



# CLOSURE REQUEST REPORT

**RDX 17 Federal Com #006H**

**Eddy County, New Mexico**

**Incident Number nRM2019548894**

**Prepared For:**

**WPX Energy Permian, LLC**

**5315 Buena Vista Dr.**

**Carlsbad, NM 88220**

Carlsbad • Houston • Midland • San Antonio • Lubbock • Hobbs • Lafayette

## SYNOPSIS

Etech Environmental & Safety Solutions, Inc. (Etech), on behalf of WPX Energy Permian, LLC (WPX), presents the following Closure Request Report (CRR) detailing continued excavation and soil sampling events conducted in accordance with an approved Remediation Work Plan Addendum (RWPA) to address an inadvertent release of produced water at the RDX 17 Federal Com #006H (Site) and subsequent reclamation activities to fulfill complete incident closure status. Based on laboratory analytical results from confirmation soil sampling activities associated with restorative actions completed at the Site, WPX is requesting No Further Action (NFA) for Incident Number nRM2019548894.

## SITE LOCATION AND RELEASE BACKGROUND

The Site is located in Unit J, Section 17, Township 26 South, Range 30 East, in Eddy County, New Mexico (32.041235°N, 103.9018005°W) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM) (**Figure 1** in **Appendix A**).

An inadvertent reportable spill occurred on July 5, 2020, due to a failed connection of a produced water poly line, causing the release of approximately 35 barrels (bbls) of produced water along a recently reclaimed lease road. Vacuum trucks were immediately dispatched and recovered approximately 5 bbls of produced water. WPX reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Corrective Action Form C-141 (Form C-141), which was received by the NMOCD on July 5, 2020, and was assigned Incident Number nRM2019548894.

A third-party environmental consultant oversaw remediation activities in accordance with an approved Remediation Work Plan (RWP) and determined that further remediation was required outside of the original scope of work presented in the RWP. As such, the RWPA was prepared and proposed corrective actions to address the remaining residual impacted soil defined by the applicable Site Closure Criteria and a sampling variance of 1,000 square feet (sqft) due to the size of the anticipated excavation area. The RWPA was submitted to the NMOCD and approved on April 26, 2024.

As detailed below, the excavation was completed by April 9, 2024, but in order to accommodate enough time for the completion of final restoration activities, compilation of laboratory analytical results and field summaries for this CRR, WPX requested a 90-day extension from the deadline above. The extension request was granted by the NMOCD for July 25, 2024.

## SITE CHARACTERIZATION AND CLOSURE CRITERIA

As previously described in the approved RWPA, the Site was characterized according to Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC) considering depth to groundwater and the proximity to:

- Any continuously flowing watercourse or any other significant watercourse;
- Any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark);
- An occupied permanent residence, school, hospital, institution or church;
- A spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes;
- Any freshwater well or spring;
- Incorporated municipal boundaries or a defined municipal fresh water well field covered under a municipal ordinance;
- A wetland;
- A subsurface mine;
- An unstable area (i.e. high karst potential); and
- A 100-year floodplain.

Based on the results from the desktop review and the estimated depth to groundwater at the Site, the following Closure Criteria was applied:

Constituents of Concern (COCs)	Laboratory Analytical Method	Closure Criteria <sup>†</sup>
Chloride	Environmental Protection Agency (EPA) 300.0	20,000 milligram per kilogram (mg/kg)
TPH (Total Petroleum Hydrocarbon)	EPA 8015 M/D	2,500 mg/kg
TPH-Gasoline Range Organics (GRO) + TPH-Diesel Range Organics (DRO)	EPA 8021B	1,000 mg/kg
Benzene	EPA 8021B	10 mg/kg
Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX)	EPA 8021B	50 mg/kg

<sup>†</sup>The reclamation concentration requirements of 600 mg/kg chloride and 100 mg/kg TPH apply to the top 4 feet of areas to be immediately reclaimed following remediation pursuant to NMAC 19.15.17.13.

All potential receptors are not within the established buffers in NMAC 19.15.29.12. Receptor details and sources used to determine the site characterization are included in **Figure 1A**, **Figure 1B**, and **Figure 1C** in **Appendix A**. Referenced well records are provided as **Appendix B**.

## EXCAVATION SOIL SAMPLING ACTIVITIES

From April 3 through April 9, 2024, Etech directed excavation of identified residual impacts via heavy equipment based on laboratory analytical results associated with delineation soil sampling activities, detailed corrective actions in the approved RWP, and visual observation. The excavation was advanced to 4 feet below ground surface (bgs) and laterally driven by field screening soil for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips.

Following the removal of impacted soil, Etech collected 5-point composite confirmation soil samples from the floors (FS01 through FS22) and sidewalls (SW01 through SW04) of the excavation at the approved sampling frequency of 1,000 square feet (sqft). The 5-point composite soil samples were comprised of five equivalent aliquots homogenized in a 1-gallon, resealable plastic bag. The samples were then placed into lab provided pre-cleaned glass jars, packaged with minimal void space, labeled, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Envirotech, Inc. in Farmington, New Mexico, for analysis of the COCs.

Approximately 3,920 cubic yards (CY) of additional impacted soil was removed from the Site, totaling approximately 9,740 CY removed from the Site when including completed remediation detailed in the RWP. Impacted soil was transported to the R360 Red Bluff Landfill Facility in Orla, Texas under WPX approved manifests. The continued excavation extent and locations of confirmation excavation soil samples are shown in **Figure 2** and **Figure 2A** in **Appendix A**. Photographic documentation of excavation activities is included in **Appendix C**.

## LABORATORY ANALYTICAL RESULTS

Laboratory analytical results for all final confirmation excavation soil samples indicated all analyzed COCs were below the Site Closure Criteria. Laboratory analytical results are summarized in **Table 1** included in **Appendix D**. The executed chain-of-custody forms and laboratory analytical reports are provided in **Appendix E**.

## RECLAMATION

Upon receipt of laboratory analytical results, the excavation, which measured approximately 21,692 sqft, was backfilled with 3,920 CY of clean, locally sourced soil and the Site was restored to "as close to its original state" as possible. The final soil cover was contoured to match the Site's pre-existing grade to prevent ponding of water and erosion. BLM Seed Mix #3 (Shallow Sites) will be hand-broadcasted over the entire disturbed area in the next favorable growing season following BLM guidelines (**Appendix F**). The selected seed blend will provide the maximum results of vegetation regrowth and ground surface coverage to match pre-existing conditions at the Site.

On April 29, 2024, Etech assessed the backfill material for its capacity to host vegetative growth. One discrete soil sample was collected from the soil cover of the excavation area (SC01) and outside of the excavation disturbance area (BG01) at 0.5-foot bgs via hand shovel and field screened for VOCs and chloride, as previously described, and qualitatively evaluated for nutrient density of pH, Nitrogen (N), Phosphorus (P), and Potassium (K) utilizing a HoldAll® Soil Test Kit according to the operating manual, which is included in **Appendix G**.

Field screening results indicated the backfill material appears to correlate with surrounding soil conditions currently supporting native vegetative growth, as summarized in **Table 2** included in **Appendix D**. The location of the restoration area and field screened soil sample locations are shown in **Figure 3** in **Appendix A**. Photographic documentation of restoration activities is included in **Appendix C**.

## CLOSURE REQUEST

Based on laboratory analytical results for confirmation excavation soil samples, WPX believes that residual soil impacts associated with the inadvertent release have been excavated and removed from Site and subsequently restored "as close to its original state" as possible. Concentrations of COCs for all final confirmation excavation soil samples were below the Site Closure Criteria and/or reclamation standard. On July 10, 2024, a CRR was submitted to the BLM as requested on the RWPA's condition for approval and approved on July 18, 2024. WPX and BLM believes the completed remedial actions have mitigated impacts at the Site and the requirements set forth in NMAC 19.15.29.13 regulations to be protective of human health, the environment and groundwater. As such, NFA appears warranted until the next favorable growing season and this CRR associated with Incident Number nRM2019548894 should be respectfully considered for Closure by the NMOCD.

If you have any questions or comments, please do not hesitate to contact Joseph Hernandez at (432) 305-6413 or [joseph@etechnv.com](mailto:joseph@etechnv.com) or Erick Herrera at (432) 305-6416 or [erick@etechnv.com](mailto:erick@etechnv.com). **Appendix H** provides correspondence email notification receipts from NMOCD, WPX, and BLM approval associated with the subject release. Previous remediation activities and soil sample analytical results for the subject release can be referenced in the approved RWPA and RWP in **Appendix I**.

Sincerely,  
Etech Environmental and Safety Solutions, Inc.



Erick Herrera  
Project Geologist



Joseph S. Hernandez  
Senior Managing Geologist



cc: Jim Raley, WPX  
New Mexico Oil Conservation Division  
Bureau of Land Management

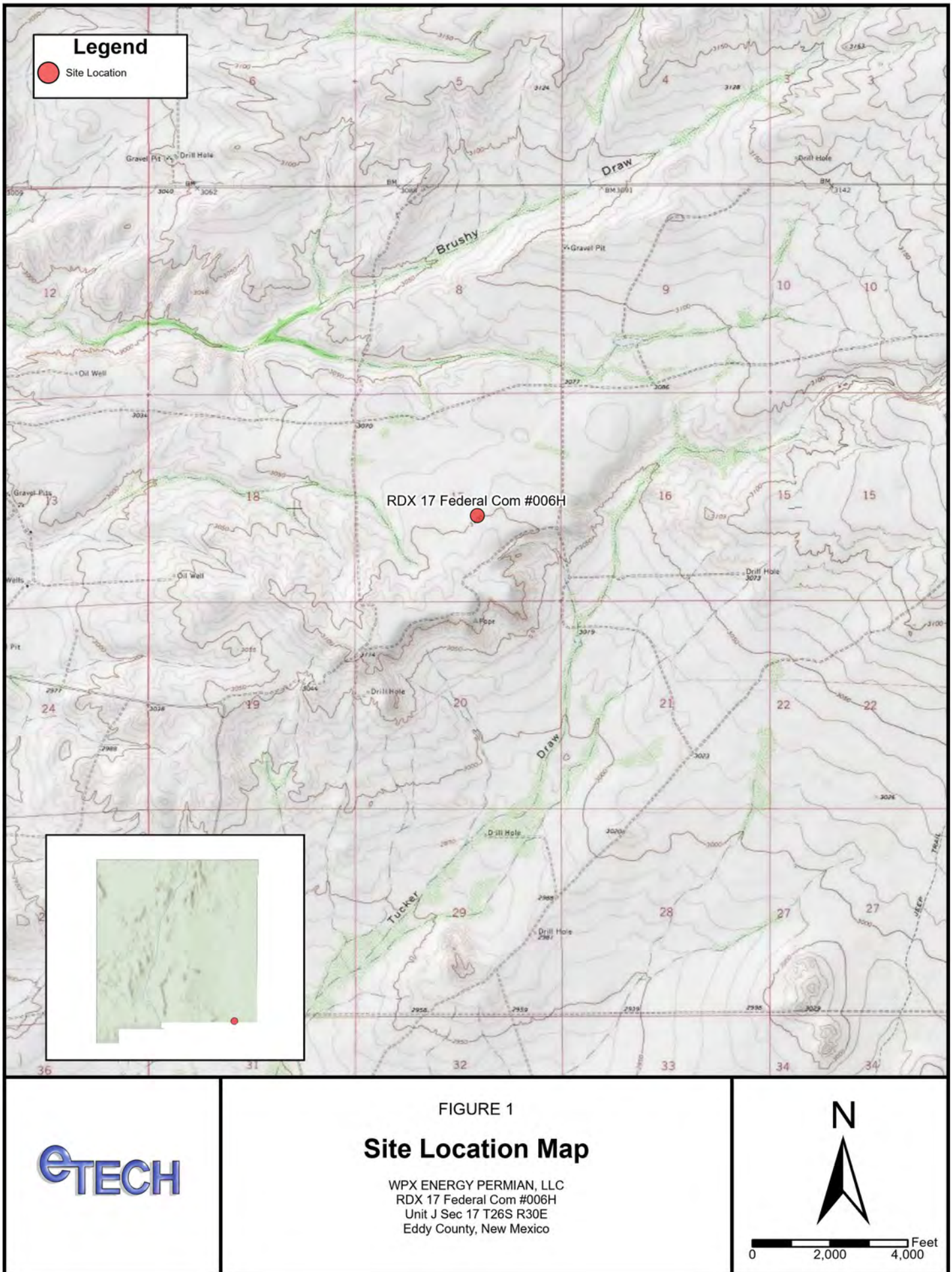
**Appendices:**

- Appendix A:** Figure 1: Site Map  
Figure 1A: Site Characterization Map – Groundwater  
Figure 1B: Site Characterization Map – Surficial Receptors  
Figure 1C: Site Characterization Map – Subsurface Receptors  
Figure 2: Excavation Extents  
Figure 2A: Excavation Soil Sample Locations  
Figure 3: Restoration Area
- Appendix B:** Referenced Well Records
- Appendix C:** Photographic Log
- Appendix D:** Tables
- Appendix E:** Laboratory Analytical Reports & Chain-of-Custody Documentation
- Appendix F:** BLM Seed Mixture 3 for Shallow Sites
- Appendix G:** HoldAll® Operating Manual
- Appendix H:** Correspondence & Notifications
- Appendix I:** Archived Reports

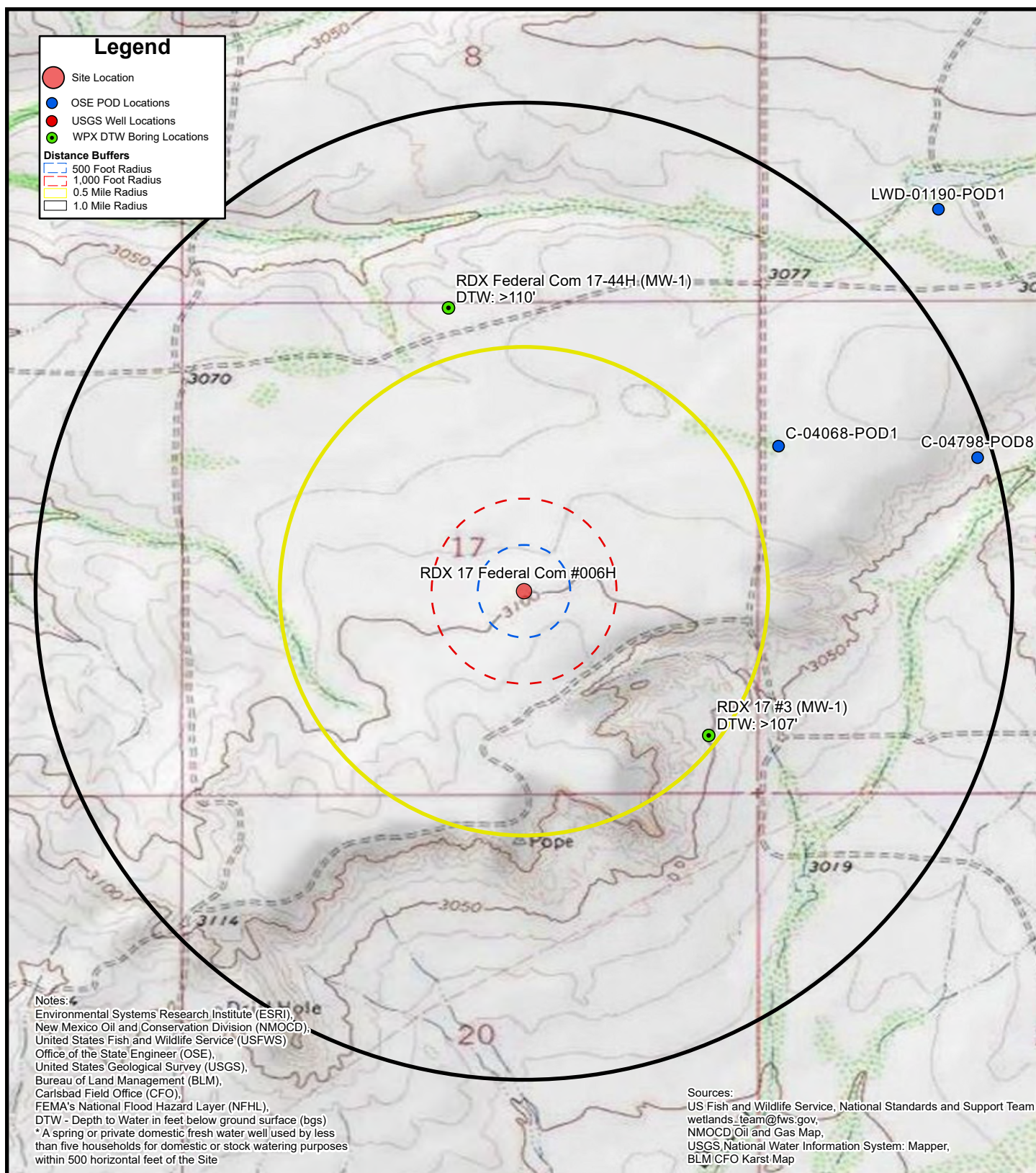
---

# APPENDIX A

## Figures

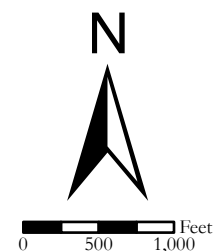






# FIGURE 1A Site Characterization Map Groundwater

WPX ENERGY PERMIAN, LLC  
RDX 17 Federal Com #006H  
Unit J Sec 17 T26S R30E  
Eddy County, New Mexico





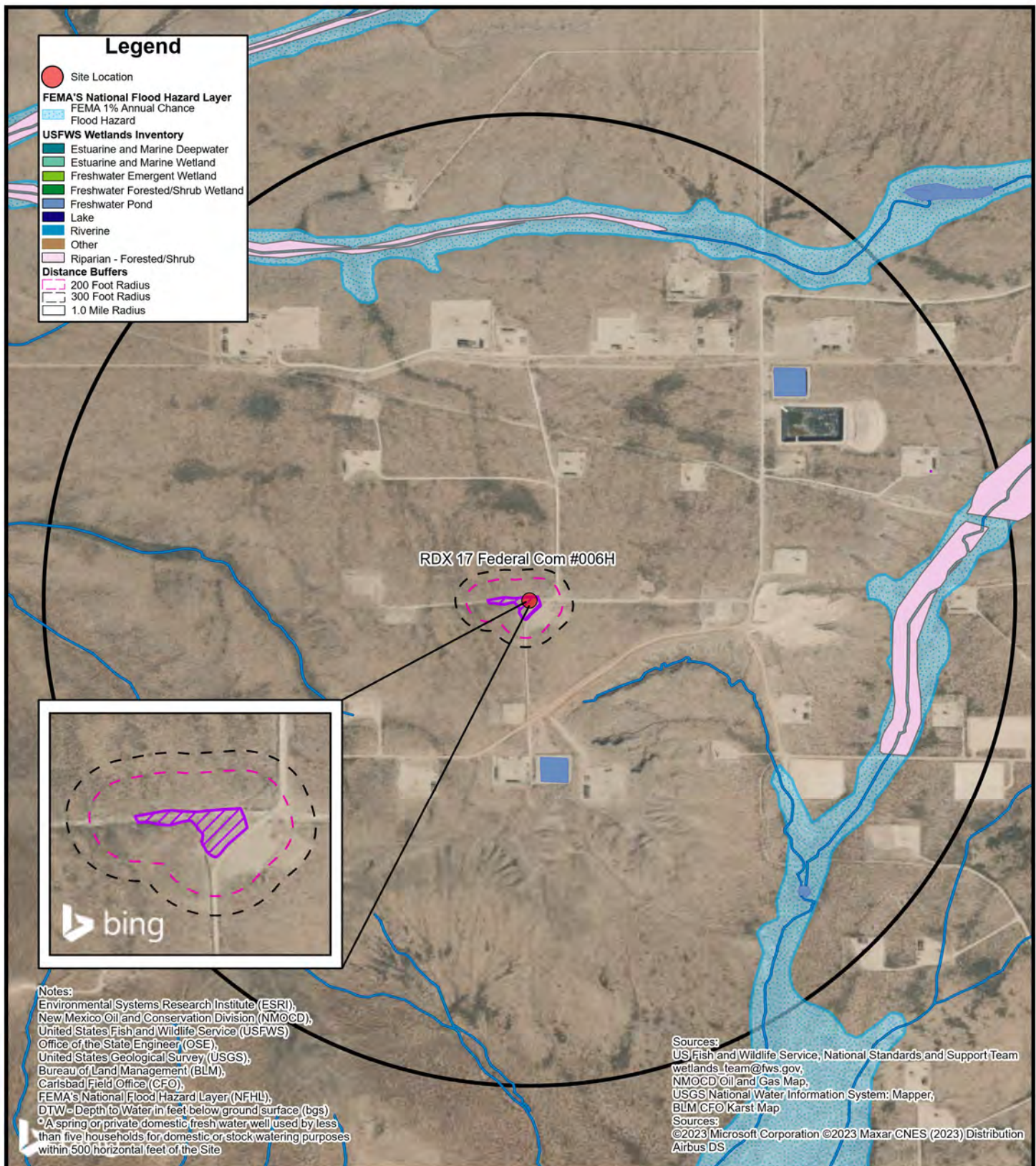


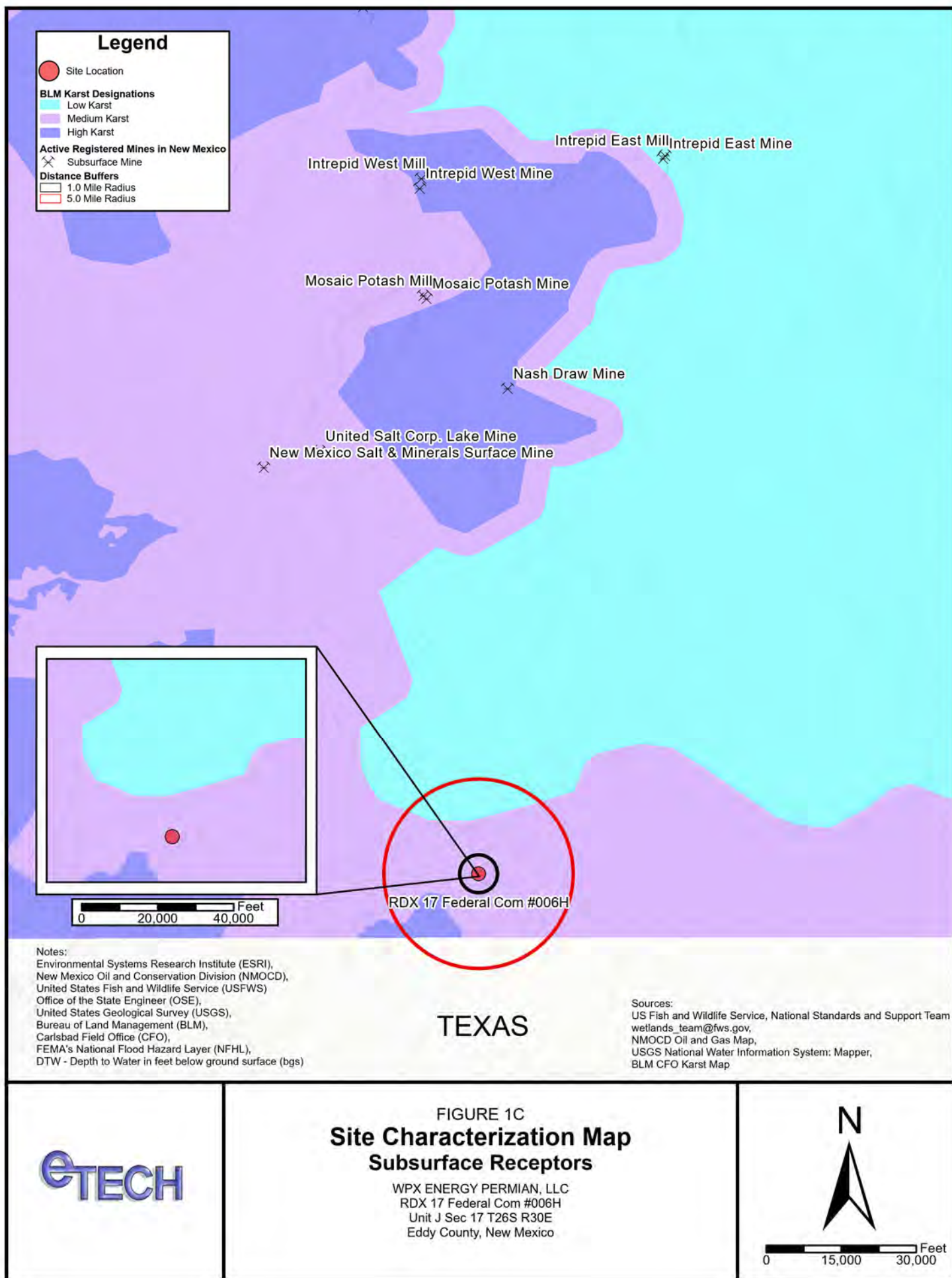
FIGURE 1B  
**Site Characterization Map  
 Surficial Receptors**

WPX ENERGY PERMIAN, LLC  
 RDX 17 Federal Com #006H  
 Unit J Sec 17 T26S R30E  
 Eddy County, New Mexico

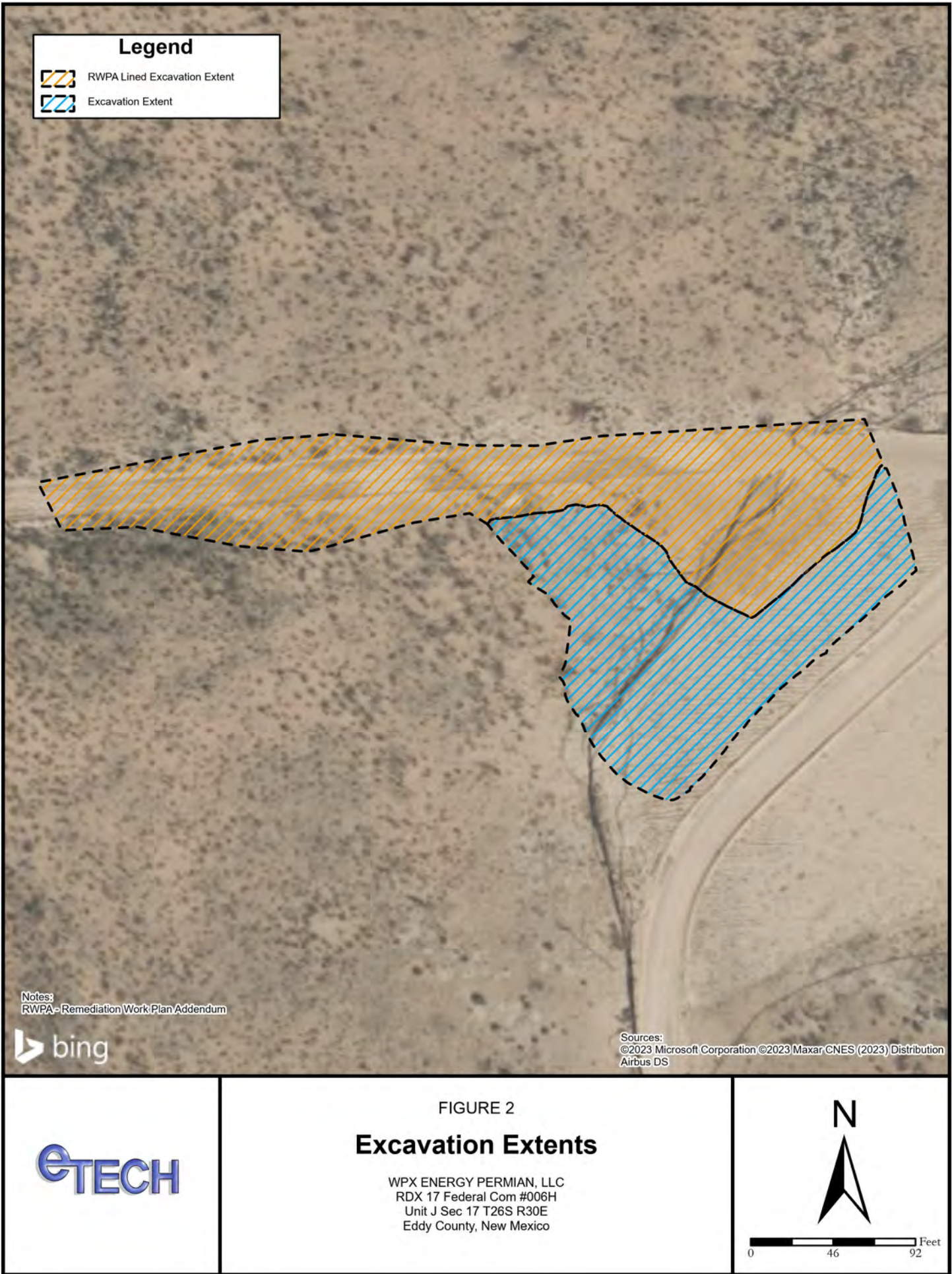
**eTECH**













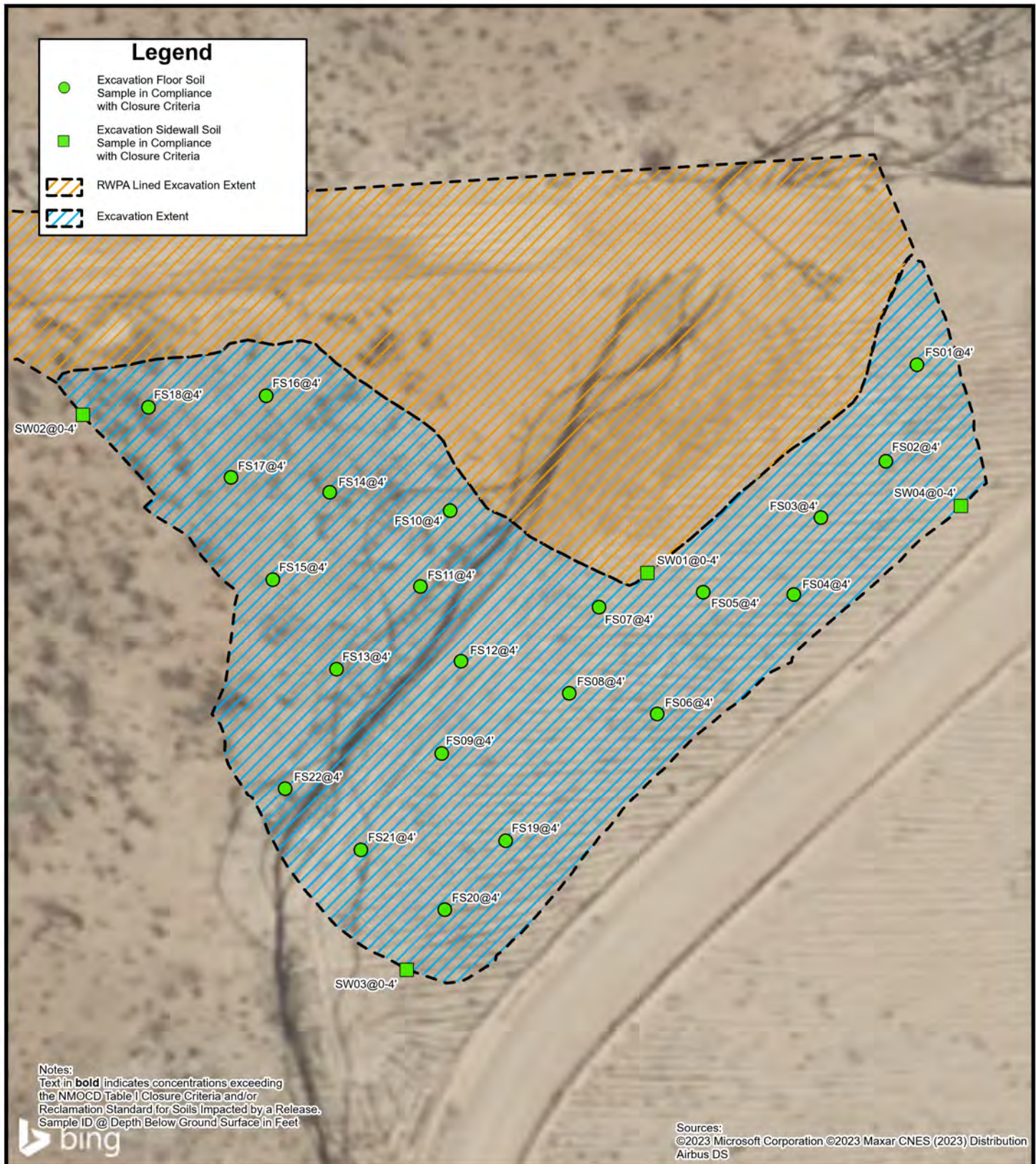


FIGURE 2A

**Excavation Soil Sample Locations**

WPX ENERGY PERMIAN, LLC  
RDX 17 Federal Com #006H  
Unit J Sec 17 T26S R30E  
Eddy County, New Mexico

N



0 23 46 Feet





---


## APPENDIX B

### Referenced Well Records

---

P.O. Box 62228 Midland • TX • 79711 • Tel: 432-563-2200 • Fax: 432-563-2213



 <b>HRL COMPLIANCE SOLUTIONS</b>							BORING LOG/MONITORING WELL COMPLETION DIAGRAM					
							Boring/Well Number:		Location:			
							MW-1		RDX 17 #3			
							Date:		Client:			
							12/8/2020		WPX Energy			
Drilling Method:			Sampling Method:				Logged By:		Drilled By:			
Air Rotary			None				J. Linn, PG		Talon LPE			
Gravel Pack Type:			Gravel Pack Depth Interval:				Seal Type:		Seal Depth Interval:		Latitude:	
10/20 Sand			3 Bags				None		None		32.036765	
Casing Type:		Diameter:	Depth Interval:				Boring Total Depth (ft. BGS):		Longitude:			
PVC		2-inch	0-102 feet bgs				107		-103.895993			
Screen Type:		Slot:	Diameter:	Depth Interval:				Well Total Depth (ft. BGS):		Depth to Water (ft. BTOC):		DTW Date:
PVC		0.010-inch	2-inch	102-107 ft				107		> 107		12/16/2020
Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	PID (ppm)	USCS	Sample ID	Lithology/Remarks		Well Completion	
0	NM	L	D	N	N	NM	SP	NS	Pale orange poorly graded fine sand			
5												
10												
15												
20												
25	NM	L	D	N	N	NM	SP	NS	Same as above with slight increase in coarse sand and gravel			
30												
35												
40												
45												
45	NM	L	D	N	N	NM	SP	NS	Pale orange poorly graded fine sand with very slight silt			
50												
55												
60												
65												
65	NM	M	SL M	N	N	NM	SM	NS	Pale red orange clayey silty fine sand with minor coarse sand and gravel			
70												
75												
80												
85												
90	NM	L	SL M	N	N	NM	SP	NS	Pale orange poorly sorted fine sand - TD 107' BGS			
95												
100												
105												
105												

---

# APPENDIX C

## Photographic Log

---

P.O. Box 62228 Midland • TX • 79711 • Tel: 432-563-2200 • Fax: 432-563-2213





**PHOTOGRAPHIC LOG**

WPX Energy Permian, LLC

RDX 17 Federal Com #006H

Incident Number nRM2019548894

Date & Time: Wed, Apr 03, 2024 at 13:53:40 MDT  
 Position: +032.041251° / -103.901482° (±11.6ft)  
 Altitude: 3123ft (±9.8ft)  
 Datum: WGS-84  
 Azimuth/Bearing: 217° S37W 3858mils True (±12°)  
 Elevation Angle: -12.3°  
 Horizon Angle: +01.1°  
 Zoom: 0.5X  
 RDX 17-6

**Photograph 1****Date: 04/03/2024**

Description: Southwestern view during excavation activities.

Date & Time: Wed, Apr 03, 2024 at 13:54:05 MDT  
 Position: +032.041264° / -103.901583° (±15.1ft)  
 Altitude: 3126ft (±11.6ft)  
 Datum: WGS-84  
 Azimuth/Bearing: 149° S31E 2649mils True (±12°)  
 Elevation Angle: -06.2°  
 Horizon Angle: -00.3°  
 Zoom: 0.5X  
 RDX 17-6

**Photograph 2****Date: 04/03/2024**

Description: Southeastern view during excavation activities.

Date & Time: Mon, Apr 08, 2024 at 15:45:55 MDT  
 Position: +032.041857° / -103.901711° (±11.8ft)  
 Altitude: 2897ft (±9.8ft)  
 Datum: WGS-84  
 Azimuth/Bearing: 199° S31E 2° 38mils True (±12°)  
 Elevation Angle: -00.5°  
 Horizon Angle: +01.2°  
 Zoom: 0.5X  
 RDX 17-6

**Photograph 3****Date: 04/08/2024**

Description: Southeastern view during excavation activities.

Date & Time: Mon, Apr 08, 2024 at 15:46:05 MDT  
 Position: +032.041860° / -103.902355° (±11.8ft)  
 Altitude: 2897ft (±9.8ft)  
 Datum: WGS-84  
 Azimuth/Bearing: 225° S32W 1892mils True (±12°)  
 Elevation Angle: -0.1°  
 Horizon Angle: +02.3°  
 Zoom: 0.5X  
 RDX 17-6

**Photograph 4****Date: 04/08/2024**

Description: Northwestern view during excavation activities.



## PHOTOGRAPHIC LOG

WPX Energy Permian, LLC

RDX 17 Federal Com #006H

Incident Number nRM2019548894

Date: 04/09/2024 at 13:29:06 MDT  
Position: +032.040668° / -103.902046° (±16.4ft)  
Altitude: 3107ft (±31.2ft)  
Datum: WGS-84  
Azimuth/Bearing: 042° N42E 0747mils True (±13°)  
Elevation Angle: -02.0°  
Horizon Angle: +01.6°  
Zoom: 0.5X  
Idx 17-6



**Photograph 5**

**Date: 04/09/2024**

Description: Northeastern view of excavation extent.

Date & Time: Mon, Apr 29, 2024 at 13:29:06 MDT  
Position: +032.040668° / -103.902046° (±16.4ft)  
Altitude: 3107ft (±31.2ft)  
Datum: WGS-84  
Azimuth/Bearing: 042° N42E 0747mils True (±13°)  
Elevation Angle: -02.0°  
Horizon Angle: +01.6°  
Zoom: 0.5X  
Idx 17-6



**Photograph 6**

**Date: 04/29/2024**

Description: Northeastern view of completed restoration.



**Photograph 7**

**Date: 04/29/2024**

Description: View of nutrient density results for SC01.



**Photograph 8**

**Date: 04/29/2024**

Description: View of nutrient density results for BG01.



---

# APPENDIX D

## Tables



**Table 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
**WPX Energy Permian, LLC**  
**RDX 17 Federal Com #006H**  
**Eddy County, New Mexico**

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	DRO+GRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria for Soils Impacted by a Release (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Excavation Soil Samples - Incident Number nRM2019548894										
FS01	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	2,280
FS02	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	1,430
FS03	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	1,750
FS04	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	1,930
FS05	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	1,390
FS06	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	2,800
FS07	04/09/2024	4	<0.0250	<0.0500	<20.0	29.8	<50.0	29.8	29.8	1,290
FS08	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	1,630
FS09	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	2,480
FS10	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	3,070
FS11	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	2,180
FS12	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	3,310
FS13	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	1,440
FS14	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	2,280
FS15	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	2,700
FS16	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	2,490
FS17	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	2,230
FS18	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	3,310
FS19	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	2,550
FS20	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	1,490
FS21	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	1,880
FS22	04/09/2024	4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	2,020
SW01 <sup>†</sup>	04/09/2024	0-4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	375
SW02 <sup>†</sup>	04/09/2024	0-4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	88.1
SW03 <sup>†</sup>	04/09/2024	0-4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	102
SW04 <sup>†</sup>	04/09/2024	0-4	<0.0250	<0.0500	<20.0	<25.0	<50.0	<25.0	<50.0	87.3

## Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

GRO: Gasoline Range Organics; ORO: Oil Range Organics

DRO: Diesel Range Organics; TPH: Total Petroleum Hydrocarbon

NMOCD: New Mexico Oil Conservation Division

NMAC: New Mexico Administrative Code

Text in "grey" represents excavated soil samples

Concentrations in bold exceed the NMOCD Table I Closure Criteria and/or Reclamation Standard† for Soils Impacted by a Release

†The reclamation concentration requirements of 600 mg/kg chloride and 100 mg/kg TPH apply to the top 4 feet of areas to be immediately reclaimed following remediation pursuant to NMAC 19.15.17.13.



**Table 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
**WPX Energy Permian, LLC**  
**RDX 17 Federal Com #006H**  
**Eddy County, New Mexico**

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Nitrogen	Potash	Phosphorous	PH (ppm)	Chloride (ppm)
Field Screening Soil Samples - Incident Number nRM2019548894							
SC01	04/29/2024	0.5	Very Low	High	Low	7.50	116
BG01	04/29/2024	0.5	Very Low	High	Very Low	7.50	<116

---

## APPENDIX E

### Laboratory Analytical Reports & Chain-of-Custody Documentation

Report to:

Gilbert Moreno



# envirotech

*Practical Solutions for a Better Tomorrow*

## Analytical Report

WPX Energy - Carlsbad

Project Name: RDX 17 Federal Com #006H

Work Order: E404085

Job Number: 01058-0007

Received: 4/11/2024

Revision: 2

Report Reviewed By:

Walter Hinchman  
Laboratory Director  
4/18/24

5796 U.S. Hwy 64  
Farmington, NM 87401

Phone: (505) 632-1881  
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.  
Statement of Data Authenticity: Envirotech Inc. attests the data reported has not been altered in any way.  
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.  
Envirotech Inc. holds the Utah TNI certification NM00979 for data reported.  
Envirotech Inc. holds the Texas TNI certification T104704557 for data reported.

Date Reported: 4/18/24



Gilbert Moreno  
5315 Buena Vista Dr  
Carlsbad, NM 88220

Project Name: RDX 17 Federal Com #006H  
Workorder: E404085  
Date Received: 4/11/2024 8:00:00AM

Gilbert Moreno,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 4/11/2024 8:00:00AM, under the Project Name: RDX 17 Federal Com #006H.

