-d4	102			70.0-130		11/22/2020 07:33	<a href="#">WG1580602</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	86.3		34.1	84.7	20.1	11/26/2020 02:59	<a href="#">WG1582399</a>
C28-C40 Oil Range	278		5.81	84.7	20.1	11/26/2020 02:59	<a href="#">WG1582399</a>
(S) o-Terphenyl	56.2	<a href="#">J7</a>		18.0-148		11/26/2020 02:59	<a href="#">WG1582399</a>



## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	95.3		1	11/21/2020 03:43	<a href="#">WG1579963</a>

## Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Chloride	197		9.66	21.0	1	11/24/2020 13:29	<a href="#">WG1581719</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0554	<a href="#">B J</a>	0.0228	0.105	1	11/23/2020 09:50	<a href="#">WG1580870</a>
(S) a,a,a-Trifluorotoluene(FID)	94.2			77.0-120		11/23/2020 09:50	<a href="#">WG1580870</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Benzene	0.00104	<a href="#">B J</a>	0.000514	0.00110	1	11/22/2020 07:52	<a href="#">WG1580602</a>
Toluene	U		0.00143	0.00550	1	11/22/2020 07:52	<a href="#">WG1580602</a>
Ethylbenzene	U		0.000811	0.00275	1	11/22/2020 07:52	<a href="#">WG1580602</a>
Total Xylenes	U		0.000968	0.00715	1	11/22/2020 07:52	<a href="#">WG1580602</a>
(S) Toluene-d8	109			75.0-131		11/22/2020 07:52	<a href="#">WG1580602</a>
(S) 4-Bromofluorobenzene	102			67.0-138		11/22/2020 07:52	<a href="#">WG1580602</a>
(S) 1,2-Dichloroethane-d4	105			70.0-130		11/22/2020 07:52	<a href="#">WG1580602</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	272		34.0	84.4	20.1	11/26/2020 03:25	<a href="#">WG1582399</a>
C28-C40 Oil Range	547		5.78	84.4	20.1	11/26/2020 03:25	<a href="#">WG1582399</a>
(S) o-Terphenyl	53.5	<a href="#">J7</a>		18.0-148		11/26/2020 03:25	<a href="#">WG1582399</a>

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc

Collected date/time: 11/11/20 13:50

L1286037

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	94.8		1	11/21/2020 03:43	<a href="#">WG1579963</a>

## Wet Chemistry by Method 300.0

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	156		9.70	21.1	1	11/24/2020 13:39	<a href="#">WG1581719</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.217	<a href="#">B</a>	0.0229	0.105	1	11/23/2020 10:10	<a href="#">WG1580870</a>
(S) a,a,a-Trifluorotoluene(FID)	88.6			77.0-120		11/23/2020 10:10	<a href="#">WG1580870</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00121	<a href="#">B</a>	0.000518	0.00111	1	11/22/2020 08:11	<a href="#">WG1580602</a>
Toluene	U		0.00144	0.00555	1	11/22/2020 08:11	<a href="#">WG1580602</a>
Ethylbenzene	U		0.000818	0.00277	1	11/22/2020 08:11	<a href="#">WG1580602</a>
Total Xylenes	U		0.000977	0.00721	1	11/22/2020 08:11	<a href="#">WG1580602</a>
(S) Toluene-d8	115			75.0-131		11/22/2020 08:11	<a href="#">WG1580602</a>
(S) 4-Bromofluorobenzene	100			67.0-138		11/22/2020 08:11	<a href="#">WG1580602</a>
(S) 1,2-Dichloroethane-d4	104			70.0-130		11/22/2020 08:11	<a href="#">WG1580602</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	133		1.70	4.22	1	11/26/2020 02:34	<a href="#">WG1582399</a>
C28-C40 Oil Range	167		0.289	4.22	1	11/26/2020 02:34	<a href="#">WG1582399</a>
(S) o-Terphenyl	48.5			18.0-148		11/26/2020 02:34	<a href="#">WG1582399</a>

Collected date/time: 11/11/20 14:00

L1286037

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	94.8		1	11/21/2020 03:43	<a href="#">WG1579963</a>

## Wet Chemistry by Method 300.0

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	119		9.71	21.1	1	11/24/2020 13:48	<a href="#">WG1581719</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0363	<a href="#">B J</a>	0.0229	0.105	1	11/23/2020 10:31	<a href="#">WG1580870</a>
(S) a,a,a-Trifluorotoluene(FID)	93.9			77.0-120		11/23/2020 10:31	<a href="#">WG1580870</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00102	<a href="#">B J</a>	0.000519	0.00111	1	11/22/2020 08:30	<a href="#">WG1580602</a>
Toluene	U		0.00144	0.00555	1	11/22/2020 08:30	<a href="#">WG1580602</a>
Ethylbenzene	U		0.000818	0.00278	1	11/22/2020 08:30	<a href="#">WG1580602</a>
Total Xylenes	U		0.000977	0.00722	1	11/22/2020 08:30	<a href="#">WG1580602</a>
(S) Toluene-d8	113			75.0-131		11/22/2020 08:30	<a href="#">WG1580602</a>
(S) 4-Bromofluorobenzene	99.3			67.0-138		11/22/2020 08:30	<a href="#">WG1580602</a>
(S) 1,2-Dichloroethane-d4	102			70.0-130		11/22/2020 08:30	<a href="#">WG1580602</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.70	4.22	1	11/26/2020 01:55	<a href="#">WG1582399</a>
C28-C40 Oil Range	0.673	<a href="#">J</a>	0.289	4.22	1	11/26/2020 01:55	<a href="#">WG1582399</a>
(S) o-Terphenyl	61.2			18.0-148		11/26/2020 01:55	<a href="#">WG1582399</a>

Collected date/time: 11/11/20 14:10

L1286037

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	94.5		1	11/21/2020 03:43	<a href="#">WG1579963</a>

## Wet Chemistry by Method 300.0

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	71.1		9.73	21.2	1	11/24/2020 13:58	<a href="#">WG1581719</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0294	<a href="#">B J</a>	0.0230	0.106	1	11/23/2020 10:51	<a href="#">WG1580870</a>
(S) a,a,a-Trifluorotoluene(FID)	94.0			77.0-120		11/23/2020 10:51	<a href="#">WG1580870</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00105	<a href="#">B J</a>	0.000521	0.00112	1	11/22/2020 08:50	<a href="#">WG1580602</a>
Toluene	U		0.00145	0.00558	1	11/22/2020 08:50	<a href="#">WG1580602</a>
Ethylbenzene	U		0.000823	0.00279	1	11/22/2020 08:50	<a href="#">WG1580602</a>
Total Xylenes	U		0.000982	0.00726	1	11/22/2020 08:50	<a href="#">WG1580602</a>
(S) Toluene-d8	110			75.0-131		11/22/2020 08:50	<a href="#">WG1580602</a>
(S) 4-Bromofluorobenzene	97.5			67.0-138		11/22/2020 08:50	<a href="#">WG1580602</a>
(S) 1,2-Dichloroethane-d4	102			70.0-130		11/22/2020 08:50	<a href="#">WG1580602</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.70	4.23	1	11/26/2020 02:08	<a href="#">WG1582399</a>
C28-C40 Oil Range	0.766	<a href="#">J</a>	0.290	4.23	1	11/26/2020 02:08	<a href="#">WG1582399</a>
(S) o-Terphenyl	59.6			18.0-148		11/26/2020 02:08	<a href="#">WG1582399</a>