The analytical test results summarized in this report with the Project Name: RDX 17 Federal Com #006H apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

**Walter Hinchman**  
Laboratory Director  
Office: 505-632-1881  
Cell: 775-287-1762  
[whinchman@envirotech-inc.com](mailto:whinchman@envirotech-inc.com)

**Raina Schwanz**  
Laboratory Administrator  
Office: 505-632-1881  
[rainaschwanz@envirotech-inc.com](mailto:rainaschwanz@envirotech-inc.com)

**Alexa Michaels**  
Sample Custody Officer  
Office: 505-632-1881  
[labadmin@envirotech-inc.com](mailto:labadmin@envirotech-inc.com)

Field Offices:

**Southern New Mexico Area**

**Lynn Jarboe**  
Laboratory Technical Representative  
Office: 505-421-LABS(5227)  
Cell: 505-320-4759  
[ljjarboe@envirotech-inc.com](mailto:ljjarboe@envirotech-inc.com)

**Michelle Golzales**  
Client Representative  
Office: 505-421-LABS(5227)  
Cell: 505-947-8222  
[mgonzales@envirotech-inc.com](mailto:mgonzales@envirotech-inc.com)

Envirotech Web Address: [www.envirotech-inc.com](http://www.envirotech-inc.com)

## Table of Contents

Title Page	1
Cover Page	2
Table of Contents	3
Sample Summary	5
Sample Data	6
FS01 4'	6
FS02 4'	7
FS03 4'	8
FS04 4'	9
FS05 4'	10
FS06 4'	11
FS07 4'	12
FS08 4'	13
FS09 4'	14
FS10 4'	15
FS11 4'	16
FS12 4'	17
FS13 4'	18
FS14 4'	19
FS15 4'	20
FS16 4'	21
FS17 4'	22
FS18 4'	23
FS19 4'	24
FS20 4'	25



## Table of Contents (continued)

FS21 4'	26
FS22 4'	27
QC Summary Data	28
QC - Volatile Organic Compounds by EPA 8260B	28
QC - Volatile Organics by EPA 8021B	29
QC - Nonhalogenated Organics by EPA 8015D - GRO	30
QC - Nonhalogenated Organics by EPA 8015D - DRO/ORO	32
QC - Anions by EPA 300.0/9056A	34
Definitions and Notes	36
Chain of Custody etc.	37

## Sample Summary

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 04/18/24 12:38
--	---	-----------------------------

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
FS01 4'	E404085-01A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS02 4'	E404085-02A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS03 4'	E404085-03A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS04 4'	E404085-04A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS05 4'	E404085-05A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS06 4'	E404085-06A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS07 4'	E404085-07A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS08 4'	E404085-08A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS09 4'	E404085-09A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS10 4'	E404085-10A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS11 4'	E404085-11A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS12 4'	E404085-12A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS13 4'	E404085-13A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS14 4'	E404085-14A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS15 4'	E404085-15A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS16 4'	E404085-16A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS17 4'	E404085-17A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS18 4'	E404085-18A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS19 4'	E404085-19A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS20 4'	E404085-20A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS21 4'	E404085-21A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
FS22 4'	E404085-22A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.



## Sample Data

WPX Energy - Carlsbad  
5315 Buena Vista Dr  
Carlsbad NM, 88220

Project Name: RDX 17 Federal Com #006H  
Project Number: 01058-0007  
Project Manager: Gilbert Moreno

**Reported:**  
4/18/2024 12:38:26PM

FS01 4'

E404085-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/15/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/15/24	
Toluene	ND	0.0250	1	04/11/24	04/15/24	
o-Xylene	ND	0.0250	1	04/11/24	04/15/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/15/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		105 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		99.0 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		112 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		105 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		99.0 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		112 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/15/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/15/24	
Surrogate: n-Nonane		82.3 %	50-200	04/15/24	04/15/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	2280	200	10	04/11/24	04/12/24	



Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/18/2024 12:38:26PM
--	---	-----------------------------------

FS02 4'

E404085-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/15/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/15/24	
Toluene	ND	0.0250	1	04/11/24	04/15/24	
o-Xylene	ND	0.0250	1	04/11/24	04/15/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/15/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		104 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		99.7 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		98.1 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		104 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		99.7 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		98.1 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/15/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/15/24	
Surrogate: n-Nonane		83.8 %	50-200	04/15/24	04/15/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	1430	200	10	04/11/24	04/12/24	



Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/18/2024 12:38:26PM
--	---	-----------------------------------

FS03 4'  
E404085-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/15/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/15/24	
Toluene	ND	0.0250	1	04/11/24	04/15/24	
o-Xylene	ND	0.0250	1	04/11/24	04/15/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/15/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		106 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		102 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		97.8 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		106 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		102 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		97.8 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/15/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/15/24	
Surrogate: n-Nonane		83.9 %	50-200	04/15/24	04/15/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	1750	40.0	2	04/11/24	04/12/24	



## Sample Data

WPX Energy - Carlsbad  
5315 Buena Vista Dr  
Carlsbad NM, 88220

Project Name: RDX 17 Federal Com #006H  
Project Number: 01058-0007  
Project Manager: Gilbert Moreno

**Reported:**  
4/18/2024 12:38:26PM

FS04 4'

E404085-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/15/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/15/24	
Toluene	ND	0.0250	1	04/11/24	04/15/24	
o-Xylene	ND	0.0250	1	04/11/24	04/15/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/15/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		103 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		97.4 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		98.0 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		103 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		97.4 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		98.0 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/15/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/15/24	
Surrogate: n-Nonane		82.7 %	50-200	04/15/24	04/15/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	1930	20.0	1	04/11/24	04/12/24	



Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/18/2024 12:38:26PM
--	---	-----------------------------------

FS05 4'

E404085-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/15/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/15/24	
Toluene	ND	0.0250	1	04/11/24	04/15/24	
o-Xylene	ND	0.0250	1	04/11/24	04/15/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/15/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		102 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		103 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		96.9 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		102 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		103 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		96.9 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/15/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/15/24	
Surrogate: n-Nonane		82.5 %	50-200	04/15/24	04/15/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	1390	20.0	1	04/11/24	04/12/24	



Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/18/2024 12:38:26PM
--	---	-----------------------------------

FS06 4'

E404085-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/15/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/15/24	
Toluene	ND	0.0250	1	04/11/24	04/15/24	
o-Xylene	ND	0.0250	1	04/11/24	04/15/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/15/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		104 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		99.6 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		97.3 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		104 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		99.6 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		97.3 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/15/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/15/24	
Surrogate: n-Nonane		81.3 %	50-200	04/15/24	04/15/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	2800	40.0	2	04/11/24	04/12/24	





Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/18/2024 12:38:26PM
--	---	-----------------------------------

FS07 4'

E404085-07

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/15/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/15/24	
Toluene	ND	0.0250	1	04/11/24	04/15/24	
o-Xylene	ND	0.0250	1	04/11/24	04/15/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/15/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		105 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		97.7 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		98.0 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		105 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		97.7 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		98.0 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	29.8	25.0	1	04/15/24	04/15/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/15/24	
Surrogate: n-Nonane		81.4 %	50-200	04/15/24	04/15/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	1290	20.0	1	04/11/24	04/12/24	



Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/18/2024 12:38:26PM
--	---	-----------------------------------

FS08 4'  
E404085-08

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/15/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/15/24	
Toluene	ND	0.0250	1	04/11/24	04/15/24	
o-Xylene	ND	0.0250	1	04/11/24	04/15/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/15/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		102 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		97.9 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		98.7 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		102 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		97.9 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		98.7 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/16/24	
Surrogate: n-Nonane		80.8 %	50-200	04/15/24	04/16/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	1630	100	5	04/11/24	04/12/24	



## Sample Data

WPX Energy - Carlsbad  
5315 Buena Vista Dr  
Carlsbad NM, 88220

Project Name: RDX 17 Federal Com #006H  
Project Number: 01058-0007  
Project Manager: Gilbert Moreno

**Reported:**  
4/18/2024 12:38:26PM

FS09 4'

E404085-09

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/15/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/15/24	
Toluene	ND	0.0250	1	04/11/24	04/15/24	
o-Xylene	ND	0.0250	1	04/11/24	04/15/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/15/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		107 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		98.1 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		98.8 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		107 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		98.1 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		98.8 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/16/24	
Surrogate: n-Nonane		82.3 %	50-200	04/15/24	04/16/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	2480	40.0	2	04/11/24	04/12/24	



Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/18/2024 12:38:26PM
--	---	-----------------------------------

FS10 4'  
E404085-10

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/15/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/15/24	
Toluene	ND	0.0250	1	04/11/24	04/15/24	
o-Xylene	ND	0.0250	1	04/11/24	04/15/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/15/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		106 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		98.2 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		99.7 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		106 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		98.2 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		99.7 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/16/24	
Surrogate: n-Nonane		82.7 %	50-200	04/15/24	04/16/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	3070	200	10	04/11/24	04/12/24	





Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/18/2024 12:38:26PM
--	---	-----------------------------------

FS11 4'

E404085-11

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/15/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/15/24	
Toluene	ND	0.0250	1	04/11/24	04/15/24	
o-Xylene	ND	0.0250	1	04/11/24	04/15/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/15/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		104 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		96.8 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		97.7 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		104 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		96.8 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		97.7 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/16/24	
Surrogate: n-Nonane		80.9 %	50-200	04/15/24	04/16/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	2180	200	10	04/11/24	04/12/24	



Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/18/2024 12:38:26PM
--	---	-----------------------------------

FS12 4'

E404085-12

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/15/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/15/24	
Toluene	ND	0.0250	1	04/11/24	04/15/24	
o-Xylene	ND	0.0250	1	04/11/24	04/15/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/15/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		106 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		99.3 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		98.1 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		106 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		99.3 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		98.1 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/16/24	
Surrogate: n-Nonane		81.4 %	50-200	04/15/24	04/16/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	3310	200	10	04/11/24	04/12/24	



## Sample Data

WPX Energy - Carlsbad  
5315 Buena Vista Dr  
Carlsbad NM, 88220

Project Name: RDX 17 Federal Com #006H  
Project Number: 01058-0007  
Project Manager: Gilbert Moreno

**Reported:**  
4/18/2024 12:38:26PM

FS13 4'

E404085-13

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/15/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/15/24	
Toluene	ND	0.0250	1	04/11/24	04/15/24	
o-Xylene	ND	0.0250	1	04/11/24	04/15/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/15/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		111 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		101 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		101 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		111 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		101 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		101 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/16/24	
Surrogate: n-Nonane		81.3 %	50-200	04/15/24	04/16/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	1440	200	10	04/11/24	04/12/24	



Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/18/2024 12:38:26PM
--	---	-----------------------------------

FS14 4'  
E404085-14

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/15/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/15/24	
Toluene	ND	0.0250	1	04/11/24	04/15/24	
o-Xylene	ND	0.0250	1	04/11/24	04/15/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/15/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		106 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		93.3 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		99.1 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/15/24	
Surrogate: Bromofluorobenzene		106 %	70-130	04/11/24	04/15/24	
Surrogate: 1,2-Dichloroethane-d4		93.3 %	70-130	04/11/24	04/15/24	
Surrogate: Toluene-d8		99.1 %	70-130	04/11/24	04/15/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/16/24	
Surrogate: n-Nonane		85.5 %	50-200	04/15/24	04/16/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	2280	40.0	2	04/11/24	04/12/24	





Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/18/2024 12:38:26PM
--	---	-----------------------------------

FS15 4'  
E404085-15

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/16/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/16/24	
Toluene	ND	0.0250	1	04/11/24	04/16/24	
o-Xylene	ND	0.0250	1	04/11/24	04/16/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/16/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/16/24	
Surrogate: Bromofluorobenzene	94.8 %	70-130		04/11/24	04/16/24	
Surrogate: 1,2-Dichloroethane-d4	102 %	70-130		04/11/24	04/16/24	
Surrogate: Toluene-d8	101 %	70-130		04/11/24	04/16/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/16/24	
Surrogate: Bromofluorobenzene	94.8 %	70-130		04/11/24	04/16/24	
Surrogate: 1,2-Dichloroethane-d4	102 %	70-130		04/11/24	04/16/24	
Surrogate: Toluene-d8	101 %	70-130		04/11/24	04/16/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/16/24	
Surrogate: n-Nonane	84.6 %	50-200		04/15/24	04/16/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	2700	40.0	2	04/11/24	04/12/24	



Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/18/2024 12:38:26PM
--	---	-----------------------------------

FS16 4'  
E404085-16

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/16/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/16/24	
Toluene	ND	0.0250	1	04/11/24	04/16/24	
o-Xylene	ND	0.0250	1	04/11/24	04/16/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/16/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/16/24	
Surrogate: Bromofluorobenzene		104 %	70-130	04/11/24	04/16/24	
Surrogate: 1,2-Dichloroethane-d4		105 %	70-130	04/11/24	04/16/24	
Surrogate: Toluene-d8		101 %	70-130	04/11/24	04/16/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/16/24	
Surrogate: Bromofluorobenzene		104 %	70-130	04/11/24	04/16/24	
Surrogate: 1,2-Dichloroethane-d4		105 %	70-130	04/11/24	04/16/24	
Surrogate: Toluene-d8		101 %	70-130	04/11/24	04/16/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/16/24	
Surrogate: n-Nonane		84.8 %	50-200	04/15/24	04/16/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	2490	200	10	04/11/24	04/12/24	



Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/18/2024 12:38:26PM
--	---	-----------------------------------

FS17 4'

E404085-17

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/16/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/16/24	
Toluene	ND	0.0250	1	04/11/24	04/16/24	
o-Xylene	ND	0.0250	1	04/11/24	04/16/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/16/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/16/24	
Surrogate: Bromofluorobenzene		106 %	70-130	04/11/24	04/16/24	
Surrogate: 1,2-Dichloroethane-d4		98.9 %	70-130	04/11/24	04/16/24	
Surrogate: Toluene-d8		83.9 %	70-130	04/11/24	04/16/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/16/24	
Surrogate: Bromofluorobenzene		106 %	70-130	04/11/24	04/16/24	
Surrogate: 1,2-Dichloroethane-d4		98.9 %	70-130	04/11/24	04/16/24	
Surrogate: Toluene-d8		83.9 %	70-130	04/11/24	04/16/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/16/24	
Surrogate: n-Nonane		86.0 %	50-200	04/15/24	04/16/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	2230	200	10	04/11/24	04/12/24	



Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/18/2024 12:38:26PM
--	---	-----------------------------------

FS18 4'

E404085-18

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/16/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/16/24	
Toluene	ND	0.0250	1	04/11/24	04/16/24	
o-Xylene	ND	0.0250	1	04/11/24	04/16/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/16/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/16/24	
Surrogate: Bromofluorobenzene		105 %	70-130	04/11/24	04/16/24	
Surrogate: 1,2-Dichloroethane-d4		101 %	70-130	04/11/24	04/16/24	
Surrogate: Toluene-d8		97.9 %	70-130	04/11/24	04/16/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/16/24	
Surrogate: Bromofluorobenzene		105 %	70-130	04/11/24	04/16/24	
Surrogate: 1,2-Dichloroethane-d4		101 %	70-130	04/11/24	04/16/24	
Surrogate: Toluene-d8		97.9 %	70-130	04/11/24	04/16/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/16/24	
Surrogate: n-Nonane		84.4 %	50-200	04/15/24	04/16/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	3310	200	10	04/11/24	04/12/24	





## Sample Data

WPX Energy - Carlsbad  
5315 Buena Vista Dr  
Carlsbad NM, 88220

Project Name: RDX 17 Federal Com #006H  
Project Number: 01058-0007  
Project Manager: Gilbert Moreno

**Reported:**  
4/18/2024 12:38:26PM

FS19 4'

E404085-19

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/16/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/16/24	
Toluene	ND	0.0250	1	04/11/24	04/16/24	
o-Xylene	ND	0.0250	1	04/11/24	04/16/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/16/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/16/24	
Surrogate: Bromofluorobenzene		105 %	70-130	04/11/24	04/16/24	
Surrogate: 1,2-Dichloroethane-d4		98.5 %	70-130	04/11/24	04/16/24	
Surrogate: Toluene-d8		97.6 %	70-130	04/11/24	04/16/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/16/24	
Surrogate: Bromofluorobenzene		105 %	70-130	04/11/24	04/16/24	
Surrogate: 1,2-Dichloroethane-d4		98.5 %	70-130	04/11/24	04/16/24	
Surrogate: Toluene-d8		97.6 %	70-130	04/11/24	04/16/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/16/24	
Surrogate: n-Nonane		85.4 %	50-200	04/15/24	04/16/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	2550	40.0	2	04/11/24	04/12/24	



## Sample Data

WPX Energy - Carlsbad  
5315 Buena Vista Dr  
Carlsbad NM, 88220

Project Name: RDX 17 Federal Com #006H  
Project Number: 01058-0007  
Project Manager: Gilbert Moreno

**Reported:**  
4/18/2024 12:38:26PM

FS20 4'

E404085-20

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Benzene	ND	0.0250	1	04/11/24	04/16/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/16/24	
Toluene	ND	0.0250	1	04/11/24	04/16/24	
o-Xylene	ND	0.0250	1	04/11/24	04/16/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/16/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/16/24	
Surrogate: Bromofluorobenzene		105 %	70-130	04/11/24	04/16/24	
Surrogate: 1,2-Dichloroethane-d4		102 %	70-130	04/11/24	04/16/24	
Surrogate: Toluene-d8		97.1 %	70-130	04/11/24	04/16/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2415063
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/16/24	
Surrogate: Bromofluorobenzene		105 %	70-130	04/11/24	04/16/24	
Surrogate: 1,2-Dichloroethane-d4		102 %	70-130	04/11/24	04/16/24	
Surrogate: Toluene-d8		97.1 %	70-130	04/11/24	04/16/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416028
Diesel Range Organics (C10-C28)	ND	25.0	1	04/15/24	04/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/15/24	04/16/24	
Surrogate: n-Nonane		83.8 %	50-200	04/15/24	04/16/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415066
Chloride	1490	20.0	1	04/11/24	04/12/24	



Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/18/2024 12:38:26PM
--	---	-----------------------------------

FS21 4'

E404085-21

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organics by EPA 8021B</b>	mg/kg	mg/kg	Analyst: EG		Batch: 2415071	
Benzene	ND	0.0250	1	04/11/24	04/14/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/14/24	
Toluene	ND	0.0250	1	04/11/24	04/14/24	
o-Xylene	ND	0.0250	1	04/11/24	04/14/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/14/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/14/24	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
	94.1 %	70-130		04/11/24	04/14/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>	mg/kg	mg/kg	Analyst: EG		Batch: 2415071	
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/14/24	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
	91.6 %	70-130		04/11/24	04/14/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>	mg/kg	mg/kg	Analyst: KM		Batch: 2416044	
Diesel Range Organics (C10-C28)	ND	25.0	1	04/16/24	04/17/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/16/24	04/17/24	
<i>Surrogate: n-Nonane</i>						
	108 %	50-200		04/16/24	04/17/24	
<b>Anions by EPA 300.0/9056A</b>	mg/kg	mg/kg	Analyst: IY		Batch: 2415048	
Chloride	1880	200	10	04/11/24	04/13/24	



Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/18/2024 12:38:26PM
--	---	-----------------------------------

FS22 4'

E404085-22

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organics by EPA 8021B</b>	mg/kg	mg/kg	Analyst: EG		Batch: 2415071	
Benzene	ND	0.0250	1	04/11/24	04/14/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/14/24	
Toluene	ND	0.0250	1	04/11/24	04/14/24	
o-Xylene	ND	0.0250	1	04/11/24	04/14/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/14/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/14/24	
Surrogate: 4-Bromochlorobenzene-PID	94.7 %	70-130		04/11/24	04/14/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>	mg/kg	mg/kg	Analyst: EG		Batch: 2415071	
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/14/24	
Surrogate: 1-Chloro-4-fluorobenzene-FID	92.6 %	70-130		04/11/24	04/14/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>	mg/kg	mg/kg	Analyst: KM		Batch: 2416044	
Diesel Range Organics (C10-C28)	ND	25.0	1	04/16/24	04/17/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/16/24	04/17/24	
Surrogate: n-Nonane	107 %	50-200		04/16/24	04/17/24	
<b>Anions by EPA 300.0/9056A</b>	mg/kg	mg/kg	Analyst: IY		Batch: 2415048	
Chloride	2020	40.0	2	04/11/24	04/13/24	





WPX Energy - Carlsbad	Project Name:	RDX 17 Federal Com #006H	Reported:
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Gilbert Moreno	4/18/2024 12:38:26PM

Volatile Organic Compounds by EPA 8260B

Analyst: RKS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	

Blank (2415063-BLK1)Prepared: 04/11/24 Analyzed: 04/15/24

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: Bromofluorobenzene	0.677		0.500		135	70-130			S3
Surrogate: 1,2-Dichloroethane-d4	0.506		0.500		101	70-130			
Surrogate: Toluene-d8	0.469		0.500		93.7	70-130			

LCS (2415063-BS1)Prepared: 04/11/24 Analyzed: 04/15/24

Benzene	2.48	0.0250	2.50		99.4	70-130			
Ethylbenzene	2.41	0.0250	2.50		96.4	70-130			
Toluene	2.70	0.0250	2.50		108	70-130			
o-Xylene	2.06	0.0250	2.50		82.3	70-130			
p,m-Xylene	4.12	0.0500	5.00		82.5	70-130			
Total Xylenes	6.18	0.0250	7.50		82.4	70-130			
Surrogate: Bromofluorobenzene	0.451		0.500		90.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.509		0.500		102	70-130			
Surrogate: Toluene-d8	0.590		0.500		118	70-130			

Matrix Spike (2415063-MS1)Source: E404085-13Prepared: 04/11/24 Analyzed: 04/15/24

Benzene	2.61	0.0250	2.50	ND	104	48-131			
Ethylbenzene	2.52	0.0250	2.50	ND	101	45-135			
Toluene	2.44	0.0250	2.50	ND	97.6	48-130			
o-Xylene	2.58	0.0250	2.50	ND	103	43-135			
p,m-Xylene	5.53	0.0500	5.00	ND	111	43-135			
Total Xylenes	8.11	0.0250	7.50	ND	108	43-135			
Surrogate: Bromofluorobenzene	0.503		0.500		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.506		0.500		101	70-130			
Surrogate: Toluene-d8	0.499		0.500		99.7	70-130			

Matrix Spike Dup (2415063-MSD1)Source: E404085-13Prepared: 04/11/24 Analyzed: 04/15/24

Benzene	2.63	0.0250	2.50	ND	105	48-131	0.630	23	
Ethylbenzene	2.54	0.0250	2.50	ND	102	45-135	0.751	27	
Toluene	2.44	0.0250	2.50	ND	97.6	48-130	0.0205	24	
o-Xylene	2.83	0.0250	2.50	ND	113	43-135	9.14	27	
p,m-Xylene	5.62	0.0500	5.00	ND	112	43-135	1.57	27	
Total Xylenes	8.44	0.0250	7.50	ND	113	43-135	4.04	27	
Surrogate: Bromofluorobenzene	0.577		0.500		115	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.492		0.500		98.3	70-130			
Surrogate: Toluene-d8	0.506		0.500		101	70-130			



QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 17 Federal Com #006H	Reported:
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Gilbert Moreno	4/18/2024 12:38:26PM

Volatile Organics by EPA 8021B

Analyst: EG

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
---------	-----------------	-----------------------------	-------------------------	---------------------------	----------	--------------------	----------	-------------------	-------

Blank (2415071-BLK1) Prepared: 04/11/24 Analyzed: 04/13/24

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	7.44		8.00		93.1	70-130			

LCS (2415071-BS1) Prepared: 04/11/24 Analyzed: 04/13/24

Benzene	4.72	0.0250	5.00		94.4	70-130			
Ethylbenzene	4.70	0.0250	5.00		94.0	70-130			
Toluene	4.70	0.0250	5.00		94.0	70-130			
o-Xylene	4.67	0.0250	5.00		93.4	70-130			
p,m-Xylene	9.47	0.0500	10.0		94.7	70-130			
Total Xylenes	14.1	0.0250	15.0		94.3	70-130			
Surrogate: 4-Bromochlorobenzene-PID	7.65		8.00		95.6	70-130			

Matrix Spike (2415071-MS1) Source: E404100-06 Prepared: 04/11/24 Analyzed: 04/13/24

Benzene	5.14	0.0250	5.00	ND	103	54-133			
Ethylbenzene	5.11	0.0250	5.00	ND	102	61-133			
Toluene	5.12	0.0250	5.00	ND	102	61-130			
o-Xylene	5.06	0.0250	5.00	ND	101	63-131			
p,m-Xylene	10.3	0.0500	10.0	ND	103	63-131			
Total Xylenes	15.3	0.0250	15.0	ND	102	63-131			
Surrogate: 4-Bromochlorobenzene-PID	7.56		8.00		94.5	70-130			

Matrix Spike Dup (2415071-MSD1) Source: E404100-06 Prepared: 04/11/24 Analyzed: 04/13/24

Benzene	5.37	0.0250	5.00	ND	107	54-133	4.46	20	
Ethylbenzene	5.34	0.0250	5.00	ND	107	61-133	4.43	20	
Toluene	5.35	0.0250	5.00	ND	107	61-130	4.27	20	
o-Xylene	5.30	0.0250	5.00	ND	106	63-131	4.68	20	
p,m-Xylene	10.7	0.0500	10.0	ND	107	63-131	4.42	20	
Total Xylenes	16.0	0.0250	15.0	ND	107	63-131	4.50	20	
Surrogate: 4-Bromochlorobenzene-PID	7.55		8.00		94.3	70-130			



QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 17 Federal Com #006H	Reported:
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Gilbert Moreno	4/18/2024 12:38:26PM

Nonhalogenated Organics by EPA 8015D - GRO

Analyst: RKS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	

Blank (2415063-BLK1) Prepared: 04/11/24 Analyzed: 04/15/24

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: Bromofluorobenzene	0.677		0.500		135	70-130			S3
Surrogate: 1,2-Dichloroethane-d4	0.506		0.500		101	70-130			
Surrogate: Toluene-d8	0.469		0.500		93.7	70-130			

LCS (2415063-BS2) Prepared: 04/11/24 Analyzed: 04/15/24

Gasoline Range Organics (C6-C10)	52.9	20.0	50.0		106	70-130			
Surrogate: Bromofluorobenzene	0.536		0.500		107	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.508		0.500		102	70-130			
Surrogate: Toluene-d8	0.490		0.500		98.0	70-130			

Matrix Spike (2415063-MS2) Source: E404085-13 Prepared: 04/11/24 Analyzed: 04/15/24

Gasoline Range Organics (C6-C10)	48.6	20.0	50.0	ND	97.2	70-130			
Surrogate: Bromofluorobenzene	0.531		0.500		106	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.468		0.500		93.6	70-130			
Surrogate: Toluene-d8	0.579		0.500		116	70-130			

Matrix Spike Dup (2415063-MSD2) Source: E404085-13 Prepared: 04/11/24 Analyzed: 04/15/24

Gasoline Range Organics (C6-C10)	46.2	20.0	50.0	ND	92.5	70-130	5.02	20	
Surrogate: Bromofluorobenzene	0.459		0.500		91.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.506		0.500		101	70-130			
Surrogate: Toluene-d8	0.525		0.500		105	70-130			



QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 17 Federal Com #006H	Reported:
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Gilbert Moreno	4/18/2024 12:38:26PM

Nonhalogenated Organics by EPA 8015D - GRO

Analyst: EG

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
---------	-----------------	-----------------------------	-------------------------	---------------------------	----------	--------------------	----------	-------------------	-------

Blank (2415071-BLK1) Prepared: 04/11/24 Analyzed: 04/13/24

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.32		8.00		91.5	70-130			

LCS (2415071-BS2) Prepared: 04/11/24 Analyzed: 04/13/24

Gasoline Range Organics (C6-C10)	52.6	20.0	50.0		105	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.35		8.00		91.9	70-130			

Matrix Spike (2415071-MS2) Source: E404100-06 Prepared: 04/11/24 Analyzed: 04/13/24

Gasoline Range Organics (C6-C10)	53.8	20.0	50.0	ND	108	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.34		8.00		91.8	70-130			

Matrix Spike Dup (2415071-MSD2) Source: E404100-06 Prepared: 04/11/24 Analyzed: 04/13/24

Gasoline Range Organics (C6-C10)	50.5	20.0	50.0	ND	101	70-130	6.35	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.49		8.00		93.6	70-130			





QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 17 Federal Com #006H	Reported:
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Gilbert Moreno	4/18/2024 12:38:26PM

Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: NV

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
---------	-----------------	-----------------------------	-------------------------	---------------------------	----------	--------------------	----------	-------------------	-------

Blank (2416028-BLK1) Prepared: 04/15/24 Analyzed: 04/15/24

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	38.5		50.0		77.1	50-200			

LCS (2416028-BS1) Prepared: 04/15/24 Analyzed: 04/15/24

Diesel Range Organics (C10-C28)	227	25.0	250		90.9	38-132			
Surrogate: n-Nonane	40.1		50.0		80.2	50-200			

Matrix Spike (2416028-MS1) Source: E404085-06 Prepared: 04/15/24 Analyzed: 04/15/24

Diesel Range Organics (C10-C28)	221	25.0	250	ND	88.6	38-132			
Surrogate: n-Nonane	40.4		50.0		80.9	50-200			

Matrix Spike Dup (2416028-MSD1) Source: E404085-06 Prepared: 04/15/24 Analyzed: 04/15/24

Diesel Range Organics (C10-C28)	227	25.0	250	ND	90.9	38-132	2.65	20	
Surrogate: n-Nonane	41.5		50.0		82.9	50-200			



QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 17 Federal Com #006H	Reported:
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Gilbert Moreno	4/18/2024 12:38:26PM

Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: KM

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
---------	-----------------	-----------------------------	-------------------------	---------------------------	----------	--------------------	----------	-------------------	-------

Blank (2416044-BLK1)					Prepared: 04/16/24 Analyzed: 04/17/24				
Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	56.3		50.0		113	50-200			

LCS (2416044-BS1)					Prepared: 04/16/24 Analyzed: 04/17/24				
Diesel Range Organics (C10-C28)	321	25.0	250		128	38-132			
Surrogate: n-Nonane	59.9		50.0		120	50-200			

Matrix Spike (2416044-MS1)					Source: E404086-43		Prepared: 04/16/24 Analyzed: 04/17/24		
Diesel Range Organics (C10-C28)	328	25.0	250	ND	131	38-132			
Surrogate: n-Nonane	54.7		50.0		109	50-200			

Matrix Spike Dup (2416044-MSD1)					Source: E404086-43		Prepared: 04/16/24 Analyzed: 04/17/24		
Diesel Range Organics (C10-C28)	328	25.0	250	ND	131	38-132	0.221	20	
Surrogate: n-Nonane	56.5		50.0		113	50-200			



QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 17 Federal Com #006H	Reported:
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Gilbert Moreno	4/18/2024 12:38:26PM

Anions by EPA 300.0/9056A

Analyst: IY

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	

Blank (2415048-BLK1)					Prepared: 04/11/24 Analyzed: 04/12/24				
Chloride	ND	20.0							
LCS (2415048-BS1)					Prepared: 04/11/24 Analyzed: 04/12/24				
Chloride	250	20.0	250		100	90-110			
Matrix Spike (2415048-MS1)					Source: E404076-01		Prepared: 04/11/24 Analyzed: 04/12/24		
Chloride	18900	400	250	17600	524	80-120			M4
Matrix Spike Dup (2415048-MSD1)					Source: E404076-01		Prepared: 04/11/24 Analyzed: 04/12/24		
Chloride	18800	400	250	17600	468	80-120	0.750	20	M4



QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 17 Federal Com #006H	Reported:
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Gilbert Moreno	4/18/2024 12:38:26PM

Anions by EPA 300.0/9056A

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
---------	-----------------	-----------------------------	-------------------------	---------------------------	----------	--------------------	----------	-------------------	-------

Blank (2415066-BLK1)					Prepared: 04/11/24 Analyzed: 04/12/24				
Chloride	ND	20.0							
LCS (2415066-BS1)					Prepared: 04/11/24 Analyzed: 04/12/24				
Chloride	256	20.0	250		102	90-110			
Matrix Spike (2415066-MS1)					Source: E404085-03		Prepared: 04/11/24 Analyzed: 04/12/24		
Chloride	1910	40.0	250	1750	66.8	80-120			M4
Matrix Spike Dup (2415066-MSD1)					Source: E404085-03		Prepared: 04/11/24 Analyzed: 04/12/24		
Chloride	1980	40.0	250	1750	93.2	80-120	3.39	20	

QC Summary Report Comment:  
Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures.  
Therefore, hand calculated values may differ slightly.



Definitions and Notes

WPX Energy - Carlsbad	Project Name:	RDX 17 Federal Com #006H	
5315 Buena Vista Dr	Project Number:	01058-0007	Reported:
Carlsbad NM, 88220	Project Manager:	Gilbert Moreno	04/18/24 12:38

- M4 Matrix spike recovery value is suspect since the analyte concentration in the sample is disproportionate to the spike level. The associated LCS spike recovery was acceptable.
- S3 Surrogate spike recovery was outside acceptance limits. LCS spike recovery was acceptable.
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- RPD Relative Percent Difference
- DNI Did Not Ignite
- DNR Did not react with the addition of acid or base.

Note (1): Methods marked with \*\* are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.





## Project Information

## Chain of Custody

Page 1 of 3

Client: WPX Energy Permian, LLC.	Bill To	Lab Use Only	TAT	EPA Program				
Project: RDX 17 Federal Com #006H	Attention: Jim Raley	Lab WO#	1D 2D 3D	CWA SDWA				
Project Manager: Gilbert Moreno	Address: 5315 Buena Vista Dr.	Job Number	Standard					
Address: 13000 W County Rd 100	City, State, Zip: Carlsbad, NM, 88220	E 404085 01058-007	5 Days TAT					
City, State, Zip: Odessa, TX, 79765	Phone: 575-885-7502	Analysis and Method		RCRA				
Phone: 432-305-6414	Email: jim.raley@divn.com	Depth (ft.)	State					
Email: Devon-team@etechnv.com	WBS: EE-159309.01.ABD		TPH GRO/DRO/OHO by 8015	NM	CO	UT	AZ	TX
	Incident ID: nRM2019548894		BTEX by 8021					
			VOC by 8260					
		Metals 6010						
		Chloride 300.0						
		BGDOC NM						
		GDOC TX						

Collected by: Edyte Konan

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	Depth (ft.)	TPH GRO/DRO/OHO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	GDOC TX	Remarks
11:00	04.09.24	S	1	FS01	1	4'					X			Testing backfill for RDX 16-9
11:10	04.09.24	S	1	FS02	2	4'					X			
11:20	04.09.24	S	1	FS03	3	4'					X			
11:30	04.09.24	S	1	FS04	4	4'					X			
11:40	04.09.24	S	1	FS05	5	4'					X			
11:50	04.09.24	S	1	FS06	6	4'					X			
12:00	04.09.24	S	1	FS07	7	4'					X			
12:10	04.09.24	S	1	FS08	8	4'					X			
12:20	04.09.24	S	1	FS09	9	4'					X			
12:30	04.09.24	S	1	FS10	10	4'					X			

## Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Sampled by: EK

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Lab Use Only
<i>[Signature]</i>	04/10/24	10:00	Michelle Gonzales	4-10-24	1000	Received on ice: <input checked="" type="radio"/> N
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	T1 T2 T3
Michelle Gonzales	4-10-24	1610	Andrew McBo	4-10-24	1630	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	AVG Temp °C
Andrew McBo	4-10-24	2230	AR	4/11/24	0800	4

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



envirotech



## Project Information

## Chain of Custody

Page 2 of 3

Client: WPX Energy Permian, LLC.				Bill To		Lab Use Only				TAT				EPA Program	
Project: RDX 17 Federal Com #006H				Attention: Jim Raley		Lab WO# E 4040BS		Job Number 01050-0007		1D	2D	3D	Standard	CWA	SDWA
Project Manager: Gilbert Moreno				Address: 5315 Buena Vista Dr.									5 Days TAT		
Address: 13000 W County Rd 100				City, State, Zip: Carlsbad, NM, 88220											RCRA
City, State, Zip: Odessa, TX, 79765				Phone: 575-885-7502											
Phone: 432-305-6414				Email: jim.raley@dv.com											
Email: Devon-team@etechnv.com				WBS: EE-159309.01.ABD											
				Incident ID: nRM2019548894											
Collected by: Edyte Konan															
Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	Depth (ft.)	TPH GRO/DRO/ORO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	GDOD TX	Remarks	
12:40	04.09.24	S	1	FS11	11	4'					X			Testing backfill for RDX 16-9	
12:50	04.09.24	S	1	FS12	12	4'					X				
13:00	04.09.24	S	1	FS13	13	4'					X				
13:10	04.09.24	S	1	FS14	14	4'					X				
13:20	04.09.24	S	1	FS15	15	4'					X				
13:30	04.09.24	S	1	FS16	16	4'					X				
13:40	04.09.24	S	1	FS17	17	4'					X				
13:50	04.09.24	S	1	FS18	18	4'					X				
14:00	04.09.24	S	1	FS19	19	4'					X				
14:10	04.09.24	S	1	FS20	20	4'					X				
Additional Instructions:															
I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: EK															
Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.															
Relinquished by: (Signature)		Date	Time	Received by: (Signature)		Date	Time	Lab Use Only							
[Signature]		04/10/24	10:00	Michelle Gonzales		4-10-24	1000	Received on ice: <input checked="" type="radio"/> Y / <input type="radio"/> N							
Michelle Gonzales		4-10-24	1610	Andrew Weiss		4-10-24	1630	T1 _____ T2 _____ T3 _____							
Andrew Weiss		4-10-24	2230	[Signature]		4/11/24	0800	AVG Temp °C 4							
Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____															
Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA															
Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.															



envirotech



envirotech



## Project Information

## Chain of Custody

Page 1 of 3

Client: WPX Energy Permian, LLC.	<b>Bill To</b>	<b>Lab Use Only</b>		<b>TAT</b>				<b>EPA Program</b>									
Project: RDX 17 Federal Com #006H		Attention: Jim Raley	Lab WO#	Job Number	1D	2D	3D	Standard	CWA	SDWA							
Project Manager: Gilbert Moreno		Address: 5315 Buena Vista Dr.	E 404085	01058-001				5 Days TAT									
Address: 13000 W County Rd 100		City, State, Zip: Carlsbad, NM, 88220	Analysis and Method								RCRA						
City, State, Zip: Odessa, TX, 79765		Phone: 575-885-7502	Depth (ft.)	TPH GRO/DRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	GDOC TX	State						
Phone: 432-305-6414		Email: jim.raley@dv.com									NM	CO	UT	AZ	TX		
mail: Devon-team@etechnv.com		WBS: EE-159309.01.ABD															
	Incident ID: nRM2019548894																
Collected by: Edyte Konan																	

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	Depth (ft.)	TPH GRO/DRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	GDOC TX	Remarks
11:00	04.09.24	S	1	FS01	1	4'					X	X		Testing backfill for RDX 16-9
11:10	04.09.24	S	1	FS02	2	4'					X	X		
11:20	04.09.24	S	1	FS03	3	4'					X	X		
11:30	04.09.24	S	1	FS04	4	4'					X 4 1/2	X		
11:40	04.09.24	S	1	FS05	5	4'					X	X		
11:50	04.09.24	S	1	FS06	6	4'					X	X		
12:00	04.09.24	S	1	FS07	7	4'					X	X		
12:10	04.09.24	S	1	FS08	8	4'					X	X		
12:20	04.09.24	S	1	FS09	9	4'					X	X		
12:30	04.09.24	S	1	FS10	10	4'					X	X		

## Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Sampled by: EK

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Lab Use Only Received on ice: <input checked="" type="radio"/> Y <input type="radio"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C 4
Michelle Gonzales	4-10-24	1030	Michelle Gonzales	4-10-24	1000	
Michelle Gonzales	4-10-24	1610	Andrew MBS	4-10-24	1630	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	
Andrew MBS	4-10-24	2230	Andrew MBS	4-11-24	0800	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



envirotech



Project Information

Chain of Custody

Client: WPX Energy Permian, LLC.					Bill To		Lab Use Only						TAT				EPA Program			
Project: RDX 17 Federal Com #006H					Attention: Jim Raley		Lab WO#		Job Number				1D	2D	3D	Standard	CWA	SDWA		
Project Manager: Gilbert Moreno					Address: 5315 Buena Vista Dr.		E 4040BS		01050-0007							5 Days TAT				
Address: 13000 W County Rd 100					City, State, Zip: Carlsbad, NM, 88220		Analysis and Method													RCRA
City, State, Zip: Odessa, TX, 79765					Phone: 575-885-7502		Depth (ft.)	TPH GRO/DRO/ORO by 8015	BTX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	GDOC TX	State					
Phone: 432-305-6414					Email: jim.raley@dvn.com										NM	CO	UT	AZ	TX	
mail: Devon-team@etechnv.com					WBS: EE-159309.01.ABD															
					Incident ID: nRM2019548894															
Collected by: Edyte Konan																				
Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number											Remarks				
12:40	04.09.24	S	1	FS11	11	4'							X			Testing backfill for RDX 16-9 AP 4/11				
12:50	04.09.24	S	1	FS12	12	4'							X							
13:00	04.09.24	S	1	FS13	13	4'							X							
13:10	04.09.24	S	1	FS14	14	4'							X							
13:20	04.09.24	S	1	FS15	15	4'							X							
13:30	04.09.24	S	1	FS16	16	4'							X							
13:40	04.09.24	S	1	FS17	17	4'							X							
13:50	04.09.24	S	1	FS18	18	4'							X							
14:00	04.09.24	S	1	FS19	19	4'							X							
14:10	04.09.24	S	1	FS20	20	4'							X							
Additional Instructions:																				
I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action.												Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.								
Sampled by: EK																				
Relinquished by: (Signature)		Date	Time	Received by: (Signature)		Date	Time	Lab Use Only												
[Signature]		04/10/24	10:00	Michelle Gonzales		4-10-24	1000	Received on ice: (Y) / N												
Relinquished by: (Signature)		Date	Time	Received by: (Signature)		Date	Time	T1 T2 T3												
Michelle Gonzales		4-10-24	1610	Andrew Weiss		4-10-24	1630													
Relinquished by: (Signature)		Date	Time	Received by: (Signature)		Date	Time	AVG Temp °C												
Andrew Weiss		4-10-24	2230	[Signature]		4/11/24	0800	4												
Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other												Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA								
Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.																				



envirotech



## Envirotech Analytical Laboratory

Printed: 4/15/2024 12:21:50PM

## Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client:	WPX Energy - Carlsbad	Date Received:	04/11/24 08:00	Work Order ID:	E404085
Phone:	(539) 573-4018	Date Logged In:	04/10/24 16:02	Logged In By:	Jessica Liesse
Email:	devon-team@etechenv.com	Due Date:	04/17/24 17:00 (4 day TAT)		

Chain of Custody (COC)

1. Does the sample ID match the COC? Yes
2. Does the number of samples per sampling site location match the COC? Yes
3. Were samples dropped off by client or carrier? Yes
4. Was the COC complete, i.e., signatures, dates/times, requested analyses? Yes
5. Were all samples received within holding time? Yes

Note: Analysis, such as pH which should be conducted in the field, i.e., 15 minute hold time, are not included in this discussion.