Collected date/time: 11/11/20 14:20

L1286037

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	95.8		1	11/21/2020 03:43	<a href="#">WG1579963</a>

## Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Chloride	50.8		9.61	20.9	1	11/24/2020 14:45	<a href="#">WG1581719</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0297	<a href="#">B J</a>	0.0227	0.104	1	11/23/2020 11:12	<a href="#">WG1580870</a>
(S) a,a,a-Trifluorotoluene(FID)	95.0			77.0-120		11/23/2020 11:12	<a href="#">WG1580870</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Benzene	U		0.000508	0.00109	1	11/22/2020 15:48	<a href="#">WG1580782</a>
Toluene	U		0.00141	0.00544	1	11/22/2020 15:48	<a href="#">WG1580782</a>
Ethylbenzene	U		0.000802	0.00272	1	11/22/2020 15:48	<a href="#">WG1580782</a>
Total Xylenes	U		0.000958	0.00707	1	11/22/2020 15:48	<a href="#">WG1580782</a>
(S) Toluene-d8	110			75.0-131		11/22/2020 15:48	<a href="#">WG1580782</a>
(S) 4-Bromofluorobenzene	90.6			67.0-138		11/22/2020 15:48	<a href="#">WG1580782</a>
(S) 1,2-Dichloroethane-d4	107			70.0-130		11/22/2020 15:48	<a href="#">WG1580782</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.68	4.18	1	11/24/2020 14:04	<a href="#">WG1580903</a>
C28-C40 Oil Range	1.04	<a href="#">B J</a>	0.286	4.18	1	11/24/2020 14:04	<a href="#">WG1580903</a>
(S) o-Terphenyl	79.3			18.0-148		11/24/2020 14:04	<a href="#">WG1580903</a>



Collected date/time: 11/11/20 14:30

L1286037

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	95.8		1	11/21/2020 03:43	<a href="#">WG1579963</a>

## Wet Chemistry by Method 300.0

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	16.9	J	9.60	20.9	1	11/24/2020 14:55	<a href="#">WG1581719</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0252	B J	0.0227	0.104	1	11/23/2020 11:33	<a href="#">WG1580870</a>
(S) a,a,a-Trifluorotoluene(FID)	94.9			77.0-120		11/23/2020 11:33	<a href="#">WG1580870</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000508	0.00109	1	11/22/2020 16:08	<a href="#">WG1580782</a>
Toluene	U		0.00141	0.00544	1	11/22/2020 16:08	<a href="#">WG1580782</a>
Ethylbenzene	U		0.000802	0.00272	1	11/22/2020 16:08	<a href="#">WG1580782</a>
Total Xylenes	U		0.000958	0.00707	1	11/22/2020 16:08	<a href="#">WG1580782</a>
(S) Toluene-d8	116			75.0-131		11/22/2020 16:08	<a href="#">WG1580782</a>
(S) 4-Bromofluorobenzene	88.8			67.0-138		11/22/2020 16:08	<a href="#">WG1580782</a>
(S) 1,2-Dichloroethane-d4	104			70.0-130		11/22/2020 16:08	<a href="#">WG1580782</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.68	4.18	1	11/24/2020 14:17	<a href="#">WG1580903</a>
C28-C40 Oil Range	U		0.286	4.18	1	11/24/2020 14:17	<a href="#">WG1580903</a>
(S) o-Terphenyl	73.3			18.0-148		11/24/2020 14:17	<a href="#">WG1580903</a>

Collected date/time: 11/11/20 15:00

L1286037

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	97.4		1	11/21/2020 03:43	<a href="#">WG1579963</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Chloride	102		9.45	20.5	1	11/24/2020 15:04	<a href="#">WG1581719</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0286	<a href="#">B J</a>	0.0223	0.103	1	11/23/2020 11:53	<a href="#">WG1580870</a>
(S) a,a,a-Trifluorotoluene(FID)	94.9			77.0-120		11/23/2020 11:53	<a href="#">WG1580870</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Benzene	U		0.000492	0.00105	1	11/22/2020 16:27	<a href="#">WG1580782</a>
Toluene	U		0.00137	0.00527	1	11/22/2020 16:27	<a href="#">WG1580782</a>
Ethylbenzene	U		0.000777	0.00264	1	11/22/2020 16:27	<a href="#">WG1580782</a>
Total Xylenes	U		0.000928	0.00685	1	11/22/2020 16:27	<a href="#">WG1580782</a>
(S) Toluene-d8	110			75.0-131		11/22/2020 16:27	<a href="#">WG1580782</a>
(S) 4-Bromofluorobenzene	88.3			67.0-138		11/22/2020 16:27	<a href="#">WG1580782</a>
(S) 1,2-Dichloroethane-d4	102			70.0-130		11/22/2020 16:27	<a href="#">WG1580782</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	1.84	<a href="#">J</a>	1.65	4.11	1	11/24/2020 16:43	<a href="#">WG1580903</a>
C28-C40 Oil Range	12.4	<a href="#">B</a>	0.281	4.11	1	11/24/2020 16:43	<a href="#">WG1580903</a>
(S) o-Terphenyl	76.8			18.0-148		11/24/2020 16:43	<a href="#">WG1580903</a>

Collected date/time: 11/11/20 15:10

L1286037

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	97.1		1	11/21/2020 03:43	<a href="#">WG1579963</a>

## Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Chloride	204		9.48	20.6	1	11/24/2020 15:14	<a href="#">WG1581719</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPH (GC/FID) Low Fraction	U		0.0224	0.103	1	11/23/2020 06:28	<a href="#">WG1580865</a>
(S) a,a,a-Trifluorotoluene(FID)	108			77.0-120		11/23/2020 06:28	<a href="#">WG1580865</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000495	0.00106	1	11/22/2020 16:46	<a href="#">WG1580782</a>
Toluene	U		0.00138	0.00530	1	11/22/2020 16:46	<a href="#">WG1580782</a>
Ethylbenzene	U		0.000781	0.00265	1	11/22/2020 16:46	<a href="#">WG1580782</a>
Total Xylenes	U		0.000933	0.00689	1	11/22/2020 16:46	<a href="#">WG1580782</a>
(S) Toluene-d8	109			75.0-131		11/22/2020 16:46	<a href="#">WG1580782</a>
(S) 4-Bromofluorobenzene	89.1			67.0-138		11/22/2020 16:46	<a href="#">WG1580782</a>
(S) 1,2-Dichloroethane-d4	105			70.0-130		11/22/2020 16:46	<a href="#">WG1580782</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C10-C28 Diesel Range	U		1.66	4.12	1	11/24/2020 14:30	<a href="#">WG1580903</a>
C28-C40 Oil Range	2.80	<a href="#">B J</a>	0.282	4.12	1	11/24/2020 14:30	<a href="#">WG1580903</a>
(S) o-Terphenyl	78.5			18.0-148		11/24/2020 14:30	<a href="#">WG1580903</a>

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc

Total Solids by Method 2540 G-2011 [L1286037-01,02,03,04,05,06,07](#)

Method Blank (MB)

(MB) R3595810-1 11/21/20 04:06

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.00100			

L1286037-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1286037-02 11/21/20 04:06 • (DUP) R3595810-3 11/21/20 04:06

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	94.9	95.2	1	0.276		10

Laboratory Control Sample (LCS)

(LCS) R3595810-2 11/21/20 04:06

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Total Solids by Method 2540 G-2011 [L1286037-08,09,10,11,12,13,14,15,16](#)

Method Blank (MB)

(MB) R3595805-1 11/21/20 03:43

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.00100			

L1286037-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1286037-13 11/21/20 03:43 • (DUP) R3595805-3 11/21/20 03:43

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	95.8	95.6	1	0.169		10

Laboratory Control Sample (LCS)

(LCS) R3595805-2 11/21/20 03:43

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Wet Chemistry by Method 300.0 [L1286037-01,02,03,04,05,06](#)

Method Blank (MB)

(MB) R3597138-1 11/24/20 17:50				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chloride	U		9.20	20.0

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

L1286030-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1286030-15 11/24/20 18:09 • (DUP) R3597138-3 11/24/20 18:18					
	Original Result (dry)	DUP Result (dry)	Dilution	DUP RPD	DUP RPD Limits
Analyte	mg/kg	mg/kg		%	%
Chloride	30.9	31.9	1	3.45	20

L1286037-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1286037-06 11/24/20 22:16 • (DUP) R3597138-6 11/24/20 22:26					
	Original Result (dry)	DUP Result (dry)	Dilution	DUP RPD	DUP RPD Limits
Analyte	mg/kg	mg/kg		%	%
Chloride	36.1	36.9	1	2.12	20

Laboratory Control Sample (LCS)

(LCS) R3597138-2 11/24/20 17:59					
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chloride	200	208	104	90.0-110	

L1286030-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286030-21 11/24/20 19:15 • (MS) R3597138-4 11/24/20 19:44 • (MSD) R3597138-5 11/24/20 19:53											
	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%
Chloride	517	U	528	537	102	104	1	80.0-120			1.58
											20



Wet Chemistry by Method 300.0

L1286037-07,08,09,10,11,12,13,14,15,16

Method Blank (MB)

(MB) R3597137-1 11/24/20 12:32

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	U		9.20	20.0

L1286037-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1286037-07 11/24/20 13:01 • (DUP) R3597137-3 11/24/20 13:10

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	35.3	35.7	1	0.947		20

L1286041-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1286041-10 11/24/20 17:08 • (DUP) R3597137-6 11/24/20 17:18

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	330	341	1	3.23		20

Laboratory Control Sample (LCS)

(LCS) R3597137-2 11/24/20 12:42

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	209	105	90.0-110	

L1286037-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286037-12 11/24/20 13:58 • (MS) R3597137-4 11/24/20 14:07 • (MSD) R3597137-5 11/24/20 14:36

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	529	71.1	622	602	104	100	1	80.0-120			3.31	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO L1286037-16

Method Blank (MB)

(MB) R3596550-3 11/23/20 04:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	108			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3596550-2 11/23/20 03:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.61	83.8	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			98.1	77.0-120	

L1286037-16 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286037-16 11/23/20 06:28 • (MS) R3596550-6 11/23/20 13:46 • (MSD) R3596550-7 11/23/20 14:07

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.73	U	2.47	2.93	43.2	51.6	1.01	10.0-151			16.8	28
(S) a,a,a-Trifluorotoluene(FID)					101	101		77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO

[L1286037-01,02,03,04,05,06,07,08,09,10,11,12,13,14,15](#)

Method Blank (MB)

(MB) R3596378-2 11/23/20 03:39

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0267	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	96.3			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3596378-1 11/23/20 02:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	6.56	119	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			109	77.0-120	

L1286030-26 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286030-26 11/23/20 05:21 • (MS) R3596378-3 11/23/20 12:14 • (MSD) R3596378-4 11/23/20 12:34

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.57	0.0447	4.87	5.06	86.7	89.1	1	10.0-151			3.87	28
(S) a,a,a-Trifluorotoluene(FID)					109	109		77.0-120				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260B

[L1286037-01,02,03,04,05,06,07,08,09,10,11,12](#)

Method Blank (MB)

(MB) R3596481-2 11/22/20 01:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	0.000900	⬇	0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	112			75.0-131
(S) 4-Bromofluorobenzene	98.9			67.0-138
(S) 1,2-Dichloroethane-d4	102			70.0-130

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

Laboratory Control Sample (LCS)

(LCS) R3596481-1 11/22/20 01:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.134	107	70.0-123	
Ethylbenzene	0.125	0.135	108	74.0-126	
Toluene	0.125	0.125	100	75.0-121	
Xylenes, Total	0.375	0.403	107	72.0-127	
(S) Toluene-d8			105	75.0-131	
(S) 4-Bromofluorobenzene			106	67.0-138	
(S) 1,2-Dichloroethane-d4			114	70.0-130	

Volatile Organic Compounds (GC/MS) by Method 8260B

L1286037-13,14,15,16

Method Blank (MB)

(MB) R3596257-3 11/22/20 14:17

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	112			75.0-131
(S) 4-Bromofluorobenzene	87.5			67.0-138
(S) 1,2-Dichloroethane-d4	101			70.0-130

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3596257-1 11/22/20 13:01 • (LCSD) R3596257-2 11/22/20 13:20

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.139	0.134	111	107	70.0-123			3.66	20
Ethylbenzene	0.125	0.133	0.137	106	110	74.0-126			2.96	20
Toluene	0.125	0.137	0.138	110	110	75.0-121			0.727	20
Xylenes, Total	0.375	0.403	0.384	107	102	72.0-127			4.83	20
(S) Toluene-d8				104	108	75.0-131				
(S) 4-Bromofluorobenzene				92.4	90.3	67.0-138				
(S) 1,2-Dichloroethane-d4				113	112	70.0-130				

L1286037-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286037-13 11/22/20 15:48 • (MS) R3596257-4 11/22/20 23:07 • (MSD) R3596257-5 11/22/20 23:26