Carrier: CourierComments/ResolutionSample Turn Around Time (TAT)

6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

7. Was a sample cooler received? Yes
8. If yes, was cooler received in good condition? Yes
9. Was the sample(s) received intact, i.e., not broken? Yes
10. Were custody/security seals present? No
11. If yes, were custody/security seals intact? NA
12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C? Yes

Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling

13. If no visible ice, record the temperature. Actual sample temperature: 4°C

Sample Container

14. Are aqueous VOC samples present? No
15. Are VOC samples collected in VOA Vials? NA
16. Is the head space less than 6-8 mm (pea sized or less)? NA
17. Was a trip blank (TB) included for VOC analyses? NA
18. Are non-VOC samples collected in the correct containers? Yes
19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

20. Were field sample labels filled out with the minimum information:  
Sample ID? Yes  
Date/Time Collected? Yes  
Collectors name? Yes

Sample Preservation

21. Does the COC or field labels indicate the samples were preserved? No
22. Are sample(s) correctly preserved? NA
24. Is lab filtration required and/or requested for dissolved metals? No

Multiphase Sample Matrix

26. Does the sample have more than one phase, i.e., multiphase? No
27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

28. Are samples required to get sent to a subcontract laboratory? No
29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: NA

Client Instruction

Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

Report to:  
Gilbert Moreno



# envirotech

*Practical Solutions for a Better Tomorrow*

## Analytical Report

WPX Energy - Carlsbad

Project Name: RDX 17 Federal Com #006H

Work Order: E404087

Job Number: 01058-0007

Received: 4/11/2024

Revision: 2

Report Reviewed By:

Walter Hinchman  
Laboratory Director  
4/17/24

5796 U.S. Hwy 64  
Farmington, NM 87401

Phone: (505) 632-1881  
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.  
Statement of Data Authenticity: Envirotech Inc. attests the data reported has not been altered in any way.  
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.  
Envirotech Inc. holds the Utah TNI certification NM00979 for data reported.  
Envirotech Inc. holds the Texas TNI certification T104704557 for data reported.

Date Reported: 4/17/24

Gilbert Moreno  
5315 Buena Vista Dr  
Carlsbad, NM 88220



Project Name: RDX 17 Federal Com #006H  
Workorder: E404087  
Date Received: 4/11/2024 8:00:00AM

Gilbert Moreno,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 4/11/2024 8:00:00AM, under the Project Name: RDX 17 Federal Com #006H.

The analytical test results summarized in this report with the Project Name: RDX 17 Federal Com #006H apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

**Walter Hinchman**  
Laboratory Director  
Office: 505-632-1881  
Cell: 775-287-1762  
[whinchman@envirotech-inc.com](mailto:whinchman@envirotech-inc.com)

**Raina Schwanz**  
Laboratory Administrator  
Office: 505-632-1881  
[rainaschwanz@envirotech-inc.com](mailto:rainaschwanz@envirotech-inc.com)

**Alexa Michaels**  
Sample Custody Officer  
Office: 505-632-1881  
[labadmin@envirotech-inc.com](mailto:labadmin@envirotech-inc.com)

Field Offices:

**Southern New Mexico Area**

**Lynn Jarboe**  
Laboratory Technical Representative  
Office: 505-421-LABS(5227)  
Cell: 505-320-4759  
[ljjarboe@envirotech-inc.com](mailto:ljjarboe@envirotech-inc.com)

**Michelle Golzaes**  
Client Representative  
Office: 505-421-LABS(5227)  
Cell: 505-947-8222  
[mgonzales@envirotech-inc.com](mailto:mgonzales@envirotech-inc.com)

Envirotech Web Address: [www.envirotech-inc.com](http://www.envirotech-inc.com)

## Table of Contents

Title Page	1
Cover Page	2
Table of Contents	3
Sample Summary	4
Sample Data	5
SW01 0-4'	5
SW02 0-4'	6
SW03 0-4'	7
SW04 0-4'	8
QC Summary Data	9
QC - Volatile Organic Compounds by EPA 8260B	9
QC - Nonhalogenated Organics by EPA 8015D - GRO	10
QC - Nonhalogenated Organics by EPA 8015D - DRO/ORO	11
QC - Anions by EPA 300.0/9056A	12
Definitions and Notes	13
Chain of Custody etc.	14



Sample Summary

WPX Energy - Carlsbad	Project Name:	RDX 17 Federal Com #006H	Reported:
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Gilbert Moreno	04/17/24 13:41

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
SW01 0-4'	E404087-01A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
SW02 0-4'	E404087-02A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
SW03 0-4'	E404087-03A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.
SW04 0-4'	E404087-04A	Soil	04/09/24	04/11/24	Glass Jar, 2 oz.



Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/17/2024 1:41:47PM
--	---	----------------------------------

SW01 0-4'  
E404087-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>		mg/kg	mg/kg	Analyst: RAS		Batch: 2415068
Benzene	ND	0.0250	1	04/11/24	04/12/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/12/24	
Toluene	ND	0.0250	1	04/11/24	04/12/24	
o-Xylene	ND	0.0250	1	04/11/24	04/12/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/12/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/12/24	
Surrogate: Bromofluorobenzene	88.8 %	70-130		04/11/24	04/12/24	
Surrogate: 1,2-Dichloroethane-d4	108 %	70-130		04/11/24	04/12/24	
Surrogate: Toluene-d8	99.0 %	70-130		04/11/24	04/12/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>		mg/kg	mg/kg	Analyst: RAS		Batch: 2415068
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/12/24	
Surrogate: Bromofluorobenzene	88.8 %	70-130		04/11/24	04/12/24	
Surrogate: 1,2-Dichloroethane-d4	108 %	70-130		04/11/24	04/12/24	
Surrogate: Toluene-d8	99.0 %	70-130		04/11/24	04/12/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>		mg/kg	mg/kg	Analyst: NV		Batch: 2416043
Diesel Range Organics (C10-C28)	ND	25.0	1	04/16/24	04/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/16/24	04/16/24	
Surrogate: n-Nonane	77.5 %	50-200		04/16/24	04/16/24	
<b>Anions by EPA 300.0/9056A</b>		mg/kg	mg/kg	Analyst: IY		Batch: 2415048
Chloride	375	20.0	1	04/11/24	04/13/24	



Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/17/2024 1:41:47PM
--	---	----------------------------------

SW02 0-4'  
E404087-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2415068
Benzene	ND	0.0250	1	04/11/24	04/12/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/12/24	
Toluene	ND	0.0250	1	04/11/24	04/12/24	
o-Xylene	ND	0.0250	1	04/11/24	04/12/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/12/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/12/24	
Surrogate: Bromofluorobenzene	89.8 %	70-130		04/11/24	04/12/24	
Surrogate: 1,2-Dichloroethane-d4	97.0 %	70-130		04/11/24	04/12/24	
Surrogate: Toluene-d8	98.7 %	70-130		04/11/24	04/12/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2415068
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/12/24	
Surrogate: Bromofluorobenzene	89.8 %	70-130		04/11/24	04/12/24	
Surrogate: 1,2-Dichloroethane-d4	97.0 %	70-130		04/11/24	04/12/24	
Surrogate: Toluene-d8	98.7 %	70-130		04/11/24	04/12/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416043
Diesel Range Organics (C10-C28)	ND	25.0	1	04/16/24	04/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/16/24	04/16/24	
Surrogate: n-Nonane	71.7 %	50-200		04/16/24	04/16/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415048
Chloride	88.1	20.0	1	04/11/24	04/13/24	



Sample Data

WPX Energy - Carlsbad 5315 Buena Vista Dr Carlsbad NM, 88220	Project Name: RDX 17 Federal Com #006H Project Number: 01058-0007 Project Manager: Gilbert Moreno	Reported: 4/17/2024 1:41:47PM
--	---	----------------------------------

SW03 0-4'  
E404087-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2415068
Benzene	ND	0.0250	1	04/11/24	04/12/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/12/24	
Toluene	ND	0.0250	1	04/11/24	04/12/24	
o-Xylene	ND	0.0250	1	04/11/24	04/12/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/12/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/12/24	
Surrogate: Bromofluorobenzene	87.8 %	70-130		04/11/24	04/12/24	
Surrogate: 1,2-Dichloroethane-d4	106 %	70-130		04/11/24	04/12/24	
Surrogate: Toluene-d8	97.3 %	70-130		04/11/24	04/12/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2415068
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/12/24	
Surrogate: Bromofluorobenzene	87.8 %	70-130		04/11/24	04/12/24	
Surrogate: 1,2-Dichloroethane-d4	106 %	70-130		04/11/24	04/12/24	
Surrogate: Toluene-d8	97.3 %	70-130		04/11/24	04/12/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416043
Diesel Range Organics (C10-C28)	ND	25.0	1	04/16/24	04/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/16/24	04/16/24	
Surrogate: n-Nonane	73.3 %	50-200		04/16/24	04/16/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415048
Chloride	102	20.0	1	04/11/24	04/13/24	



## Sample Data

WPX Energy - Carlsbad  
5315 Buena Vista Dr  
Carlsbad NM, 88220

Project Name: RDX 17 Federal Com #006H  
Project Number: 01058-0007  
Project Manager: Gilbert Moreno

**Reported:**  
4/17/2024 1:41:47PM

SW04 0-4'

E404087-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
<b>Volatile Organic Compounds by EPA 8260B</b>						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2415068
Benzene	ND	0.0250	1	04/11/24	04/12/24	
Ethylbenzene	ND	0.0250	1	04/11/24	04/12/24	
Toluene	ND	0.0250	1	04/11/24	04/12/24	
o-Xylene	ND	0.0250	1	04/11/24	04/12/24	
p,m-Xylene	ND	0.0500	1	04/11/24	04/12/24	
Total Xylenes	ND	0.0250	1	04/11/24	04/12/24	
Surrogate: Bromofluorobenzene	87.3 %	70-130		04/11/24	04/12/24	
Surrogate: 1,2-Dichloroethane-d4	105 %	70-130		04/11/24	04/12/24	
Surrogate: Toluene-d8	93.9 %	70-130		04/11/24	04/12/24	
<b>Nonhalogenated Organics by EPA 8015D - GRO</b>						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2415068
Gasoline Range Organics (C6-C10)	ND	20.0	1	04/11/24	04/12/24	
Surrogate: Bromofluorobenzene	87.3 %	70-130		04/11/24	04/12/24	
Surrogate: 1,2-Dichloroethane-d4	105 %	70-130		04/11/24	04/12/24	
Surrogate: Toluene-d8	93.9 %	70-130		04/11/24	04/12/24	
<b>Nonhalogenated Organics by EPA 8015D - DRO/ORO</b>						
	mg/kg	mg/kg		Analyst: NV		Batch: 2416043
Diesel Range Organics (C10-C28)	ND	25.0	1	04/16/24	04/16/24	
Oil Range Organics (C28-C36)	ND	50.0	1	04/16/24	04/16/24	
Surrogate: n-Nonane	79.5 %	50-200		04/16/24	04/16/24	
<b>Anions by EPA 300.0/9056A</b>						
	mg/kg	mg/kg		Analyst: IY		Batch: 2415048
Chloride	87.3	20.0	1	04/11/24	04/13/24	





WPX Energy - Carlsbad	Project Name:	RDX 17 Federal Com #006H	Reported:
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Gilbert Moreno	4/17/2024 1:41:47PM

Volatile Organic Compounds by EPA 8260B

Analyst: RAS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	

Blank (2415068-BLK1)

Prepared: 04/11/24 Analyzed: 04/12/24

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: Bromofluorobenzene	0.407		0.500		81.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.511		0.500		102	70-130			
Surrogate: Toluene-d8	0.532		0.500		106	70-130			

LCS (2415068-BS1)

Prepared: 04/11/24 Analyzed: 04/13/24

Benzene	2.40	0.0250	2.50		96.2	70-130			
Ethylbenzene	2.23	0.0250	2.50		89.1	70-130			
Toluene	2.32	0.0250	2.50		92.6	70-130			
o-Xylene	2.23	0.0250	2.50		89.3	70-130			
p,m-Xylene	4.48	0.0500	5.00		89.6	70-130			
Total Xylenes	6.71	0.0250	7.50		89.5	70-130			
Surrogate: Bromofluorobenzene	0.477		0.500		95.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.541		0.500		108	70-130			
Surrogate: Toluene-d8	0.482		0.500		96.4	70-130			

Matrix Spike (2415068-MS1)

Source: E404087-03 Prepared: 04/11/24 Analyzed: 04/13/24

Benzene	2.47	0.0250	2.50	ND	98.8	48-131			
Ethylbenzene	2.29	0.0250	2.50	ND	91.6	45-135			
Toluene	2.46	0.0250	2.50	ND	98.2	48-130			
o-Xylene	2.45	0.0250	2.50	ND	98.2	43-135			
p,m-Xylene	4.93	0.0500	5.00	ND	98.6	43-135			
Total Xylenes	7.38	0.0250	7.50	ND	98.5	43-135			
Surrogate: Bromofluorobenzene	0.481		0.500		96.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.541		0.500		108	70-130			
Surrogate: Toluene-d8	0.501		0.500		100	70-130			

Matrix Spike Dup (2415068-MSD1)

Source: E404087-03 Prepared: 04/11/24 Analyzed: 04/13/24

Benzene	2.41	0.0250	2.50	ND	96.6	48-131	2.29	23	
Ethylbenzene	2.28	0.0250	2.50	ND	91.0	45-135	0.701	27	
Toluene	2.38	0.0250	2.50	ND	95.0	48-130	3.33	24	
o-Xylene	2.45	0.0250	2.50	ND	97.9	43-135	0.326	27	
p,m-Xylene	4.89	0.0500	5.00	ND	97.9	43-135	0.713	27	
Total Xylenes	7.34	0.0250	7.50	ND	97.9	43-135	0.584	27	
Surrogate: Bromofluorobenzene	0.505		0.500		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.542		0.500		108	70-130			
Surrogate: Toluene-d8	0.483		0.500		96.6	70-130			



QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 17 Federal Com #006H	Reported:
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Gilbert Moreno	4/17/2024 1:41:47PM

Nonhalogenated Organics by EPA 8015D - GRO

Analyst: RAS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
---------	-----------------	-----------------------------	-------------------------	---------------------------	----------	--------------------	----------	-------------------	-------

Blank (2415068-BLK1) Prepared: 04/11/24 Analyzed: 04/12/24

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: Bromofluorobenzene	0.407		0.500		81.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.511		0.500		102	70-130			
Surrogate: Toluene-d8	0.532		0.500		106	70-130			

LCS (2415068-BS2) Prepared: 04/11/24 Analyzed: 04/13/24

Gasoline Range Organics (C6-C10)	56.7	20.0	50.0		113	70-130			
Surrogate: Bromofluorobenzene	0.457		0.500		91.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.509		0.500		102	70-130			
Surrogate: Toluene-d8	0.552		0.500		110	70-130			

Matrix Spike (2415068-MS2) Source: E404087-03 Prepared: 04/11/24 Analyzed: 04/13/24

Gasoline Range Organics (C6-C10)	60.3	20.0	50.0	ND	121	70-130			
Surrogate: Bromofluorobenzene	0.476		0.500		95.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.480		0.500		95.9	70-130			
Surrogate: Toluene-d8	0.511		0.500		102	70-130			

Matrix Spike Dup (2415068-MSD2) Source: E404087-03 Prepared: 04/11/24 Analyzed: 04/13/24

Gasoline Range Organics (C6-C10)	59.6	20.0	50.0	ND	119	70-130	1.22	20	
Surrogate: Bromofluorobenzene	0.467		0.500		93.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.502		0.500		100	70-130			
Surrogate: Toluene-d8	0.534		0.500		107	70-130			



QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 17 Federal Com #006H	Reported:
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Gilbert Moreno	4/17/2024 1:41:47PM

Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: NV

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
---------	-----------------	-----------------------------	-------------------------	---------------------------	----------	--------------------	----------	-------------------	-------

Blank (2416043-BLK1)					Prepared: 04/16/24 Analyzed: 04/16/24				
Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	41.3		50.0		82.7	50-200			

LCS (2416043-BS1)					Prepared: 04/16/24 Analyzed: 04/16/24				
Diesel Range Organics (C10-C28)	254	25.0	250		102	38-132			
Surrogate: n-Nonane	44.1		50.0		88.1	50-200			

LCS Dup (2416043-BSD1)					Prepared: 04/16/24 Analyzed: 04/16/24				
Diesel Range Organics (C10-C28)	240	25.0	250		96.0	38-132	5.71	20	
Surrogate: n-Nonane	42.1		50.0		84.3	50-200			



QC Summary Data

WPX Energy - Carlsbad	Project Name:	RDX 17 Federal Com #006H	Reported:
5315 Buena Vista Dr	Project Number:	01058-0007	
Carlsbad NM, 88220	Project Manager:	Gilbert Moreno	4/17/2024 1:41:47PM

Anions by EPA 300.0/9056A

Analyst: IY

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	

Blank (2415048-BLK1)					Prepared: 04/11/24 Analyzed: 04/12/24				
Chloride	ND	20.0							
LCS (2415048-BS1)					Prepared: 04/11/24 Analyzed: 04/12/24				
Chloride	250	20.0	250		100	90-110			
Matrix Spike (2415048-MS1)					Source: E404076-01		Prepared: 04/11/24 Analyzed: 04/12/24		
Chloride	18900	400	250	17600	524	80-120			M4
Matrix Spike Dup (2415048-MSD1)					Source: E404076-01		Prepared: 04/11/24 Analyzed: 04/12/24		
Chloride	18800	400	250	17600	468	80-120	0.750	20	M4

QC Summary Report Comment:  
Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures.  
Therefore, hand calculated values may differ slightly.



Definitions and Notes

WPX Energy - Carlsbad	Project Name:	RDX 17 Federal Com #006H	
5315 Buena Vista Dr	Project Number:	01058-0007	Reported:
Carlsbad NM, 88220	Project Manager:	Gilbert Moreno	04/17/24 13:41

- M4 Matrix spike recovery value is suspect since the analyte concentration in the sample is disproportionate to the spike level. The associated LCS spike recovery was acceptable.
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- RPD Relative Percent Difference
- DNI Did Not Ignite
- DNR Did not react with the addition of acid or base.

Note (1): Methods marked with \*\* are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.



Client: WPX Energy Permian, LLC.				Bill To				Lab Use Only				TAT				EPA Program			
Project: RDX 17 Federal Com #006H				Attention: Jim Raley				Lab WO#				1D				CWA			
Project Manager: Gilbert Moreno				Address: 5315 Buena Vista Dr.				E 404087				2D				SDWA			
Address: 13000 W County Rd 100				City, State, Zip: Carlsbad, NM, 88220				Job Number				3D				Standard			
City, State, Zip: Odessa, TX, 79765				Phone: 575-885-7502				010577-0001				5 Days TAT				RCRA			
Phone: 432-305-6414				Email: jim.raley@dvn.com				Analysis and Method								State			
Email: Devon-team@etechnv.com				WBS: EE-159309.01.ABD												NM CO UT AZ TX			
				Incident ID: nRM2019548894															
Collected by: Edyte Konan																			
Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	Depth (ft.)	TPH GRO/DRO/ORO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	GDGC TX	Remarks					
15:00	04.09.24	S	1	SW01	1	0-4'					X			Testing backfill for RDX 16-9					
15:10	04.09.24	S	1	SW02	2	0-4'					X								
15:20	04.09.24	S	1	SW03	3	0-4'					X								
15:30	04.09.24	S	1	SW04	4	0-4'					X								
04/10/24																			
Additional Instructions:																			
I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: EK																			
Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.																			
Relinquished by: (Signature)		Date		Time		Received by: (Signature)		Date		Time		Lab Use Only							
[Signature]		04/10/24		10:00		Michelle Gonzales		4-10-24		1000		Received on ice: (Y) N							
Relinquished by: (Signature)		Date		Time		Received by: (Signature)		Date		Time		T1 T2 T3							
Michelle Gonzales		4-10-24		1610		Andrew		4-10-24		1630									
Relinquished by: (Signature)		Date		Time		Received by: (Signature)		Date		Time		AVG Temp °C							
[Signature]		4-10-24		2230		[Signature]		4/11/24		0800		4							
Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other																			
Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA																			
Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.																			



envirotech



envirotech



## Envirotech Analytical Laboratory

Printed: 4/15/2024 12:42:28PM

## Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client:	WPX Energy - Carlsbad	Date Received:	04/11/24 08:00	Work Order ID:	E404087
Phone:	(539) 573-4018	Date Logged In:	04/10/24 16:14	Logged In By:	Jessica Liesse
Email:	devon-team@etechnv.com	Due Date:	04/17/24 17:00 (4 day TAT)		

Chain of Custody (COC)

1. Does the sample ID match the COC? Yes
2. Does the number of samples per sampling site location match the COC? Yes
3. Were samples dropped off by client or carrier? Yes
4. Was the COC complete, i.e., signatures, dates/times, requested analyses? Yes
5. Were all samples received within holding time? Yes

Note: Analysis, such as pH which should be conducted in the field, i.e., 15 minute hold time, are not included in this discussion.

Carrier: CourierComments/ResolutionSample Turn Around Time (TAT)

6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

7. Was a sample cooler received? Yes
8. If yes, was cooler received in good condition? Yes
9. Was the sample(s) received intact, i.e., not broken? Yes
10. Were custody/security seals present? No
11. If yes, were custody/security seals intact? NA
12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C? Yes

Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling

13. If no visible ice, record the temperature. Actual sample temperature: 4°C

Sample Container

14. Are aqueous VOC samples present? No
15. Are VOC samples collected in VOA Vials? NA
16. Is the head space less than 6-8 mm (pea sized or less)? NA
17. Was a trip blank (TB) included for VOC analyses? NA
18. Are non-VOC samples collected in the correct containers? Yes
19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

20. Were field sample labels filled out with the minimum information:  
Sample ID? Yes  
Date/Time Collected? Yes  
Collectors name? Yes

Sample Preservation

21. Does the COC or field labels indicate the samples were preserved? No
22. Are sample(s) correctly preserved? NA
24. Is lab filtration required and/or requested for dissolved metals? No

Multiphase Sample Matrix

26. Does the sample have more than one phase, i.e., multiphase? No
27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

28. Are samples required to get sent to a subcontract laboratory? No
29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: NA

Client Instruction

Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

---

## APPENDIX F

### BLM Seed Mixture for Shallow Sites

**Seed Mixture 3, for Shallow Sites**

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

<u>Species</u>	<u>lb/acre</u>
Plains Bristlegrass ( <i>Setaria macrostachya</i> )	1.0
Green Sprangletop ( <i>Leptochloa dubia</i> )	2.0
Sideoats Grama ( <i>Bouteloua curtipendula</i> )	5.0

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

---

## APPENDIX G

### HoldAll® Operating Manual

---

P.O. Box 62228 Midland • TX • 79711 • Tel: 432-563-2200 • Fax: 432-563-2213



**HoldAll®**  
Decorative Plant Accessories

**40 TESTS**  
**DIRECTIONS INSIDE**

# SOIL TEST KIT



**Plants & Flowers**



**Grasses & Lawns**



**Fruits & Veggies**



**Trees & Shrubs**

**757860**



**HoldAll®**  
Decorative Plant Accessories**757860**

# SOIL TEST KIT

## Tests Your Soil for a Healthy Garden

• pH • Nitrogen(N) • Phosphorus(P) • Potassium(K) •

### PREPARING YOUR SOIL SAMPLES

For lawns, annuals or house plants, take the soil sample from about 2-3" below the surface. For perennials especially shrubs, vegetables and fruit, the sample should be from 4" deep.

Avoid touching the soil with your hands. Test different areas of your soil, as it may differ according to past cultivation, underlying soil differences or a localized condition. It is preferable to make individual tests on several samples from different areas, than to mix the samples together.

Place your soil sample into a clean container. Break the sample up with the trowel or spoon and allow it to dry out naturally. This is not essential, however it makes working with the sample easier. Remove any small stones, organic material such as grass, weeds or roots and hard particles of lime. Then crumble the sample finely and mix it thoroughly.



HOW TO TEST YOUR SOIL:

Tube caps and capsules are color-coded for simplicity;

Green = pH                      Purple = Nitrogen  
Blue = Phosphorus          Orange = Potash

pH TEST:

- 1. Remove cap from the green capped tube.
  - 2. Fill tube with soil to the first line.
  - 3. Carefully open a green capsule and pour powder into the tube.
  - 4. Add water (preferably distilled) to the fourth line.
  - 5. Cap tube and shake thoroughly.
  - 6. Allow soil to settle and color to develop for about a minute.
  - 7. Compare color of solution to the pH color chart.
- Repeat for remaining capsules.



pH 7.5 - Alkaline

pH 7.0 - Neutral

pH 6.5 - Slight A

pH 6.0 - Acid

pH 5.5 - Acid

pH 5.0 - Very Acid

pH 4.5 - Very Acid

NITROGEN, PHOSPHORUS & POTASH TESTS:

Fill a clean jar or can with 1 part soil and 5 parts water. Thoroughly shake or stir the soil and water together for at least one minute and then allow the mixture to stand undisturbed until it settles (30 minutes to 24 hours, dependent on soil). A fine clay soil will take much longer to settle out than a coarse sandy soil. The clarity of the solution will also vary, the clearer the better, however cloudiness will not affect the accuracy of the test.

PLANT FOOD CHART		
Nitrogen	Phosphorous	Potash
High	High	High
Medium	Medium	Medium
Low	Low	Low
Very Low	Very Low	Very Low

- 1. Remove the cap from the tube. (Please note that the color of the capsules should match the color of the tube cap.) Using dropper provided, fill the tube to the fourth line with liquid from your soil mixture. Avoid disturbing the sediment
- 2. Carefully separate the two halves of one of the capsules. Pour the powder into the tube.
- 3. Cap the tube and shake thoroughly. Allow color to develop for 10 minutes.
- 4. Compare color of solution to the appropriate portion of the plant food color chart. For best results allow daylight, not direct sunlight, to illuminate the solution. Note your results. Repeat for remaining capsules.



TO RAISE OR LOWER pH OF YOUR SOIL

Raising and lowering pH is not an exact science & most plants have a reasonably wide tolerance, certainly to within 1 pH point. Consult the pH Preference List and you will see that the majority can manage well on a pH around 6.5 but some need an alkaline soil

and some a particularly acid soil. Altering pH takes time so do not expect rapid changes; rather, work steadily towards giving a plant its ideal conditions.

ADJUSTING pH

pH can be adjusted to provide more suitable growing conditions for the different plants you wish to grow. Or, you can leave the pH of the soil as it is and select plants that like the level revealed by your test. Once you have your pH reading, check the pH Preference List for the pH levels of over 450 popular plants, trees, shrubs, vegetables and fruits. If your pH reading differs significantly from the list's recommended levels, follow instructions below for adjusting soil pH. You can correct pH at any time of the year but it

is best to start in the Fall and check progress in the Spring. After working to adjust your soil, retest for pH level in 40-60 days. If results are still significantly off, retreat your soil, not exceeding recommended application levels. Allow one month to pass between adding lime and adding fertilizers.

SOIL TYPES

Sandy Soils: A light, coarse soil comprised of crumbling and alluvial debris.  
Loam Soils: A medium friable soil, consisting of a blend of coarse (sand) alluvium and fine (clay) particles mixed within fairly broad limits with a little lime and humus.  
Clay Soils: A heavy, clinging, impermeable

soil, comprised of very fine particles with little lime and humus and tending to be waterlogged in winter and very dry in summer.

ADJUSTING SOIL pH - HOW MUCH TO APPLY

Material	phChange	Sandy	Loamy	Clay
Dolomitic or Calcic Limestone	+0.5 unit (0.5 pH)	2.5	2.5	2.5
	+1.0 unit (1.0 pH)	5.0	5.0	5.0
Hydrated Lime	+0.5 unit (0.5 pH)	1.25 - 2.0	1.25 - 2.0	1.25 - 2.0
	+1.0 unit (1.0 pH)	3.5 - 4.0	3.5 - 4.0	3.5 - 4.0
Iron Sulfate	-0.5 unit (0.5 pH)	0.75	0.75	0.75
	-1.0 unit (1.0 pH)	1.5	1.5	1.5
Aluminum Sulfate	-0.5 unit (0.5 pH)	0.5 - 0.75	0.5 - 0.75	0.5 - 0.75
	-1.0 unit (1.0 pH)	1 - 1.25	1 - 1.25	1 - 1.25

Amounts listed are pounds per 100 square feet. Do not add more than 5lbs. of lime or sulfur in one application.



## FERTILIZER RECOMMENDATIONS

### FEEDING PRIOR TO PLANTING

Adequate reserves of plant food should be available in the soil before planting vegetables, preparing a seed or flower bed, sodding or seeding a lawn, or planting shrubs and trees. To make up any deficiencies, apply fertilizers from the following chart according to your soil test result.

TEST RESULTS	Very Low	Low	Medium	High
<b>Nitrogen Fertilizers (%N)</b>				
Dried Blood (11%)	36	19	6	N/A
Nitrate of Soda (16%)	27	14	3	N/A
<b>Phosphate Fertilizers (%P)</b>				
Bone Meal (19%)	27	14	6	N/A
Triple Superphosphate (46%)	10.25	5.25-5.5	2.25	N/A
<b>Potash Fertilizers (%K)</b>				
Muriate of Potash (60%)	8.75-9	4.75-5	2.25-2.5	N/A

Amounts listed are ounces per 100 square feet. (Ounces referred to are by weight)

### FEEDING ESTABLISHED PLANTS AND BEDS

Based on your test results, apply the appropriate fertilizer(s) in the amounts recommended in the following chart.

### RECOMMENDATIONS FOR N, P AND K RESULTS

	Very Low			Low			Medium		
	N	P	K	N	P	K	N	P	K
Lawn	22.0-22.5	0.75-1.0	4.75-5.0	14.0-14.5	1.0-1.5	2.25-2.5	3.75-4.0	0	0
Fruit	14.0-14.5	6.5	13.5-14.0	7.75-8.0	4.0-4.25	8.75-9.0	3.75-4.0	2.25	4.75-5.0
Flower	14.0-14.25	6.5	13.5-14.0	7.75-8.0	4.0-4.25	8.75-9.0	3.75-4.0	2.25	4.75-5.0
Shrubs (flowering)	14.0-14.25	8.25-8.5	13.5-14.0	7.75-8.0	4.0-4.25	8.75-9.0	3.75-4.0	1.0-1.25	4.75-5.0
Shrubs (foliage)	22.0-22.5	10.5-10.75	8.75-9.0	14.0-14.5	5.25-5.5	4.75-5.0	3.75-4.0	2.25	2.25-2.5
Veggies (root)	14.0-14.25	12.0-12.25	8.75-9.0	14.0-14.5	5.25-5.5	4.75-5.0	3.75-4.0	3.0	2.25-2.5
Veggies (leafy)	28.25-29.0	10.25	8.75-9.0	14.0-14.5	5.25-5.5	4.75-5.0	7.75-8.0	2.25	2.25-2.5
Tree	14.0-14.5	10.25	8.75-9.0	7.75-8.0	5.25-5.5	4.75-5.0	3.75-4.0	2.25	2.25-2.5
General Feed	22.0-22.5	8.25-8.5	8.75-9.0	10.5-11.0	4.0-4.25	4.75-5.0	3.75-4.0	1.0-1.25	2.25-2.5

	High		
	N	P	K
Lawn	N/A	N/A	N/A
Fruit	N/A	N/A	N/A
Flower	N/A	N/A	N/A
Shrubs (flowering)	N/A	N/A	N/A
Shrubs (foliage)	N/A	N/A	N/A
Veggies (root)	N/A	N/A	N/A
Veggies (leafy)	N/A	N/A	N/A
Tree	N/A	N/A	N/A
General Feed	N/A	N/A	N/A

The recommendations are based on the following fertilizers sources: Nitrate of Soda (16% N), Triple Superphosphate (46% P<sub>2</sub>O<sub>5</sub>) and Muriate of Potassium (60% K<sub>2</sub>O). The amounts listed are in oz. /100 sq. ft. (Ounces referred to are by weight, not volume.) If you wish to use other fertilizer, simply check the package for the percentage of nutrients for N, P, & K and adjust the application level accordingly.

### SPECIAL RECOMMENDATIONS FOR LAWNS

For a new lawn, pay special attention to soil preparation before planting. Proper soil preparation for any size lawn will have a significant impact on the amount of water and care it demands in the future. Till the soil to a depth of at least 12" and incorporate plenty of organic material (9" or more). Test your soil for pH and adjust to the levels recommended on pH Preference List for your type of grass. Refer to the Adjusting Soil pH chart for recommended lime or sulfate applications.

For established lawns, Nitrogen is the most essential nutrient to promote lush growth and deep, green color. Phosphorus and Potassium, in lesser quantities, are also important for strong root formation and growth. Compound fertilizers will supply all 3 nutrients, or you can select an individual fertilizer, such as Nitrate of Soda. The following chart gives recommended application levels specifically for lawns, based on your Nitrogen soil test results.

### RECOMMENDATIONS FOR LAWNS

Fertilizer Type	Very Low	Low
	24-4-4 4.0 lbs.	2.0 lbs.
24-3-4	3.1 lbs.	1.55 lbs.
30-4-4	3.0 lbs.	1.5 lbs.
	Medium	High
	24-4-4 1.0 lbs.	N/A
24-3-4	.77 lbs.	N/A
30-4-4	.75 lbs.	N/A

Amounts listed are pounds per 1000 square feet.

### SAFETY & HYGIENE

Dispose of test solutions by rinsing down the sink. Empty gelatin capsules should be disposed of immediately with household waste. Wash the test tubes and caps in warm, soapy water immediately after each use. Make sure any sediment or color staining is removed. Rinse well and dry. Each bag of capsules should be stored inside the blister. Fit the caps on each test tube. Place all components back into the package. The blister pack has been specially designed to be reused as a storage container.

Store your kit in clean, dry conditions, indoors. The powders are safe in normal domestic terms but like all chemicals and pharmaceuticals, they should be put away and kept out of reach of children. Try to avoid touching the powders. Always wash your hands thoroughly after making your tests. Do not eat, drink or smoke while using the soil test kit. Keep powders away from food, drink and animal feed. If taken internally, drink copious amounts of water and seek medical advice.

### CAUTIONS

Where a lot of fertilizer is needed to correct one plant food, divide the applications over several weeks. Do not add lime and fertilizer together; lime first. Allow at least one month to pass before applying fertilizer. Retest 30 days after applying fertilizer.



# HoldAll®

Decorative Plant Accessories

## Plant pH Preference List

NAME	pH	NAME	pH	NAME	pH	NAME	pH	NAME	pH
FRUIT		VEGETABLES AND HERBS		HOUSE and GREENHOUSE PLANTS		FLOWERS, TREES AND SHRUBS		FLOWERS, TREES AND SHRUBS	
APPLE	5.0 - 6.5	SAGE	5.5 - 6.5	GENISTA	6.5 - 7.5	ASPERULA	6.0 - 8.0	LAUREL	6.5 - 7.5
APRICOT	6.0 - 7.0	SHALLOT	5.5 - 7.0	GERANIUM	6.0 - 8.0	ASPHODOLINE	6.0 - 8.0	LAVENDER	6.5 - 7.5
AVOCADO	6.0 - 7.5	SORGHUM	5.5 - 7.5	GLOXINIA	5.5 - 6.5	ASTER	5.5 - 7.5	LIATRIS	5.5 - 7.5
BANANA	5.0 - 7.0	SOYBEAN	5.5 - 6.5	GRAPE IVY	5.0 - 6.5	AUBRITA	6.0 - 7.5	LIGUSTRUM	5.0 - 7.5
BLACKBERRY	5.0 - 6.0	SPEARMINT	5.5 - 7.5	GRAPE HYACINTH	6.0 - 7.5	AZALEA	4.5 - 6.0	LILAC	6.0 - 7.5
BLUEBERRY	4.0 - 6.0	SPINACH	6.0 - 7.5	GREVILLEA	5.5 - 6.5	BALLOON FLOWER	6.0 - 6.5	LILY OF THE VALLEY	4.5 - 6.0
CANTALOUPE	6.5 - 7.5	SWEDE	5.0 - 7.0	GYNURA	5.5 - 6.5	BAYBERRY	4.0 - 6.0	LITHOSPERMUM	5.0 - 6.5
CHERRY	6.0 - 7.5	THYME	5.5 - 7.0	HEDERA (IVY)	6.0 - 8.0	BERGENIA	6.0 - 7.5	LOBELIA	6.5 - 7.5
CRANBERRY	5.5 - 6.5	TOMATO	5.5 - 7.5	HELIOTROPIUM	5.0 - 6.0	BLEEDING HEART	6.0 - 7.5	LUPINUS	5.5 - 7.0
CURRENT: Black	6.0 - 8.0	TURNIP	5.5 - 7.0	HENS AND CHICKENS	6.0 - 7.0	BLUEBELL	6.0 - 7.6	MAGNOLIA	5.0 - 6.0
Red	5.5 - 7.0	WATER CRESS	6.0 - 8.0	HERRINGBONE PLANT	6.0 - 6.0	BROOM	5.0 - 6.0	MAHONIA	6.0 - 7.0
White	6.0 - 8.0	HOUSE and GREENHOUSE PLANTS		HIBISCUS PLANT	6.0 - 8.0	BUDDLEIA	6.0 - 7.0	MARGOLD	5.5 - 7.0
DAMSON	6.0 - 7.5	ABUTILON	5.5 - 6.5	HOYA	5.0 - 6.5	BUPHTHALUM	6.0 - 8.0	MOLINIA	4.0 - 5.0
GOOSEBERRY	5.0 - 6.5	ACORUS	5.0 - 6.5	IMPATIENS	5.5 - 6.5	BUTTERFLY BUSH	4.0 - 6.0	MORAEA	5.5 - 6.5
GRAPEVINE	6.0 - 7.0	AECHMEA	5.0 - 5.5	IVY TREE	6.0 - 7.0	CALENDULA	5.5 - 7.0	MORNING GLORY	6.0 - 7.5
GRAPEFRUIT	6.0 - 7.5	AFRICAN VIOLET	6.0 - 7.0	JACARANDA	6.0 - 7.5	CAMASSIA	6.0 - 8.0	MOSS	6.0 - 8.0
HAZELNUT	6.0 - 7.0	AGLAONEMA	5.0 - 6.0	JAPANESE SEDGE	6.0 - 8.0	CANDYTUFT	6.0 - 7.5	MOSS, SPHAGNUM	3.5 - 5.0
HOP	6.0 - 7.5	AMARYLLIS	5.5 - 6.5	JASMINUM	5.5 - 7.0	CANNA	6.0 - 8.0	MYOSOTIS	6.0 - 7.0
HUCKLEBERRY	4.0 - 6.0	ANTHURIUM	5.0 - 6.0	JERUSALEM CHERRY	5.5 - 6.5	CANTERBURY BELLS	7.0 - 7.5	NARCISSUS	6.0 - 8.5
LEMON	6.0 - 7.0	APHELANDRA	5.0 - 6.0	JESSAMONE	5.0 - 6.0	CARDINAL FLOWER	4.0 - 6.0	NASTURTIUM	5.5 - 7.5
LYCHEE	6.0 - 7.0	ARAUCHARIA	5.0 - 6.0	KALANCHOE	6.0 - 7.5	CARNATION	6.0 - 7.5	NICOTIANA	5.5 - 6.5
MANGO	5.0 - 6.0	ASPARAGUS FERN	6.0 - 8.0	KANGAROO THORN	6.0 - 8.0	CATALPA	6.0 - 8.0	PACHYSANDRA	5.0 - 8.0
MELON	5.5 - 6.5	ASPIDISTRA	4.0 - 5.5	KANGAROO VINE	5.0 - 6.5	CERATIA	6.0 - 7.0	PAEONIA	6.0 - 7.5
MULBERRY	6.0 - 7.5	AZALEA	4.5 - 6.0	LANTANA	5.5 - 7.0	CISSUS	6.0 - 7.5	PANSY	5.5 - 7.0
NECTARINE	6.0 - 7.5	BABY'S BREATH	6.0 - 7.5	LAURUS (BAY TREE)	5.0 - 6.0	CISTUS	6.0 - 7.5	PASSION FLOWER	6.0 - 8.0
PEACH	6.0 - 7.5	BABY'S TEARS	5.0 - 6.0	LEMON PLANT	6.0 - 7.5	CLARKIA	6.0 - 6.5	PASQUE FLOWER	5.0 - 6.0
PEAR	6.0 - 7.5	BEGONIA	5.5 - 7.0	MIMOSA	5.0 - 7.0	CLIANTHUS	6.0 - 7.5	PAULOWNIA	6.0 - 8.0
PINEAPPLE	5.0 - 6.0	BIRD OF PARADISE	6.0 - 6.5	MIND YOUR OWN BUSINESS	5.0 - 5.5	CLEMATIS	5.5 - 7.0	PENSTEMON	5.5 - 7.0
PLUM	6.0 - 7.5	BISHOP'S CAP	5.0 - 6.0	MONSTERA	5.0 - 6.0	COLCHICUM	5.5 - 6.5	PERIWINKLE	6.0 - 7.5
POMEGRANATE	5.5 - 6.5	BLACK-EYED SUSAN	5.5 - 7.5	MYRTLE	6.0 - 8.0	COLUMBINE	6.0 - 7.0	PETUNIA	6.0 - 7.5
QUINCE	6.0 - 7.5	BLOOD LEAF	5.5 - 6.5	NEVER NEVER PLANT	5.0 - 6.0	CONVOLVULUS	6.0 - 8.0	PINKS	6.0 - 7.5
RASPBERRY	5.0 - 7.5	BOTTLEBRUSH	6.0 - 7.5	NICODEMIA (INDOOR OAK)	6.0 - 8.0	COREOPSIS	5.0 - 6.0	POLYGONUM	6.0 - 7.5
RHUBARB	5.5 - 7.0	BOUGAINVILLEA	5.5 - 7.5	NORFOLK ISLAND PINE	5.0 - 6.0	DAFFODIL	6.0 - 6.5	POLYANTHUS	6.0 - 7.5
STRAWBERRY	5.0 - 7.5	BOXWOOD	6.0 - 7.5	OLEANDER	6.0 - 7.5	DAHLIA	6.0 - 7.5	POPPY	6.0 - 7.5
WATERMELON	5.5 - 6.5	BROMELIADS	5.0 - 7.5	OPLISMENUS	5.0 - 6.0	CORONILLA	6.0 - 8.0	PORTULACA	5.5 - 7.5
VEGETABLES AND HERBS		BUTTERFLY FLOWER	6.0 - 7.5	ORCHID	4.5 - 5.5	CORYDALIS	6.0 - 8.0	PRIMROSE	5.5 - 6.5
ARTICHOKE	6.5 - 7.5	CACTI	4.5 - 6.0	OXALIS	6.0 - 8.0	COSMOS	5.0 - 8.0	PRIMULA	6.0 - 7.5
ASPARAGUS	6.0 - 8.0	CALCAOLARIA	6.0 - 7.0	PALMS	6.0 - 7.5	COTONEASTER	6.0 - 8.0	PRIVET	5.0 - 7.5
BASIL	5.5 - 6.5	CALADIUM	5.0 - 6.0	PANDANUS	5.0 - 6.0	CRAB APPLE	6.0 - 7.5	PRUNELLA	6.0 - 7.5
BEAN	6.0 - 7.5	CALLA LILY	6.0 - 7.0	PEACOCK PLANT	5.0 - 6.0	CROCUS	6.0 - 8.0	PRUNUS	6.5 - 7.5
(Runner, Broad, French)		CAMELIA	4.5 - 5.5	PELLIONIA	5.0 - 6.0	CYNOGLOSSUM	6.0 - 7.5	RED HOT POKER	6.0 - 7.5
BEETROOT	6.0 - 7.5	CAMPANULA	5.5 - 6.5	PEPEROMIA	5.0 - 6.0	DAFFODIL	6.0 - 6.5	RHODODENDRON	4.5 - 6.0
BROCCOLI	6.0 - 7.0	CAPSICUM	5.0 - 6.5	PHILODENDRON	5.0 - 6.0	DAHLIA	6.0 - 7.5	ROSES:	
BRUSSELS SPROUTS	6.0 - 7.5	CARDINAL FLOWER	5.0 - 6.0	PILEA	6.0 - 8.0	DAY LILY	6.0 - 8.0	HYBRID TEA	5.5 - 7.0
CABBAGE	6.0 - 7.5	CASTOR OIL PLANT	5.5 - 6.5	PLUMBAGO	5.5 - 6.5	DELPHINIUM	6.0 - 7.5	CLIMBING	6.0 - 7.0
CALABRESE	6.5 - 7.5	CANTURY PLANT	5.0 - 6.5	PODACARPUS	5.0 - 6.5	DEUTZIA	6.0 - 7.5	RAMBLING	5.5 - 7.0
CARROT	5.5 - 7.0	CHINESE EVERGREEN	5.0 - 6.0	POINTSETTIA	6.0 - 7.5	DIANTHUS	6.0 - 7.5	SALVIA	6.0 - 7.5
CAULIFLOWER	5.5 - 7.5	CHINESE PRIMROSE	6.0 - 7.5	POLYSCIAS	6.0 - 7.5	DOGWOOD	5.0 - 7.0	SCABIOSA	5.0 - 7.5
CELERY	6.0 - 7.0	CHRISTMAS CACTUS	5.0 - 6.5	POTHOS	5.0 - 6.0	EDELWEISS	6.5 - 7.5	SEDUM	6.0 - 7.5
CHICORY	5.0 - 6.5	CINERARIA	5.5 - 7.0	PRAYER PLANT	5.0 - 6.0	ELAEAGNUS	5.0 - 7.5	SNAPDRAGON	5.5 - 7.0
CHINESE CABBAGE	6.0 - 7.5	CLERODENDRUM	5.0 - 6.0	PUNICA	5.5 - 6.5	ENKIANTHUS	5.0 - 6.0	SNOWDROP	6.0 - 8.0
CHIVES	6.0 - 7.0	CLIVIA	5.5 - 6.5	SANSERIERIA	4.5 - 7.0	ERICA	4.5 - 6.0	SOAPWORT	6.0 - 7.5
CORN - SWEET	5.5 - 7.0	COCKSCOMB	6.0 - 7.0	SAXIFRAGA	6.0 - 8.0	EUPHORBIA	6.0 - 7.0	SPEEDWELL	5.5 - 6.5
CRESS	6.0 - 7.0	COFFEE PLANT	5.0 - 6.0	SCINDAPSUS	5.0 - 6.0	EVERLASTINGS	5.0 - 6.0	SPIRAEA	6.0 - 7.5
COURGETTES	5.5 - 7.0	COLEUS	6.0 - 7.0	SHRIMP PLANT	6.0 - 7.0	FIRETHORN	6.0 - 8.0	SPRUCE	4.0 - 5.0
CUCUMBER	5.5 - 7.5	COLUMNEA	4.5 - 5.5	SPANISH BAYONET	6.0 - 7.5	FORGET-ME-NOTS	6.0 - 7.0	STOCK	6.0 - 7.5
FENNEL	5.0 - 6.0	CORAL BERRY	5.5 - 7.5	SPIDER PLANT	6.0 - 7.5	FORSYTHIA	6.0 - 8.0	STONECROP	6.5 - 7.5
GARLIC	5.5 - 7.5	CRASSULA	5.0 - 6.0	SUCCULENTS	5.0 - 6.5	FOXGLOVE	6.0 - 7.5	SUMACK	5.0 - 6.5
GINGER	6.0 - 8.0	CREeping FIG	5.0 - 6.0	SYNOGONIUM	5.0 - 6.0	FRITILLARIA	6.0 - 7.5	SUNFLOWER	5.0 - 7.0
HORSERADISH	6.0 - 7.0	CROTON	5.0 - 6.0	TOLMIEA	5.0 - 6.0	FUCHSIA	5.5 - 7.5	SWEET PEA	6.0 - 7.5
KALE	6.0 - 7.5	CROWN OF THORNS	6.0 - 7.5	TRADESCANTIA	5.0 - 6.0	GAILLARDIA	6.0 - 7.5	SWEET WILLIAM	6.0 - 7.5
KOHLRABI	6.0 - 7.5	CUPHEA	6.0 - 7.5	UMBRELLA TREE	5.0 - 7.5	GAZANIA	5.5 - 7.0	TAMARIX	6.5 - 8.0
LEEK	6.0 - 8.0	CYCLAMEN	6.0 - 7.0	VENUS FLYTRAP	4.0 - 5.0	GENTIANA	5.0 - 7.5	TRILLIUM	5.0 - 6.5
LENTIL	5.5 - 7.0	CYPERUS	5.0 - 7.5	WEeping FIG	5.0 - 6.0	GEUM	6.0 - 7.5	TULIP	6.0 - 7.0
LETTUCE	6.0 - 7.0	DIEFFENBACHIA	5.0 - 6.0	YUCCA	6.0 - 7.5	GLADIOILI	6.0 - 7.0	VIBERNUM	5.0 - 7.5
MARJORAM	6.0 - 8.0	DIPLADENIA	6.0 - 7.5	ZEBRINA	5.0 - 6.0	GLOBULARIA	5.5 - 7.0	VIOLA	5.5 - 6.5
MARROW	6.0 - 7.5	DIZGOTHECA	6.0 - 7.5	FLOWERS, TREES AND SHRUBS		GODETIA	6.0 - 7.5	VIRGINIA CREEPER	5.0 - 7.5
MILLET	6.0 - 6.5	DRACAENA	5.0 - 6.0	ABELIA	6.0 - 8.0	GOLDEN ROD	5.0 - 7.0	WALLFLOWER	5.5 - 7.5
MINT	7.0 - 8.0	EASTER LILY	6.0 - 7.0	ACACIA	6.0 - 8.0	GYPHOPHILIA	6.0 - 7.5	WATER LILY	5.5 - 6.5
MUSHROOM	6.5 - 7.5	ELEPHANT'S EAR	5.0 - 6.0	ACANTHUS	6.0 - 7.0	HAWTHORN	6.0 - 7.0	WEIGELIA	6.0 - 7.5
MUSTARD	6.0 - 7.5	EPISCIA	6.0 - 7.0	ACONITUM	5.0 - 6.0	HEATHER	4.0 - 6.0	WISTARIA	6.0 - 8.0
OLIVE	5.5 - 6.5	EUONYMUS	6.0 - 8.0	ADONIS	6.0 - 8.0	HELIANTHUS	5.0 - 7.0	ZINNIA	5.5 - 7.5
ONION	6.0 - 7.0	FERNS:		AGERATUM	6.0 - 7.5	HELLEBORUS	6.0 - 7.5	TURF AND ORNAMENTAL GRASSES	
PAPRIKA	7.0 - 8.5	BIRD'S NEST	5.0 - 5.5	AILANTHUS	6.0 - 7.5	HOLLY	5.0 - 6.5	BAHAI	6.5 - 7.5
PARSLEY	5.0 - 7.0	BOSTON	5.5 - 6.5	AJUGA	4.0 - 6.0	HOLLYHOCK	6.0 - 7.5	BENT	5.5 - 6.5
PARSNIP	5.5 - 7.5	BUTTON	6.0 - 8.0	ALTHEA	6.0 - 7.5	HONEYSUCKLE	6.0 - 7.5	BERMUDA	6.0 - 7.0
PEA	6.0 - 7.5	CHRISTMAS	6.0 - 7.5	ALYSSUM	6.0 - 7.5	HYACINTH	6.5 - 7.5	CANADA BLUE	4.5 - 6.4
PEANUT	5.0 - 6.5	CLOAK	6.0 - 7.5	AMARANTHUS	6.0 - 6.5	HYDRANGEA (Blue)	4.0 - 5.0	CLOVER	6.0 - 7.0
PECAN	4.0 - 6.0	FEATHER	5.5 - 6.5	ANCHUSA	6.0 - 7.5	HYDRANGEA (Pink)	6.0 - 7.0	KENTUCKY BLUE	6.0 - 7.5
PEPPER	5.5 - 7.0	HART'S TONGUE	7.0 - 8.0	ANDROSACE	5.0 - 6.0	HYDRANGEA (White)	6.5 - 8.0	MEADOW	6.0 - 7.5
PEPPERMINT	6.0 - 7.5	HOLLY	4.5 - 6.0	ANEMONE	6.0 - 7.5	HYPERICUM	5.5 - 7.0	PAMPAS	6.0 - 8.0
PISTACHIO	5.0 - 6.0	MAIDENHAIR	6.0 - 8.0	ANTHYLLIS	5.0 - 6.0	IRIS	5.0 - 6.5	RED TOP	6.0 - 6.5
POTATO	4.5 - 6.0	RABBITS FOOT	6.0 - 7.5	ARBUSUS	4.0 - 6.0	IVY	6.0 - 7.5	RYE	6.0 - 7.0
POTATO - SWEET	5.5 - 6.0	SPLEENWORT	6.0 - 7.5	ARENARIA	6.0 - 8.0	JUNIPER	5.0 - 6.5	ST. AUGUSTINE	6.5 - 7.5
PUMPKIN	5.5 - 7.5	FIG		ARISTEA	6.0 - 7.5	KALMIA	4.5 - 5.0	TALL FESCUE	6.0 - 7.0
RADISH	6.0 - 7.0	FITTONIA	5.5 - 6.5	ARMERIA	6.0 - 7.5	KERRIA	6.0 - 7.0	VELVET BENT	5.0 - 6.0
RICE	5.0 - 6.5	FREESIA	6.0 - 7.5	ARNICA	5.0 - 6.5	LABURNUM	6.0 - 7.0	ZOYSIA	6.0 - 7.0
ROSEMARY	5.0 - 6.0	GARDENIA	5.0 - 6.0						

## Soil Test Kit Questions and Answers

**Question:** I tested my soil, the pH test worked, but the rest of the results are clear. What's wrong?

1. An error has been made in the testing process.
2. Nutrient levels are too low for the test to indicate.
3. The capsules have absorbed too much moisture prior to being used. The reaction has already occurred within the capsule itself.

**Question:** My pH test result came out dark blue, there is no blue on the pH color chart.

1. The water being used to perform the test is alkaline. Recommend distilled water for the testing process.
2. The soil pH is higher than 7.5. The color results change from greens to blues to purples as the pH rises.

**Question:** I got results on all but the Nitrogen portion of the kit.

1. Nitrogen leaches out of the soil very quickly, especially in sandy soil.
2. The form of Nitrogen the kit tests for is Nitrate, the form used by plants. Nitrate is formed through the natural Nitrogen cycle within the soil. It is possible to have Nitrogen present in the soil in a non-testable form.

**Question:** I tested fertilizer with the kit and still got no reaction!

The kit detects only the form of the nutrient used by the plant. These nutrients must break down to the form tested for, through the natural bacterial action and decay processes in the soil. In most cases fertilizers will not test correctly.

**Question:** I fertilized my soil as recommended in your instructions and then re-tested. My readings didn't change.

Because the nutrients need to break down, we recommend two to four weeks between fertilizing and re-testing.

**Question:** My soil will not settle to the bottom in the soil/water solution I've mixed.

Although the directions read the soil and water should settle for at least 10 minutes before proceeding, there is no harm in letting the soil settle much longer. Suggest the consumer mix the soil and water the evening or even the day before testing. Some very fine clay soil will not settle. For these few homeowners, the kit will not work.

**Question:** The testing capsule didn't dissolve.

The capsules must be opened and the testing powder poured into the test tube. There isn't enough water present to dissolve the capsule.

**Question:** The color result I got doesn't match any on the color chart.

1. If the result is the same "color" but a different "shade" it's a matter of a judgment decision between the different nutrient levels.
2. The consumer may have inadvertently used the wrong capsule for the test in question.

In most cases we offer to send the consumer additional reagent capsules for re-testing. If an error was made in the first testing process, it's generally corrected the second time through.



**HoldAll®**  
Decorative Plant Accessories

**40 TESTS**  
**DIRECTIONS INSIDE**

# SOIL TEST KIT

Tests Your Soil for a Healthy Garden

• pH • Nitrogen(N) • Phosphorus(P) • Potassium(K) •

## WHY TEST YOUR SOIL?

Plants need food (nutrients) for healthy growth. Nitrogen, Phosphorus and Potash (N, P and K for short), play a vital role in plant growth just as vitamins, minerals, carbohydrates and protein do in our health.

## HOW TO TEST YOUR SOIL

For the new and experienced soil testers alike, you will appreciate this easy, fast and fun way to achieve better growing results from your gardening efforts!

Everything is color-coded, including the tubes and capsules. All you do is take a sample of soil, mix with water, add powder from capsule, shake and watch the color develop. Then, note your test results. Fast, easy and it only takes a few minutes!

## WHEN TO TEST YOUR SOIL

Soil should be tested periodically throughout the growing season, but it is especially recommended to test before planting in Spring and when preparing beds in Fall. And, if you feel your plants are not growing well, a soil test may help.

## Included in the kit are:

40 test capsules, 10 each for pH, N, P and K, Four (4) Color-coded Test Tubes, Test Tube Storage Dock, complete instructions for adjusting soil pH, fertilization guidelines and pH preference list for over 450 plants for the home, yard and garden.

## Soil Test Kit Components

Complete Instruction booklet Inside.



60183L

©2015 Panacea Products Corp.  
2711 International St., Columbus, OH 43228  
www.PanaceaProducts.com  
Assembled in USA from  
Foreign and Domestic parts



0 93432 60183 9

**757860**

---

## APPENDIX H

### Correspondence & Notifications

---

P.O. Box 62228 Midland • TX • 79711 • Tel: 432-563-2200 • Fax: 432-563-2213





**Erick Herrera**

---

**From:** Morgan, Crisha A <camorgan@blm.gov>  
**Sent:** Thursday, July 18, 2024 11:07 AM  
**To:** Erick Herrera  
**Subject:** Re: [EXTERNAL] RE: RDX 17 Federal Com #006 Closure Request - Incident Number nRM2019548894

**Bureau of Land Management**

The Closure Report for RDX 17 Federal Com 6 has been reviewed. Sampling report shows that NMOCD's Table 1 closure requirements have been met. More extensive work may be required during future major well pad construction/alteration or final plugging and abandonment. Please consider this the BLM's approval for closure. Please remember that it is still the operator's ultimate responsibility to gain stable vegetation in the spill area.

The **BLM acceptance/approval does not** relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment or if the location fails to reclaim properly. In such an event that the location does not re-vegetate, or future issues with contaminants are encountered, the operator will be asked to address the issues until the contaminant issues are fully mitigated and the location is successfully reclaimed. In addition, BLM approval does not relieve the operator of responsibility for compliance with any other federal, state, or local laws/regulations.

If you have any questions or concerns, please let me know. Have a great day!

**Crisha A. Morgan** | Certified - Environmental Protection Specialist | Program Officer | COR | Spills Coordinator | Orphaned & Idled Well POC Lead

Bureau of Land Management | Carlsbad Field Office  
620 E. Greene Street Carlsbad, NM 88220  
Cell 575-200-8648 | Office 575-234-5987 | [camorgan@blm.gov](mailto:camorgan@blm.gov)



**WARNING: This document is FOR OFFICIAL USE ONLY (FOUO). It contains information that may be exempt from public release under the Freedom of Information Act (5.U.S.C. 552). It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with Department of Interior (DOI) policy relating to FOUO information and is not to be released to the public or other personnel who do not have need-to-know without prior approval of an authorized DOI official. FOR OFFICIAL USE ONLY**

---

**From:** Morgan, Crisha A <[camorgan@blm.gov](mailto:camorgan@blm.gov)>  
**Sent:** Wednesday, July 10, 2024 10:20 AM  
**To:** Erick Herrera <[erick@etechnv.com](mailto:erick@etechnv.com)>  
**Subject:** Re: [EXTERNAL] RE: RDX 17 Federal Com #006 Closure Request - Incident Number nRM2019548894

## Bureau of Land Management



I have it now! I will review it ASAP...

**Crisha A. Morgan** | Certified - Environmental Protection Specialist | Program Officer | COR | Spills Coordinator | Orphaned & Idled Well POC Lead  
Bureau of Land Management | Carlsbad Field Office  
620 E. Greene Street Carlsbad, NM 88220  
Cell 575-200-8648 | Office 575-234-5987 | [camorgan@blm.gov](mailto:camorgan@blm.gov)



**WARNING:** This document is FOR OFFICIAL USE ONLY (FOUO). It contains information that may be exempt from public release under the Freedom of Information Act (5.U.S.C. 552). It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with Department of Interior (DOI) policy relating to FOUO information and is not to be released to the public or other personnel who do not have need-to-know without prior approval of an authorized DOI official. FOR OFFICIAL USE ONLY

**From:** Erick Herrera <[erick@etechnv.com](mailto:erick@etechnv.com)>  
**Sent:** Wednesday, July 10, 2024 7:13 AM  
**To:** Morgan, Crisha A <[camorgan@blm.gov](mailto:camorgan@blm.gov)>  
**Subject:** [EXTERNAL] RE: RDX 17 Federal Com #006 Closure Request - Incident Number nRM2019548894

**This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.**

Crisha,

I received a bounce back message. Wondering if you received this.

Thanks,

Erick Herrera

Project Geologist



Work: (432) 305-6416

Cell: (281) 777-4152

---

**From:** Erick Herrera <[erick@etechnv.com](mailto:erick@etechnv.com)>

**Sent:** Wednesday, July 10, 2024 7:58 AM

**To:** Morgan, Crisha A <[camorgan@blm.gov](mailto:camorgan@blm.gov)>

**Cc:** Raley, Jim <[jim.raley@dm.com](mailto:jim.raley@dm.com)>; Devon-Team <[Devon-Team@etechnv.com](mailto:Devon-Team@etechnv.com)>

**Subject:** RDX 17 Federal Com #006 Closure Request - Incident Number nRM2019548894

Good morning,

On behalf of WPX Energy, LLC. (WPX), please find the attached Closure Request Report to address an inadvertent release for Incident Number nRM2019548894, at the RDX Federal Com 17 #006 (Site) for your review.

WPX respectfully requests consideration of the attached Closure Request.

If you have any questions, please let me know.

Thank you,

**Erick Herrera**

Project Geologist



Work: (432) 305-6416

Cell: (281) 777-4152

**Erick Herrera**

---

**From:** Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>  
**Sent:** Friday, April 26, 2024 11:20 AM  
**To:** Raley, Jim  
**Cc:** Devon-Team; Bratcher, Michael, EMNRD; Wells, Shelly, EMNRD; Velez, Nelson, EMNRD; Rodgers, Scott, EMNRD  
**Subject:** (Final Extension) - WPX Energy - RDX 17-6 (NRM2019548894)

Some people who received this message don't often get email from robert.hamlet@emnrd.nm.gov. [Learn why this is important](#)

RE: Incident #**NRM2019548894**

Jim,

Your request for a 90 day extension to **July 25th, 2024** is approved. This will be the **final extension** for this release. Please include this e-mail correspondence in the remediation and/or closure report.

**Robert Hamlet** • Environmental Specialist - Advanced  
Environmental Bureau  
EMNRD - Oil Conservation Division  
506 W. Texas Ave. | Artesia, NM 88210  
575.909.0302 | [robert.hamlet@state.nm.us](mailto:robert.hamlet@state.nm.us)  
<http://www.emnrd.state.nm.us/OCD/>



---

**From:** Raley, Jim <Jim.Raley@dvn.com>  
**Sent:** Friday, April 26, 2024 8:18 AM  
**To:** Hamlet, Robert, EMNRD <Robert.Hamlet@emnrd.nm.gov>  
**Cc:** Devon-Team <Devon-Team@etechenv.com>  
**Subject:** [EXTERNAL] Extension Request WPX Energy - RDX 17-6 (NRM2019548894)

**CAUTION:** This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Robert,

Apologies, the remediation closure report was due on 4/25/2024 for incident NRM2019548894, I overlooked this due date. We are finished with the cleanup and currently backfilling and seeding this site. As such, I respectfully ask NMOCD to allow an extra 90 days to deliver the remediation and reclamation closure reports. We do not anticipate any other delays.

A Remediation Work Plan Addendum (RWPA) was submitted for Incident Number nRM2019548894 and approved by the NMOCD on January 26, 2024. Since the RWPA approval, approximately 3,920 cubic yards of impacted soil has been excavated and removed from the Site and hauled to an approved landfill facility under WPX approved waste manifests. The excavation was sampled in accordance with 19.15.29.12.D.(1)(a) NMAC and the approved RWPA



sampling variance. Confirmation excavation soil samples were submitted to an accredited laboratory to be analyzed for BTEX (EPA 8021B), TPH (EPA 8015M), and chloride (EPA 300.0) by their respective, approved methods. Final laboratory analytical results were received on April 18, 2024, and indicated that all residual impacts associated with Incident Number nRM2019548894 have been removed from the Site, according to the applicable Site Closure Criteria.

To provide enough time for the completion of restoration activities, compilation of laboratory analytical results and field summaries associated with Incident Number nRM2019548894, and submittal of a formal report, WPX requests a 90-day extension of the deadline to **July 24, 2024**.

Jim Raley | Environmental Professional - Permian Basin  
5315 Buena Vista Dr., Carlsbad, NM 88220  
C: (575)689-7597 | [jim.rale@devon.com](mailto:jim.rale@devon.com)



Confidentiality Warning: This message and any attachments are intended only for the use of the intended recipient(s), are confidential, and may be privileged. If you are not the intended recipient, you are hereby notified that any review, retransmission, conversion to hard copy, copying, circulation or other use of all or any portion of this message and any attachments is strictly prohibited. If you are not the intended recipient, please notify the sender immediately by return e-mail, and delete this message and any attachments from your system.

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

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

QUESTIONS  
  
Action 329807

QUESTIONS

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID: 246289
	Action Number: 329807
	Action Type: [NOTIFY] Notification Of Sampling (C-141N)

QUESTIONS

Prerequisites	
Incident ID (n#)	nRM2019548894
Incident Name	NRM2019548894 RDX 17 FEDERAL COM #006H @ 30-015-39308
Incident Type	Produced Water Release
Incident Status	Remediation Plan Approved
Incident Well	[30-015-39308] RDX 17 FEDERAL COM #006H

Location of Release Source	
Site Name	RDX 17 FEDERAL COM #006H
Date Release Discovered	07/05/2020
Surface Owner	Federal

Sampling Event General Information	
Please answer all the questions in this group.	
What is the sampling surface area in square feet	20,625
What is the estimated number of samples that will be gathered	25
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	04/09/2024
Time sampling will commence	08:30 AM
Please provide any information necessary for observers to contact samplers	Please contact Gilbert Moreno at 432-305-6414 with any questions.
Please provide any information necessary for navigation to sampling site	From the intersection of Tarbrush Rd, and Pipeline Rd, Go east on Pipeline Rd for 3.2 mi; turn right for 1.60 mi; right for 0.38 mi to site GPS (32.041235, -103.9018005).

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

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

CONDITIONS  
  
Action 329807

CONDITIONS

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID: 246289
	Action Number: 329807
	Action Type: [NOTIFY] Notification Of Sampling (C-141N)

CONDITIONS

Created By	Condition	Condition Date
jraleay	Failure to notify the OCD of sampling events including any changes in date/time per the requirements of 19.15.29.12.D.(1).(a) NMAC, may result in the remediation closure samples not being accepted.	4/3/2024

---

# APPENDIX I

## Archived Reports

---

P.O. Box 62228 Midland • TX • 79711 • Tel: 432-563-2200 • Fax: 432-563-2213





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

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

Form C-141  
Revised August 24, 2018  
Submit to appropriate OCD District office

Incident ID	NRM2019548894
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: WPX Energy Permian, LLC.	OGRID: 246289
Contact Name: Lynda Laumbach	Contact Telephone: (575) 725-1647
Contact email: Lynda.Laumbach@wpxenergy.com	Incident # (assigned by OCD)
Contact mailing address: 5315 Buena Vista Drive, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.041235 Longitude -103.9018005  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: RDX 17 Federal Com #006H	Site Type: Production Facility
Date Release Discovered: 07/05/2020	API# (if applicable): 30-015-39308

Unit Letter	Section	Township	Range	County
J	17	26S	30E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: )

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls):	Volume Recovered (bbls):
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls): 35	Volume Recovered (bbls): 5
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release:  
At 0830 hours PW polyline connection failed causing an estimated 35bbl of PW to be released along recently reclaimed lease road for RDX 17-13. 5bbl of PW was recovered.

$$bbl\ estimate = \frac{saturated\ soil\ volume\ (ft^3)}{4.21(\frac{ft^3}{bbl\ equivalent})} * estimated\ soil\ porosity(\%)$$


State of New Mexico  
Oil Conservation Division

Incident ID	NRM2019548894
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Release was over 25bbl of fluid.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Email notification was sent to Mike Bratcher, Robert Hamlet, Victoria Venegas, and Jim Griswold on 07/05/2020 at 1640 hours.	

### Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped.	
<input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Lynda Laumbach</u>	Title: <u>Environmental Specialist</u>
Signature: <u></u>	Date: <u>07/06/2020</u>
email: <u>Lynda.Laumbach@wpenergy.com</u>	Telephone: <u>(575)725-1647</u>
<b><u>OCD Only</u></b>	
Received by: <u>Ramona Marcus</u>	Date: <u>7/13/2020</u>

Incident ID	nRM2019548894
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?	<u>&gt;100</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input checked="" 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	nRM2019548894
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: Jim Raley Title: Environmental Professional  
Signature:  Date: 5/2/2022  
email: jim.raley@dv.com Telephone: 575-686-7597

**OCD Only**

Received by: Jocelyn Harimon Date: 10/17/2022



Incident ID	nRM2019548894
District RP	
Facility ID	
Application ID	

## Remediation Plan

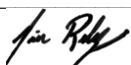
**Remediation Plan Checklist:** *Each of the following items must be included in the plan.*

- ☒ 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: Jim Raley Title: Environmental Professional  
Signature:  Date: 5/2/2022  
email: jim.raley@dvn.com Telephone: 575-686-7597

**OCD Only**

Received by: Jocelyn Harimon Date: 10/17/2022

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

Signature:  Date: 01/26/2024



## REMEDIATION WORK PLAN ADDENDUM

Site Location:

**RDX 17 Federal Com #006H  
Eddy County, New Mexico  
Incident Number:  
NRM2019548894**

April 28, 2022

Ensolum Project No. 03A1987010

Prepared for:

**WPX Energy Permian, LLC  
5315 Buena Vista Dr.  
Carlsbad, NM 88220  
Attention: Jim Raley**

Prepared by:

A handwritten signature in black ink, appearing to read "Joseph S. Hernandez".

Joseph S. Hernandez  
Senior Geologist

A handwritten signature in black ink, appearing to read "Ashley L. Ager".

Ashley Ager, M.S., PG  
Program Director, Geologist

RDX 17 Federal Com #006H  
Incident Number: NRM2019548894  
Remediation Work Plan Addendum  
April 28, 2022



## TABLE OF CONTENTS

<b>1.0 INTRODUCTION</b>	1
1.1 Site Description & Release Overview	1
1.2 Site Characterization	1&2
1.3 Project Objective	2
<b>2.0 REMEDIATION WORK PLAN EXECUTION</b>	2
2.1 Excavation Activities	2
2.2 Delineation Activities	3
<b>3.0 SOIL SAMPLING RESULTS</b>	3
<b>4.0 REMEDIATION WORK PLAN ADDENDUM</b>	3,4&5
4.1 Proposed Sampling	5
4.2 Proposed Schedule	5

## APPENDICES

<b>Appendix A:</b>	Figure 1 – Site Map Figure 2 – Excavation Soil Sample Locations Figure 3 – Delineation Soil Sample Locations
<b>Appendix B:</b>	Photographic Log
<b>Appendix C:</b>	Lithologic Soil Sampling Logs
<b>Appendix D:</b>	Tables
<b>Appendix E:</b>	Laboratory Analytical Reports & Chain-of-Custody Documentation
<b>Appendix F:</b>	Email Correspondence

RDX 17 Federal Com #006H  
Incident Number: NRM2019548894  
Remediation Work Plan Report  
April 28, 2022



## 1.0 INTRODUCTION

Ensolum, LLC (Ensolum) has prepared this Remediation Work Plan Addendum (RWPA) to document corrective actions completed by WPX Permian Energy, LLC (WPX) at the RDX 17 Federal Com #006H (hereinafter referred to as the "Site") in Unit J, Section 17, Township 26 South, Range 30 East, in Eddy County, New Mexico (**Figure 1 in Appendix A**). The purpose of the RWPA is to supplement corrective actions that have been executed in accordance with a Remediation Work Plan (RWP) authored by WPX, which was approved by the New Mexico Oil and Conservation Division (NMOCD) on July 21, 2021. Based on current field observations, field screening activities and review of the laboratory analytical results from excavation and delineation soil sampling activities at the Site, WPX respectfully submits this RWPA which summarizes activities performed to date and proposes additional remediation and soil sampling activities to further address soil impacts at the Site.

### 1.1 Site Description and Release Background

The Site is located within Eddy County, New Mexico (32.041235° N, 103.9018005° W) and is associated with oil and gas exploration and production operations on Bureau of Land Management (BLM) Federal Land (**Figure 1 in Appendix A**).

On July 5, 2020, a produced water polyline connection failed and resulted in approximately 35 barrels (bbls) of produced water to be released along a recently reclaimed lease road. Approximately 5 bbls of produced water were recovered via vacuum truck. WPX reported the release to the NMOCD via email on July 5, 2020 and with a subsequent Corrective Action Form C-141 (Form C-141) July 6, 2020. The release was assigned Incident Number NRM2019548894.

### 1.2 Site Characterization

A detailed Site Characterization can be referenced in the approved RWP report, submitted by WPX. Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization. Potential site receptors are identified on **Figure 1 in Appendix A**.

Based on the results of the Site Characterization, the following NMOCD Table 1 Closure Criteria (Closure Criteria) were applied:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total Petroleum Hydrocarbon (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

A reclamation requirement of 600 mg/kg chloride and 100 mg/kg TPH was applied to the top 4 feet in the pasture area that was impacted by the release.



RDX 17 Federal Com #006H  
Incident Number: NRM2019548894  
Remediation Work Plan Report  
April 28, 2022



### 1.3 Project Objective

The primary objectives of Ensolum's scope of services were to document initial remediation activities performed at the Site were completed in accordance with the approved RWP and to document those concentrations of constituents of concern (COCs) present in soil remaining on-Site.

## 2.0 REMEDIATION WORK PLAN EXECUTION

A third-party contractor, WSP USA, Inc. (WSP), conducted soil sampling activities at the Site to verify the presence or absence of soil impacts associated with the subject release and oversaw initial excavation efforts to remove impacted soil and 20-mil impermeable liner installation. To date, approximately 5,820 cubic yards of impacted soil have been removed from the Site.

### 2.1 Excavation Activities

Between December 9, 2021 and February 9, 2022, excavation activities were conducted by WPX to remove identified impacted soil from the Site utilizing heavy equipment. Excavation activities were directed by field screening soil for volatile organic compounds (VOCs) utilizing a calibrated photo-ionization detector (PID) and chloride using Hach® chloride QuanTab® test strips.

Following removal of impacted soil, WSP collected confirmation sidewall soil samples (samples designated as SW) at a sampling frequency of 200 square feet from excavation to confirm if impacted soil above reclamation and/or Closure Criteria was successfully removed. The 5-point composite soil samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. SW01 through SW23 were collected from the sidewalls of the excavation at depths ranging from ground surface to approximately 4 feet bgs. Due to a liner installation set to cover the entirety of the excavation footprint, composite floor soil samples were not collected from the excavation. The location of the confirmation sidewall soil samples and excavation extent are shown on **Figure 2 in Appendix A**.

The soil samples were placed directly into a pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported at or below 4 degrees Celsius (°C), under strict chain-of-custody procedures, to Eurofins LLC (Eurofins) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH following EPA Method 8015M/D; and chloride following EPA Method 300.0. Photographic documentation during excavation activities is included in **Appendix B**.

### 2.2 Delineation Activities

Between January 10, 2022 and January 17, 2022, delineation activities were conducted by WSP to complete vertical delineation within the proposed liner installation area and to investigate the extent of impacted soil southeast of the excavation area, outside of the original scope of work defined in the approved RWP. Delineation samples were collected in potholes advanced with heavy equipment (samples designated PH). Delineation activities were directed by field screening soil for VOCs utilizing a calibrated PID and chloride using Hach® chloride QuanTab® test strips. A minimum of two soil samples were collected from each delineation soil sample location

RDX 17 Federal Com #006H  
Incident Number: NRM2019548894  
Remediation Work Plan Report  
April 28, 2022



(PH01 through PH12): including the sample with the highest observed field screening and the greatest depth. The location of the delineation samples and area of concern are shown in **Figure 3 in Appendix A**. Field screening results and observations for each delineation soil sample were recorded on lithologic soil sampling logs (**Appendix C**). The soil samples were collected, handled and analyzed as previously described. Photographic documentation during delineation activities is included in **Appendix B**.

Per the approved RWP, a 20-mil impermeable liner was installed in the excavation associated with the reclaimed lease road to mitigate future migration of residual chloride impacts into the subsurface on February 14, 2022. The original RWP documented soil impacts in this area up to 10 feet bgs. The liner installation area is depicted on **Figures 2 and 3 in Appendix A**. Photographic documentation of the liner installation is included in **Appendix B**. The excavation was subsequently backfilled, and the Site was restored to "as close to its original state" as possible.

### 3.0 SOIL SAMPLING RESULTS

Laboratory analytical results for SW01 through SW16 were below the reclamation standard and/or Closure Criteria; SW17 through SW23 indicated COCs exceeded the reclamation standard requirement, adjacent to the area of concern.

Laboratory analytical results for PH01 through PH03 define the vertical extent of impact within the liner excavation area was below the Closure Criteria; PH09 through PH12 indicated COCs exceed the reclamation standard, however, based on the current extent of soil characterization at the Site, it appears that vertical impacts do not exceed 4 feet bgs within the area of concern. Results for PH04 through PH08 were below the reclamation standard and/or Closure Criteria and estimates the horizontal boundary of impact related to the area of concern.

Laboratory analytical results are summarized in **Table 1** included in **Appendix D**. The executed chain-of-custody forms and laboratory analytical reports are provided in **Appendix E**. **Appendix F** provides correspondence email notification receipts associated with the release.

### 4.0 REMEDIATION WORK PLAN ADDENDUM

Based on the results documented in this report, the following findings and conclusions regarding the release are presented:

- To date, approximately 5,820 cubic yards of impacted soil has been removed and disposed of at R360 Environmental Solutions in Orla, Texas, addressing the entire proposed excavation area in the original RWP;
- Based on laboratory analytical results for delineation samples PH01 through PH08 and final confirmation sidewall soil samples SW01 through SW16, the excavation area has been vertically and laterally delineated;
- A 20-mil impermeable liner was installed in the excavation associated with the reclaimed lease road to mitigate future migration of residual chloride impacts into the subsurface. The original RWP documented soil impacts in this area up to 10 feet bgs;

RDX 17 Federal Com #006H  
Incident Number: NRM2019548894  
Remediation Work Plan Report  
April 28, 2022



- Based on laboratory analytical results for PH04 through PH12, an additional **5,500 cubic yards** of impacted soil is anticipated to be remediated and/or removed from the Site for disposal in accordance with state and federal regulations for the extent. The area of concern is displayed on **Figure 3 in Appendix A**;
- Soil impacts within the area of concern do not exceed 4 feet bgs.

Based on the conclusions presented above, the following remediation is proposed:

- Additional impacted soil associated with SW17 through SW23, and area of concern will be excavated pursuant to NMAC 19.15.29 to ensure the lateral extent of the impacted soil not meeting the reclamation standard requirement has been identified and removed. Excavated soil will then be transferred to: (a) a New Mexico approved landfill facility for disposal and the excavation will be backfilled with non-waste containing soil, as defined by "Procedures for Implementation of the Spill Rule" (September 6, 2019) or (b) an on-site ex-situ treatment cell for chloride extraction. Following review of the additional soil characterization at the Site, WPX will re-evaluate the proposed remedial options and submit a revised RWP detailing the option (b) treatment and sampling plan for NMOCD review, if selected.
- Horizontal delineation will be achieved through 5-point composite sidewall soil samples following the removal of residual impacts;
- Access for remediation or disturbance that occurs offsite requires BLM approval with additional coverage. WPX will prepare and submit documentation for proposed additional work areas before initiating corrective actions;
- There are areas off pad (ex. reclaimed pad and access road) that may require third-party operator oversight and additional safety measures to be in place before or during remediation activities near their respective utilities. WPX or third-party operator may implement additional safety precautions above encroachment guidelines, including restrictions on hand shoveling and cribbing. These restrictions may be implemented as health and safety precautions at the judgment and responsibility of a WPX or third-party operator safety representative.
- Subsequent to the completion of remediation and receipt of soil confirmation sample results documenting that impacted soil had been removed, the additional excavation area will be backfilled with clean and/or treated soil and restored to "as close to its original state" as soon as possible.

#### 4.1 Proposed Sampling

WPX is requesting a variance to the 200 square foot confirmation sampling requirement for the area to be excavated, which would require an estimated additional 151 floor soil samples within the area of concern, excluding sidewall samples. Due to the large extent of the impacted area (30,200 square feet), Ensolum proposes increasing the confirmation sampling size to collecting a 5-point composite sample to represent each 1,000 square foot area for the floors and sidewalls of the excavation.

RDX 17 Federal Com #006H  
Incident Number: NRM2019548894  
Remediation Work Plan Report  
April 28, 2022

---



## 4.2 Proposed Schedule

WPX believes the scope of work described above will meet requirements set forth in NMAC 19.15.29.13 and be protective of human health, the environment, and groundwater. As such, WPX respectfully requests approval of this RWPA from NMOCD.

Based on the extent of corrective measures, planning and potential third-party operator oversight at the Site, WPX anticipates beginning remediation within **180 days** of the approval of the RWPA.