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.136	U	0.108	0.0841	79.5	61.8	1	10.0-149			25.0	37
Ethylbenzene	0.136	U	0.106	0.0805	78.2	59.2	1	10.0-160			27.6	38
Toluene	0.136	U	0.111	0.0859	81.6	63.1	1	10.0-156			25.5	38
Xylenes, Total	0.408	U	0.305	0.234	74.7	57.3	1	10.0-160			26.3	38
(S) Toluene-d8					113	109		75.0-131				
(S) 4-Bromofluorobenzene					91.6	89.4		67.0-138				
(S) 1,2-Dichloroethane-d4					109	107		70.0-130				

Semi-Volatile Organic Compounds (GC) by Method 8015 L1286037-13,14,15,16

Method Blank (MB)

(MB) R3597124-1 11/24/20 13:37

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	2.46	J	0.274	4.00
(S) o-Terphenyl	86.2			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3597124-2 11/24/20 13:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	45.3	90.6	50.0-150	
(S) o-Terphenyl			107	18.0-148	

L1286041-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286041-01 11/24/20 17:36 • (MS) R3597124-3 11/24/20 17:49 • (MSD) R3597124-4 11/24/20 18:02

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	51.6	34.1	67.9	69.0	65.4	67.6	1	50.0-150			1.70	20
(S) o-Terphenyl					73.2	88.5		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Semi-Volatile Organic Compounds (GC) by Method 8015

[L1286037-01,02,03,04,05,06,07,08,09,10,11,12](#)

Method Blank (MB)

(MB) R3597678-1 11/25/20 22:44

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	69.2			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3597678-2 11/25/20 22:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	33.5	67.0	50.0-150	
(S) o-Terphenyl			73.9	18.0-148	

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

## Guide to Reading and Understanding Your Laboratory Report

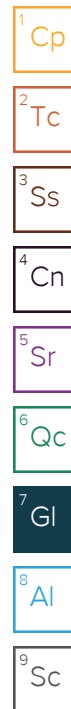
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

### Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

## State Accreditations

Alabama	40660	Nebraska	NE-05-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <sup>1</sup>	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1 6</sup>	90010	South Carolina	84004
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1 4</sup>	2006
Louisiana <sup>1</sup>	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