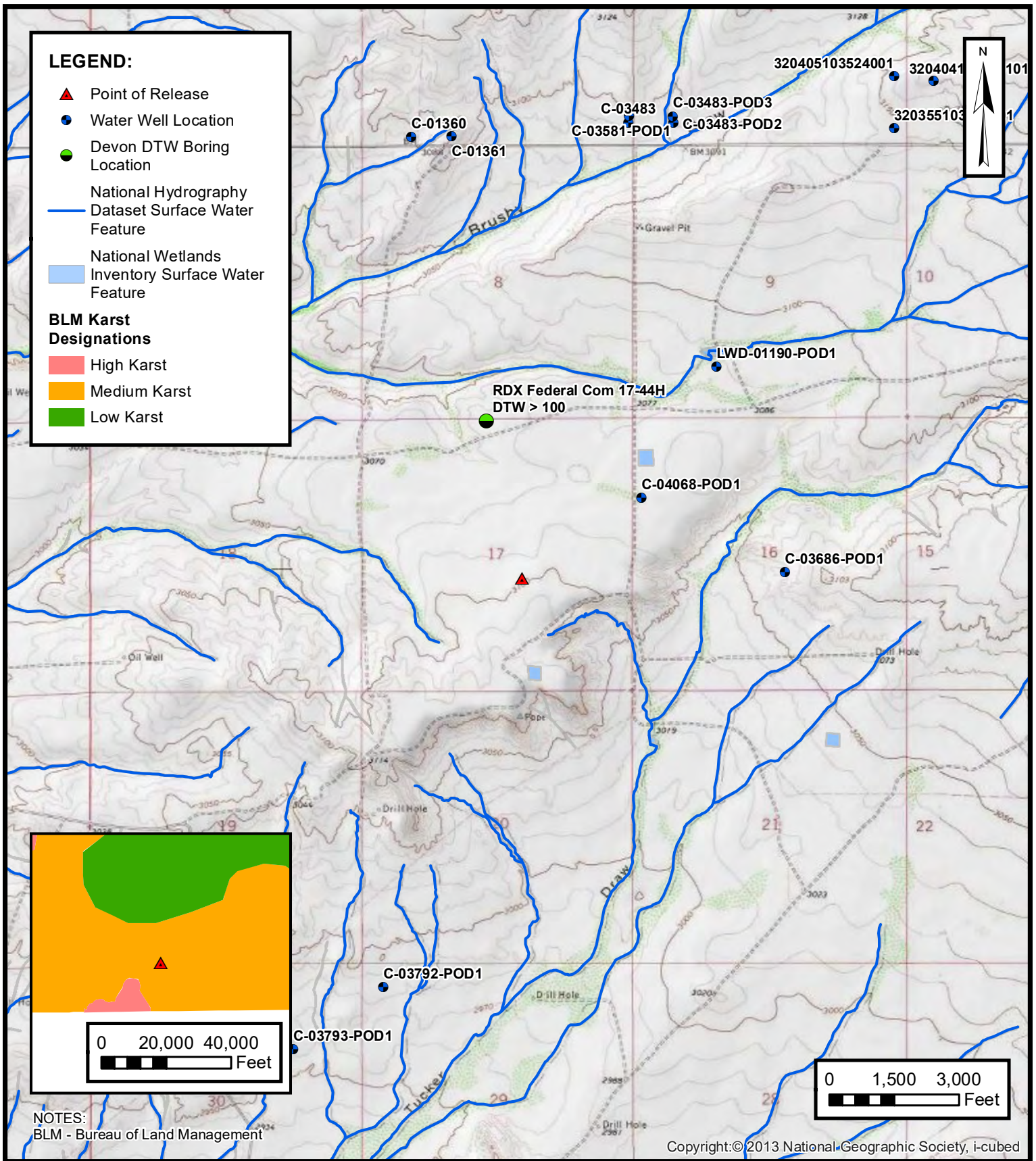




## APPENDIX A

### Figures

---

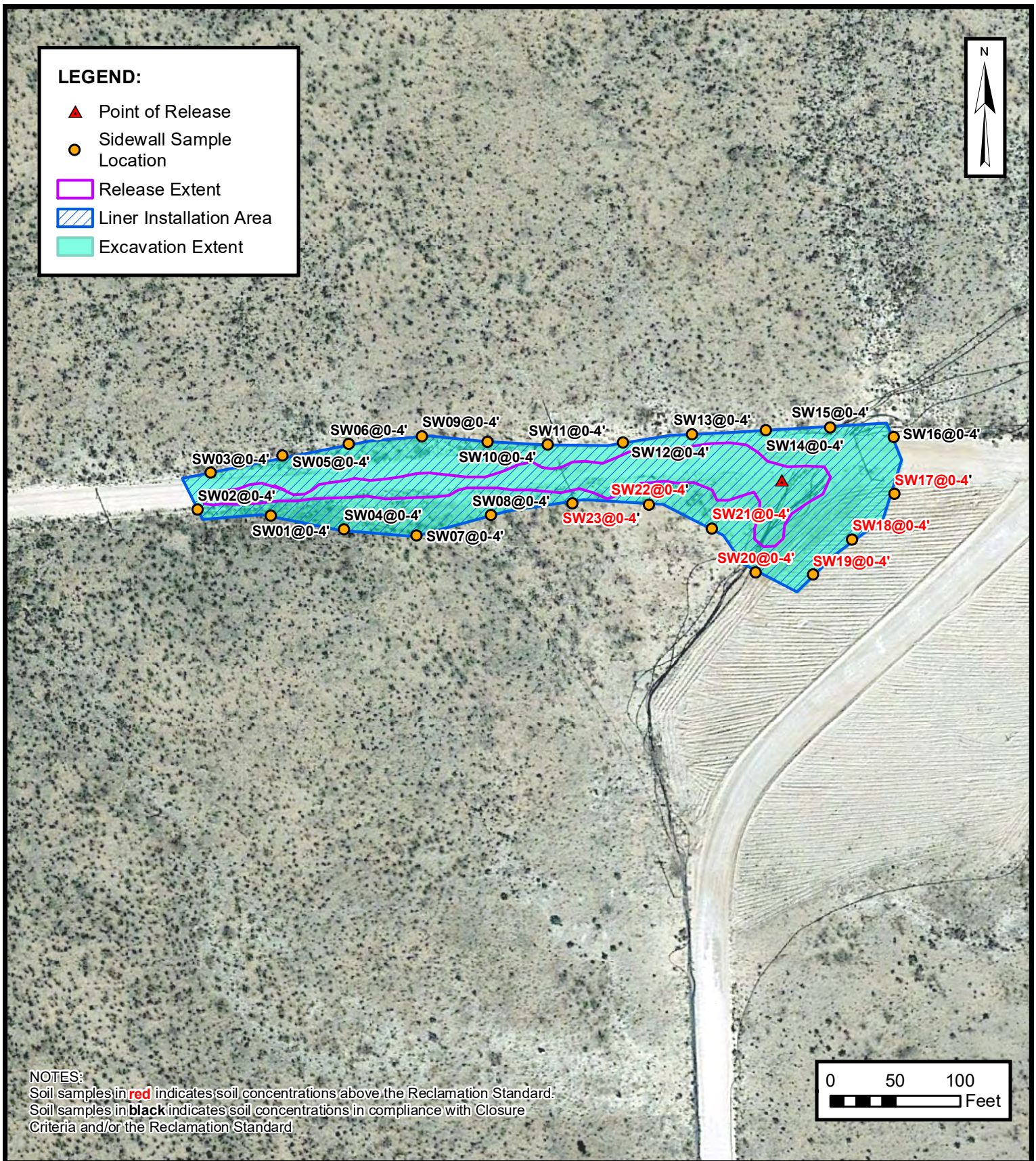


### SITE MAP

WPX ENERGY PERMIAN, LLC.  
RDX 17 FEDERAL COM #006H  
Incident Number: NRM2019548894  
Unit J, Sec 17, T26S, R30E  
Eddy County, New Mexico

**FIGURE**  
**1**



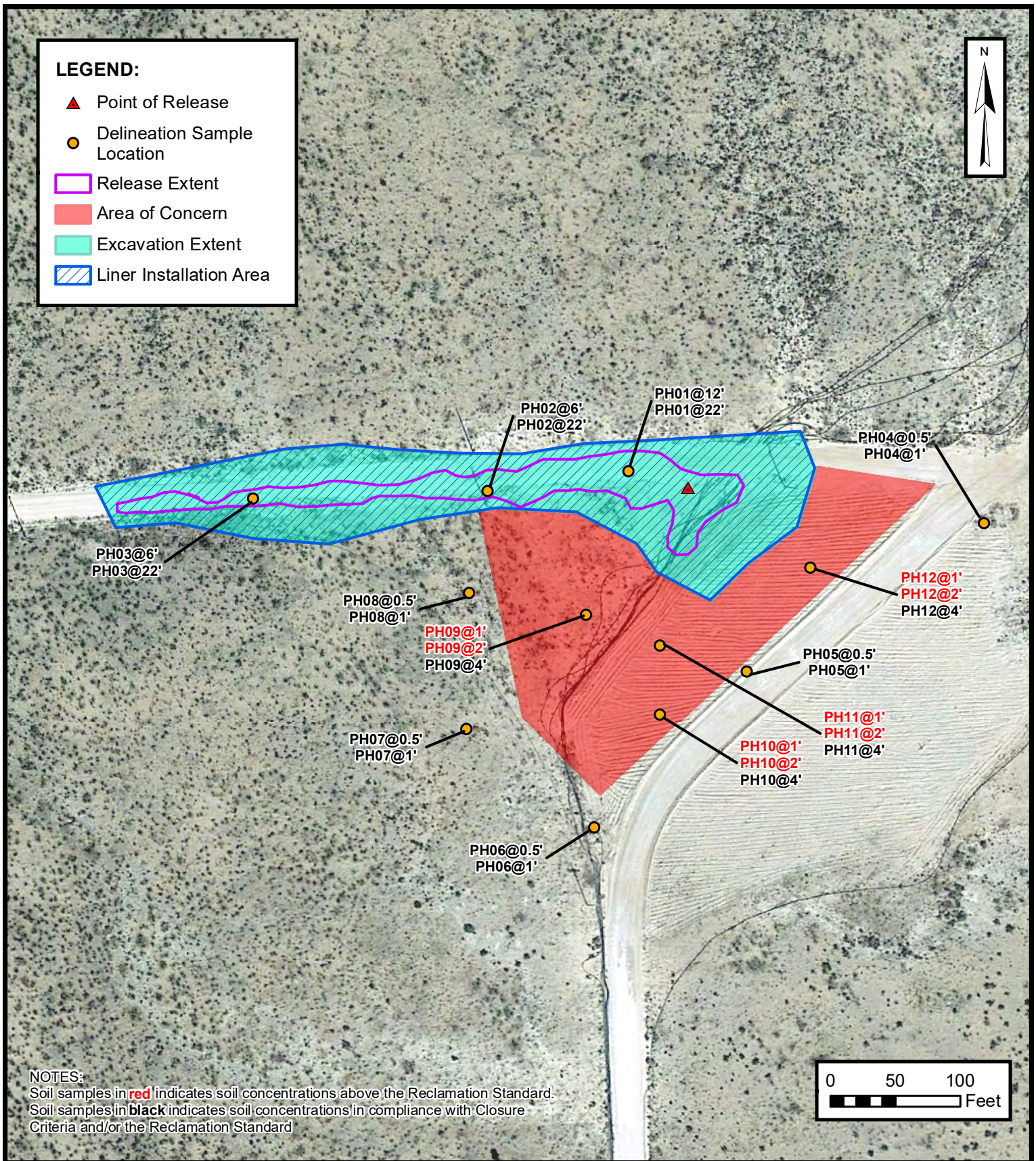


### EXCAVATION SOIL SAMPLE LOCATIONS

WPX ENERGY PERMIAN, LLC.  
 RDX 17 FEDERAL COM #006H  
 Incident Number: NRM2019548894  
 Unit J, Sec 17, T26S, R30E  
 Eddy County, New Mexico

**FIGURE**  
**2**





### DELINEATION SOIL SAMPLE LOCATIONS

WPX ENERGY PERMIAN, LLC.  
 RDX 17 FEDERAL COM #006H  
 Incident Number: NRM2019548894  
 Unit J, Sec 17, T26S, R30E  
 Eddy County, New Mexico

**FIGURE**  
**3**





## APPENDIX B

### Photographic Documentation

**Photographic Log**

WPX Energy Permian, LLC.

RDX 17 Federal Com #006H

Incident Number: nRM2019548894

Ensolum Job Number: 03A1987010

**Photograph 1***Date: December 2021 through February 2022**Description: Eastern excavation activities prior to relocating surface flowlines***Photograph 2***Date: December 2021 through February 2022**Description: Western excavation activities***Photograph 3***Date: December 2021 through February 2022**Description: Excavation activities of previously reclaimed lease road***Photograph 4***Date: December 2021 through February 2022**Description: Excavation activities of previously reclaimed lease road*

**Photographic Log**

WPX Energy Permian, LLC.

RDX 17 Federal Com #006H

Incident Number: nRM2019548894

Ensolum Job Number: 03A1987010

**Photograph 5***Date: December 2021 through February 2022**Description: Eastern excavation extent post relocation of surface flowlines***Photograph 6***Date: December 2021 through February 2022**Description: View of eastern excavation extent facing west***Photograph 7***Date: December 2021 through February 2022**Description: Excavation extent of reclaimed lease road***Photograph 8***Date: December 2021 through February 2022**Description: View of western excavation extent facing east*



**Photographic Log**

WPX Energy Permian, LLC.

RDX 17 Federal Com #006H

Incident Number: nRM2019548894

Ensolum Job Number: 03A1987010

**Photograph 9**

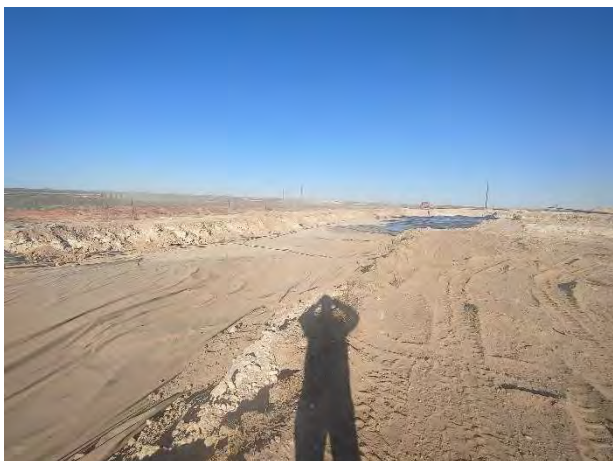
Date: February 14, 2022

Description: Liner installation

**Photograph 10**

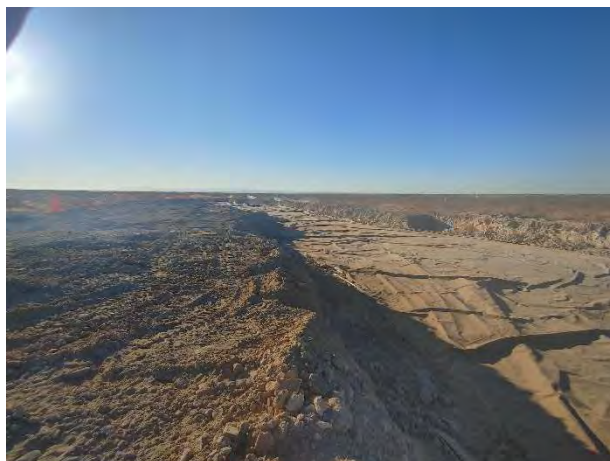
Date: February 14, 2022

Description: Liner installation

**Photograph 11**

Date: February 14, 2022

Description: Liner installation completion

**Photograph 12**

Date: February 14, 2022


Description: Liner installation completion







## APPENDIX C


### Lithologic Soil Sampling Logs


							Sample Name: PH01		Date: 1/17/2022	
							Site Name: RDX 17 Federal Com #006H			
							Incident Number: nRM2019548894			
							Job Number: 03A1987010			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>							Logged By: Gilbert Moreno		Method: Track Hoe	
Coordinates: 32.041009,-103.901768							Hole Diameter: N/A		Total Depth: 22 feet	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.										
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions		
EXCAVATED						0		EXCAVATED		
-	-	-	-	-	4		CCHE	0-4', previously excavated		
						5				
Dry	4,313	0.1	No	-	6			4-16', CALICHE, dry, tan, well graded, fine-medium, grain, well consolidated, no stain, no odor		
Dry	8,712	0.1	No	-	8			16-22', SILTY SAND, dry, tan-brown, fine-medium grain, well consolidated, some dark grey cobbles, no stain, no odor		
Dry	6,384	0.1	No	-	10	10				
Dry	10,224	0.1	No	PH01	12					
Dry	5,908	0.3	No	-	14	15				
Dry	9,432	0.2	No	-	16		SM			
Dry	8,712	0.6	No	-	18					
Dry	5,056	3.0	No	-	20	20				
Dry	5,464	3.5	No	PH01	22					
Total Depth										


							Sample Name: PH02		Date: 1/17/2022	
							Site Name: RDX 17 Federal Com #006H			
							Incident Number: nRM2019548894			
							Job Number: 03A1987010			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>							Logged By: Gilbert Moreno		Method: Track Hoe	
Coordinates: 32.041009,-103.901768							Hole Diameter: N/A		Total Depth: 22 feet	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.										
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions		
EXCAVATED						0		EXCAVATED		
-	-	-	-	-	4		CCHE	0-4', previously excavated		
					5			4-16', CALICHE, dry, tan, well graded, fine-medium, grain, well consolidated, no stain, no odor  16-22', SILTY SAND, dry, tan-brown, fine-medium grain, well consolidated, some dark grey cobbles, no stain, no odor		
Dry	5,056	0.6	No	PH02	6					
Dry	3,976	0.7	No	-	8					
Dry	4,312	1.0	No	-	10	10				
Dry	3,368	4.0	No	-	12					
Dry	3,976	1.1	No	-	14					
					15					
Dry	5,056	0.8	No	-	16		SM			
Dry	3,368	1.0	No	-	18					
Dry	3,976	2.5	No	-	20	20				
Dry	3,092	2.0	No	PH02	22					
Total Depth										


							Sample Name: PH03		Date: 1/17/2022	
							Site Name: RDX 17 Federal Com #006H			
							Incident Number: nRM2019548894			
							Job Number: 03A1987010			
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>							Logged By: Gilbert Moreno		Method: Track Hoe	
Coordinates: 32.041009,-103.901768							Hole Diameter: N/A		Total Depth: 22 feet	
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.										
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions		
EXCAVATED						0		EXCAVATED		
-	-	-	-	-	4	5	CCHE	0-4', previously excavated		
Dry	5,908	0.1	No	PH03	6			4-16', CALICHE, dry, tan, well graded, fine-medium, grain, well consolidated, no stain, no odor		
Dry	1,942	0.2	No	-	8			16-22', SILTY SAND, dry, tan-brown, fine-medium grain, well consolidated, some dark grey cobbles, no stain, no odor		
Dry	1,744	0.7	No	-	10			10		
Dry	1,088	0.5	No	-	12					
Dry	1,028	0.5	No	-	14	15	SM			
Dry	1,028	0.5	No	-	16					
Dry	196	1.0	No	-	18					
Dry	548	1.0	No	-	20			20		
Dry	500	0.6	No	PH03	22					
Total Depth										




								Sample Name: PH04		Date: 1/10/2022			
								Site Name: RDX 17 Federal Com #006H					
								Incident Number: nRM2019548894					
								Job Number: 03A1987010					
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								Logged By: Anna Byers		Method: Track Hoe			
Coordinates: 32.041009, -103.901768								Hole Diameter: N/A		Total Depth: 1 foot			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.													
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions					
Dry	136	0.1	No	PH04	0.5	0	SP-SM	0-1', SAND, dry, brown, poorly graded with silt and gravel, trace roots, no stain, no odor					
Dry	284	0.2	No	PH04	1	1							
Total Depth													


		Sample Name: PH05		Date: 1/10/2022				
		Site Name: RDX 17 Federal Com #006H						
		Incident Number: nRM2019548894						
		Job Number: 03A1987010						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.041009, -103.901768			Logged By: Anna Byers		Method: Track Hoe			
			Hole Diameter: N/A		Total Depth: 1 foot			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	356	0.2	No	PH05	0.5	0	SP-SM	0-1', SAND, dry, brown, poorly graded with silt and gravel, trace roots, no stain, no odor
Dry	136	0.2	No	PH05	1	1		
								Total Depth


		Sample Name: PH06		Date: 1/10/2022				
		Site Name: RDX 17 Federal Com #006H						
		Incident Number: nRM2019548894						
		Job Number: 03A1987010						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.041009, -103.901768			Logged By: Anna Byers		Method: Track Hoe			
			Hole Diameter: N/A		Total Depth: 1 foot			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	<112	0.1	No	PH06	0.5	0	SP-SM	0-1', SAND, dry, brown, poorly graded with silt and gravel, trace roots, no stain, no odor
Dry	<112	0.2	No	PH06	1	1		
								Total Depth


		Sample Name: PH07		Date: 1/10/2022				
		Site Name: RDX 17 Federal Com #006H						
		Incident Number: nRM2019548894						
		Job Number: 03A1987010						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.041009, -103.901768			Logged By: Anna Byers		Method: Track Hoe			
			Hole Diameter: N/A		Total Depth: 1 foot			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	<112	0.1	No	PH07	0.5	0	SP-SM	0-1', SAND, dry, brown, poorly graded with silt and gravel, trace roots, no stain, no odor
Dry	<112	0.2	No	PH07	1	1		
								Total Depth




								Sample Name: PH08		Date: 1/10/2022			
								Site Name: RDX 17 Federal Com #006H					
								Incident Number: nRM2019548894					
								Job Number: 03A1987010					
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								Logged By: Anna Byers		Method: Track Hoe			
Coordinates: 32.041009, -103.901768								Hole Diameter: N/A		Total Depth: 1 foot			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.													
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions					
Dry	<112	0.2	No	PH08	0.5	0	SP-SM	0-1', SAND, dry, brown, poorly graded with silt and gravel, trace roots, no stain, no odor					
Dry	<112	0.1	No	PH08	1	1							
											Total Depth		

		Sample Name: PH09		Date: 1/10/2022				
		Site Name: RDX 17 Federal Com #006H						
		Incident Number: nRM2019548894						
		Job Number: 03A1987010						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.041009, -103.901768			Logged By: Gilbert Moreno		Method: Track Hoe			
			Hole Diameter: N/A		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
Dry	548	0.5	No	-	0.5	0	CCHE	0-4', CALICHE, dry, tan-brown, well graded, fine-medium grain, well consolidated, no stain, no odor
Dry	1,012	0.2	No	PH09	1	1		
Dry	1,412	0.1	No	PH09	2	2		
-	-	-	-	-	-	3		
Dry	2,015	0.3	No	PH09	4	4		
								Total Depth

		Sample Name: PH10		Date: 1/10/2022				
		Site Name: RDX 17 Federal Com #006H						
		Incident Number: nRM2019548894						
		Job Number: 03A1987010						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.041009, -103.901768				Hole Diameter: N/A				
				Method: Track Hoe				
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0	CCHE	0-4', CALICHE, dry, tan-brown, well graded, fine-medium grain, well consolidated, no stain, no odor
Dry	348	0.2	No	-	0.5			
Dry	648	0.5	No	PH10	1	1		
Dry	2,312	0.1	No	PH10	2	2		
-	-	-	-	-	-	3		
Dry	952	0.3	No	PH10	4	4		
								Total Depth

								Sample Name: PH11		Date: 1/10/2022			
								Site Name: RDX 17 Federal Com #006H					
								Incident Number: nRM2019548894					
								Job Number: 03A1987010					
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								Logged By: Gilbert Moreno		Method: Track Hoe			
Coordinates: 32.041009, -103.901768								Hole Diameter: N/A		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.													
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions					
Dry	348	0.2	No	-	0.5	0	CCHE	0-4', CALICHE, dry, tan-brown, well graded, fine-medium grain, well consolidated, no stain, no odor					
Dry	648	0.5	No	PH11	1	1							
Dry	2,312	0.1	No	PH11	2	2							
-	-	-	-	-	-	3							
Dry	952	0.3	No	PH11	4	4							
											Total Depth		



		Sample Name: PH12		Date: 1/10/2022				
		Site Name: RDX 17 Federal Com #006H						
		Incident Number: nRM2019548894						
		Job Number: 03A1987010						
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Coordinates: 32.041009, -103.901768			Logged By: Gilbert Moreno		Method: Track Hoe			
			Hole Diameter: N/A		Total Depth: 4 feet			
Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. No correction factors included.								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						0	CCHE	0-4', CALICHE, dry, tan-brown, well graded, fine-medium grain, well consolidated, no stain, no odor
Dry	448	0.1	No	-	0.5			
Dry	748	0.2	No	PH12	1	1		
Dry	1,648	0.1	No	PH12	2	2		
-	-	-	-	-	-	3		
Dry	1,332	0.3	No	PH12	4	4		
								Total Depth



## APPENDIX D

### Tables



**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
 WPX Energy Permian, LLC. - RDX 17 Federal Com #006H  
 Eddy County, New Mexico

Ensolum Project No. 03A1987010

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
<b>NMOCD Table 1 Closure Criteria (NMAC 19.15.29)</b>			<b>10</b>	<b>50</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>1,000</b>	<b>2,500</b>	<b>20,000</b>
<b>Excavation Sidewall Soil Sample Analytical Results</b>										
SW01	12/09/2021	0 - 4	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	183
SW02	12/09/2021	0 - 4	<0.00200	<0.00401	<49.8	<49.8	<49.8	<49.8	<49.8	137
SW03	12/09/2021	0 - 4	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	375
SW04	12/10/2021	0 - 4	0.037	0.124	<50.0	<50.0	<50.0	<50.0	<50.0	162
SW05	12/15/2021	0 - 4	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	465
SW06	12/14/2021	0 - 4	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	469
SW07	12/16/2021	1 - 4	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	<49.9	513
SW08	12/16/2021	1 - 4	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	395
SW09	12/16/2021	1 - 4	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	102
SW10	12/16/2021	1 - 4	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	401
SW11	01/06/2022	0 - 4	<0.00198	<0.00397	<49.9	<49.9	<49.9	<49.9	<49.9	214
SW12	01/06/2022	0 - 4	<0.00198	<0.00397	<50.0	<50.0	<50.0	<50.0	<50.0	234
SW13	01/06/2022	0 - 4	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	278
SW14	01/06/2022	0 - 4	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	247
SW15	01/06/2022	0 - 4	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	431
SW16	01/06/2022	0 - 4	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	<50.0	387
SW17	02/09/2022	0 - 4	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	2,430
SW18	02/09/2022	0 - 4	<0.00201	<0.00402	<50.0	354	<50.0	354	354	5,230
SW19	02/09/2022	0 - 4	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	3,700
SW20	02/09/2022	0 - 4	<0.00199	<0.00398	<50.0	86.3	<50.0	86.3	86.3	3,590
SW21	02/09/2022	0 - 4	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	4,990
SW22	02/09/2022	0 - 4	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	9,120
SW23	02/09/2022	0 - 4	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	4,450
<b>Delineation Soil Sample Analytical Results</b>										
PH01	01/07/2022	12	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	<50.0	14,800
PH01	01/07/2022	22	<0.00198	<0.00397	<49.9	<49.9	<49.9	<49.9	<49.9	12,900
PH02	01/07/2022	6	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	8,430



**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
 WPX Energy Permian, LLC. - RDX 17 Federal Com #006H  
 Eddy County, New Mexico

Ensolum Project No. 03A1987010

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
<b>NMOC D Table 1 Closure Criteria (NMAC 19.15.29)</b>			<b>10</b>	<b>50</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>1,000</b>	<b>2,500</b>	<b>20,000</b>
PH02	01/07/2022	22	<0.00198	<0.00397	<49.9	<49.9	<49.9	<49.9	<49.9	6,070
PH03	01/07/2022	6	<0.00200	<0.00400	<49.9	<49.9	<49.9	<49.9	<49.9	9,860
PH03	01/07/2022	22	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	920
PH04	01/10/2022	0.5	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	<50.0	161
PH04	01/10/2022	1	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	361
PH05	01/10/2022	0.5	<0.00199	<0.00398	<49.9	56.5	<49.9	56.5	56.5	421
PH05	01/10/2022	1	<0.00199	<0.00398	<49.9	76.8	<49.9	76.8	76.8	195
PH06	01/10/2022	0.5	<0.00198	<0.00397	<49.9	<49.9	<49.9	<49.9	<49.9	6
PH06	01/10/2022	1	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	8
PH07	01/10/2022	0.5	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	<5.00
PH07	01/10/2022	1	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	<50.0	<5.01
PH08	01/10/2022	0.5	<0.00200	<0.00400	<49.9	<49.9	<49.9	<49.9	<49.9	11
PH08	01/10/2022	1	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	326
PH09	01/10/2022	1	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	<b>2,620</b>
PH09	01/10/2022	2	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	<b>2,990</b>
PH09	01/10/2022	4	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	3,390
PH10	01/10/2022	1	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	<49.9	<b>879</b>
PH10	01/10/2022	2	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	<50.0	<b>3,970</b>
PH10	01/10/2022	4	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	<50.0	1,510
PH11	01/10/2022	1	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	<49.9	<b>1,580</b>
PH11	01/10/2022	2	<0.00200	<0.00400	<49.9	<49.9	<49.9	<49.9	<49.9	<b>1,760</b>
PH11	01/10/2022	4	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	<50.0	2,630
PH12	01/10/2022	1	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	<49.9	<b>1,210</b>
PH12	01/10/2022	2	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	<b>2,000</b>
PH12	01/10/2022	4	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	<50.0	1,790

**Notes:**

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOC D: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

MRO: Motor Oil Range Organics

TPH: Total Petroleum Hydrocarbon

Concentrations in **bold** exceed the New Mexico Administrative Code Reclamation

Standard (NMAC 19.15.29.13.D (1))





## APPENDIX E

### Laboratory Analytical Reports & Chain-of-Custody Documentation



## Environment Testing America

### ANALYTICAL REPORT

Eurofins Xenco, Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-1694-1

Laboratory Sample Delivery Group: Eddy County  
Client Project/Site: RDX 17-6 314083360.006

**For:**

WSP USA Inc.  
2777 N. Stemmons Freeway  
Suite 1600  
Dallas, Texas 75207

Attn: Joseph Hernandez

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:  
12/16/2021 4:21:16 PM

Jessica Kramer, Project Manager  
(432)704-5440  
[jessica.kramer@eurofinset.com](mailto:jessica.kramer@eurofinset.com)

#### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

Client: WSP USA Inc.  
Project/Site: RDX 17-6 314083360.006

Laboratory Job ID: 890-1694-1  
SDG: Eddy County

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
Surrogate Summary . . . . .	8
QC Sample Results . . . . .	9
QC Association Summary . . . . .	13
Lab Chronicle . . . . .	15
Certification Summary . . . . .	16
Method Summary . . . . .	17
Sample Summary . . . . .	18
Chain of Custody . . . . .	19
Receipt Checklists . . . . .	20

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Definitions/Glossary

Client: WSP USA Inc.  
Project/Site: RDX 17-6 314083360.006

Job ID: 890-1694-1  
SDG: Eddy County

Qualifiers

GC VOA

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

GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

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

Glossary

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



Case Narrative

Client: WSP USA Inc.  
Project/Site: RDX 17-6 314083360.006

Job ID: 890-1694-1  
SDG: Eddy County

Job ID: 890-1694-1

Laboratory: Eurofins Xenco, Carlsbad

Narrative

Job Narrative  
890-1694-1

Receipt

The samples were received on 12/9/2021 4:07 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.2°C

GC VOA

Method 8021B: Surrogate recovery for the following sample was outside control limits: (MB 880-14447/5-B). Evidence of matrix interferences is not obvious.

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

GC Semi VOA

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

HPLC/IC

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

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

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6 314083360.006

Job ID: 890-1694-1  
SDG: Eddy County

Client Sample ID: SW01

Lab Sample ID: 890-1694-1

Date Collected: 12/09/21 10:45

Matrix: Solid

Date Received: 12/09/21 16:07

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/13/21 07:30	12/13/21 16:43	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/13/21 07:30	12/13/21 16:43	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/13/21 07:30	12/13/21 16:43	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		12/13/21 07:30	12/13/21 16:43	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/13/21 07:30	12/13/21 16:43	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		12/13/21 07:30	12/13/21 16:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		70 - 130	12/13/21 07:30	12/13/21 16:43	1
1,4-Difluorobenzene (Surr)	112		70 - 130	12/13/21 07:30	12/13/21 16:43	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			12/14/21 10:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			12/13/21 12:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		12/13/21 08:26	12/13/21 17:00	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		12/13/21 08:26	12/13/21 17:00	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		12/13/21 08:26	12/13/21 17:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	78		70 - 130	12/13/21 08:26	12/13/21 17:00	1
o-Terphenyl	96		70 - 130	12/13/21 08:26	12/13/21 17:00	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	183		4.98		mg/Kg			12/14/21 20:09	1

Client Sample ID: SW02

Lab Sample ID: 890-1694-2

Date Collected: 12/09/21 12:25

Matrix: Solid

Date Received: 12/09/21 16:07

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/13/21 07:30	12/13/21 17:03	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/13/21 07:30	12/13/21 17:03	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/13/21 07:30	12/13/21 17:03	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		12/13/21 07:30	12/13/21 17:03	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/13/21 07:30	12/13/21 17:03	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		12/13/21 07:30	12/13/21 17:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		70 - 130	12/13/21 07:30	12/13/21 17:03	1

Eurofins Xenco, Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6 314083360.006

Job ID: 890-1694-1  
SDG: Eddy County

Client Sample ID: SW02

Lab Sample ID: 890-1694-2

Date Collected: 12/09/21 12:25

Matrix: Solid

Date Received: 12/09/21 16:07

Sample Depth: 0 - 4

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	106		70 - 130	12/13/21 07:30	12/13/21 17:03	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			12/14/21 10:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.8	U	49.8		mg/Kg			12/13/21 12:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.8	U	49.8		mg/Kg		12/13/21 08:26	12/13/21 17:21	1
Diesel Range Organics (Over C10-C28)	<49.8	U	49.8		mg/Kg		12/13/21 08:26	12/13/21 17:21	1
Oil Range Organics (Over C28-C36)	<49.8	U	49.8		mg/Kg		12/13/21 08:26	12/13/21 17:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	70		70 - 130				12/13/21 08:26	12/13/21 17:21	1
o-Terphenyl	87		70 - 130				12/13/21 08:26	12/13/21 17:21	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	137		4.95		mg/Kg			12/14/21 20:20	1

Client Sample ID: SW03

Lab Sample ID: 890-1694-3

Date Collected: 12/09/21 13:00

Matrix: Solid

Date Received: 12/09/21 16:07

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		12/13/21 07:30	12/13/21 17:24	1
Toluene	<0.00199	U	0.00199		mg/Kg		12/13/21 07:30	12/13/21 17:24	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		12/13/21 07:30	12/13/21 17:24	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		12/13/21 07:30	12/13/21 17:24	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		12/13/21 07:30	12/13/21 17:24	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		12/13/21 07:30	12/13/21 17:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		70 - 130	12/13/21 07:30	12/13/21 17:24	1
1,4-Difluorobenzene (Surr)	107		70 - 130	12/13/21 07:30	12/13/21 17:24	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			12/14/21 10:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			12/13/21 12:32	1

Eurofins Xenco, Carlsbad

Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6 314083360.006

Job ID: 890-1694-1  
SDG: Eddy County

Client Sample ID: SW03  
Date Collected: 12/09/21 13:00  
Date Received: 12/09/21 16:07  
Sample Depth: 0 - 4

Lab Sample ID: 890-1694-3  
Matrix: Solid

Method: 8015B NM - Diesel Range Organics (DRO) (GC)										
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		12/13/21 08:26	12/13/21 17:42	1	
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/13/21 08:26	12/13/21 17:42	1	
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/13/21 08:26	12/13/21 17:42	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
1-Chlorooctane	75		70 - 130				12/13/21 08:26	12/13/21 17:42	1	
o-Terphenyl	93		70 - 130				12/13/21 08:26	12/13/21 17:42	1	

Method: 300.0 - Anions, Ion Chromatography - Soluble										
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Chloride	375		5.00		mg/Kg			12/15/21 16:15	1	



## Surrogate Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6 314083360.006

Job ID: 890-1694-1  
SDG: Eddy County

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-1694-1	SW01	113	112
890-1694-2	SW02	113	106
890-1694-3	SW03	117	107
890-1695-A-1-A MS	Matrix Spike	104	96
890-1695-A-1-B MSD	Matrix Spike Duplicate	101	98
LCS 880-14447/1-A	Lab Control Sample	108	100
LCSD 880-14447/2-A	Lab Control Sample Dup	105	101
MB 880-14447/5-B	Method Blank	132 S1+	105
<b>Surrogate Legend</b>			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-1694-1	SW01	78	96
890-1694-2	SW02	70	87
890-1694-3	SW03	75	93
890-1695-A-1-F MS	Matrix Spike	84	83
890-1695-A-1-G MSD	Matrix Spike Duplicate	88	88
LCS 880-14599/2-A	Lab Control Sample	89	97
LCSD 880-14599/3-A	Lab Control Sample Dup	118	118
MB 880-14599/1-A	Method Blank	94	119
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6 314083360.006

Job ID: 890-1694-1  
SDG: Eddy County

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

Lab Sample ID: MB 880-14447/5-B

Matrix: Solid

Analysis Batch: 14589

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 14447

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/13/21 07:30	12/13/21 10:34	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/13/21 07:30	12/13/21 10:34	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/13/21 07:30	12/13/21 10:34	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		12/13/21 07:30	12/13/21 10:34	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/13/21 07:30	12/13/21 10:34	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		12/13/21 07:30	12/13/21 10:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	132	S1+	70 - 130	12/13/21 07:30	12/13/21 10:34	1
1,4-Difluorobenzene (Surr)	105		70 - 130	12/13/21 07:30	12/13/21 10:34	1

Lab Sample ID: LCS 880-14447/1-A

Matrix: Solid

Analysis Batch: 14589

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 14447

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.09495		mg/Kg		95	70 - 130
Toluene	0.100	0.08907		mg/Kg		89	70 - 130
Ethylbenzene	0.100	0.08816		mg/Kg		88	70 - 130
m-Xylene & p-Xylene	0.200	0.1830		mg/Kg		92	70 - 130
o-Xylene	0.100	0.09232		mg/Kg		92	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	108		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: LCSD 880-14447/2-A

Matrix: Solid

Analysis Batch: 14589

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 14447

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.100	0.08985		mg/Kg		90	70 - 130	6	35
Toluene	0.100	0.08570		mg/Kg		86	70 - 130	4	35
Ethylbenzene	0.100	0.08480		mg/Kg		85	70 - 130	4	35
m-Xylene & p-Xylene	0.200	0.1768		mg/Kg		88	70 - 130	3	35
o-Xylene	0.100	0.08732		mg/Kg		87	70 - 130	6	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

Lab Sample ID: 890-1695-A-1-B MSD

Matrix: Solid

Analysis Batch: 14589

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 14447

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.0990	0.08933		mg/Kg					
Toluene	<0.00200	U	0.0990	0.08357		mg/Kg					

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6 314083360.006

Job ID: 890-1694-1  
SDG: Eddy County

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

Lab Sample ID: 890-1695-A-1-B MSD

Matrix: Solid

Analysis Batch: 14589

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 14447

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene	<0.00200	U	0.0990	0.08153		mg/Kg					
m-Xylene & p-Xylene	<0.00400	U	0.198	0.1734		mg/Kg					
o-Xylene	<0.00200	U	0.0990	0.08500		mg/Kg					

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: 890-1695-A-1-A MS

Matrix: Solid

Analysis Batch: 14589

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

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

Lab Sample ID: MB 880-14599/1-A

Matrix: Solid

Analysis Batch: 14594

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 14599

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		12/13/21 08:26	12/13/21 09:22	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/13/21 08:26	12/13/21 09:22	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/13/21 08:26	12/13/21 09:22	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	94		70 - 130	12/13/21 08:26	12/13/21 09:22	1
o-Terphenyl	119		70 - 130	12/13/21 08:26	12/13/21 09:22	1

Lab Sample ID: LCS 880-14599/2-A

Matrix: Solid

Analysis Batch: 14594

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 14599

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	804.6		mg/Kg		80	70 - 130
Diesel Range Organics (Over C10-C28)	1000	856.7		mg/Kg		86	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	89		70 - 130
o-Terphenyl	97		70 - 130

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6 314083360.006

Job ID: 890-1694-1  
SDG: Eddy County

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

Lab Sample ID: LCSD 880-14599/3-A

Matrix: Solid

Analysis Batch: 14594

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 14599

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	951.7		mg/Kg		95	70 - 130	17	20
Diesel Range Organics (Over C10-C28)	1000	1000		mg/Kg		100	70 - 130	15	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	118		70 - 130						
o-Terphenyl	118		70 - 130						

Lab Sample ID: 890-1695-A-1-F MS

Matrix: Solid

Analysis Batch: 14594

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 14599

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	997	1257		mg/Kg		124	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U F1	997	1250		mg/Kg		125	70 - 130		
Surrogate	MS %Recovery	MS Qualifier	Limits								
1-Chlorooctane	84		70 - 130								
o-Terphenyl	83		70 - 130								

Lab Sample ID: 890-1695-A-1-G MSD

Matrix: Solid

Analysis Batch: 14594

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 14599

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	1307		mg/Kg		128	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	999	1343	F1	mg/Kg		134	70 - 130	7	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	88		70 - 130								
o-Terphenyl	88		70 - 130								

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-14499/1-A

Matrix: Solid

Analysis Batch: 14775

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			12/14/21 15:15	1

Eurofins Xenco, Carlsbad



## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6 314083360.006

Job ID: 890-1694-1  
SDG: Eddy County

## Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-14499/2-A

Matrix: Solid

Analysis Batch: 14775

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	250	268.0		mg/Kg		107	90 - 110

Lab Sample ID: LCSD 880-14499/3-A

Matrix: Solid

Analysis Batch: 14775

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	271.0		mg/Kg		108	90 - 110	1	20

Lab Sample ID: 890-1689-A-8-E MS

Matrix: Solid

Analysis Batch: 14775

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	135		249	404.7		mg/Kg		109	90 - 110

Lab Sample ID: 890-1689-A-8-F MSD

Matrix: Solid

Analysis Batch: 14775

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	135		249	400.3		mg/Kg		107	90 - 110	1	20

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6 314083360.006

Job ID: 890-1694-1  
SDG: Eddy County

## GC VOA

## Prep Batch: 14447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1694-1	SW01	Total/NA	Solid	5035	
890-1694-2	SW02	Total/NA	Solid	5035	
890-1694-3	SW03	Total/NA	Solid	5035	
MB 880-14447/5-B	Method Blank	Total/NA	Solid	5035	
LCS 880-14447/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-14447/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-1695-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## Analysis Batch: 14589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1694-1	SW01	Total/NA	Solid	8021B	14447
890-1694-2	SW02	Total/NA	Solid	8021B	14447
890-1694-3	SW03	Total/NA	Solid	8021B	14447
MB 880-14447/5-B	Method Blank	Total/NA	Solid	8021B	14447
LCS 880-14447/1-A	Lab Control Sample	Total/NA	Solid	8021B	14447
LCSD 880-14447/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	14447
890-1695-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	
890-1695-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	14447

## Analysis Batch: 14761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1694-1	SW01	Total/NA	Solid	Total BTEX	
890-1694-2	SW02	Total/NA	Solid	Total BTEX	
890-1694-3	SW03	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Analysis Batch: 14594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1694-1	SW01	Total/NA	Solid	8015B NM	14599
890-1694-2	SW02	Total/NA	Solid	8015B NM	14599
890-1694-3	SW03	Total/NA	Solid	8015B NM	14599
MB 880-14599/1-A	Method Blank	Total/NA	Solid	8015B NM	14599
LCS 880-14599/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	14599
LCSD 880-14599/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	14599
890-1695-A-1-F MS	Matrix Spike	Total/NA	Solid	8015B NM	14599
890-1695-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	14599

## Prep Batch: 14599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1694-1	SW01	Total/NA	Solid	8015NM Prep	
890-1694-2	SW02	Total/NA	Solid	8015NM Prep	
890-1694-3	SW03	Total/NA	Solid	8015NM Prep	
MB 880-14599/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-14599/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-14599/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1695-A-1-F MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-1695-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Eurofins Xenco, Carlsbad

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6 314083360.006

Job ID: 890-1694-1  
SDG: Eddy County

## GC Semi VOA

## Analysis Batch: 14652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1694-1	SW01	Total/NA	Solid	8015 NM	
890-1694-2	SW02	Total/NA	Solid	8015 NM	
890-1694-3	SW03	Total/NA	Solid	8015 NM	

## HPLC/IC

## Leach Batch: 14499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1694-1	SW01	Soluble	Solid	DI Leach	
890-1694-2	SW02	Soluble	Solid	DI Leach	
890-1694-3	SW03	Soluble	Solid	DI Leach	
MB 880-14499/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-14499/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-14499/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1689-A-8-E MS	Matrix Spike	Soluble	Solid	DI Leach	
890-1689-A-8-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## Analysis Batch: 14775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1694-1	SW01	Soluble	Solid	300.0	14499
890-1694-2	SW02	Soluble	Solid	300.0	14499
890-1694-3	SW03	Soluble	Solid	300.0	14499
MB 880-14499/1-A	Method Blank	Soluble	Solid	300.0	14499
LCS 880-14499/2-A	Lab Control Sample	Soluble	Solid	300.0	14499
LCSD 880-14499/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	14499
890-1689-A-8-E MS	Matrix Spike	Soluble	Solid	300.0	14499
890-1689-A-8-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	14499

## Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6 314083360.006

Job ID: 890-1694-1  
SDG: Eddy County

Client Sample ID: SW01

Lab Sample ID: 890-1694-1

Date Collected: 12/09/21 10:45

Matrix: Solid

Date Received: 12/09/21 16:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	14447	12/13/21 07:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	14589	12/13/21 16:43	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			14761	12/14/21 10:16	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			14652	12/13/21 12:32	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	14599	12/13/21 08:26	DM	XEN MID
Total/NA	Analysis	8015B NM		1			14594	12/13/21 17:00	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	14499	12/10/21 12:24	CH	XEN MID
Soluble	Analysis	300.0		1			14775	12/14/21 20:09	CH	XEN MID

Client Sample ID: SW02

Lab Sample ID: 890-1694-2

Date Collected: 12/09/21 12:25

Matrix: Solid

Date Received: 12/09/21 16:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	14447	12/13/21 07:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	14589	12/13/21 17:03	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			14761	12/14/21 10:16	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			14652	12/13/21 12:32	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.04 g	10 mL	14599	12/13/21 08:26	DM	XEN MID
Total/NA	Analysis	8015B NM		1			14594	12/13/21 17:21	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	14499	12/10/21 12:24	CH	XEN MID
Soluble	Analysis	300.0		1			14775	12/14/21 20:20	CH	XEN MID

Client Sample ID: SW03

Lab Sample ID: 890-1694-3

Date Collected: 12/09/21 13:00

Matrix: Solid

Date Received: 12/09/21 16:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	14447	12/13/21 07:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	14589	12/13/21 17:24	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			14761	12/14/21 10:16	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			14652	12/13/21 12:32	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	14599	12/13/21 08:26	DM	XEN MID
Total/NA	Analysis	8015B NM		1			14594	12/13/21 17:42	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	14499	12/10/21 12:24	CH	XEN MID
Soluble	Analysis	300.0		1			14775	12/15/21 16:15	CH	XEN MID

## Laboratory References:

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

Eurofins Xenco, Carlsbad



Accreditation/Certification Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6 314083360.006

Job ID: 890-1694-1  
SDG: Eddy County

Laboratory: Eurofins Xenco, Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6 314083360.006

Job ID: 890-1694-1  
SDG: Eddy County

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

**Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

Sample Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6 314083360.006

Job ID: 890-1694-1  
SDG: Eddy County

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1694-1	SW01	Solid	12/09/21 10:45	12/09/21 16:07	0 - 4
890-1694-2	SW02	Solid	12/09/21 12:25	12/09/21 16:07	0 - 4
890-1694-3	SW03	Solid	12/09/21 13:00	12/09/21 16:07	0 - 4

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



Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300  
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334  
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296  
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

## Chain of Custody

Work Order No: \_\_\_\_\_

www.xenco.com Page 1 of 1

Project Manager:	JOSEPH HERNANDEZ		Bill to: (if different)	JIM RAHEY	
Company Name:	WSP USA		Company Name:	WSPX	
Address:	3300 N A Street		Address:	5315 BUENA VISTA DR	
City, State ZIP:	MIDLAND, TX 79705		City, State ZIP:	Carlsbad, NM 88228	
Phone:	(281) 702-2321		Email:	cuna.byers@wsp.com	

Work Order Comments				
Program:	UST/PST <input type="checkbox"/>	PBP <input type="checkbox"/>	Brownfields <input type="checkbox"/>	RRC <input type="checkbox"/> Superfund <input type="checkbox"/>
State of Project:				
Reporting:	Level II <input type="checkbox"/>	Level III <input type="checkbox"/>	PST/UST <input type="checkbox"/>	TRRP <input type="checkbox"/> Level IV <input type="checkbox"/>
Deliverables:	EDD <input type="checkbox"/>	ADAPT <input type="checkbox"/>	Other: _____	

[illegible]

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	TPH	BTE	Chlo	Sample Comments
SW01	S	12/19/21	1545	0-4'	Comp	1	X	X	X	Cost Center : 1461137001
SW02	S	12/19/21	1225	0-4'	↑	1	X	X	X	
SW03	S	12/19/21	1300	0-4'	↑	1	X	X	X	

Total 200.7 / 6010	200.8 / 6020:	
8RCRA 13PPM	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn	
TCCLP / SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U		Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document certifies the relinquishment of sample constitutes a valid purchase order from client company to Eurofins Xencro, its affiliates and subcontractors. It assigns standard terms and conditions of Eurofins Xencro. Eurofins Xencro will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xencro. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xencro but not analyzed. These terms will be enforced unless previously negated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
Anna Byers	Joe Delp	12/9/21			

Print Name: ANNE BYERS Date: 12/9/21



## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1694-1

SDG Number: Eddy County

Login Number: 1694

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Xenco, Carlsbad

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

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1694-1

SDG Number: Eddy County

Login Number: 1694

List Number: 2

Creator: Lowe, Katie

List Source: Eurofins Xenco, Midland

List Creation: 12/13/21 07:53 AM

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



## Environment Testing America

### ANALYTICAL REPORT

Eurofins Xenco, Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-1699-1

Laboratory Sample Delivery Group: 31403360.006

Client Project/Site: RDX 17-6

**For:**

WSP USA Inc.  
2777 N. Stemmons Freeway  
Suite 1600  
Dallas, Texas 75207

Attn: Joseph Hernandez

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:  
12/20/2021 4:17:55 PM

Jessica Kramer, Project Manager  
(432)704-5440  
[jessica.kramer@eurofinset.com](mailto:jessica.kramer@eurofinset.com)

#### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Laboratory Job ID: 890-1699-1  
SDG: 31403360.006

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
Surrogate Summary . . . . .	6
QC Sample Results . . . . .	7
QC Association Summary . . . . .	11
Lab Chronicle . . . . .	13
Certification Summary . . . . .	14
Method Summary . . . . .	15
Sample Summary . . . . .	16
Chain of Custody . . . . .	17
Receipt Checklists . . . . .	20

1

2

3

4

5

6

7

8

9

10

11

12

13

14



Definitions/Glossary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1699-1  
SDG: 31403360.006

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

Glossary

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

Case Narrative

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1699-1  
SDG: 31403360.006

Job ID: 890-1699-1

Laboratory: Eurofins Xenco, Carlsbad

Narrative

Job Narrative  
890-1699-1

Receipt

The sample was received on 12/13/2021 12:31 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.0°C

GC VOA

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

GC Semi VOA

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-14776 and analytical batch 880-14800 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: (880-9270-A-1-F MSD). Evidence of matrix interferences is not obvious.

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

HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike (MS) recovery for preparation batch 880-14833 and analytical batch 880-14982 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. The associated sample is: SW04 (890-1699-1).

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

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1699-1  
SDG: 31403360.006

Client Sample ID: SW04

Lab Sample ID: 890-1699-1

Date Collected: 12/10/21 09:45

Matrix: Solid

Date Received: 12/13/21 12:31

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.0370		0.00198		mg/Kg		12/14/21 07:30	12/14/21 12:25	1
Toluene	0.0642		0.00198		mg/Kg		12/14/21 07:30	12/14/21 12:25	1
Ethylbenzene	0.00482		0.00198		mg/Kg		12/14/21 07:30	12/14/21 12:25	1
m-Xylene & p-Xylene	0.0144		0.00396		mg/Kg		12/14/21 07:30	12/14/21 12:25	1
o-Xylene	0.00334		0.00198		mg/Kg		12/14/21 07:30	12/14/21 12:25	1
Xylenes, Total	0.0177		0.00396		mg/Kg		12/14/21 07:30	12/14/21 12:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130	12/14/21 07:30	12/14/21 12:25	1
1,4-Difluorobenzene (Surr)	114		70 - 130	12/14/21 07:30	12/14/21 12:25	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	0.124		0.00396		mg/Kg			12/20/21 15:38	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			12/17/21 09:16	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		12/14/21 11:31	12/15/21 18:20	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/14/21 11:31	12/15/21 18:20	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/14/21 11:31	12/15/21 18:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	89		70 - 130	12/14/21 11:31	12/15/21 18:20	1
o-Terphenyl	106		70 - 130	12/14/21 11:31	12/15/21 18:20	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	162		4.98		mg/Kg			12/19/21 22:26	1

Eurofins Xenco, Carlsbad

Surrogate Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1699-1  
SDG: 31403360.006

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-1699-1	SW04	107	114
890-1699-1 MS	SW04	103	99
890-1699-1 MSD	SW04	107	104
LCS 880-14660/1-A	Lab Control Sample	99	105
LCSD 880-14660/2-A	Lab Control Sample Dup	104	108
MB 880-14660/5-A	Method Blank	117	102
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-9270-A-1-E MS	Matrix Spike	73	79
880-9270-A-1-F MSD	Matrix Spike Duplicate	60 S1-	65 S1-
890-1699-1	SW04	89	106
LCS 880-14776/2-A	Lab Control Sample	98	102
LCSD 880-14776/3-A	Lab Control Sample Dup	103	102
MB 880-14776/1-A	Method Blank	89	104
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			



## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1699-1  
SDG: 31403360.006

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

Lab Sample ID: MB 880-14660/5-A

Matrix: Solid

Analysis Batch: 14700

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 14660

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/14/21 07:30	12/14/21 10:41	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/14/21 07:30	12/14/21 10:41	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/14/21 07:30	12/14/21 10:41	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		12/14/21 07:30	12/14/21 10:41	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/14/21 07:30	12/14/21 10:41	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		12/14/21 07:30	12/14/21 10:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	117		70 - 130	12/14/21 07:30	12/14/21 10:41	1
1,4-Difluorobenzene (Surr)	102		70 - 130	12/14/21 07:30	12/14/21 10:41	1

Lab Sample ID: LCS 880-14660/1-A

Matrix: Solid

Analysis Batch: 14700

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 14660

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.08602		mg/Kg		86	70 - 130
Toluene	0.100	0.07927		mg/Kg		79	70 - 130
Ethylbenzene	0.100	0.07784		mg/Kg		78	70 - 130
m-Xylene & p-Xylene	0.200	0.1589		mg/Kg		79	70 - 130
o-Xylene	0.100	0.07845		mg/Kg		78	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

Lab Sample ID: LCSD 880-14660/2-A

Matrix: Solid

Analysis Batch: 14700

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 14660

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.100	0.1000		mg/Kg		100	70 - 130	15	35
Toluene	0.100	0.09082		mg/Kg		91	70 - 130	14	35
Ethylbenzene	0.100	0.08966		mg/Kg		90	70 - 130	14	35
m-Xylene & p-Xylene	0.200	0.1825		mg/Kg		91	70 - 130	14	35
o-Xylene	0.100	0.09067		mg/Kg		91	70 - 130	14	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	108		70 - 130

Lab Sample ID: 890-1699-1 MSD

Matrix: Solid

Analysis Batch: 14700

Client Sample ID: SW04

Prep Type: Total/NA

Prep Batch: 14660

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.0370		0.101	0.09777		mg/Kg					
Toluene	0.0642		0.101	0.09286		mg/Kg					

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1699-1  
SDG: 31403360.006

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

Lab Sample ID: 890-1699-1 MSD

Matrix: Solid

Analysis Batch: 14700

Client Sample ID: SW04

Prep Type: Total/NA

Prep Batch: 14660

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene	0.00482		0.101	0.09246		mg/Kg					
m-Xylene & p-Xylene	0.0144		0.201	0.1911		mg/Kg					
o-Xylene	0.00334		0.101	0.09407		mg/Kg					

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: 890-1699-1 MS

Matrix: Solid

Analysis Batch: 14700

Client Sample ID: SW04

Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		70 - 130
1,4-Difluorobenzene (Surr)	99		70 - 130

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

Lab Sample ID: MB 880-14776/1-A

Matrix: Solid

Analysis Batch: 14800

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 14776

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		12/14/21 11:31	12/15/21 10:05	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/14/21 11:31	12/15/21 10:05	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/14/21 11:31	12/15/21 10:05	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	89		70 - 130	12/14/21 11:31	12/15/21 10:05	1
o-Terphenyl	104		70 - 130	12/14/21 11:31	12/15/21 10:05	1

Lab Sample ID: LCS 880-14776/2-A

Matrix: Solid

Analysis Batch: 14800

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 14776

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	945.0		mg/Kg		95	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1042		mg/Kg		104	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	98		70 - 130
o-Terphenyl	102		70 - 130

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1699-1  
SDG: 31403360.006

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

Lab Sample ID: LCSD 880-14776/3-A

Matrix: Solid

Analysis Batch: 14800

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 14776

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	804.8		mg/Kg		80	70 - 130	16	20
Diesel Range Organics (Over C10-C28)	1000	888.6		mg/Kg		89	70 - 130	16	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	103		70 - 130						
o-Terphenyl	102		70 - 130						

Lab Sample ID: 880-9270-A-1-E MS

Matrix: Solid

Analysis Batch: 14800

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 14776

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F2	997	1180		mg/Kg		116	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U F1	997	752.4		mg/Kg		75	70 - 130		
Surrogate	MS %Recovery	MS Qualifier	Limits								
1-Chlorooctane	73		70 - 130								
o-Terphenyl	79		70 - 130								

Lab Sample ID: 880-9270-A-1-F MSD

Matrix: Solid

Analysis Batch: 14800

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 14776

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F2	999	831.4	F2	mg/Kg		81	70 - 130	35	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	999	625.3	F1	mg/Kg		63	70 - 130	18	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	60	S1-	70 - 130								
o-Terphenyl	65	S1-	70 - 130								

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-14833/1-A

Matrix: Solid

Analysis Batch: 14982

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			12/17/21 08:48	1

Eurofins Xenco, Carlsbad

QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1699-1  
SDG: 31403360.006

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-14833/2-A				Client Sample ID: Lab Control Sample						
Matrix: Solid				Prep Type: Soluble						
Analysis Batch: 14982										
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits			
Chloride	250	257.3		mg/Kg		103	90 - 110			

Lab Sample ID: LCSD 880-14833/3-A				Client Sample ID: Lab Control Sample Dup						
Matrix: Solid				Prep Type: Soluble						
Analysis Batch: 14982										
Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit	
Chloride	250	258.3		mg/Kg		103	90 - 110	0	20	

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1699-1  
SDG: 31403360.006

## GC VOA

## Prep Batch: 14660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1699-1	SW04	Total/NA	Solid	5035	
MB 880-14660/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-14660/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-14660/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-1699-1 MSD	SW04	Total/NA	Solid	5035	

## Analysis Batch: 14700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1699-1	SW04	Total/NA	Solid	8021B	14660
MB 880-14660/5-A	Method Blank	Total/NA	Solid	8021B	14660
LCS 880-14660/1-A	Lab Control Sample	Total/NA	Solid	8021B	14660
LCSD 880-14660/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	14660
890-1699-1 MS	SW04	Total/NA	Solid	8021B	
890-1699-1 MSD	SW04	Total/NA	Solid	8021B	14660

## Analysis Batch: 15211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1699-1	SW04	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Prep Batch: 14776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1699-1	SW04	Total/NA	Solid	8015NM Prep	
MB 880-14776/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-14776/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-14776/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-9270-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-9270-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 14800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1699-1	SW04	Total/NA	Solid	8015B NM	14776
MB 880-14776/1-A	Method Blank	Total/NA	Solid	8015B NM	14776
LCS 880-14776/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	14776
LCSD 880-14776/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	14776
880-9270-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	14776
880-9270-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	14776

## Analysis Batch: 15045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1699-1	SW04	Total/NA	Solid	8015 NM	

## HPLC/IC

## Leach Batch: 14833

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1699-1	SW04	Soluble	Solid	DI Leach	
MB 880-14833/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-14833/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-14833/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

Eurofins Xenco, Carlsbad



QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1699-1  
SDG: 31403360.006

HPLC/IC

Analysis Batch: 14982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1699-1	SW04	Soluble	Solid	300.0	14833
MB 880-14833/1-A	Method Blank	Soluble	Solid	300.0	14833
LCS 880-14833/2-A	Lab Control Sample	Soluble	Solid	300.0	14833
LCSD 880-14833/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	14833

Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1699-1  
SDG: 31403360.006

Client Sample ID: SW04  
Date Collected: 12/10/21 09:45  
Date Received: 12/13/21 12:31

Lab Sample ID: 890-1699-1  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	14660	12/14/21 07:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	14700	12/14/21 12:25	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			15211	12/20/21 15:38	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			15045	12/17/21 09:16	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	14776	12/14/21 11:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			14800	12/15/21 18:20	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	14833	12/15/21 11:24	CA	XEN MID
Soluble	Analysis	300.0		1			14982	12/19/21 22:26	SC	XEN MID

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

Accreditation/Certification Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1699-1  
SDG: 31403360.006

Laboratory: Eurofins Xenco, Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1699-1  
SDG: 31403360.006

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

**Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

Sample Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1699-1  
SDG: 31403360.006

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1699-1	SW04	Solid	12/10/21 09:45	12/13/21 12:31	0 - 4

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





## Environment Testing

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300  
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-333-  
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296  
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

## Chain of Custody

Work Order No: \_\_\_\_\_

Page 1 of 1  
www.xenco.com

Project Manager:	Joseph Hernandez	Bill to: (if different)	Tim Riley
Company Name:	WSP USA	Company Name:	WSPX
Address:	3338 N A Street	Address:	5315 Buena Vista Dr.
City, State ZIP:	Middleburg, TX 79705	City, State ZIP:	Clarksburg, WV 26302
Phone:	(254) 762-2324	Email:	anna.bayes@wsp.com

Work Order Comments				
Program:	UST/PST <input type="checkbox"/>	PRP <input type="checkbox"/>	Brownfields <input type="checkbox"/>	RRC <input type="checkbox"/> Superfund <input type="checkbox"/>
State of Project:				
Reporting:	Level II <input type="checkbox"/>	Level III <input type="checkbox"/>	PST/UST <input type="checkbox"/>	TRRP <input type="checkbox"/> Level IV <input type="checkbox"/>
Deliverables:	EDD <input type="checkbox"/>	ADAPT <input type="checkbox"/>	Other: _____	

[illegible]

<del>CBS</del>	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/ Comp	# of Cont	T <sub>R</sub>	B <sub>A</sub>	Chl.	Sample Comments
Singlet	S	12/8/01	0946	0'-4'	Comp	1	X	X	X		Cost Center: 1PCLB-7E01

Total 2007 / 6010	2008 / 6020:	Circle Method(s) and Metal(s) to be analyzed
8RCRA 13PPM	Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn
TCPLP / SPLP 6010 :	8RCRA 5b	As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document constitutes a valid purchase order from client company to Eurofins Xerco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xerco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Eurofins Xerco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xerco, but not analyzed. These terms will be enforce unless previously negated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 <i>Chunne Bayens</i>	<i>[Signature]</i>	12-13-21 4:00	2 <i>[Signature]</i>	<i>[Signature]</i>	12-13-21 12:3
3			4		
5			6		

Printed Date: 08/25/2026 Rev: 2020.2

Eurofins Xenco. Carlsbad

1089 N Canal St

Carlebad NM 88720

Phone: 575-988-3199 Fax 575-988-3199

## Chain of Custody Record



## Environment Testing

[illegible]

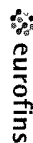
Eurofins Xenco, Carlsbad

1089 N Canal St

Carlsbad, NM 88220

Phone 575-988-3199 Fax. 575-988-3199

## Chain of Custody Record



## Environment Testing America

[illegible]

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1699-1

SDG Number: 31403360.006

Login Number: 1699

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Xenco, Carlsbad

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

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1699-1

SDG Number: 31403360.006

Login Number: 1699

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Xenco, Midland

List Creation: 12/14/21 12:00 PM

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





## Environment Testing America

### ANALYTICAL REPORT

Eurofins Xenco, Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-1725-1

Laboratory Sample Delivery Group: 31403360.006

Client Project/Site: RDX 17-6

**For:**

WSP USA Inc.  
2777 N. Stemmons Freeway  
Suite 1600  
Dallas, Texas 75207

Attn: Joseph Hernandez

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:  
12/23/2021 3:07:24 PM

Jessica Kramer, Project Manager  
(432)704-5440  
[jessica.kramer@eurofinset.com](mailto:jessica.kramer@eurofinset.com)

#### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Laboratory Job ID: 890-1725-1  
SDG: 31403360.006

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
Surrogate Summary . . . . .	7
QC Sample Results . . . . .	8
QC Association Summary . . . . .	14
Lab Chronicle . . . . .	16
Certification Summary . . . . .	17
Method Summary . . . . .	18
Sample Summary . . . . .	19
Chain of Custody . . . . .	20
Receipt Checklists . . . . .	21

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

Definitions/Glossary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1725-1  
SDG: 31403360.006

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Case Narrative

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1725-1  
SDG: 31403360.006

Job ID: 890-1725-1

Laboratory: Eurofins Xenco, Carlsbad

Narrative

Job Narrative  
890-1725-1

Receipt

The samples were received on 12/15/2021 3:54 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

GC VOA

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

GC Semi VOA

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

HPLC/IC

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

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1725-1  
SDG: 31403360.006

Client Sample ID: SW05

Lab Sample ID: 890-1725-1

Date Collected: 12/15/21 09:40

Matrix: Solid

Date Received: 12/15/21 15:54

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/17/21 15:00	12/18/21 03:36	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/17/21 15:00	12/18/21 03:36	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/17/21 15:00	12/18/21 03:36	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		12/17/21 15:00	12/18/21 03:36	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/17/21 15:00	12/18/21 03:36	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		12/17/21 15:00	12/18/21 03:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130	12/17/21 15:00	12/18/21 03:36	1
1,4-Difluorobenzene (Surr)	93		70 - 130	12/17/21 15:00	12/18/21 03:36	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			12/21/21 14:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			12/23/21 12:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		12/17/21 14:20	12/20/21 15:58	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/17/21 14:20	12/20/21 15:58	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/17/21 14:20	12/20/21 15:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	100		70 - 130	12/17/21 14:20	12/20/21 15:58	1
o-Terphenyl	100		70 - 130	12/17/21 14:20	12/20/21 15:58	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	465		4.95		mg/Kg			12/20/21 15:46	1

Client Sample ID: SW06

Lab Sample ID: 890-1725-2

Date Collected: 12/14/21 09:50

Matrix: Solid

Date Received: 12/15/21 15:54

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/17/21 15:00	12/18/21 03:56	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/17/21 15:00	12/18/21 03:56	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/17/21 15:00	12/18/21 03:56	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		12/17/21 15:00	12/18/21 03:56	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/17/21 15:00	12/18/21 03:56	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		12/17/21 15:00	12/18/21 03:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	122		70 - 130	12/17/21 15:00	12/18/21 03:56	1

Eurofins Xenco, Carlsbad



## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1725-1  
SDG: 31403360.006

Client Sample ID: SW06

Lab Sample ID: 890-1725-2

Date Collected: 12/14/21 09:50

Matrix: Solid

Date Received: 12/15/21 15:54

Sample Depth: 0 - 4

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	108		70 - 130	12/17/21 15:00	12/18/21 03:56	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			12/21/21 14:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			12/23/21 12:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		12/17/21 14:20	12/20/21 16:18	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		12/17/21 14:20	12/20/21 16:18	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		12/17/21 14:20	12/20/21 16:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	99		70 - 130				12/17/21 14:20	12/20/21 16:18	1
o-Terphenyl	98		70 - 130				12/17/21 14:20	12/20/21 16:18	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	469		4.96		mg/Kg			12/20/21 12:55	1

## Surrogate Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1725-1  
SDG: 31403360.006

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-9404-A-21-E MS	Matrix Spike	110	97
880-9404-A-21-F MSD	Matrix Spike Duplicate	106	96
890-1725-1	SW05	115	93
890-1725-2	SW06	122	108
LCS 880-15018/1-A	Lab Control Sample	108	92
LCSD 880-15018/2-A	Lab Control Sample Dup	109	94
MB 880-14947/5-A	Method Blank	127	103
MB 880-15018/5-A	Method Blank	126	105
<b>Surrogate Legend</b>			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-9504-A-1-K MS	Matrix Spike	84	83
880-9504-A-1-L MSD	Matrix Spike Duplicate	86	85
890-1725-1	SW05	100	100
890-1725-2	SW06	99	98
890-1727-A-21-I MS	Matrix Spike	113	98
890-1727-A-21-J MSD	Matrix Spike Duplicate	111	97
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO2 (70-130)	OTPH2 (70-130)
LCS 880-15090/2-A	Lab Control Sample	100	97
LCS 880-15229/2-A	Lab Control Sample	104	107
LCSD 880-15090/3-A	Lab Control Sample Dup	110	116
LCSD 880-15229/3-A	Lab Control Sample Dup	113	118
MB 880-15090/1-A	Method Blank	142 S1+	233 S1+
MB 880-15229/1-A	Method Blank	135 S1+	131 S1+
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1725-1  
SDG: 31403360.006

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

Lab Sample ID: MB 880-14947/5-A

Matrix: Solid

Analysis Batch: 15044

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 14947

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/17/21 07:30	12/17/21 12:15	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/17/21 07:30	12/17/21 12:15	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/17/21 07:30	12/17/21 12:15	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		12/17/21 07:30	12/17/21 12:15	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/17/21 07:30	12/17/21 12:15	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		12/17/21 07:30	12/17/21 12:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	127		70 - 130	12/17/21 07:30	12/17/21 12:15	1
1,4-Difluorobenzene (Surr)	103		70 - 130	12/17/21 07:30	12/17/21 12:15	1

Lab Sample ID: MB 880-15018/5-A

Matrix: Solid

Analysis Batch: 15044

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 15018

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/17/21 15:00	12/18/21 01:24	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/17/21 15:00	12/18/21 01:24	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/17/21 15:00	12/18/21 01:24	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		12/17/21 15:00	12/18/21 01:24	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/17/21 15:00	12/18/21 01:24	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		12/17/21 15:00	12/18/21 01:24	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	126		70 - 130	12/17/21 15:00	12/18/21 01:24	1
1,4-Difluorobenzene (Surr)	105		70 - 130	12/17/21 15:00	12/18/21 01:24	1

Lab Sample ID: LCS 880-15018/1-A

Matrix: Solid

Analysis Batch: 15044

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 15018

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.07815		mg/Kg		78	70 - 130
Toluene	0.100	0.07801		mg/Kg		78	70 - 130
Ethylbenzene	0.100	0.08074		mg/Kg		81	70 - 130
m-Xylene & p-Xylene	0.200	0.1599		mg/Kg		80	70 - 130
o-Xylene	0.100	0.08036		mg/Kg		80	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	108		70 - 130
1,4-Difluorobenzene (Surr)	92		70 - 130

Lab Sample ID: LCSD 880-15018/2-A

Matrix: Solid

Analysis Batch: 15044

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 15018

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	0.100	0.07388		mg/Kg		74	70 - 130	6	35

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1725-1  
SDG: 31403360.006

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

Lab Sample ID: LCSD 880-15018/2-A

Matrix: Solid

Analysis Batch: 15044

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 15018

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
							Limits	RPD		
Toluene	0.100	0.08103		mg/Kg		81	70 - 130	4		35
Ethylbenzene	0.100	0.08149		mg/Kg		81	70 - 130	1		35
m-Xylene & p-Xylene	0.200	0.1570		mg/Kg		79	70 - 130	2		35
o-Xylene	0.100	0.08323		mg/Kg		83	70 - 130	4		35

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	94		70 - 130

Lab Sample ID: 880-9404-A-21-E MS

Matrix: Solid

Analysis Batch: 15044

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 15018

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.	
									Limits	RPD
Benzene	<0.00201	U	0.101	0.07600		mg/Kg		76	70 - 130	
Toluene	<0.00201	U	0.101	0.07954		mg/Kg		79	70 - 130	
Ethylbenzene	<0.00201	U	0.101	0.08324		mg/Kg		83	70 - 130	
m-Xylene & p-Xylene	<0.00402	U	0.201	0.1594		mg/Kg		79	70 - 130	
o-Xylene	<0.00201	U	0.101	0.07839		mg/Kg		78	70 - 130	

Surrogate	MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	110		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: 880-9404-A-21-F MSD

Matrix: Solid

Analysis Batch: 15044

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 15018

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec.		RPD	Limit
									Limits	RPD		
Benzene	<0.00201	U	0.0990	0.07352		mg/Kg		74	70 - 130	3		35
Toluene	<0.00201	U	0.0990	0.07366		mg/Kg		74	70 - 130	8		35
Ethylbenzene	<0.00201	U	0.0990	0.08113		mg/Kg		82	70 - 130	3		35
m-Xylene & p-Xylene	<0.00402	U	0.198	0.1543		mg/Kg		78	70 - 130	3		35
o-Xylene	<0.00201	U	0.0990	0.08041		mg/Kg		81	70 - 130	3		35

Surrogate	MSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

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

Lab Sample ID: MB 880-15090/1-A

Matrix: Solid

Analysis Batch: 15096

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 15090

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		12/17/21 14:20	12/20/21 12:12	1

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1725-1  
SDG: 31403360.006

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

Lab Sample ID: MB 880-15090/1-A

Matrix: Solid

Analysis Batch: 15096

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 15090

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/17/21 14:20	12/20/21 12:12	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/17/21 14:20	12/20/21 12:12	1
Surrogate	MB	MB	Limits				Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
1-Chlorooctane	142	S1+	70 - 130				12/17/21 14:20	12/20/21 12:12	1
o-Terphenyl	233	S1+	70 - 130				12/17/21 14:20	12/20/21 12:12	1

Lab Sample ID: LCS 880-15090/2-A

Matrix: Solid

Analysis Batch: 15096

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 15090

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	883.9		mg/Kg		88	70 - 130
Diesel Range Organics (Over C10-C28)	1000	935.7		mg/Kg		94	70 - 130
Surrogate	LCS	LCS	Limits				
	%Recovery	Qualifier					
1-Chlorooctane	100		70 - 130				
o-Terphenyl	97		70 - 130				

Lab Sample ID: LCSD 880-15090/3-A

Matrix: Solid

Analysis Batch: 15096

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 15090

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	924.4		mg/Kg		92	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	1000	953.9		mg/Kg		95	70 - 130	2	20
Surrogate	LCSD	LCSD	Limits						
	%Recovery	Qualifier							
1-Chlorooctane	110		70 - 130						
o-Terphenyl	116		70 - 130						

Lab Sample ID: 890-1727-A-21-I MS

Matrix: Solid

Analysis Batch: 15096

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 15090

Analyte	Sample	Sample	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier							
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F1	996	1328		mg/Kg		129	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U F1	996	1339	F1	mg/Kg		134	70 - 130
Surrogate	MS	MS	Limits						
	%Recovery	Qualifier							
1-Chlorooctane	113		70 - 130						
o-Terphenyl	98		70 - 130						

Eurofins Xenco, Carlsbad



## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1725-1  
SDG: 31403360.006

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

Lab Sample ID: 890-1727-A-21-J MSD

Matrix: Solid

Analysis Batch: 15096

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 15090

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U F1	995	1392	F1	mg/Kg		136	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	<49.9	U F1	995	1328	F1	mg/Kg		133	70 - 130	1	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	111		70 - 130								
o-Terphenyl	97		70 - 130								

Lab Sample ID: MB 880-15229/1-A

Matrix: Solid

Analysis Batch: 15231

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 15229

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		12/21/21 07:55	12/21/21 09:16	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/21/21 07:55	12/21/21 09:16	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/21/21 07:55	12/21/21 09:16	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	135	S1+	70 - 130				12/21/21 07:55	12/21/21 09:16	1
o-Terphenyl	131	S1+	70 - 130				12/21/21 07:55	12/21/21 09:16	1

Lab Sample ID: LCS 880-15229/2-A

Matrix: Solid

Analysis Batch: 15231

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 15229

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO)-C6-C10	1000	884.2		mg/Kg		88	70 - 130		
Diesel Range Organics (Over C10-C28)	1000	919.9		mg/Kg		92	70 - 130		
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
1-Chlorooctane	104		70 - 130						
o-Terphenyl	107		70 - 130						

Lab Sample ID: LCSD 880-15229/3-A

Matrix: Solid

Analysis Batch: 15231

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 15229

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	922.3		mg/Kg		92	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	1000	943.9		mg/Kg		94	70 - 130	3	20

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1725-1  
SDG: 31403360.006

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

Lab Sample ID: LCSD 880-15229/3-A

Matrix: Solid

Analysis Batch: 15231

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 15229

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	113		70 - 130
o-Terphenyl	118		70 - 130

Lab Sample ID: 880-9504-A-1-K MS

Matrix: Solid

Analysis Batch: 15231

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 15229

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	996	1046		mg/Kg		101	70 - 130	
Diesel Range Organics (Over C10-C28)	<49.9	U	996	812.5		mg/Kg		82	70 - 130	
Surrogate	%Recovery	Qualifier	Limits	MS	MS					
1-Chlorooctane	84		70 - 130							
o-Terphenyl	83		70 - 130							

Lab Sample ID: 880-9504-A-1-L MSD

Matrix: Solid

Analysis Batch: 15231

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 15229

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	995	1069		mg/Kg		104	70 - 130	2	20	
Diesel Range Organics (Over C10-C28)	<49.9	U	995	836.9		mg/Kg		84	70 - 130	3	20	
Surrogate	%Recovery	Qualifier	Limits	MSD	MSD							
1-Chlorooctane	86		70 - 130									
o-Terphenyl	85		70 - 130									

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-15089/1-A

Matrix: Solid

Analysis Batch: 15128

Client Sample ID: Method Blank

Prep Type: Soluble

	MB	MB								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
Chloride	<5.00	U	5.00		mg/Kg			12/20/21 10:02		1

Lab Sample ID: LCS 880-15089/2-A

Matrix: Solid

Analysis Batch: 15128

Client Sample ID: Lab Control Sample

Prep Type: Soluble

	Spike	LCS	LCS					%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride	250	265.7		mg/Kg		106	90 - 110		

Eurofins Xenco, Carlsbad

QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1725-1  
SDG: 31403360.006

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 880-15089/3-A				Client Sample ID: Lab Control Sample Dup							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 15128											
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride			250	271.6		mg/Kg		109	90 - 110	2	20

Lab Sample ID: 890-1723-A-4-E MS				Client Sample ID: Matrix Spike							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 15128											
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	1130		250	1377	4	mg/Kg		100	90 - 110		

Lab Sample ID: 890-1723-A-4-F MSD				Client Sample ID: Matrix Spike Duplicate							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 15128											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1130		250	1372	4	mg/Kg		98	90 - 110	0	20

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1725-1  
SDG: 31403360.006

## GC VOA

## Prep Batch: 14947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-14947/5-A	Method Blank	Total/NA	Solid	5035	

## Prep Batch: 15018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1725-1	SW05	Total/NA	Solid	5035	
890-1725-2	SW06	Total/NA	Solid	5035	
MB 880-15018/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-15018/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-15018/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-9404-A-21-E MS	Matrix Spike	Total/NA	Solid	5035	
880-9404-A-21-F MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## Analysis Batch: 15044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1725-1	SW05	Total/NA	Solid	8021B	15018
890-1725-2	SW06	Total/NA	Solid	8021B	15018
MB 880-14947/5-A	Method Blank	Total/NA	Solid	8021B	14947
MB 880-15018/5-A	Method Blank	Total/NA	Solid	8021B	15018
LCS 880-15018/1-A	Lab Control Sample	Total/NA	Solid	8021B	15018
LCSD 880-15018/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	15018
880-9404-A-21-E MS	Matrix Spike	Total/NA	Solid	8021B	15018
880-9404-A-21-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	15018

## Analysis Batch: 15276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1725-1	SW05	Total/NA	Solid	Total BTEX	
890-1725-2	SW06	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Prep Batch: 15090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1725-1	SW05	Total/NA	Solid	8015NM Prep	
890-1725-2	SW06	Total/NA	Solid	8015NM Prep	
MB 880-15090/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-15090/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-15090/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1727-A-21-I MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-1727-A-21-J MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 15096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1725-1	SW05	Total/NA	Solid	8015B NM	15090
890-1725-2	SW06	Total/NA	Solid	8015B NM	15090
MB 880-15090/1-A	Method Blank	Total/NA	Solid	8015B NM	15090
LCS 880-15090/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	15090
LCSD 880-15090/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	15090
890-1727-A-21-I MS	Matrix Spike	Total/NA	Solid	8015B NM	15090
890-1727-A-21-J MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	15090

Eurofins Xenco, Carlsbad

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1725-1  
SDG: 31403360.006

## GC Semi VOA

## Prep Batch: 15229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-15229/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-15229/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-15229/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-9504-A-1-K MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-9504-A-1-L MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 15231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-15229/1-A	Method Blank	Total/NA	Solid	8015B NM	15229
LCS 880-15229/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	15229
LCSD 880-15229/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	15229
880-9504-A-1-K MS	Matrix Spike	Total/NA	Solid	8015B NM	15229
880-9504-A-1-L MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	15229

## Analysis Batch: 15468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1725-1	SW05	Total/NA	Solid	8015 NM	
890-1725-2	SW06	Total/NA	Solid	8015 NM	

## HPLC/IC

## Leach Batch: 15089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1725-1	SW05	Soluble	Solid	DI Leach	
890-1725-2	SW06	Soluble	Solid	DI Leach	
MB 880-15089/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-15089/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-15089/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1723-A-4-E MS	Matrix Spike	Soluble	Solid	DI Leach	
890-1723-A-4-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## Analysis Batch: 15128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1725-1	SW05	Soluble	Solid	300.0	15089
890-1725-2	SW06	Soluble	Solid	300.0	15089
MB 880-15089/1-A	Method Blank	Soluble	Solid	300.0	15089
LCS 880-15089/2-A	Lab Control Sample	Soluble	Solid	300.0	15089
LCSD 880-15089/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	15089
890-1723-A-4-E MS	Matrix Spike	Soluble	Solid	300.0	15089
890-1723-A-4-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	15089

Eurofins Xenco, Carlsbad



Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1725-1  
SDG: 31403360.006

Client Sample ID: SW05  
Date Collected: 12/15/21 09:40  
Date Received: 12/15/21 15:54

Lab Sample ID: 890-1725-1  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	15018	12/17/21 15:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	15044	12/18/21 03:36	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			15276	12/21/21 14:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			15468	12/23/21 12:30	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	15090	12/17/21 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			15096	12/20/21 15:58	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	15089	12/17/21 14:11	CA	XEN MID
Soluble	Analysis	300.0		1			15128	12/20/21 15:46	CH	XEN MID

Client Sample ID: SW06  
Date Collected: 12/14/21 09:50  
Date Received: 12/15/21 15:54

Lab Sample ID: 890-1725-2  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	15018	12/17/21 15:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	15044	12/18/21 03:56	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			15276	12/21/21 14:36	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			15468	12/23/21 12:30	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	15090	12/17/21 14:20	DM	XEN MID
Total/NA	Analysis	8015B NM		1			15096	12/20/21 16:18	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	15089	12/17/21 14:11	CA	XEN MID
Soluble	Analysis	300.0		1			15128	12/20/21 12:55	CH	XEN MID

Laboratory References:

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

Accreditation/Certification Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1725-1  
SDG: 31403360.006

Laboratory: Eurofins Xenco, Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1725-1  
SDG: 31403360.006

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

**Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

Sample Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1725-1  
SDG: 31403360.006

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1725-1	SW05	Solid	12/15/21 09:40	12/15/21 15:54	0 - 4
890-1725-2	SW06	Solid	12/14/21 09:50	12/15/21 15:54	0 - 4

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



## Environment Testing

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300  
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334  
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296  
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

## Chain of Custody

Work Order No: \_\_\_\_\_

www.xenco.com Page 1 of 1

Project Manager:	Joseph Hernandez	Bill to: (if different)	Jim Paley
Company Name:	WSP	Company Name:	WPK
Address:	3399 N A Street	Address:	5319 Buena Vista Dr.
City, State ZIP:	Midland TX 79705	City, State ZIP:	Laslpad, NM 88274
Phone:	(807) 727-3829	Email:	ana.bales@wsp.com

Work Order Comments				
Program:	UST/PST <input type="checkbox"/>	PRP <input type="checkbox"/>	Brownfields <input type="checkbox"/>	RRC <input type="checkbox"/> Superfund <input type="checkbox"/>
State of Project:				
Reporting:	Level II <input type="checkbox"/>	Level III <input type="checkbox"/>	PST/UST <input type="checkbox"/>	TRRP <input type="checkbox"/> Level IV <input type="checkbox"/>
Deliverables:	EDD <input type="checkbox"/>	Adapt <input type="checkbox"/>	Other: <input type="text"/>	

ANALYSIS REQUEST							Preservative Codes					
							None:	NO	D1 Water:	H <sub>2</sub> O		
							Cool:	Cool	MeOH:	Me		
							HCL:	HC	HNO <sub>3</sub> :	TN		
							H <sub>2</sub> SO <sub>4</sub> :	H <sub>2</sub>	NaOH:	Na		
							H <sub>3</sub> PO <sub>4</sub> :	HP				
							NaHSO <sub>4</sub> :	NABIS				
							Na <sub>2</sub> S <sub>2</sub> O <sub>5</sub> :	NaSO <sub>3</sub>				
							Zn Acetate-	-NaOH:	Zn			
							NaOH+Ascorbic Acid:	SAPC				

[illegible]

Total 200.7/6010	200.8/6020:	
8RCRA 13PPM	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn	
Circle Method(s) and Metal(s) to be analyzed	TCLP/SPLP 6010 : 8RCRA	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
		Hg: 1631/245.1/7470/7471

Notice: Signature of this document is required for reimbursement of samples constituting a valid purchase order from client company to Eurofins Xeno, its affiliates and subcontractors. It assigns standard terms and conditions of service. Eurofins Xeno will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of service. A minimum charge of \$58.00 will be applied to each project and a charge of \$5 for each sample submitted to Eurofins Xeno, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	12/15/21 1425	<i>[Signature]</i>	<i>[Signature]</i>	12.15.21 185

Downloaded from: 190.229.200.100 - 2020.2



## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1725-1

SDG Number: 31403360.006

Login Number: 1725

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Xenco, Carlsbad

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

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1725-1

SDG Number: 31403360.006

Login Number: 1725

List Number: 2

Creator: Kramer, Jessica

List Source: Eurofins Xenco, Midland

List Creation: 12/17/21 01:55 PM

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



## Environment Testing America

### ANALYTICAL REPORT

Eurofins Xenco, Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-1744-1

Laboratory Sample Delivery Group: 31403360.006

Client Project/Site: RDX 17-6

Revision: 1

#### For:

WSP USA Inc.  
2777 N. Stemmons Freeway  
Suite 1600  
Dallas, Texas 75207

Attn: Joseph Hernandez

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:  
1/5/2022 11:07:39 AM

Jessica Kramer, Project Manager  
(432)704-5440  
[jessica.kramer@eurofinset.com](mailto:jessica.kramer@eurofinset.com)

#### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Laboratory Job ID: 890-1744-1  
SDG: 31403360.006

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
Surrogate Summary . . . . .	9
QC Sample Results . . . . .	10
QC Association Summary . . . . .	17
Lab Chronicle . . . . .	20
Certification Summary . . . . .	22
Method Summary . . . . .	23
Sample Summary . . . . .	24
Chain of Custody . . . . .	25
Receipt Checklists . . . . .	26

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

## Definitions/Glossary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

## Qualifiers

## GC VOA

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

## GC Semi VOA

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

## HPLC/IC

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

## Glossary

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

Eurofins Xenco, Carlsbad



Case Narrative

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

Job ID: 890-1744-1

Laboratory: Eurofins Xenco, Carlsbad

Narrative	Job Narrative 890-1744-1
-----------	-----------------------------

REVISION

The report being provided is a revision of the original report sent on 12/28/2021. The report (revision 1) is being revised due to Per client email, requesting chloride re run on SW07.