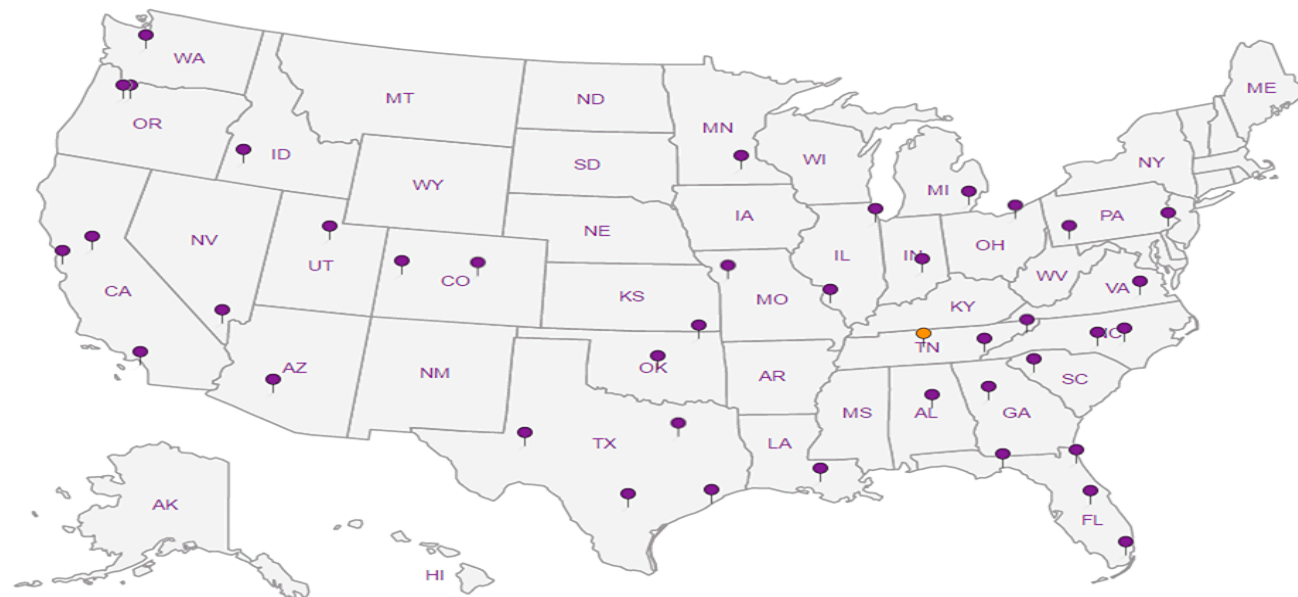
## Third Party Federal Accreditations


A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

## Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



 <b>Tetra Tech, Inc.</b>				901 West Wall Street, Suite 100 Midland, Texas 79701 Tel (432) 682-4559 Fax (432) 682-3946				11286037																																	
Client Name: Conoco Phillips				Site Manager: Christian Llull				<b>ANALYSIS REQUEST (Circle or Specify Method No.)</b> <table border="1"><tr><td>BYEX 8021B</td><td>BTEX 8260B</td><td>TPH TX1005 (Ext to C35)</td><td>TPH 8015M (GRQ - DRO - ORO - MRO)</td><td>PAH 8270C</td><td>Total Metals Ag As Ba Cd Cr Pb Se Hg</td><td>TCLP Metals Ag As Ba Cd Cr Pb Se Hg</td><td>TCLP Volatiles</td><td>TCLP Semi Volatiles</td><td>RCI</td><td>GC/MS Vol. 8260B / 624</td><td>GC/MS Semi. Vol. 8270C/625</td><td>PCB's 8082 / 608</td><td>NORM</td><td>PLM (Asbestos)</td><td>Chloride 300.0</td><td>Chloride Sulfate</td><td>TDS</td><td>General Water Chemistry (see attached list)</td><td>Anion/Cation Balance</td><td>TPH 8015R</td><td>HOLD</td></tr></table>												BYEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRQ - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride 300.0	Chloride Sulfate	TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	TPH 8015R	HOLD
BYEX 8021B	BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRQ - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles													TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride 300.0	Chloride Sulfate	TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	TPH 8015R	HOLD								
Project Name: Philmex Battery #4 Circulating Pump Release (1RP-1236)				Contact Info: Email: christian.llull@tetratech.com Phone: (512) 338-1667																																					
Project Location: Lea County, New Mexico				Project #: 212C-MD-02334, Task No. 09																																					
Invoice to: Accounts Payable 901 West Wall Street, Suite 100 Midland, Texas 79701																																									
Receiving Laboratory: Pace Analytical				Sampler Signature: Joe Tyler																																					
Comments: COPTETRA Acctnum																																									
LAB # (LAB USE ONLY)		SAMPLE IDENTIFICATION		SAMPLING YEAR: 2020		MATRIX		PRESERVATIVE METHOD				# CONTAINERS		FILTERED (Y/N)																											
				DATE TIME		WATER SOIL		HCL HNO <sub>3</sub> ICE NONE																																	
-01		BH-1 (0'-1')		11/11/20 1200		X		X				1 N		X X																											
-02		BH-1 (2'-3')		11/11/20 1210		X		X				1 N		X X																											
-03		BH-1 (4'-5')		11/11/20 1220		X		X				1 N		X X																											
-04		BH-1 (6'-7')		11/11/20 1230		X		X				1 N		X X																											
-05		BH-1 (9'-10')		11/11/20 1240		X		X				1 N		X X																											
-06		BH-1 (14'-15')		11/11/20 1250		X		X				1 N		X X																											
-07		BH-1 (19'-20')		11/11/20 1300		X		X				1 N		X X																											
-08		BH-2 (0'-1')		11/11/20 1330		X		X				1 N		X X																											
-09		BH-2 (2'-3')		11/11/20 1340		X		X				1 N		X X																											
-10		BH-2 (4'-5')		11/11/20 1350		X		X				1 N		X X																											
Relinquished by: Joe Tyler				Date: 11-13-20				Time: 14:00				Received by: [Signature]				Date: 11-13-20				Time: 14:00																					
Relinquished by: [Signature]				Date: 11-13-20				Time: 17:00				Received by: SLWA				Date: 11-13-20				Time: 17:00																					
Relinquished by:				Date:				Time:				Received by: B. Banos				Date: 11-14-20				Time: 1000																					
ORIGINAL COPY A056																		LAB USE ONLY Sample Temperature				REMARKS: <input checked="" type="checkbox"/> Standard <input type="checkbox"/> RUSH: Same Day 24 hr. 48 hr. 72 hr. <input type="checkbox"/> Rush Charges Authorized <input type="checkbox"/> Special Report Limits or TRRP Report																			
(Circle) HAND DELIVERED FEDEX UPS Tracking #:																		210-2 [Signature]																							



$$2 \pm 0 = 2 \text{ mm}$$

Pace Analytical National Center for Testing & Innovation  
Cooler Receipt Form

Client: <u>COPTETRA</u>		<u>11286037</u>	
Cooler Received/Opened On: <u>11 / 14 / 20</u>		Temperature: <u>2</u>	
Received By: <u>Billy Barras</u>			
Signature: <u>B. Barras</u>			
Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	<u>/</u>		
COC Signed / Accurate?		<u>/</u>	
Bottles arrive intact?		<u>/</u>	
Correct bottles used?		<u>/</u>	
Sufficient volume sent?		<u>/</u>	
If Applicable		<u>/</u>	
VOA Zero headspace?			
Preservation Correct / Checked?			





## ANALYTICAL REPORT

December 16, 2020

**ConocoPhillips - Tetra Tech**

Sample Delivery Group: L1293318  
Samples Received: 12/05/2020  
Project Number: 212C-MD-02334 TASK09  
Description: Philmex Battery #4 Circulating Pump Release (IRP-1236)  
  
Report To: Christian Llull  
901 West Wall  
Suite 100  
Midland, TX 79701

<sup>1</sup> Cp<sup>2</sup> Tc<sup>3</sup> Ss<sup>4</sup> Cn<sup>5</sup> Sr<sup>6</sup> Qc<sup>7</sup> Gl<sup>8</sup> Al<sup>9</sup> Sc

Entire Report Reviewed By:

Chris McCord  
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Cp: Cover Page	1	<div><sup>1</sup>Cp</div>
Tc: Table of Contents	2	
Ss: Sample Summary	3	<div><sup>2</sup>Tc</div>
Cn: Case Narrative	4	
Sr: Sample Results	5	<div><sup>3</sup>Ss</div>
AH-1 (BH-4) (0'-1') L1293318-01	5	
AH-2 (BH-7) (0'-1') L1293318-02	6	<div><sup>4</sup>Cn</div>
AH-3 (BH-6) (0'-1') L1293318-03	7	<div><sup>5</sup>Sr</div>
AH-4 (BH-5) (0'-1') L1293318-04	8	
Qc: Quality Control Summary	9	<div><sup>6</sup>Qc</div>
Total Solids by Method 2540 G-2011	9	
Wet Chemistry by Method 300.0	10	<div><sup>7</sup>Gl</div>
Volatile Organic Compounds (GC) by Method 8015D/GRO	11	<div><sup>8</sup>Al</div>
Volatile Organic Compounds (GC/MS) by Method 8260B	13	
Semi-Volatile Organic Compounds (GC) by Method 8015	14	<div><sup>9</sup>Sc</div>
Gl: Glossary of Terms	15	
Al: Accreditations & Locations	16	
Sc: Sample Chain of Custody	17	

## AH-1 (BH-4) (O'-1') L1293318-01 Solid

Collected by  
Joe Tyler

Collected date/time  
12/02/20 13:30

Received date/time  
12/05/20 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1591752	1	12/16/20 05:00	12/16/20 05:07	KBC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1591067	1	12/15/20 13:33	12/15/20 19:01	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1592781	1	12/08/20 13:52	12/16/20 16:53	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1588717	1	12/08/20 13:52	12/09/20 04:14	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1591819	1	12/14/20 23:14	12/15/20 06:37	JN	Mt. Juliet, TN

<sup>1</sup> Cp<sup>2</sup> Tc<sup>3</sup> Ss<sup>4</sup> Cn

## AH-2 (BH-7) (O'-1') L1293318-02 Solid

Collected by  
Joe Tyler

Collected date/time  
12/02/20 14:00

Received date/time  
12/05/20 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1591752	1	12/16/20 05:00	12/16/20 05:07	KBC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1591067	1	12/15/20 13:33	12/15/20 19:29	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1590968	1	12/08/20 13:52	12/13/20 17:05	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1588717	1	12/08/20 13:52	12/09/20 04:33	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1591819	1	12/14/20 23:14	12/15/20 12:38	JN	Mt. Juliet, TN

<sup>5</sup> Sr<sup>6</sup> Qc<sup>7</sup> Gl<sup>8</sup> Al

## AH-3 (BH-6) (O'-1') L1293318-03 Solid

Collected by  
Joe Tyler

Collected date/time  
12/02/20 14:30

Received date/time  
12/05/20 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1591752	1	12/16/20 05:00	12/16/20 05:07	KBC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1591067	1	12/15/20 13:33	12/15/20 19:49	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1590968	1	12/08/20 13:52	12/13/20 17:25	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1588717	1	12/08/20 13:52	12/09/20 04:51	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1591819	1	12/14/20 23:14	12/15/20 07:03	JN	Mt. Juliet, TN