Report revision history

**Receipt**  
The samples were received on 12/20/2021 4:59 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.6°C

**GC VOA**  
Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-15326 and analytical batch 880-15375 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-15437 and analytical batch 880-15427 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

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

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

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

Client Sample ID: SW07

Lab Sample ID: 890-1744-1

Date Collected: 12/16/21 09:10

Matrix: Solid

Date Received: 12/20/21 16:59

Sample Depth: 1 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		12/22/21 10:02	12/22/21 23:36	1
Toluene	<0.00202	U	0.00202		mg/Kg		12/22/21 10:02	12/22/21 23:36	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		12/22/21 10:02	12/22/21 23:36	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		12/22/21 10:02	12/22/21 23:36	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		12/22/21 10:02	12/22/21 23:36	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		12/22/21 10:02	12/22/21 23:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	126		70 - 130	12/22/21 10:02	12/22/21 23:36	1
1,4-Difluorobenzene (Surr)	93		70 - 130	12/22/21 10:02	12/22/21 23:36	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			12/28/21 08:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			12/28/21 17:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		12/22/21 09:41	12/22/21 18:49	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		12/22/21 09:41	12/22/21 18:49	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		12/22/21 09:41	12/22/21 18:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	99		70 - 130	12/22/21 09:41	12/22/21 18:49	1
o-Terphenyl	96		70 - 130	12/22/21 09:41	12/22/21 18:49	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	513		50.4		mg/Kg			01/03/22 17:58	10

Client Sample ID: SW08

Lab Sample ID: 890-1744-2

Date Collected: 12/16/21 09:15

Matrix: Solid

Date Received: 12/20/21 16:59

Sample Depth: 1 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/22/21 10:02	12/22/21 23:57	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/22/21 10:02	12/22/21 23:57	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/22/21 10:02	12/22/21 23:57	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		12/22/21 10:02	12/22/21 23:57	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/22/21 10:02	12/22/21 23:57	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		12/22/21 10:02	12/22/21 23:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		70 - 130	12/22/21 10:02	12/22/21 23:57	1

Eurofins Xenco, Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

Client Sample ID: SW08

Lab Sample ID: 890-1744-2

Date Collected: 12/16/21 09:15

Matrix: Solid

Date Received: 12/20/21 16:59

Sample Depth: 1 - 4

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	85		70 - 130	12/22/21 10:02	12/22/21 23:57	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			12/28/21 08:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			12/28/21 17:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		12/22/21 09:41	12/22/21 19:09	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/22/21 09:41	12/22/21 19:09	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/22/21 09:41	12/22/21 19:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	105		70 - 130				12/22/21 09:41	12/22/21 19:09	1
o-Terphenyl	98		70 - 130				12/22/21 09:41	12/22/21 19:09	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	395		25.0		mg/Kg			12/22/21 14:28	5

Client Sample ID: SW09

Lab Sample ID: 890-1744-3

Date Collected: 12/16/21 09:20

Matrix: Solid

Date Received: 12/20/21 16:59

Sample Depth: 1 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		12/22/21 10:02	12/23/21 00:17	1
Toluene	<0.00199	U	0.00199		mg/Kg		12/22/21 10:02	12/23/21 00:17	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		12/22/21 10:02	12/23/21 00:17	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		12/22/21 10:02	12/23/21 00:17	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		12/22/21 10:02	12/23/21 00:17	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		12/22/21 10:02	12/23/21 00:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	79		70 - 130	12/22/21 10:02	12/23/21 00:17	1
1,4-Difluorobenzene (Surr)	93		70 - 130	12/22/21 10:02	12/23/21 00:17	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			12/28/21 08:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			12/28/21 17:22	1

Eurofins Xenco, Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

Client Sample ID: SW09

Lab Sample ID: 890-1744-3

Date Collected: 12/16/21 09:20

Matrix: Solid

Date Received: 12/20/21 16:59

Sample Depth: 1 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		12/22/21 09:41	12/22/21 19:30	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		12/22/21 09:41	12/22/21 19:30	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		12/22/21 09:41	12/22/21 19:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	114		70 - 130				12/22/21 09:41	12/22/21 19:30	1
o-Terphenyl	111		70 - 130				12/22/21 09:41	12/22/21 19:30	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	102		5.03		mg/Kg			12/22/21 14:38	1

Client Sample ID: SW10

Lab Sample ID: 890-1744-4

Date Collected: 12/16/21 09:25

Matrix: Solid

Date Received: 12/20/21 16:59

Sample Depth: 1 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U *	0.00200		mg/Kg		12/23/21 12:08	12/23/21 20:30	1
Toluene	<0.00200	U *1 *+ F1	0.00200		mg/Kg		12/23/21 12:08	12/23/21 20:30	1
Ethylbenzene	<0.00200	U F1	0.00200		mg/Kg		12/23/21 12:08	12/23/21 20:30	1
m-Xylene & p-Xylene	<0.00401	U *1 *- F1	0.00401		mg/Kg		12/23/21 12:08	12/23/21 20:30	1
o-Xylene	<0.00200	U *1 *+ F1	0.00200		mg/Kg		12/23/21 12:08	12/23/21 20:30	1
Xylenes, Total	<0.00401	U *1 *+ F1	0.00401		mg/Kg		12/23/21 12:08	12/23/21 20:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	127		70 - 130				12/23/21 12:08	12/23/21 20:30	1
1,4-Difluorobenzene (Surr)	100		70 - 130				12/23/21 12:08	12/23/21 20:30	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			12/28/21 08:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			12/28/21 17:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		12/22/21 09:41	12/22/21 19:51	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		12/22/21 09:41	12/22/21 19:51	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		12/22/21 09:41	12/22/21 19:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	98		70 - 130				12/22/21 09:41	12/22/21 19:51	1
o-Terphenyl	94		70 - 130				12/22/21 09:41	12/22/21 19:51	1

Eurofins Xenco, Carlsbad

Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

Client Sample ID: SW10  
Date Collected: 12/16/21 09:25  
Date Received: 12/20/21 16:59  
Sample Depth: 1 - 4

Lab Sample ID: 890-1744-4  
Matrix: Solid

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	401		25.2		mg/Kg			12/22/21 14:48	5



## Surrogate Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-9625-A-1-A MS	Matrix Spike	142 S1+	114
880-9625-A-1-B MSD	Matrix Spike Duplicate	113	88
890-1744-1	SW07	126	93
890-1744-2	SW08	90	85
890-1744-3	SW09	79	93
890-1744-4	SW10	127	100
890-1744-4 MS	SW10	117	97
890-1744-4 MSD	SW10	141 S1+	104
LCS 880-15326/1-A	Lab Control Sample	110	96
LCS 880-15437/1-A	Lab Control Sample	626 S1+	53 S1-
LCSD 880-15326/2-A	Lab Control Sample Dup	122	100
LCSD 880-15437/2-A	Lab Control Sample Dup	113	102
MB 880-15326/5-A	Method Blank	120	96
MB 880-15437/5-A	Method Blank	122	100
<b>Surrogate Legend</b>			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-1743-A-1-D MS	Matrix Spike	92	87
890-1743-A-1-E MSD	Matrix Spike Duplicate	103	101
890-1744-1	SW07	99	96
890-1744-2	SW08	105	98
890-1744-3	SW09	114	111
890-1744-4	SW10	98	94
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO2 (70-130)	OTPH2 (70-130)
LCS 880-15317/2-A	Lab Control Sample	110	115
LCSD 880-15317/3-A	Lab Control Sample Dup	119	114
MB 880-15317/1-A	Method Blank	115	120
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

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

Lab Sample ID: MB 880-15326/5-A

Matrix: Solid

Analysis Batch: 15375

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 15326

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/22/21 10:02	12/22/21 16:11	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/22/21 10:02	12/22/21 16:11	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/22/21 10:02	12/22/21 16:11	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		12/22/21 10:02	12/22/21 16:11	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/22/21 10:02	12/22/21 16:11	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		12/22/21 10:02	12/22/21 16:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	120		70 - 130	12/22/21 10:02	12/22/21 16:11	1
1,4-Difluorobenzene (Surr)	96		70 - 130	12/22/21 10:02	12/22/21 16:11	1

Lab Sample ID: LCS 880-15326/1-A

Matrix: Solid

Analysis Batch: 15375

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 15326

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.09590		mg/Kg		96	70 - 130
Toluene	0.100	0.09926		mg/Kg		99	70 - 130
Ethylbenzene	0.100	0.1004		mg/Kg		100	70 - 130
m-Xylene & p-Xylene	0.200	0.1935		mg/Kg		97	70 - 130
o-Xylene	0.100	0.09323		mg/Kg		93	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	110		70 - 130
1,4-Difluorobenzene (Surr)	96		70 - 130

Lab Sample ID: LCSD 880-15326/2-A

Matrix: Solid

Analysis Batch: 15375

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 15326

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	0.100	0.1034		mg/Kg		103	70 - 130	8	35
Toluene	0.100	0.1048		mg/Kg		105	70 - 130	5	35
Ethylbenzene	0.100	0.1064		mg/Kg		106	70 - 130	6	35
m-Xylene & p-Xylene	0.200	0.2138		mg/Kg		107	70 - 130	10	35
o-Xylene	0.100	0.1057		mg/Kg		106	70 - 130	13	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	122		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

Lab Sample ID: 880-9625-A-1-A MS

Matrix: Solid

Analysis Batch: 15375

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 15326

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<0.00200	U F1 F2	0.0998	0.06972		mg/Kg		70	70 - 130
Toluene	<0.00200	U F1	0.0998	0.07261		mg/Kg		72	70 - 130

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

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

Lab Sample ID: 880-9625-A-1-A MS

Matrix: Solid

Analysis Batch: 15375

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 15326

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	<0.00200	U F1	0.0998	0.06766	F1	mg/Kg		68	70 - 130
m-Xylene & p-Xylene	<0.00401	U F1	0.200	0.1374	F1	mg/Kg		69	70 - 130
o-Xylene	<0.00200	U F1	0.0998	0.06888	F1	mg/Kg		69	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	142	S1+	70 - 130
1,4-Difluorobenzene (Surr)	114		70 - 130

Lab Sample ID: 880-9625-A-1-B MSD

Matrix: Solid

Analysis Batch: 15375

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 15326

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	<0.00200	U F1 F2	0.0994	0.02127	F1 F2	mg/Kg		21	70 - 130	106	35
Toluene	<0.00200	U F1	0.0994	0.06729	F1	mg/Kg		67	70 - 130	8	35
Ethylbenzene	<0.00200	U F1	0.0994	0.06544	F1	mg/Kg		66	70 - 130	3	35
m-Xylene & p-Xylene	<0.00401	U F1	0.199	0.1259	F1	mg/Kg		63	70 - 130	9	35
o-Xylene	<0.00200	U F1	0.0994	0.05627	F1	mg/Kg		56	70 - 130	20	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	113		70 - 130
1,4-Difluorobenzene (Surr)	88		70 - 130

Lab Sample ID: MB 880-15437/5-A

Matrix: Solid

Analysis Batch: 15427

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 15437

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		12/23/21 12:08	12/23/21 20:00	1
Toluene	<0.00200	U	0.00200		mg/Kg		12/23/21 12:08	12/23/21 20:00	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		12/23/21 12:08	12/23/21 20:00	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		12/23/21 12:08	12/23/21 20:00	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		12/23/21 12:08	12/23/21 20:00	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		12/23/21 12:08	12/23/21 20:00	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	122		70 - 130	12/23/21 12:08	12/23/21 20:00	1
1,4-Difluorobenzene (Surr)	100		70 - 130	12/23/21 12:08	12/23/21 20:00	1

Lab Sample ID: LCS 880-15437/1-A

Matrix: Solid

Analysis Batch: 15427

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 15437

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.06355	*-	mg/Kg		64	70 - 130
Toluene	0.100	0.2411	*+	mg/Kg		241	70 - 130
Ethylbenzene	0.100	0.1077		mg/Kg		108	70 - 130
m-Xylene & p-Xylene	0.200	0.1060	*-	mg/Kg		53	70 - 130

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	626	S1+	70 - 130
1,4-Difluorobenzene (Surr)	53	S1-	70 - 130

Lab Sample ID: LCSD 880-15437/2-A  
Matrix: Solid  
Analysis Batch: 15427

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 15437

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	0.100	0.08456		mg/Kg		85	70 - 130	28	35
Toluene	0.100	0.09326	*1	mg/Kg		93	70 - 130	88	35
Ethylbenzene	0.100	0.1004		mg/Kg		100	70 - 130	7	35
m-Xylene & p-Xylene	0.200	0.1964	*1	mg/Kg		98	70 - 130	60	35
o-Xylene	0.100	0.09728	*1	mg/Kg		97	70 - 130	123	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	113		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: 890-1744-4 MS  
Matrix: Solid  
Analysis Batch: 15427

Client Sample ID: SW10  
Prep Type: Total/NA  
Prep Batch: 15437

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	<0.00200	U *-	0.0998	0.07463		mg/Kg		75	70 - 130		
Toluene	<0.00200	U *1 *+ F1	0.0998	0.06904	F1	mg/Kg		69	70 - 130		
Ethylbenzene	<0.00200	U F1	0.0998	0.05768	F1	mg/Kg		58	70 - 130		
m-Xylene & p-Xylene	<0.00401	U *1 *- F1	0.200	0.1137	F1	mg/Kg		57	70 - 130		
o-Xylene	<0.00200	U *1 *+ F1	0.0998	0.06154	F1	mg/Kg		62	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	117		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: 890-1744-4 MSD  
Matrix: Solid  
Analysis Batch: 15427

Client Sample ID: SW10  
Prep Type: Total/NA  
Prep Batch: 15437

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	<0.00200	U *-	0.0994	0.08482		mg/Kg		85	70 - 130	13	35
Toluene	<0.00200	U *1 *+ F1	0.0994	0.08707		mg/Kg		87	70 - 130	23	35
Ethylbenzene	<0.00200	U F1	0.0994	0.08127		mg/Kg		82	70 - 130	34	35
m-Xylene & p-Xylene	<0.00401	U *1 *- F1	0.199	0.1553		mg/Kg		78	70 - 130	31	35
o-Xylene	<0.00200	U *1 *+ F1	0.0994	0.07869		mg/Kg		79	70 - 130	24	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	141	S1+	70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

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

Lab Sample ID: MB 880-15317/1-A

Matrix: Solid

Analysis Batch: 15328

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 15317

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		12/22/21 09:41	12/22/21 11:15	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		12/22/21 09:41	12/22/21 11:15	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		12/22/21 09:41	12/22/21 11:15	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	115		70 - 130				12/22/21 09:41	12/22/21 11:15	1
o-Terphenyl	120		70 - 130				12/22/21 09:41	12/22/21 11:15	1

Lab Sample ID: LCS 880-15317/2-A

Matrix: Solid

Analysis Batch: 15328

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 15317

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	791.8		mg/Kg		79	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1008		mg/Kg		101	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	110		70 - 130				
o-Terphenyl	115		70 - 130				

Lab Sample ID: LCSD 880-15317/3-A

Matrix: Solid

Analysis Batch: 15328

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 15317

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	869.0		mg/Kg		87	70 - 130	9	20
Diesel Range Organics (Over C10-C28)	1000	1036		mg/Kg		104	70 - 130	3	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	119		70 - 130						
o-Terphenyl	114		70 - 130						

Lab Sample ID: 890-1743-A-1-D MS

Matrix: Solid

Analysis Batch: 15328

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 15317

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	996	1031		mg/Kg		101	70 - 130
Diesel Range Organics (Over C10-C28)	126		996	1014		mg/Kg		89	70 - 130

Eurofins Xenco, Carlsbad



## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

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

Lab Sample ID: 890-1743-A-1-D MS

Matrix: Solid

Analysis Batch: 15328

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 15317

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	92		70 - 130
o-Terphenyl	87		70 - 130

Lab Sample ID: 890-1743-A-1-E MSD

Matrix: Solid

Analysis Batch: 15328

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 15317

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	995	1002		mg/Kg		98	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	126		995	1192		mg/Kg		107	70 - 130	16	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	103		70 - 130
o-Terphenyl	101		70 - 130

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-15278/1-A

Matrix: Solid

Analysis Batch: 15401

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			12/22/21 10:00	1

Lab Sample ID: LCS 880-15278/2-A

Matrix: Solid

Analysis Batch: 15401

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	250	253.5		mg/Kg		101	90 - 110

Lab Sample ID: LCSD 880-15278/3-A

Matrix: Solid

Analysis Batch: 15401

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	247.8		mg/Kg		99	90 - 110	2	20

Lab Sample ID: 890-1740-A-3-B MS

Matrix: Solid

Analysis Batch: 15401

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	318		1260	1571		mg/Kg		100	90 - 110

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

## Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-1740-A-3-C MSD

Matrix: Solid

Analysis Batch: 15401

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	318		1260	1567		mg/Kg		99	90 - 110	0	20

Lab Sample ID: 890-1743-A-4-B MS

Matrix: Solid

Analysis Batch: 15401

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	6560		2500	9222		mg/Kg		107	90 - 110		

Lab Sample ID: 890-1743-A-4-C MSD

Matrix: Solid

Analysis Batch: 15401

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	6560		2500	9214		mg/Kg		106	90 - 110	0	20

Lab Sample ID: MB 880-15521/1-A

Matrix: Solid

Analysis Batch: 15817

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			12/30/21 17:04	1

Lab Sample ID: LCS 880-15521/2-A

Matrix: Solid

Analysis Batch: 15817

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	250	250.3		mg/Kg		100	90 - 110		

Lab Sample ID: LCSD 880-15521/3-A

Matrix: Solid

Analysis Batch: 15817

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	250.9		mg/Kg		100	90 - 110	0	20

Lab Sample ID: 880-9676-A-6-B MS

Matrix: Solid

Analysis Batch: 15817

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	39.7		248	313.2		mg/Kg		110	90 - 110		

Lab Sample ID: 880-9676-A-6-C MSD

Matrix: Solid

Analysis Batch: 15817

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	39.7		248	313.2		mg/Kg		110	90 - 110	0	20

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-15705/1-A

Matrix: Solid

Analysis Batch: 15917

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			01/03/22 13:00	1

Lab Sample ID: LCS 880-15705/2-A

Matrix: Solid

Analysis Batch: 15917

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	250	246.7		mg/Kg		99	90 - 110

Lab Sample ID: LCSD 880-15705/3-A

Matrix: Solid

Analysis Batch: 15917

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	246.6		mg/Kg		99	90 - 110	0	20

Lab Sample ID: 890-1756-A-2-B MS

Matrix: Solid

Analysis Batch: 15917

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	<5.04	U	252	229.9		mg/Kg		91	90 - 110

Lab Sample ID: 890-1756-A-2-C MSD

Matrix: Solid

Analysis Batch: 15917

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	<5.04	U	252	230.5		mg/Kg		91	90 - 110	0	20

Eurofins Xenco, Carlsbad

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

## GC VOA

## Prep Batch: 15326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1744-1	SW07	Total/NA	Solid	5035	
890-1744-2	SW08	Total/NA	Solid	5035	
890-1744-3	SW09	Total/NA	Solid	5035	
MB 880-15326/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-15326/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-15326/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-9625-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
880-9625-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## Analysis Batch: 15375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1744-1	SW07	Total/NA	Solid	8021B	15326
890-1744-2	SW08	Total/NA	Solid	8021B	15326
890-1744-3	SW09	Total/NA	Solid	8021B	15326
MB 880-15326/5-A	Method Blank	Total/NA	Solid	8021B	15326
LCS 880-15326/1-A	Lab Control Sample	Total/NA	Solid	8021B	15326
LCSD 880-15326/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	15326
880-9625-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	15326
880-9625-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	15326

## Analysis Batch: 15427

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1744-4	SW10	Total/NA	Solid	8021B	15437
MB 880-15437/5-A	Method Blank	Total/NA	Solid	8021B	15437
LCS 880-15437/1-A	Lab Control Sample	Total/NA	Solid	8021B	15437
LCSD 880-15437/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	15437
890-1744-4 MS	SW10	Total/NA	Solid	8021B	15437
890-1744-4 MSD	SW10	Total/NA	Solid	8021B	15437

## Prep Batch: 15437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1744-4	SW10	Total/NA	Solid	5035	
MB 880-15437/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-15437/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-15437/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-1744-4 MS	SW10	Total/NA	Solid	5035	
890-1744-4 MSD	SW10	Total/NA	Solid	5035	

## Analysis Batch: 15505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1744-1	SW07	Total/NA	Solid	Total BTEX	
890-1744-2	SW08	Total/NA	Solid	Total BTEX	
890-1744-3	SW09	Total/NA	Solid	Total BTEX	
890-1744-4	SW10	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Prep Batch: 15317

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1744-1	SW07	Total/NA	Solid	8015NM Prep	
890-1744-2	SW08	Total/NA	Solid	8015NM Prep	

Eurofins Xenco, Carlsbad

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

## GC Semi VOA (Continued)

## Prep Batch: 15317 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1744-3	SW09	Total/NA	Solid	8015NM Prep	
890-1744-4	SW10	Total/NA	Solid	8015NM Prep	
MB 880-15317/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-15317/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-15317/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1743-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-1743-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 15328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1744-1	SW07	Total/NA	Solid	8015B NM	15317
890-1744-2	SW08	Total/NA	Solid	8015B NM	15317
890-1744-3	SW09	Total/NA	Solid	8015B NM	15317
890-1744-4	SW10	Total/NA	Solid	8015B NM	15317
MB 880-15317/1-A	Method Blank	Total/NA	Solid	8015B NM	15317
LCS 880-15317/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	15317
LCSD 880-15317/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	15317
890-1743-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	15317
890-1743-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	15317

## Analysis Batch: 15674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1744-1	SW07	Total/NA	Solid	8015 NM	
890-1744-2	SW08	Total/NA	Solid	8015 NM	
890-1744-3	SW09	Total/NA	Solid	8015 NM	
890-1744-4	SW10	Total/NA	Solid	8015 NM	

## HPLC/IC

## Leach Batch: 15278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1744-1	SW07	Soluble	Solid	DI Leach	
890-1744-2	SW08	Soluble	Solid	DI Leach	
890-1744-3	SW09	Soluble	Solid	DI Leach	
890-1744-4	SW10	Soluble	Solid	DI Leach	
MB 880-15278/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-15278/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-15278/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1740-A-3-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-1740-A-3-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	
890-1743-A-4-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-1743-A-4-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## Analysis Batch: 15401

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1744-1	SW07	Soluble	Solid	300.0	15278
890-1744-2	SW08	Soluble	Solid	300.0	15278
890-1744-3	SW09	Soluble	Solid	300.0	15278
890-1744-4	SW10	Soluble	Solid	300.0	15278
MB 880-15278/1-A	Method Blank	Soluble	Solid	300.0	15278
LCS 880-15278/2-A	Lab Control Sample	Soluble	Solid	300.0	15278

Eurofins Xenco, Carlsbad



## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

## HPLC/IC (Continued)

## Analysis Batch: 15401 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-15278/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	15278
890-1740-A-3-B MS	Matrix Spike	Soluble	Solid	300.0	15278
890-1740-A-3-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	15278
890-1743-A-4-B MS	Matrix Spike	Soluble	Solid	300.0	15278
890-1743-A-4-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	15278

## Leach Batch: 15521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1744-1	SW07	Soluble	Solid	DI Leach	
MB 880-15521/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-15521/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-15521/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-9676-A-6-B MS	Matrix Spike	Soluble	Solid	DI Leach	
880-9676-A-6-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## Leach Batch: 15705

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1744-1	SW07	Soluble	Solid	DI Leach	
MB 880-15705/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-15705/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-15705/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1756-A-2-B MS	Matrix Spike	Soluble	Solid	DI Leach	
890-1756-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## Analysis Batch: 15817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1744-1	SW07	Soluble	Solid	300.0	15521
MB 880-15521/1-A	Method Blank	Soluble	Solid	300.0	15521
LCS 880-15521/2-A	Lab Control Sample	Soluble	Solid	300.0	15521
LCSD 880-15521/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	15521
880-9676-A-6-B MS	Matrix Spike	Soluble	Solid	300.0	15521
880-9676-A-6-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	15521

## Analysis Batch: 15917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1744-1	SW07	Soluble	Solid	300.0	15705
MB 880-15705/1-A	Method Blank	Soluble	Solid	300.0	15705
LCS 880-15705/2-A	Lab Control Sample	Soluble	Solid	300.0	15705
LCSD 880-15705/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	15705
890-1756-A-2-B MS	Matrix Spike	Soluble	Solid	300.0	15705
890-1756-A-2-C MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	15705

Eurofins Xenco, Carlsbad

## Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

**Client Sample ID: SW07****Date Collected: 12/16/21 09:10****Date Received: 12/20/21 16:59****Lab Sample ID: 890-1744-1****Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	15326	12/22/21 10:02	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	15375	12/22/21 23:36	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			15505	12/28/21 08:41	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			15674	12/28/21 17:22	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	15317	12/22/21 09:41	DM	XEN MID
Total/NA	Analysis	8015B NM		1			15328	12/22/21 18:49	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	15278	12/21/21 15:12	CA	XEN MID
Soluble	Analysis	300.0		10			15401	12/22/21 14:18	SC	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	15521	12/24/21 19:56	SC	XEN MID
Soluble	Analysis	300.0		10			15817	12/30/21 18:38	CH	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	15705	12/29/21 08:46	CH	XEN MID
Soluble	Analysis	300.0		10			15917	01/03/22 17:58	CH	XEN MID

**Client Sample ID: SW08****Date Collected: 12/16/21 09:15****Date Received: 12/20/21 16:59****Lab Sample ID: 890-1744-2****Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	15326	12/22/21 10:02	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	15375	12/22/21 23:57	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			15505	12/28/21 08:41	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			15674	12/28/21 17:22	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	15317	12/22/21 09:41	DM	XEN MID
Total/NA	Analysis	8015B NM		1			15328	12/22/21 19:09	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	15278	12/21/21 15:12	CA	XEN MID
Soluble	Analysis	300.0		5			15401	12/22/21 14:28	SC	XEN MID

**Client Sample ID: SW09****Date Collected: 12/16/21 09:20****Date Received: 12/20/21 16:59****Lab Sample ID: 890-1744-3****Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	15326	12/22/21 10:02	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	15375	12/23/21 00:17	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			15505	12/28/21 08:41	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			15674	12/28/21 17:22	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	15317	12/22/21 09:41	DM	XEN MID
Total/NA	Analysis	8015B NM		1			15328	12/22/21 19:30	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	15278	12/21/21 15:12	CA	XEN MID
Soluble	Analysis	300.0		1			15401	12/22/21 14:38	SC	XEN MID

Eurofins Xenco, Carlsbad

Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

Client Sample ID: SW10  
Date Collected: 12/16/21 09:25  
Date Received: 12/20/21 16:59

Lab Sample ID: 890-1744-4  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	15437	12/23/21 12:08	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	15427	12/23/21 20:30	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			15505	12/28/21 08:41	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			15674	12/28/21 17:22	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	15317	12/22/21 09:41	DM	XEN MID
Total/NA	Analysis	8015B NM		1			15328	12/22/21 19:51	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	15278	12/21/21 15:12	CA	XEN MID
Soluble	Analysis	300.0		5			15401	12/22/21 14:48	SC	XEN MID

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

Accreditation/Certification Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

Laboratory: Eurofins Xenco, Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

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

Protocol References:

- ASTM = ASTM International
- MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
- SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
- TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

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



Sample Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1744-1  
SDG: 31403360.006

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1744-1	SW07	Solid	12/16/21 09:10	12/20/21 16:59	1 - 4
890-1744-2	SW08	Solid	12/16/21 09:15	12/20/21 16:59	1 - 4
890-1744-3	SW09	Solid	12/16/21 09:20	12/20/21 16:59	1 - 4
890-1744-4	SW10	Solid	12/16/21 09:25	12/20/21 16:59	1 - 4

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



Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334  
 Lubbock, TX (806) 794-1296  
 Hobbs, NM (575) 988-3199

**Work Order No:**

EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296  
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Page 1 of 1

Project Manager: Joseph Hernandez		Bill to: (if different) Jim Raley	
Company Name: WSP USA		Company Name: WPX	
Address: 3300 N A Street		Address: 5315 Buena Vista Dr.	
City, State ZIP: Midland, TX 79705		City, State ZIP: Carlsbad, NM 88220	
Phone: (281) 782-2329		Email: anna.byers@wsp.com	

Project Name: RDX 17-16		Turn Around <input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush		Pres. Code	
Project Number: 314033400 0016		Due Date: TAT starts the day received by the lab, if received by 4:30pm			
Project Location: Eddy County		Wet Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Sampler's Name: Mercy Rotich		Thermometer ID: T-10-207			
P.O. #: NRM2019548894		Correction Factor: -0.2			
Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Temperature Reading: 3.8			
Samples Received Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Corrected Temperature: 3.6			
Cooler Custody Seals: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
Sample Custody Seals: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
Total Containers:					

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont
SW07	S	12-16-2011	9:10	1-4'		
SW08	S	12-16-2011	9:15	1-4'		
SW09	S	12-16-2011	9:20	1-4'		
SW10	S	12-16-2011	9:25	1-4'		
			94			

SAMPLE RECEIPT		Parameters	
Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Grab/Comp	
Thermometer ID: T-10-207		# of Cont	
Correction Factor: -0.2			
Temperature Reading: 3.8			
Corrected Temperature: 3.6			

SAMPLE RECEIPT		Parameters	
Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Grab/Comp	
Thermometer ID: T-10-207		# of Cont	
Correction Factor: -0.2			
Temperature Reading: 3.8			
Corrected Temperature: 3.6			

SAMPLE RECEIPT		Parameters	
Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Grab/Comp	
Thermometer ID: T-10-207		# of Cont	
Correction Factor: -0.2			
Temperature Reading: 3.8			
Corrected Temperature: 3.6			

SAMPLE RECEIPT		Parameters	
Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Grab/Comp	
Thermometer ID: T-10-207		# of Cont	
Correction Factor: -0.2			
Temperature Reading: 3.8			
Corrected Temperature: 3.6			

SAMPLE RECEIPT		Parameters	
Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Grab/Comp	
Thermometer ID: T-10-207		# of Cont	
Correction Factor: -0.2			
Temperature Reading: 3.8			
Corrected Temperature: 3.6			

SAMPLE RECEIPT		Parameters	
Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Grab/Comp	
Thermometer ID: T-10-207		# of Cont	
Correction Factor: -0.2			
Temperature Reading: 3.8			
Corrected Temperature: 3.6			

SAMPLE RECEIPT		Parameters	
Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Grab/Comp	
Thermometer ID: T-10-207		# of Cont	
Correction Factor: -0.2			
Temperature Reading: 3.8			
Corrected Temperature: 3.6			

SAMPLE RECEIPT		Parameters	
Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Grab/Comp	
Thermometer ID: T-10-207		# of Cont	
Correction Factor: -0.2			
Temperature Reading: 3.8			
Corrected Temperature: 3.6			

SAMPLE RECEIPT		Parameters	
Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Grab/Comp	
Thermometer ID: T-10-207		# of Cont	
Correction Factor: -0.2			
Temperature Reading: 3.8			
Corrected Temperature: 3.6			

SAMPLE RECEIPT		Parameters	
Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Grab/Comp	
Thermometer ID: T-10-207		# of Cont	
Correction Factor: -0.2			
Temperature Reading: 3.8			
Corrected Temperature: 3.6			

SAMPLE RECEIPT		Parameters	
Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Grab/Comp	
Thermometer ID: T-10-207		# of Cont	
Correction Factor: -0.2			
Temperature Reading: 3.8			
Corrected Temperature: 3.6			

SAMPLE RECEIPT		Parameters	
Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Grab/Comp	
Thermometer ID: T-10-207		# of Cont	
Correction Factor: -0.2			
Temperature Reading: 3.8			
Corrected Temperature: 3.6			

SAMPLE RECEIPT		Parameters	
Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Grab/Comp	
Thermometer ID: T-10-207		# of Cont	
Correction Factor: -0.2			
Temperature Reading: 3.8			
Corrected Temperature: 3.6			

SAMPLE RECEIPT		Parameters	
Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Grab/Comp	
Thermometer ID: T-10-207		# of Cont	
Correction Factor: -0.2			
Temperature Reading: 3.8			
Corrected Temperature: 3.6			

SAMPLE RECEIPT		Parameters	
Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Grab/Comp	
Thermometer ID: T-10-207		# of Cont	
Correction Factor: -0.2			
Temperature Reading: 3.8			
Corrected Temperature: 3.6			

SAMPLE RECEIPT		Parameters	
Temp Blank: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Grab/Comp	
Thermometer ID: T-10-207		# of Cont	
Correction Factor: -0.2			
Temperature Reading: 3.8			
Corrected Temperature: 3.6			

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1744-1

SDG Number: 31403360.006

Login Number: 1744

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Xenco, Carlsbad

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

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1744-1

SDG Number: 31403360.006

Login Number: 1744

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Xenco, Midland

List Creation: 12/21/21 02:08 PM

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



## Environment Testing America

### ANALYTICAL REPORT

Eurofins Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-1807-1

Laboratory Sample Delivery Group: 31403360.006

Client Project/Site: RDX 17-6

For:

WSP USA Inc.  
2777 N. Stemmons Freeway  
Suite 1600  
Dallas, Texas 75207

Attn: Joseph Hernandez

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:  
1/14/2022 2:21:49 PM

Jessica Kramer, Project Manager  
(432)704-5440  
[jessica.kramer@eurofinset.com](mailto:jessica.kramer@eurofinset.com)

#### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



Client: WSP USA Inc.  
Project/Site: RDX 17-6

Laboratory Job ID: 890-1807-1  
SDG: 31403360.006

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
Surrogate Summary . . . . .	10
QC Sample Results . . . . .	11
QC Association Summary . . . . .	15
Lab Chronicle . . . . .	18
Certification Summary . . . . .	20
Method Summary . . . . .	21
Sample Summary . . . . .	22
Chain of Custody . . . . .	23
Receipt Checklists . . . . .	24

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Definitions/Glossary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Case Narrative

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

Job ID: 890-1807-1

Laboratory: Eurofins Carlsbad

Narrative	Job Narrative 890-1807-1
-----------	-----------------------------

Receipt

The samples were received on 1/6/2022 2:27 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

GC VOA

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

GC Semi VOA

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

HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-16432 and 880-16432 and analytical batch 880-16543 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

Client Sample ID: SW11

Lab Sample ID: 890-1807-1

Date Collected: 01/06/22 11:15

Matrix: Solid

Date Received: 01/06/22 14:27

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		01/07/22 08:00	01/07/22 20:11	1
Toluene	<0.00198	U	0.00198		mg/Kg		01/07/22 08:00	01/07/22 20:11	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		01/07/22 08:00	01/07/22 20:11	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		01/07/22 08:00	01/07/22 20:11	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		01/07/22 08:00	01/07/22 20:11	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		01/07/22 08:00	01/07/22 20:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		70 - 130	01/07/22 08:00	01/07/22 20:11	1
1,4-Difluorobenzene (Surr)	95		70 - 130	01/07/22 08:00	01/07/22 20:11	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			01/12/22 12:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			01/11/22 14:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/07/22 15:29	01/09/22 01:20	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/07/22 15:29	01/09/22 01:20	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/07/22 15:29	01/09/22 01:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	91		70 - 130	01/07/22 15:29	01/09/22 01:20	1
o-Terphenyl	107		70 - 130	01/07/22 15:29	01/09/22 01:20	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	214		4.97		mg/Kg			01/13/22 23:15	1

Client Sample ID: SW12

Lab Sample ID: 890-1807-2

Date Collected: 01/06/22 11:20

Matrix: Solid

Date Received: 01/06/22 14:27

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		01/07/22 08:00	01/07/22 20:31	1
Toluene	<0.00198	U	0.00198		mg/Kg		01/07/22 08:00	01/07/22 20:31	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		01/07/22 08:00	01/07/22 20:31	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		01/07/22 08:00	01/07/22 20:31	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		01/07/22 08:00	01/07/22 20:31	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		01/07/22 08:00	01/07/22 20:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		70 - 130	01/07/22 08:00	01/07/22 20:31	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

Client Sample ID: SW12

Lab Sample ID: 890-1807-2

Date Collected: 01/06/22 11:20

Matrix: Solid

Date Received: 01/06/22 14:27

Sample Depth: 0 - 4

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	94		70 - 130	01/07/22 08:00	01/07/22 20:31	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			01/12/22 12:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			01/11/22 14:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/07/22 15:29	01/09/22 01:40	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/07/22 15:29	01/09/22 01:40	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/07/22 15:29	01/09/22 01:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	73		70 - 130				01/07/22 15:29	01/09/22 01:40	1
o-Terphenyl	84		70 - 130				01/07/22 15:29	01/09/22 01:40	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	234		4.95		mg/Kg			01/13/22 23:26	1

Client Sample ID: SW13

Lab Sample ID: 890-1807-3

Date Collected: 01/06/22 11:25

Matrix: Solid

Date Received: 01/06/22 14:27

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		01/07/22 08:00	01/07/22 20:52	1
Toluene	<0.00201	U	0.00201		mg/Kg		01/07/22 08:00	01/07/22 20:52	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		01/07/22 08:00	01/07/22 20:52	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		01/07/22 08:00	01/07/22 20:52	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		01/07/22 08:00	01/07/22 20:52	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		01/07/22 08:00	01/07/22 20:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		70 - 130	01/07/22 08:00	01/07/22 20:52	1
1,4-Difluorobenzene (Surr)	102		70 - 130	01/07/22 08:00	01/07/22 20:52	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			01/12/22 12:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			01/11/22 14:19	1

Eurofins Carlsbad



## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

## Client Sample ID: SW13

## Lab Sample ID: 890-1807-3

Date Collected: 01/06/22 11:25

Matrix: Solid

Date Received: 01/06/22 14:27

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/07/22 15:29	01/09/22 02:00	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/07/22 15:29	01/09/22 02:00	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/07/22 15:29	01/09/22 02:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	77		70 - 130				01/07/22 15:29	01/09/22 02:00	1
o-Terphenyl	90		70 - 130				01/07/22 15:29	01/09/22 02:00	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	278	F1	5.00		mg/Kg			01/13/22 23:32	1

## Client Sample ID: SW14

## Lab Sample ID: 890-1807-4

Date Collected: 01/06/22 11:30

Matrix: Solid

Date Received: 01/06/22 14:27

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		01/07/22 08:00	01/07/22 21:12	1
Toluene	<0.00201	U	0.00201		mg/Kg		01/07/22 08:00	01/07/22 21:12	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		01/07/22 08:00	01/07/22 21:12	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		01/07/22 08:00	01/07/22 21:12	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		01/07/22 08:00	01/07/22 21:12	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		01/07/22 08:00	01/07/22 21:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130				01/07/22 08:00	01/07/22 21:12	1
1,4-Difluorobenzene (Surr)	93		70 - 130				01/07/22 08:00	01/07/22 21:12	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			01/12/22 12:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			01/11/22 14:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/07/22 15:29	01/09/22 02:20	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/07/22 15:29	01/09/22 02:20	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/07/22 15:29	01/09/22 02:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	77		70 - 130				01/07/22 15:29	01/09/22 02:20	1
o-Terphenyl	89		70 - 130				01/07/22 15:29	01/09/22 02:20	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

## Client Sample ID: SW14

## Lab Sample ID: 890-1807-4

Date Collected: 01/06/22 11:30

Matrix: Solid

Date Received: 01/06/22 14:27

Sample Depth: 0 - 4

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	247		4.99		mg/Kg			01/13/22 23:51	1

## Client Sample ID: SW15

## Lab Sample ID: 890-1807-5

Date Collected: 01/06/22 11:35

Matrix: Solid

Date Received: 01/06/22 14:27

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		01/07/22 08:00	01/07/22 21:33	1
Toluene	<0.00199	U	0.00199		mg/Kg		01/07/22 08:00	01/07/22 21:33	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		01/07/22 08:00	01/07/22 21:33	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		01/07/22 08:00	01/07/22 21:33	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		01/07/22 08:00	01/07/22 21:33	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		01/07/22 08:00	01/07/22 21:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	122		70 - 130				01/07/22 08:00	01/07/22 21:33	1
1,4-Difluorobenzene (Surr)	109		70 - 130				01/07/22 08:00	01/07/22 21:33	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			01/12/22 12:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			01/11/22 14:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/07/22 15:29	01/09/22 02:41	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/07/22 15:29	01/09/22 02:41	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/07/22 15:29	01/09/22 02:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	78		70 - 130				01/07/22 15:29	01/09/22 02:41	1
o-Terphenyl	95		70 - 130				01/07/22 15:29	01/09/22 02:41	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	431		49.5		mg/Kg			01/13/22 23:57	10

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

Client Sample ID: SW16

Lab Sample ID: 890-1807-6

Date Collected: 01/06/22 11:40

Matrix: Solid

Date Received: 01/06/22 14:27

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/07/22 08:00	01/07/22 21:53	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/07/22 08:00	01/07/22 21:53	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/07/22 08:00	01/07/22 21:53	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		01/07/22 08:00	01/07/22 21:53	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/07/22 08:00	01/07/22 21:53	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		01/07/22 08:00	01/07/22 21:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	119		70 - 130	01/07/22 08:00	01/07/22 21:53	1
1,4-Difluorobenzene (Surr)	100		70 - 130	01/07/22 08:00	01/07/22 21:53	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			01/12/22 12:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			01/11/22 14:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/07/22 15:29	01/08/22 22:37	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/07/22 15:29	01/08/22 22:37	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/07/22 15:29	01/08/22 22:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	74		70 - 130	01/07/22 15:29	01/08/22 22:37	1
o-Terphenyl	78		70 - 130	01/07/22 15:29	01/08/22 22:37	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	387		50.0		mg/Kg			01/14/22 00:22	10

Eurofins Carlsbad

## Surrogate Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-1805-A-1-A MS	Matrix Spike	111	100
890-1805-A-1-B MSD	Matrix Spike Duplicate	104	95
890-1807-1	SW11	103	95
890-1807-2	SW12	111	94
890-1807-3	SW13	107	102
890-1807-4	SW14	109	93
890-1807-5	SW15	122	109
890-1807-6	SW16	119	100
LCS 880-16163/1-A	Lab Control Sample	108	98
LCSD 880-16163/2-A	Lab Control Sample Dup	107	93
MB 880-16163/5-A	Method Blank	120	100
<b>Surrogate Legend</b>			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-9971-A-1-D MS	Matrix Spike	86	84
880-9971-A-1-E MSD	Matrix Spike Duplicate	82	84
890-1807-1	SW11	91	107
890-1807-2	SW12	73	84
890-1807-3	SW13	77	90
890-1807-4	SW14	77	89
890-1807-5	SW15	78	95
890-1807-6	SW16	74	78
LCS 880-16295/2-A	Lab Control Sample	101	107
LCSD 880-16295/3-A	Lab Control Sample Dup	112	116
MB 880-16295/1-A	Method Blank	78	90
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