<sup>9</sup> Sc

## AH-4 (BH-5) (O'-1') L1293318-04 Solid

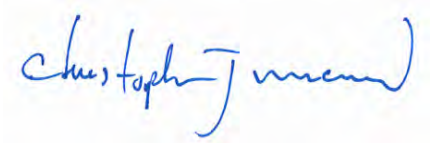
Collected by  
Joe Tyler

Collected date/time  
12/02/20 15:00

Received date/time  
12/05/20 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1591752	1	12/16/20 05:00	12/16/20 05:07	KBC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG1591067	1	12/15/20 13:33	12/15/20 19:58	ELN	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1590968	1	12/08/20 13:52	12/13/20 17:46	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1588717	1	12/08/20 13:52	12/09/20 05:10	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1591819	1	12/14/20 23:14	12/15/20 05:17	JN	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris McCord  
Project Manager

- <sup>1</sup> Cp
- <sup>2</sup> Tc
- <sup>3</sup> Ss
- <sup>4</sup> Cn
- <sup>5</sup> Sr
- <sup>6</sup> Qc
- <sup>7</sup> Gl
- <sup>8</sup> Al
- <sup>9</sup> Sc

Collected date/time: 12/02/20 13:30

L1293318

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	96.2		1	12/16/2020 05:07	<a href="#">WG1591752</a>

## Wet Chemistry by Method 300.0

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	U		9.56	20.8	1	12/15/2020 19:01	<a href="#">WG1591067</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0225	0.104	1	12/16/2020 16:53	<a href="#">WG1592781</a>
(S) a,a,a-Trifluorotoluene(FID)	96.9			77.0-120		12/16/2020 16:53	<a href="#">WG1592781</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000504	0.00108	1	12/09/2020 04:14	<a href="#">WG1588717</a>
Toluene	U		0.00140	0.00539	1	12/09/2020 04:14	<a href="#">WG1588717</a>
Ethylbenzene	U		0.000795	0.00270	1	12/09/2020 04:14	<a href="#">WG1588717</a>
Total Xylenes	U		0.000949	0.00701	1	12/09/2020 04:14	<a href="#">WG1588717</a>
(S) Toluene-d8	104			75.0-131		12/09/2020 04:14	<a href="#">WG1588717</a>
(S) 4-Bromofluorobenzene	96.1			67.0-138		12/09/2020 04:14	<a href="#">WG1588717</a>
(S) 1,2-Dichloroethane-d4	110			70.0-130		12/09/2020 04:14	<a href="#">WG1588717</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	7.79	<u>B</u>	1.67	4.16	1	12/15/2020 06:37	<a href="#">WG1591819</a>
C28-C40 Oil Range	34.6		0.285	4.16	1	12/15/2020 06:37	<a href="#">WG1591819</a>
(S) o-Terphenyl	64.7			18.0-148		12/15/2020 06:37	<a href="#">WG1591819</a>

Collected date/time: 12/02/20 14:00

L1293318

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	95.9		1	12/16/2020 05:07	<a href="#">WG1591752</a>

## Wet Chemistry by Method 300.0

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	U		9.59	20.9	1	12/15/2020 19:29	<a href="#">WG1591067</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0250	<u>J</u>	0.0226	0.104	1	12/13/2020 17:05	<a href="#">WG1590968</a>
(S) a,a,a-Trifluorotoluene(FID)	107			77.0-120		12/13/2020 17:05	<a href="#">WG1590968</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000507	0.00109	1	12/09/2020 04:33	<a href="#">WG1588717</a>
Toluene	U		0.00141	0.00543	1	12/09/2020 04:33	<a href="#">WG1588717</a>
Ethylbenzene	U		0.000800	0.00271	1	12/09/2020 04:33	<a href="#">WG1588717</a>
Total Xylenes	U		0.000955	0.00706	1	12/09/2020 04:33	<a href="#">WG1588717</a>
(S) Toluene-d8	108			75.0-131		12/09/2020 04:33	<a href="#">WG1588717</a>
(S) 4-Bromofluorobenzene	98.1			67.0-138		12/09/2020 04:33	<a href="#">WG1588717</a>
(S) 1,2-Dichloroethane-d4	108			70.0-130		12/09/2020 04:33	<a href="#">WG1588717</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	5.12	<u>B</u>	1.68	4.17	1	12/15/2020 12:38	<a href="#">WG1591819</a>
C28-C40 Oil Range	20.4		0.286	4.17	1	12/15/2020 12:38	<a href="#">WG1591819</a>
(S) o-Terphenyl	76.8			18.0-148		12/15/2020 12:38	<a href="#">WG1591819</a>



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	99.1		1	12/16/2020 05:07	<a href="#">WG1591752</a>

Wet Chemistry by Method 300.0

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Chloride	10.2	J	9.28	20.2	1	12/15/2020 19:49	<a href="#">WG1591067</a>

Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0315	J	0.0219	0.101	1	12/13/2020 17:25	<a href="#">WG1590968</a>
(S) a,a,a-Trifluorotoluene(FID)	107			77.0-120		12/13/2020 17:25	<a href="#">WG1590968</a>

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000475	0.00102	1	12/09/2020 04:51	<a href="#">WG1588717</a>
Toluene	U		0.00132	0.00509	1	12/09/2020 04:51	<a href="#">WG1588717</a>
Ethylbenzene	U		0.000750	0.00255	1	12/09/2020 04:51	<a href="#">WG1588717</a>
Total Xylenes	U		0.000896	0.00662	1	12/09/2020 04:51	<a href="#">WG1588717</a>
(S) Toluene-d8	106			75.0-131		12/09/2020 04:51	<a href="#">WG1588717</a>
(S) 4-Bromofluorobenzene	97.4			67.0-138		12/09/2020 04:51	<a href="#">WG1588717</a>
(S) 1,2-Dichloroethane-d4	108			70.0-130		12/09/2020 04:51	<a href="#">WG1588717</a>

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	18.3		1.62	4.04	1	12/15/2020 07:03	<a href="#">WG1591819</a>
C28-C40 Oil Range	78.9		0.276	4.04	1	12/15/2020 07:03	<a href="#">WG1591819</a>
(S) o-Terphenyl	64.0			18.0-148		12/15/2020 07:03	<a href="#">WG1591819</a>

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Collected date/time: 12/02/20 15:00

L1293318

## Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	98.7		1	12/16/2020 05:07	<a href="#">WG1591752</a>

## Wet Chemistry by Method 300.0

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Chloride	79.3		9.32	20.3	1	12/15/2020 19:58	<a href="#">WG1591067</a>

## Volatile Organic Compounds (GC) by Method 8015D/GRO

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0220	0.101	1	12/13/2020 17:46	<a href="#">WG1590968</a>
(S) a,a,a-Trifluorotoluene(FID)	105			77.0-120		12/13/2020 17:46	<a href="#">WG1590968</a>

## Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
Benzene	U		0.000479	0.00103	1	12/09/2020 05:10	<a href="#">WG1588717</a>
Toluene	U		0.00133	0.00513	1	12/09/2020 05:10	<a href="#">WG1588717</a>
Ethylbenzene	U		0.000757	0.00257	1	12/09/2020 05:10	<a href="#">WG1588717</a>
Total Xylenes	U		0.000903	0.00667	1	12/09/2020 05:10	<a href="#">WG1588717</a>
(S) Toluene-d8	104			75.0-131		12/09/2020 05:10	<a href="#">WG1588717</a>
(S) 4-Bromofluorobenzene	97.6			67.0-138		12/09/2020 05:10	<a href="#">WG1588717</a>
(S) 1,2-Dichloroethane-d4	109			70.0-130		12/09/2020 05:10	<a href="#">WG1588717</a>

## Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.63	4.05	1	12/15/2020 05:17	<a href="#">WG1591819</a>
C28-C40 Oil Range	2.04	<a href="#">B J</a>	0.278	4.05	1	12/15/2020 05:17	<a href="#">WG1591819</a>
(S) o-Terphenyl	79.9			18.0-148		12/15/2020 05:17	<a href="#">WG1591819</a>

Total Solids by Method 2540 G-2011 [L1293318-01,02,03,04](#)

Method Blank (MB)

(MB) R3604193-1 12/16/20 05:07

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000			

L1293318-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1293318-02 12/16/20 05:07 • (DUP) R3604193-3 12/16/20 05:07

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP RPD Limits
Total Solids	95.9	96.2	1	0.332	10

Laboratory Control Sample (LCS)

(LCS) R3604193-2 12/16/20 05:07

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Wet Chemistry by Method 300.0

L1293318-01,02,03,04

Method Blank (MB)

(MB) R3603969-1 12/15/20 18:43

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chloride	U		9.20	20.0

L1293318-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1293318-02 12/15/20 19:29 • (DUP) R3603969-5 12/15/20 19:39

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	U	U	1	0.000		20

L1293357-16 Original Sample (OS) • Duplicate (DUP)

(OS) L1293357-16 12/15/20 23:09 • (DUP) R3603969-6 12/15/20 23:19

Analyte	Original Result (dry) mg/kg	DUP Result (dry) mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	754	735	1	2.54		20

Laboratory Control Sample (LCS)

(LCS) R3603969-2 12/15/20 18:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	200	196	98.0	90.0-110	

L1293318-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1293318-01 12/15/20 19:01 • (MS) R3603969-3 12/15/20 19:10 • (MSD) R3603969-4 12/15/20 19:20

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	520	U	514	522	99.0	100	1	80.0-120			1.49	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO [L1293318-02,03,04](#)

Method Blank (MB)

(MB) R3603303-2 12/13/20 14:11				
	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	110			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3603303-1 12/13/20 13:30					
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	mg/kg	mg/kg	%	%	
TPH (GC/FID) Low Fraction	5.50	5.49	99.8	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			105	77.0-120	

L1293318-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1293318-02 12/13/20 17:05 • (MS) R3603303-3 12/13/20 23:21 • (MSD) R3603303-4 12/13/20 23:42												
	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
TPH (GC/FID) Low Fraction	5.68	0.0250	1.78	2.03	30.9	35.0	1	10.0-151			13.1	28
(S) a,a,a-Trifluorotoluene(FID)					102	100		77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Volatile Organic Compounds (GC) by Method 8015D/GRO

[L1293318-01](#)

Method Blank (MB)

(MB) R3604220-3 12/16/20 11:38

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	98.4			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3604220-2 12/16/20 10:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.89	88.9	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			100	77.0-120	

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



Volatile Organic Compounds (GC/MS) by Method 8260B

L1293318-01,02,03,04

Method Blank (MB)

(MB) R3601820-3 12/09/20 03:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	105			75.0-131
(S) 4-Bromofluorobenzene	99.9			67.0-138
(S) 1,2-Dichloroethane-d4	113			70.0-130

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3601820-1 12/09/20 01:35 • (LCSD) R3601820-2 12/09/20 01:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.145	0.135	116	108	70.0-123			7.14	20
Ethylbenzene	0.125	0.132	0.129	106	103	74.0-126			2.30	20
Toluene	0.125	0.132	0.123	106	98.4	75.0-121			7.06	20
Xylenes, Total	0.375	0.395	0.383	105	102	72.0-127			3.08	20
(S) Toluene-d8				101	100	75.0-131				
(S) 4-Bromofluorobenzene				98.0	103	67.0-138				
(S) 1,2-Dichloroethane-d4				120	118	70.0-130				

Semi-Volatile Organic Compounds (GC) by Method 8015 L1293318-01,02,03,04

Method Blank (MB)

(MB) R3603881-1 12/15/20 04:51

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	1.65	J	1.61	4.00
C28-C40 Oil Range	0.338	J	0.274	4.00
(S) o-Terphenyl	75.2			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3603881-2 12/15/20 05:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	43.9	87.8	50.0-150	
(S) o-Terphenyl			95.9	18.0-148	

L1293318-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1293318-04 12/15/20 05:17 • (MS) R3603881-3 12/15/20 05:31 • (MSD) R3603881-4 12/15/20 05:44

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	50.7	U	41.8	41.6	82.6	82.2	1	50.0-150			0.485	20
(S) o-Terphenyl					86.5	85.7		18.0-148				

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

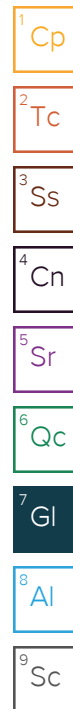
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

## Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

## Qualifier Description

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

## State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1 6</sup>	KY90010	South Carolina	84004
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1 4</sup>	2006
Louisiana <sup>1</sup>	LA180010	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA

## Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

## Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



RAD & DEEN: <0.5 mR/hr



**Matt Shacklock**

Login #: L1293318	Client: COPTETRA	Date: 12/05/20	Evaluated by:
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**Non-Conformance (check applicable items)**

Sample Integrity	Chain of Custody Clarification	
Parameter(s) past holding time	Login Clarification Needed	<b>If Broken Container:</b>
Temperature not in range	Chain of custody is incomplete	Insufficient packing material around container
Improper container type	Please specify Metals requested.	Insufficient packing material inside cooler
pH not in range.	Please specify TCLP requested.	Improper handling by carrier (FedEx / UPS / Courier)
Insufficient sample volume.	Received additional samples not listed on coc.	Sample was frozen
Sample is biphasic.	Sample ids on containers do not match ids on coc	Container lid not intact
Vials received with headspace.	Trip Blank not received.	<b>If no Chain of Custody:</b>
Broken container	Client did not "X" analysis.	Received by:
Broken container:	Chain of Custody is missing	Date/Time:
Sufficient sample remains		Temp./Cont Rec./pH:
		Carrier:
		Tracking#

**Login Comments:**

Client labeled samples as "HA- (PB-)" instead of "AH- (BH-)" as indicated on the COC. Logged per COC.

Client informed by:	Call	Email	Voice Mail	Date: 12/7/20	Time: 13:28
TSR Initials: CM	Client Contact:				

Login Instructions

Keep as logged per COC.



## **APPENDIX F**

### **NMSLO Seed Mixture Details**



United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for **Lea County, New Mexico**

**1RP-1236**



December 30, 2020

# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# Contents

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**Preface**..... 2

**How Soil Surveys Are Made**.....5

**Soil Map**..... 8

    Soil Map.....9

    Legend.....10

    Map Unit Legend..... 11

    Map Unit Descriptions.....11

        Lea County, New Mexico..... 13

        KU—Kimbrough-Lea complex, dry, 0 to 3 percent slopes.....13

**References**..... 16

## How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil



## Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

## Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

## Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


# Custom Soil Resource Report Soil Map



## Custom Soil Resource Report

## MAP LEGEND

## Area of Interest (AOI)

 Area of Interest (AOI)


## Soils


 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points

## Special Point Features

 Blowout

 Borrow Pit


 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water


 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole


 Slide or Slip


 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

## Water Features

 Streams and Canals


## Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

## Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lea County, New Mexico  
Survey Area Data: Version 17, Jun 8, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 7, 2020—May 12, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Custom Soil Resource Report

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KU	Kimbrough-Lea complex, dry, 0 to 3 percent slopes	3.6	100.0%
<b>Totals for Area of Interest</b>		<b>3.6</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.



## Custom Soil Resource Report

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Custom Soil Resource Report

**Lea County, New Mexico****KU—Kimbrough-Lea complex, dry, 0 to 3 percent slopes****Map Unit Setting**

*National map unit symbol:* 2tw46  
*Elevation:* 2,500 to 4,800 feet  
*Mean annual precipitation:* 14 to 16 inches  
*Mean annual air temperature:* 57 to 63 degrees F  
*Frost-free period:* 180 to 220 days  
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Kimbrough and similar soils:* 45 percent  
*Lea and similar soils:* 25 percent  
*Minor components:* 30 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Kimbrough****Setting**

*Landform:* Plains, playa rims  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear, concave  
*Parent material:* Loamy eolian deposits derived from sedimentary rock

**Typical profile**

*A - 0 to 3 inches:* gravelly loam  
*Bw - 3 to 10 inches:* loam  
*Bkkm1 - 10 to 16 inches:* cemented material  
*Bkkm2 - 16 to 80 inches:* cemented material

**Properties and qualities**

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* 4 to 18 inches to petrocalcic  
*Drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.01 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 95 percent  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 1.0  
*Available water capacity:* Very low (about 1.4 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* D  
*Ecological site:* R077DY049TX - Very Shallow 12-17" PZ  
*Hydric soil rating:* No

## Custom Soil Resource Report

**Description of Lea****Setting**

*Landform:* Plains

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Parent material:* Calcareous, loamy eolian deposits from the blackwater draw formation of pleistocene age over indurated caliche of pliocene age

**Typical profile**

*A - 0 to 10 inches:* loam

*Bk - 10 to 18 inches:* loam

*Bkk - 18 to 26 inches:* gravelly fine sandy loam

*Bkkm - 26 to 80 inches:* cemented material

**Properties and qualities**

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* 22 to 30 inches to petrocalcic

*Drainage class:* Well drained

*Runoff class:* High

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 90 percent

*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

*Sodium adsorption ratio, maximum:* 3.0

*Available water capacity:* Very low (about 2.9 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7s

*Hydrologic Soil Group:* D

*Ecological site:* R077DY047TX - Sandy Loam 12-17" PZ

*Hydric soil rating:* No

**Minor Components****Douro**

*Percent of map unit:* 12 percent

*Landform:* Plains

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* R077DY047TX - Sandy Loam 12-17" PZ

*Other vegetative classification:* Unnamed (G077DH000TX)

*Hydric soil rating:* No

**Kenhill**

*Percent of map unit:* 12 percent

*Landform:* Plains

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Ecological site:* R077DY038TX - Clay Loam 12-17" PZ

*Hydric soil rating:* No

Custom Soil Resource Report

**Spraberry**

*Percent of map unit:* 6 percent

*Landform:* Plains, playa rims

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear

*Ecological site:* R077DY049TX - Very Shallow 12-17" PZ

*Other vegetative classification:* Unnamed (G077DH000TX)

*Hydric soil rating:* No

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## Custom Soil Resource Report

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United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053624](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624)

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**NMSLO Seed Mix****Loamy (L)****LOAMY (L) SITES SEED MIXTURE:**

COMMON NAME	VARIETY	APPLICATION RATE (PLS/Acre)	DRILL BOX
<b>Grasses:</b>			
Black grama	VNS, Southern	1.0	D
Blue grama	Lovington	1.0	D
Sideoats grama	Vaughn, El Reno	4.0	F
Sand dropseed	VNS, Southern	2.0	S
Alkali sacaton	VNS, Southern	1.0	
Little bluestem	Cimarron, Pastura	1.5	F
<b>Forbs:</b>			
Firewheel ( <i>Gaillardia</i> )	VNS, Southern	1.0	D
<b>Shrubs:</b>			
Fourwing saltbush	Marana, Santa Rita	1.0	D
Common winterfat	VNS, Southern	0.5	F
<b>Total PLS/acre</b>		<b>18.0</b>	

S = Small seed drill box, D = Standard seed drill box, F = Fluffy seed drill box

VNS = Variety Not Stated, PLS = Pure Live Seed

- Seed mixes should be provided in bags separating seed types into the three categories: small (S), standard (D) and fluffy (F).
- VNS, Southern – Seed should be from a southern latitude collection of this species.
- Double seed application rate for broadcast or hydroseeding.
- If one species is not available, contact the SLO for an approved substitute; alternatively the SLO may require other species proportionately increased.
- Additional information on these seed species can be found on the USDA Plants Database website at <http://plants.usda.gov>.



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

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

CONDITIONS

Action 207912

**CONDITIONS**

Operator: CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	OGRID: 217817
	Action Number: 207912
	Action Type: [IM-SD] Incident File Support Doc (ENV) (IM-BNF)

**CONDITIONS**

Created By	Condition	Condition Date
jharimon	Workplan/Remediation Plan is approved with the following conditions: Floor confirmation samples must be delineated/excavated to meet closure criteria standards for proven depth to water determination. Sidewall samples must be delineated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release. The variance request for the alternative confirmation sampling plan is approved provided the sidewall and floor samples are representative of no more than 400 SF and sidewall samples show delineation from surface to 4'.	4/21/2023