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

Lab Sample ID: MB 880-16163/5-A

Matrix: Solid

Analysis Batch: 16202

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 16163

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/07/22 08:00	01/07/22 11:30	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/07/22 08:00	01/07/22 11:30	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/07/22 08:00	01/07/22 11:30	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		01/07/22 08:00	01/07/22 11:30	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/07/22 08:00	01/07/22 11:30	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		01/07/22 08:00	01/07/22 11:30	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	120		70 - 130	01/07/22 08:00	01/07/22 11:30	1
1,4-Difluorobenzene (Surr)	100		70 - 130	01/07/22 08:00	01/07/22 11:30	1

Lab Sample ID: LCS 880-16163/1-A

Matrix: Solid

Analysis Batch: 16202

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 16163

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.09195		mg/Kg		92	70 - 130
Toluene	0.100	0.09439		mg/Kg		94	70 - 130
Ethylbenzene	0.100	0.1051		mg/Kg		105	70 - 130
m-Xylene & p-Xylene	0.200	0.1991		mg/Kg		100	70 - 130
o-Xylene	0.100	0.09446		mg/Kg		94	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	108		70 - 130
1,4-Difluorobenzene (Surr)	98		70 - 130

Lab Sample ID: LCSD 880-16163/2-A

Matrix: Solid

Analysis Batch: 16202

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 16163

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.100	0.09529		mg/Kg		95	70 - 130	4	35
Toluene	0.100	0.1011		mg/Kg		101	70 - 130	7	35
Ethylbenzene	0.100	0.1017		mg/Kg		102	70 - 130	3	35
m-Xylene & p-Xylene	0.200	0.1942		mg/Kg		97	70 - 130	2	35
o-Xylene	0.100	0.1003		mg/Kg		100	70 - 130	6	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		70 - 130
1,4-Difluorobenzene (Surr)	93		70 - 130

Lab Sample ID: 890-1805-A-1-B MSD

Matrix: Solid

Analysis Batch: 16202

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 16163

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00201	U	0.100	0.09925		mg/Kg					
Toluene	<0.00201	U	0.100	0.1053		mg/Kg					

Eurofins Carlsbad



## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

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

Lab Sample ID: 890-1805-A-1-B MSD

Matrix: Solid

Analysis Batch: 16202

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 16163

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylbenzene	<0.00201	U	0.100	0.1019		mg/Kg					
m-Xylene & p-Xylene	<0.00402	U	0.200	0.1981		mg/Kg					
o-Xylene	<0.00201	U	0.100	0.09328		mg/Kg					

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: 890-1805-A-1-A MS

Matrix: Solid

Analysis Batch: 16202

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	111		70 - 130
1,4-Difluorobenzene (Surr)	100		70 - 130

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

Lab Sample ID: MB 880-16295/1-A

Matrix: Solid

Analysis Batch: 16324

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 16295

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/07/22 15:29	01/08/22 22:37	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/07/22 15:29	01/08/22 22:37	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/07/22 15:29	01/08/22 22:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	78		70 - 130	01/07/22 15:29	01/08/22 22:37	1
o-Terphenyl	90		70 - 130	01/07/22 15:29	01/08/22 22:37	1

Lab Sample ID: LCS 880-16295/2-A

Matrix: Solid

Analysis Batch: 16324

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 16295

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	785.8		mg/Kg		79	70 - 130
Diesel Range Organics (Over C10-C28)	1000	1097		mg/Kg		110	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	101		70 - 130
o-Terphenyl	107		70 - 130

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

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

Lab Sample ID: LCSD 880-16295/3-A

Matrix: Solid

Analysis Batch: 16324

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 16295

Analyte	Spike			LCSD		Unit	D	%Rec	%Rec.		RPD	
	Added	Result	Qualifier	Result	Qualifier				Limits	RPD	Limit	
Gasoline Range Organics (GRO)-C6-C10	1000	922.7				mg/Kg		92	70 - 130	16	20	
Diesel Range Organics (Over C10-C28)	1000	1239				mg/Kg		124	70 - 130	12	20	
		LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits									
1-Chlorooctane	112		70 - 130									
o-Terphenyl	116		70 - 130									

Lab Sample ID: 880-9971-A-1-D MS

Matrix: Solid

Analysis Batch: 16324

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 16295

Analyte	Sample		Spike	MS		Unit	D	%Rec	%Rec.		RPD	
	Result	Qualifier		Result	Qualifier				Limits		Limit	
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	996	917.2		mg/Kg		92	70 - 130			
Diesel Range Organics (Over C10-C28)	<49.9	U	996	1140		mg/Kg		114	70 - 130			
		MS	MS									
Surrogate	%Recovery	Qualifier	Limits									
1-Chlorooctane	86		70 - 130									
o-Terphenyl	84		70 - 130									

Lab Sample ID: 880-9971-A-1-E MSD

Matrix: Solid

Analysis Batch: 16324

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 16295

Analyte	Sample		Spike	MSD		Unit	D	%Rec	%Rec.		RPD	
	Result	Qualifier		Result	Qualifier				Limits	RPD	Limit	
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	864.2		mg/Kg		87	70 - 130	6	20	
Diesel Range Organics (Over C10-C28)	<49.9	U	999	1142		mg/Kg		114	70 - 130	0	20	
		MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits									
1-Chlorooctane	82		70 - 130									
o-Terphenyl	84		70 - 130									

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-16432/1-A

Matrix: Solid

Analysis Batch: 16543

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<5.00	U	5.00		mg/Kg			01/13/22 21:45	1

Eurofins Carlsbad

QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-16432/2-A				Client Sample ID: Lab Control Sample							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 16543											
Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			250	264.9		mg/Kg		106	90 - 110		

Lab Sample ID: LCSD 880-16432/3-A				Client Sample ID: Lab Control Sample Dup							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 16543											
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride			250	270.8		mg/Kg		108	90 - 110	2	20

Lab Sample ID: 890-1807-3 MS				Client Sample ID: SW13							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 16543											
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	278	F1	250	567.3	F1	mg/Kg		116	90 - 110		

Lab Sample ID: 890-1807-3 MSD				Client Sample ID: SW13							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 16543											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	278	F1	250	567.6	F1	mg/Kg		116	90 - 110	0	20

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

## GC VOA

## Prep Batch: 16163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1807-1	SW11	Total/NA	Solid	5035	
890-1807-2	SW12	Total/NA	Solid	5035	
890-1807-3	SW13	Total/NA	Solid	5035	
890-1807-4	SW14	Total/NA	Solid	5035	
890-1807-5	SW15	Total/NA	Solid	5035	
890-1807-6	SW16	Total/NA	Solid	5035	
MB 880-16163/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-16163/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-16163/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-1805-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## Analysis Batch: 16202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1807-1	SW11	Total/NA	Solid	8021B	16163
890-1807-2	SW12	Total/NA	Solid	8021B	16163
890-1807-3	SW13	Total/NA	Solid	8021B	16163
890-1807-4	SW14	Total/NA	Solid	8021B	16163
890-1807-5	SW15	Total/NA	Solid	8021B	16163
890-1807-6	SW16	Total/NA	Solid	8021B	16163
MB 880-16163/5-A	Method Blank	Total/NA	Solid	8021B	16163
LCS 880-16163/1-A	Lab Control Sample	Total/NA	Solid	8021B	16163
LCSD 880-16163/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	16163
890-1805-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	
890-1805-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	16163

## Analysis Batch: 16668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1807-1	SW11	Total/NA	Solid	Total BTEX	
890-1807-2	SW12	Total/NA	Solid	Total BTEX	
890-1807-3	SW13	Total/NA	Solid	Total BTEX	
890-1807-4	SW14	Total/NA	Solid	Total BTEX	
890-1807-5	SW15	Total/NA	Solid	Total BTEX	
890-1807-6	SW16	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Prep Batch: 16295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1807-1	SW11	Total/NA	Solid	8015NM Prep	
890-1807-2	SW12	Total/NA	Solid	8015NM Prep	
890-1807-3	SW13	Total/NA	Solid	8015NM Prep	
890-1807-4	SW14	Total/NA	Solid	8015NM Prep	
890-1807-5	SW15	Total/NA	Solid	8015NM Prep	
890-1807-6	SW16	Total/NA	Solid	8015NM Prep	
MB 880-16295/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-16295/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-16295/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-9971-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-9971-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

Eurofins Carlsbad

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

## GC Semi VOA

## Analysis Batch: 16324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1807-1	SW11	Total/NA	Solid	8015B NM	16295
890-1807-2	SW12	Total/NA	Solid	8015B NM	16295
890-1807-3	SW13	Total/NA	Solid	8015B NM	16295
890-1807-4	SW14	Total/NA	Solid	8015B NM	16295
890-1807-5	SW15	Total/NA	Solid	8015B NM	16295
MB 880-16295/1-A	Method Blank	Total/NA	Solid	8015B NM	16295
LCS 880-16295/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	16295
LCSD 880-16295/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	16295
880-9971-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	16295
880-9971-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	16295

## Analysis Batch: 16326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1807-6	SW16	Total/NA	Solid	8015B NM	16295

## Analysis Batch: 16554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1807-1	SW11	Total/NA	Solid	8015 NM	
890-1807-2	SW12	Total/NA	Solid	8015 NM	
890-1807-3	SW13	Total/NA	Solid	8015 NM	
890-1807-4	SW14	Total/NA	Solid	8015 NM	
890-1807-5	SW15	Total/NA	Solid	8015 NM	
890-1807-6	SW16	Total/NA	Solid	8015 NM	

## HPLC/IC

## Leach Batch: 16432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1807-1	SW11	Soluble	Solid	DI Leach	
890-1807-2	SW12	Soluble	Solid	DI Leach	
890-1807-3	SW13	Soluble	Solid	DI Leach	
890-1807-4	SW14	Soluble	Solid	DI Leach	
890-1807-5	SW15	Soluble	Solid	DI Leach	
890-1807-6	SW16	Soluble	Solid	DI Leach	
MB 880-16432/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-16432/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-16432/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1807-3 MS	SW13	Soluble	Solid	DI Leach	
890-1807-3 MSD	SW13	Soluble	Solid	DI Leach	

## Analysis Batch: 16543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1807-1	SW11	Soluble	Solid	300.0	16432
890-1807-2	SW12	Soluble	Solid	300.0	16432
890-1807-3	SW13	Soluble	Solid	300.0	16432
890-1807-4	SW14	Soluble	Solid	300.0	16432
890-1807-5	SW15	Soluble	Solid	300.0	16432
890-1807-6	SW16	Soluble	Solid	300.0	16432
MB 880-16432/1-A	Method Blank	Soluble	Solid	300.0	16432
LCS 880-16432/2-A	Lab Control Sample	Soluble	Solid	300.0	16432
LCSD 880-16432/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	16432

Eurofins Carlsbad



QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

HPLC/IC (Continued)

Analysis Batch: 16543 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1807-3 MS	SW13	Soluble	Solid	300.0	16432
890-1807-3 MSD	SW13	Soluble	Solid	300.0	16432

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

Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

Client Sample ID: SW11  
Date Collected: 01/06/22 11:15  
Date Received: 01/06/22 14:27

Lab Sample ID: 890-1807-1  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	16163	01/07/22 08:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16202	01/07/22 20:11	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			16668	01/12/22 12:57	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			16554	01/11/22 14:19	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	16295	01/07/22 15:29	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16324	01/09/22 01:20	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	16432	01/10/22 13:08	CH	XEN MID
Soluble	Analysis	300.0		1			16543	01/13/22 23:15	CH	XEN MID

Client Sample ID: SW12  
Date Collected: 01/06/22 11:20  
Date Received: 01/06/22 14:27

Lab Sample ID: 890-1807-2  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	16163	01/07/22 08:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16202	01/07/22 20:31	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			16668	01/12/22 12:57	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			16554	01/11/22 14:19	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	16295	01/07/22 15:29	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16324	01/09/22 01:40	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	16432	01/10/22 13:08	CH	XEN MID
Soluble	Analysis	300.0		1			16543	01/13/22 23:26	CH	XEN MID

Client Sample ID: SW13  
Date Collected: 01/06/22 11:25  
Date Received: 01/06/22 14:27

Lab Sample ID: 890-1807-3  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	16163	01/07/22 08:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16202	01/07/22 20:52	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			16668	01/12/22 12:57	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			16554	01/11/22 14:19	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	16295	01/07/22 15:29	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16324	01/09/22 02:00	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	16432	01/10/22 13:08	CH	XEN MID
Soluble	Analysis	300.0		1			16543	01/13/22 23:32	CH	XEN MID

Client Sample ID: SW14  
Date Collected: 01/06/22 11:30  
Date Received: 01/06/22 14:27

Lab Sample ID: 890-1807-4  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	16163	01/07/22 08:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16202	01/07/22 21:12	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			16668	01/12/22 12:57	AJ	XEN MID

Eurofins Carlsbad

Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

Client Sample ID: SW14  
Date Collected: 01/06/22 11:30  
Date Received: 01/06/22 14:27

Lab Sample ID: 890-1807-4  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			16554	01/11/22 14:19	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	16295	01/07/22 15:29	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16324	01/09/22 02:20	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	16432	01/10/22 13:08	CH	XEN MID
Soluble	Analysis	300.0		1			16543	01/13/22 23:51	CH	XEN MID

Client Sample ID: SW15  
Date Collected: 01/06/22 11:35  
Date Received: 01/06/22 14:27

Lab Sample ID: 890-1807-5  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	16163	01/07/22 08:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16202	01/07/22 21:33	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			16668	01/12/22 12:57	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			16554	01/11/22 14:19	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	16295	01/07/22 15:29	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16324	01/09/22 02:41	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	16432	01/10/22 13:08	CH	XEN MID
Soluble	Analysis	300.0		10			16543	01/13/22 23:57	CH	XEN MID

Client Sample ID: SW16  
Date Collected: 01/06/22 11:40  
Date Received: 01/06/22 14:27

Lab Sample ID: 890-1807-6  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	16163	01/07/22 08:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16202	01/07/22 21:53	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			16668	01/12/22 12:57	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			16554	01/11/22 14:19	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	16295	01/07/22 15:29	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16326	01/08/22 22:37	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	16432	01/10/22 13:08	CH	XEN MID
Soluble	Analysis	300.0		10			16543	01/14/22 00:22	CH	XEN MID

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

Accreditation/Certification Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

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

**Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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



Sample Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1807-1  
SDG: 31403360.006

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1807-1	SW11	Solid	01/06/22 11:15	01/06/22 14:27	0 - 4
890-1807-2	SW12	Solid	01/06/22 11:20	01/06/22 14:27	0 - 4
890-1807-3	SW13	Solid	01/06/22 11:25	01/06/22 14:27	0 - 4
890-1807-4	SW14	Solid	01/06/22 11:30	01/06/22 14:27	0 - 4
890-1807-5	SW15	Solid	01/06/22 11:35	01/06/22 14:27	0 - 4
890-1807-6	SW16	Solid	01/06/22 11:40	01/06/22 14:27	0 - 4





## Chain of Custody

**Work Order No:**

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334  
Midland, TX (432) 704-5440 El Paso, TX (915) 585-4443 Lubbock, TX (806) 794-1256 Casabad, NM (432) 704-5440  
Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000 West Palm Beach, FL (561) 689-6704

[www.xenco.com](http://www.xenco.com)

Page 1 of 1

Project Manager:	Joseph Hernandez	Bill to: (if different)	Jim Ransley
Company Name:	WSP USA	Company Name:	WPX Energy
Address:	3328 N A Street	Address:	5345 Buena Vista Dr
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Dallas, TX 75226
Phone:	(817) 762-2329	Email:	anna.bryant@wsp.com

**Work Order Comments**

**Program:** UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐

**State of Project:**

Reporting Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐

**Deliverables:** EDD ☐ ADaPT ☐ Other: \_\_\_\_\_

[illegible]

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	TP	BTE	Ch	Sample Comments
	SM1	S	1/6/22	1115	8-4'	1				Cost Center #: 1061137001
	SM2			1120		1				
	SM3			1125		1				
	SM4			1130		1				
	SM5			1135		1				
	SM6			1140		1				

[illegible]

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	<i>Annex Page</i>	<i>C. D. D. W. F.</i>	1.6.22 1487			
3						
5						

Revised Date 02/25/19 Rev. 2019

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1807-1

SDG Number: 31403360.006

Login Number: 1807

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1807-1

SDG Number: 31403360.006

Login Number: 1807

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 01/07/22 12:52 PM

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



## Environment Testing America

### ANALYTICAL REPORT

Eurofins Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-1816-1

Laboratory Sample Delivery Group: 31403360.006

Client Project/Site: RDX 17-6

For:

WSP USA Inc.  
2777 N. Stemmons Freeway  
Suite 1600  
Dallas, Texas 75207

Attn: Joseph Hernandez

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:  
1/17/2022 9:41:03 PM

Jessica Kramer, Project Manager  
(432)704-5440  
[jessica.kramer@eurofinset.com](mailto:jessica.kramer@eurofinset.com)

#### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



Client: WSP USA Inc.  
Project/Site: RDX 17-6

Laboratory Job ID: 890-1816-1  
SDG: 31403360.006

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
Surrogate Summary . . . . .	15
QC Sample Results . . . . .	17
QC Association Summary . . . . .	23
Lab Chronicle . . . . .	27
Certification Summary . . . . .	31
Method Summary . . . . .	32
Sample Summary . . . . .	33
Chain of Custody . . . . .	34
Receipt Checklists . . . . .	36

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

Definitions/Glossary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Case Narrative

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

Job ID: 890-1816-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative  
890-1816-1

Receipt

The samples were received on 1/11/2022 9:19 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.0°C

GC VOA

Method 8021B: Surrogate recovery for the following samples were outside control limits: PH11 (890-1816-7) and (880-10173-A-61-C). Evidence of matrix interferences is not obvious.

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

GC Semi VOA

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: PH09 (890-1816-1) and (890-1816-A-1-F MS). Evidence of matrix interferences is not obvious.

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

HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-16761 and analytical batch 880-16927 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

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

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

Client Sample ID: PH09

Lab Sample ID: 890-1816-1

Date Collected: 01/10/22 13:16

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U F2 F1 *1	0.00199		mg/Kg		01/13/22 07:30	01/13/22 10:56	1
Toluene	<0.00199	U F1	0.00199		mg/Kg		01/13/22 07:30	01/13/22 10:56	1
Ethylbenzene	<0.00199	U F1	0.00199		mg/Kg		01/13/22 07:30	01/13/22 10:56	1
m-Xylene & p-Xylene	<0.00398	U F1	0.00398		mg/Kg		01/13/22 07:30	01/13/22 10:56	1
o-Xylene	<0.00199	U F2 F1	0.00199		mg/Kg		01/13/22 07:30	01/13/22 10:56	1
Xylenes, Total	<0.00398	U F2 F1	0.00398		mg/Kg		01/13/22 07:30	01/13/22 10:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		70 - 130	01/13/22 07:30	01/13/22 10:56	1
1,4-Difluorobenzene (Surr)	115		70 - 130	01/13/22 07:30	01/13/22 10:56	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			01/17/22 14:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			01/17/22 14:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/12/22 21:46	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/12/22 21:46	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/12/22 21:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	66	S1-	70 - 130	01/12/22 14:31	01/12/22 21:46	1
o-Terphenyl	74		70 - 130	01/12/22 14:31	01/12/22 21:46	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2620		25.0		mg/Kg			01/16/22 00:21	5

Client Sample ID: PH09

Lab Sample ID: 890-1816-2

Date Collected: 01/10/22 13:20

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U *1	0.00199		mg/Kg		01/13/22 07:30	01/13/22 11:16	1
Toluene	<0.00199	U	0.00199		mg/Kg		01/13/22 07:30	01/13/22 11:16	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		01/13/22 07:30	01/13/22 11:16	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		01/13/22 07:30	01/13/22 11:16	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		01/13/22 07:30	01/13/22 11:16	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		01/13/22 07:30	01/13/22 11:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	84		70 - 130	01/13/22 07:30	01/13/22 11:16	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

Client Sample ID: PH09

Lab Sample ID: 890-1816-2

Date Collected: 01/10/22 13:20

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 2

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	105		70 - 130	01/13/22 07:30	01/13/22 11:16	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			01/17/22 14:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			01/17/22 14:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/12/22 22:53	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/12/22 22:53	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/12/22 22:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	79		70 - 130				01/12/22 14:31	01/12/22 22:53	1
o-Terphenyl	88		70 - 130				01/12/22 14:31	01/12/22 22:53	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2990		25.0		mg/Kg			01/16/22 00:28	5

Client Sample ID: PH09

Lab Sample ID: 890-1816-3

Date Collected: 01/10/22 13:24

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U *1	0.00200		mg/Kg		01/13/22 07:30	01/13/22 11:37	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/13/22 07:30	01/13/22 11:37	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/13/22 07:30	01/13/22 11:37	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		01/13/22 07:30	01/13/22 11:37	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/13/22 07:30	01/13/22 11:37	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		01/13/22 07:30	01/13/22 11:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	73		70 - 130	01/13/22 07:30	01/13/22 11:37	1
1,4-Difluorobenzene (Surr)	87		70 - 130	01/13/22 07:30	01/13/22 11:37	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			01/17/22 14:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			01/17/22 14:06	1

Eurofins Carlsbad



## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

## Client Sample ID: PH09

## Lab Sample ID: 890-1816-3

Date Collected: 01/10/22 13:24

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/12/22 23:13	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/12/22 23:13	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/12/22 23:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	78		70 - 130				01/12/22 14:31	01/12/22 23:13	1
o-Terphenyl	86		70 - 130				01/12/22 14:31	01/12/22 23:13	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3390		24.9		mg/Kg			01/16/22 00:35	5

## Client Sample ID: PH10

## Lab Sample ID: 890-1816-4

Date Collected: 01/10/22 13:40

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U *1	0.00200		mg/Kg		01/13/22 07:30	01/13/22 11:58	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/13/22 07:30	01/13/22 11:58	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/13/22 07:30	01/13/22 11:58	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		01/13/22 07:30	01/13/22 11:58	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/13/22 07:30	01/13/22 11:58	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		01/13/22 07:30	01/13/22 11:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	81		70 - 130				01/13/22 07:30	01/13/22 11:58	1
1,4-Difluorobenzene (Surr)	105		70 - 130				01/13/22 07:30	01/13/22 11:58	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			01/17/22 14:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			01/17/22 14:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/12/22 23:32	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/12/22 23:32	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/12/22 23:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	79		70 - 130				01/12/22 14:31	01/12/22 23:32	1
o-Terphenyl	86		70 - 130				01/12/22 14:31	01/12/22 23:32	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

## Client Sample ID: PH10

Lab Sample ID: 890-1816-4

Date Collected: 01/10/22 13:40

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	879		4.96		mg/Kg			01/16/22 00:42	1

## Client Sample ID: PH10

Lab Sample ID: 890-1816-5

Date Collected: 01/10/22 13:45

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 16:04	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 16:04	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 16:04	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		01/13/22 11:00	01/14/22 16:04	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 16:04	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		01/13/22 11:00	01/14/22 16:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		70 - 130				01/13/22 11:00	01/14/22 16:04	1
1,4-Difluorobenzene (Surr)	93		70 - 130				01/13/22 11:00	01/14/22 16:04	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			01/17/22 14:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			01/17/22 14:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/12/22 23:53	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/12/22 23:53	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/12/22 23:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	80		70 - 130				01/12/22 14:31	01/12/22 23:53	1
o-Terphenyl	90		70 - 130				01/12/22 14:31	01/12/22 23:53	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3970		25.2		mg/Kg			01/16/22 01:04	5

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

Client Sample ID: PH10

Lab Sample ID: 890-1816-6

Date Collected: 01/10/22 13:49

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00202	U	0.00202		mg/Kg		01/13/22 11:00	01/14/22 16:24	1
Toluene	<0.00202	U	0.00202		mg/Kg		01/13/22 11:00	01/14/22 16:24	1
Ethylbenzene	<0.00202	U	0.00202		mg/Kg		01/13/22 11:00	01/14/22 16:24	1
m-Xylene & p-Xylene	<0.00403	U	0.00403		mg/Kg		01/13/22 11:00	01/14/22 16:24	1
o-Xylene	<0.00202	U	0.00202		mg/Kg		01/13/22 11:00	01/14/22 16:24	1
Xylenes, Total	<0.00403	U	0.00403		mg/Kg		01/13/22 11:00	01/14/22 16:24	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	129		70 - 130				01/13/22 11:00	01/14/22 16:24	1
1,4-Difluorobenzene (Surr)	94		70 - 130				01/13/22 11:00	01/14/22 16:24	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00403	U	0.00403		mg/Kg			01/17/22 14:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			01/17/22 14:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/13/22 00:14	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/13/22 00:14	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/13/22 00:14	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1-Chlorooctane	78		70 - 130				01/12/22 14:31	01/13/22 00:14	1
o-Terphenyl	86		70 - 130				01/12/22 14:31	01/13/22 00:14	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1510		49.7		mg/Kg			01/16/22 01:11	10

Client Sample ID: PH11

Lab Sample ID: 890-1816-7

Date Collected: 01/10/22 14:03

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 16:45	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 16:45	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 16:45	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		01/13/22 11:00	01/14/22 16:45	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 16:45	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		01/13/22 11:00	01/14/22 16:45	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	134	S1+	70 - 130				01/13/22 11:00	01/14/22 16:45	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

Client Sample ID: PH11

Lab Sample ID: 890-1816-7

Date Collected: 01/10/22 14:03

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	73		70 - 130	01/13/22 11:00	01/14/22 16:45	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			01/17/22 14:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			01/17/22 14:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/13/22 00:34	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/13/22 00:34	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/13/22 00:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	79		70 - 130				01/12/22 14:31	01/13/22 00:34	1
o-Terphenyl	88		70 - 130				01/12/22 14:31	01/13/22 00:34	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1580		24.8		mg/Kg			01/16/22 01:18	5

Client Sample ID: PH11

Lab Sample ID: 890-1816-8

Date Collected: 01/10/22 14:10

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 17:05	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 17:05	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 17:05	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		01/13/22 11:00	01/14/22 17:05	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 17:05	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		01/13/22 11:00	01/14/22 17:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	124		70 - 130	01/13/22 11:00	01/14/22 17:05	1
1,4-Difluorobenzene (Surr)	74		70 - 130	01/13/22 11:00	01/14/22 17:05	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			01/17/22 14:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			01/17/22 14:06	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

Client Sample ID: PH11

Lab Sample ID: 890-1816-8

Date Collected: 01/10/22 14:10

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/13/22 00:54	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/13/22 00:54	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/13/22 00:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	74		70 - 130				01/12/22 14:31	01/13/22 00:54	1
o-Terphenyl	83		70 - 130				01/12/22 14:31	01/13/22 00:54	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1760		25.1		mg/Kg			01/16/22 01:25	5

Client Sample ID: PH11

Lab Sample ID: 890-1816-9

Date Collected: 01/10/22 14:13

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 17:26	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 17:26	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 17:26	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		01/13/22 11:00	01/14/22 17:26	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 17:26	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		01/13/22 11:00	01/14/22 17:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	129		70 - 130				01/13/22 11:00	01/14/22 17:26	1
1,4-Difluorobenzene (Surr)	96		70 - 130				01/13/22 11:00	01/14/22 17:26	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			01/17/22 14:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			01/17/22 14:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/13/22 01:14	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/13/22 01:14	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/13/22 01:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	75		70 - 130				01/12/22 14:31	01/13/22 01:14	1
o-Terphenyl	83		70 - 130				01/12/22 14:31	01/13/22 01:14	1

Eurofins Carlsbad



## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

## Client Sample ID: PH11

Lab Sample ID: 890-1816-9

Date Collected: 01/10/22 14:13

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 4

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2630		49.9		mg/Kg			01/16/22 01:32	10

## Client Sample ID: PH12

Lab Sample ID: 890-1816-10

Date Collected: 01/10/22 14:30

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		01/13/22 11:00	01/14/22 17:46	1
Toluene	<0.00201	U	0.00201		mg/Kg		01/13/22 11:00	01/14/22 17:46	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		01/13/22 11:00	01/14/22 17:46	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		01/13/22 11:00	01/14/22 17:46	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		01/13/22 11:00	01/14/22 17:46	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		01/13/22 11:00	01/14/22 17:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	127		70 - 130				01/13/22 11:00	01/14/22 17:46	1
1,4-Difluorobenzene (Surr)	79		70 - 130				01/13/22 11:00	01/14/22 17:46	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			01/17/22 14:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			01/17/22 14:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/13/22 01:34	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/13/22 01:34	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/12/22 14:31	01/13/22 01:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	80		70 - 130				01/12/22 14:31	01/13/22 01:34	1
o-Terphenyl	90		70 - 130				01/12/22 14:31	01/13/22 01:34	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1210		5.05		mg/Kg			01/16/22 01:39	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

Client Sample ID: PH12

Lab Sample ID: 890-1816-11

Date Collected: 01/10/22 14:34

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 2

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		01/13/22 11:00	01/14/22 18:06	1
Toluene	<0.00199	U	0.00199		mg/Kg		01/13/22 11:00	01/14/22 18:06	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		01/13/22 11:00	01/14/22 18:06	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		01/13/22 11:00	01/14/22 18:06	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		01/13/22 11:00	01/14/22 18:06	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		01/13/22 11:00	01/14/22 18:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	122		70 - 130	01/13/22 11:00	01/14/22 18:06	1
1,4-Difluorobenzene (Surr)	78		70 - 130	01/13/22 11:00	01/14/22 18:06	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			01/17/22 14:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			01/17/22 14:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/13/22 02:15	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/13/22 02:15	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/13/22 02:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	78		70 - 130	01/12/22 14:31	01/13/22 02:15	1
o-Terphenyl	89		70 - 130	01/12/22 14:31	01/13/22 02:15	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2000		25.2		mg/Kg			01/16/22 02:00	5

Client Sample ID: PH12

Lab Sample ID: 890-1816-12

Date Collected: 01/10/22 14:40

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		01/13/22 11:00	01/14/22 18:27	1
Toluene	<0.00198	U	0.00198		mg/Kg		01/13/22 11:00	01/14/22 18:27	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		01/13/22 11:00	01/14/22 18:27	1
m-Xylene & p-Xylene	<0.00396	U	0.00396		mg/Kg		01/13/22 11:00	01/14/22 18:27	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		01/13/22 11:00	01/14/22 18:27	1
Xylenes, Total	<0.00396	U	0.00396		mg/Kg		01/13/22 11:00	01/14/22 18:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	122		70 - 130	01/13/22 11:00	01/14/22 18:27	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

Client Sample ID: PH12

Lab Sample ID: 890-1816-12

Date Collected: 01/10/22 14:40

Matrix: Solid

Date Received: 01/11/22 09:19

Sample Depth: 4

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	81		70 - 130	01/13/22 11:00	01/14/22 18:27	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00396	U	0.00396		mg/Kg			01/17/22 14:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			01/17/22 14:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/13/22 02:35	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/13/22 02:35	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/13/22 02:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	72		70 - 130				01/12/22 14:31	01/13/22 02:35	1
o-Terphenyl	81		70 - 130				01/12/22 14:31	01/13/22 02:35	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1790		24.9		mg/Kg			01/17/22 15:59	5

Eurofins Carlsbad

## Surrogate Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-10173-A-61-D MS	Matrix Spike	109	97
880-10173-A-61-E MSD	Matrix Spike Duplicate	106	107
890-1816-1	PH09	102	115
890-1816-1 MS	PH09	86	114
890-1816-1 MSD	PH09	133 S1+	138 S1+
890-1816-2	PH09	84	105
890-1816-3	PH09	73	87
890-1816-4	PH10	81	105
890-1816-5	PH10	113	93
890-1816-6	PH10	129	94
890-1816-7	PH11	134 S1+	73
890-1816-8	PH11	124	74
890-1816-9	PH11	129	96
890-1816-10	PH12	127	79
890-1816-11	PH12	122	78
890-1816-12	PH12	122	81
LCS 880-16655/1-A	Lab Control Sample	108	105
LCS 880-16731/1-A	Lab Control Sample	100	107
LCSD 880-16655/2-A	Lab Control Sample Dup	81	102
LCSD 880-16731/2-A	Lab Control Sample Dup	106	104
MB 880-16655/5-A	Method Blank	85	74
MB 880-16731/5-A	Method Blank	100	98
<b>Surrogate Legend</b>			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-1816-1	PH09	66 S1-	74
890-1816-1 MS	PH09	65 S1-	65 S1-
890-1816-1 MSD	PH09	76	75
890-1816-2	PH09	79	88
890-1816-3	PH09	78	86
890-1816-4	PH10	79	86
890-1816-5	PH10	80	90
890-1816-6	PH10	78	86
890-1816-7	PH11	79	88
890-1816-8	PH11	74	83
890-1816-9	PH11	75	83
890-1816-10	PH12	80	90
890-1816-11	PH12	78	89
890-1816-12	PH12	72	81
LCS 880-16679/2-A	Lab Control Sample	104	105
LCSD 880-16679/3-A	Lab Control Sample Dup	97	100
MB 880-16679/1-A	Method Blank	78	88

Eurofins Carlsbad

Surrogate Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

Surrogate Legend

1CO = 1-Chlorooctane  
OTPH = o-Terphenyl

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



## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

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

Lab Sample ID: MB 880-16655/5-A

Matrix: Solid

Analysis Batch: 16697

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 16655

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/13/22 07:30	01/13/22 10:28	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/13/22 07:30	01/13/22 10:28	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/13/22 07:30	01/13/22 10:28	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		01/13/22 07:30	01/13/22 10:28	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/13/22 07:30	01/13/22 10:28	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		01/13/22 07:30	01/13/22 10:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	85		70 - 130	01/13/22 07:30	01/13/22 10:28	1
1,4-Difluorobenzene (Surr)	74		70 - 130	01/13/22 07:30	01/13/22 10:28	1

Lab Sample ID: LCS 880-16655/1-A

Matrix: Solid

Analysis Batch: 16697

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 16655

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.1148		mg/Kg		115	70 - 130
Toluene	0.100	0.1140		mg/Kg		114	70 - 130
Ethylbenzene	0.100	0.1006		mg/Kg		101	70 - 130
m-Xylene & p-Xylene	0.200	0.2082		mg/Kg		104	70 - 130
o-Xylene	0.100	0.1034		mg/Kg		103	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	108		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

Lab Sample ID: LCSD 880-16655/2-A

Matrix: Solid

Analysis Batch: 16697

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 16655

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.100	0.07142	*1	mg/Kg		71	70 - 130	47	35
Toluene	0.100	0.08461		mg/Kg		85	70 - 130	30	35
Ethylbenzene	0.100	0.08101		mg/Kg		81	70 - 130	22	35
m-Xylene & p-Xylene	0.200	0.1478		mg/Kg		74	70 - 130	34	35
o-Xylene	0.100	0.07332		mg/Kg		73	70 - 130	34	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	81		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: 890-1816-1 MS

Matrix: Solid

Analysis Batch: 16697

Client Sample ID: PH09

Prep Type: Total/NA

Prep Batch: 16655

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<0.00199	U F2 F1	0.0998	0.09088		mg/Kg		91	70 - 130
		*1							

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

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

Lab Sample ID: 890-1816-1 MS

Matrix: Solid

Analysis Batch: 16697

Client Sample ID: PH09

Prep Type: Total/NA

Prep Batch: 16655

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	<0.00199	U F1	0.0998	0.06928	F1	mg/Kg		69	70 - 130
Ethylbenzene	<0.00199	U F1	0.0998	0.06297	F1	mg/Kg		63	70 - 130
m-Xylene & p-Xylene	<0.00398	U F1	0.200	0.1209	F1	mg/Kg		61	70 - 130
o-Xylene	<0.00199	U F2 F1	0.0998	0.06076	F1	mg/Kg		61	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	86		70 - 130
1,4-Difluorobenzene (Surr)	114		70 - 130

Lab Sample ID: 890-1816-1 MSD

Matrix: Solid

Analysis Batch: 16697

Client Sample ID: PH09

Prep Type: Total/NA

Prep Batch: 16655

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00199	U F2 F1 *1	0.100	0.05485	F2 F1	mg/Kg		55	70 - 130	49	35
Toluene	<0.00199	U F1	0.100	0.09455		mg/Kg		94	70 - 130	31	35
Ethylbenzene	<0.00199	U F1	0.100	0.08768		mg/Kg		88	70 - 130	33	35
m-Xylene & p-Xylene	<0.00398	U F1	0.200	0.1630		mg/Kg		81	70 - 130	30	35
o-Xylene	<0.00199	U F2 F1	0.100	0.1153	F2	mg/Kg		115	70 - 130	62	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	133	S1+	70 - 130
1,4-Difluorobenzene (Surr)	138	S1+	70 - 130

Lab Sample ID: MB 880-16731/5-A

Matrix: Solid

Analysis Batch: 16809

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 16731

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 10:36	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 10:36	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 10:36	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		01/13/22 11:00	01/14/22 10:36	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/13/22 11:00	01/14/22 10:36	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		01/13/22 11:00	01/14/22 10:36	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	01/13/22 11:00	01/14/22 10:36	1
1,4-Difluorobenzene (Surr)	98		70 - 130	01/13/22 11:00	01/14/22 10:36	1

Lab Sample ID: LCS 880-16731/1-A

Matrix: Solid

Analysis Batch: 16809

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 16731

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.08796		mg/Kg		88	70 - 130
Toluene	0.100	0.07568		mg/Kg		76	70 - 130

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

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

Lab Sample ID: LCS 880-16731/1-A

Matrix: Solid

Analysis Batch: 16809

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 16731

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	
							Limits	
Ethylbenzene	0.100	0.07869		mg/Kg		79	70 - 130	
m-Xylene & p-Xylene	0.200	0.1620		mg/Kg		81	70 - 130	
o-Xylene	0.100	0.07612		mg/Kg		76	70 - 130	

Surrogate	LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

Lab Sample ID: LCSD 880-16731/2-A

Matrix: Solid

Analysis Batch: 16809

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 16731

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	
							Limits		RPD	Limit
Benzene	0.100	0.08855		mg/Kg		89	70 - 130		1	35
Toluene	0.100	0.07522		mg/Kg		75	70 - 130		1	35
Ethylbenzene	0.100	0.07865		mg/Kg		79	70 - 130		0	35
m-Xylene & p-Xylene	0.200	0.1614		mg/Kg		81	70 - 130		0	35
o-Xylene	0.100	0.08275		mg/Kg		83	70 - 130		8	35

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	104		70 - 130

Lab Sample ID: 880-10173-A-61-D MS

Matrix: Solid

Analysis Batch: 16809

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 16731

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.	
									Limits	
Benzene	<0.00199	U	0.0996	0.09690		mg/Kg		97	70 - 130	
Toluene	<0.00199	U	0.0996	0.08816		mg/Kg		87	70 - 130	
Ethylbenzene	<0.00199	U	0.0996	0.09067		mg/Kg		91	70 - 130	
m-Xylene & p-Xylene	<0.00398	U	0.199	0.1876		mg/Kg		94	70 - 130	
o-Xylene	<0.00199	U	0.0996	0.09180		mg/Kg		92	70 - 130	

Surrogate	MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	97		70 - 130

Lab Sample ID: 880-10173-A-61-E MSD

Matrix: Solid

Analysis Batch: 16809

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 16731

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec.		RPD	
									Limits		RPD	Limit
Benzene	<0.00199	U	0.100	0.09933		mg/Kg		99	70 - 130		2	35
Toluene	<0.00199	U	0.100	0.08934		mg/Kg		88	70 - 130		1	35
Ethylbenzene	<0.00199	U	0.100	0.09031		mg/Kg		90	70 - 130		0	35
m-Xylene & p-Xylene	<0.00398	U	0.200	0.1874		mg/Kg		94	70 - 130		0	35
o-Xylene	<0.00199	U	0.100	0.09089		mg/Kg		90	70 - 130		1	35

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

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

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	107		70 - 130

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

Lab Sample ID: MB 880-16679/1-A

Matrix: Solid

Analysis Batch: 16627

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 16679

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/12/22 20:35	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/12/22 20:35	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/12/22 14:31	01/12/22 20:35	1
Surrogate	MB MB		Limits				Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
1-Chlorooctane	78		70 - 130				01/12/22 14:31	01/12/22 20:35	1
o-Terphenyl	88		70 - 130				01/12/22 14:31	01/12/22 20:35	1

Lab Sample ID: LCS 880-16679/2-A

Matrix: Solid

Analysis Batch: 16627

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 16679

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	854.1		mg/Kg		85	70 - 130
Diesel Range Organics (Over C10-C28)	1000	996.3		mg/Kg		100	70 - 130
Surrogate	LCS LCS		Limits				
	%Recovery	Qualifier					
1-Chlorooctane	104		70 - 130				
o-Terphenyl	105		70 - 130				

Lab Sample ID: LCSD 880-16679/3-A

Matrix: Solid

Analysis Batch: 16627

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 16679

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	925.9		mg/Kg		93	70 - 130	8	20
Diesel Range Organics (Over C10-C28)	1000	1000		mg/Kg		100	70 - 130	0	20
Surrogate	LCSD LCSD		Limits						
	%Recovery	Qualifier							
1-Chlorooctane	97		70 - 130						
o-Terphenyl	100		70 - 130						

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

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

Lab Sample ID: 890-1816-1 MS

Matrix: Solid

Analysis Batch: 16627

Client Sample ID: PH09

Prep Type: Total/NA

Prep Batch: 16679

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	996	754.3		mg/Kg		76	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U	996	840.3		mg/Kg		82	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	65	S1-	70 - 130						
o-Terphenyl	65	S1-	70 - 130						

Lab Sample ID: 890-1816-1 MSD

Matrix: Solid

Analysis Batch: 16627

Client Sample ID: PH09

Prep Type: Total/NA

Prep Batch: 16679

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	852.4		mg/Kg		85	70 - 130	12	20
Diesel Range Organics (Over C10-C28)	<49.9	U	999	1009		mg/Kg		99	70 - 130	18	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	76		70 - 130								
o-Terphenyl	75		70 - 130								

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-16761/1-A

Matrix: Solid

Analysis Batch: 16927

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			01/15/22 23:39	1

Lab Sample ID: LCS 880-16761/2-A

Matrix: Solid

Analysis Batch: 16927

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	250	267.8		mg/Kg		107	90 - 110

Lab Sample ID: LCSD 880-16761/3-A

Matrix: Solid

Analysis Batch: 16927

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	269.6		mg/Kg		108	90 - 110	1	20

Eurofins Carlsbad

QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-1816-10 MS										Client Sample ID: PH12		
Matrix: Solid										Prep Type: Soluble		
Analysis Batch: 16927												
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits			
Chloride	1210		253	1407	4	mg/Kg		78	90 - 110			

Lab Sample ID: 890-1816-10 MSD										Client Sample ID: PH12		
Matrix: Solid										Prep Type: Soluble		
Analysis Batch: 16927												
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit	
Chloride	1210		253	1406	4	mg/Kg		78	90 - 110	0	20	



## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

## GC VOA

## Prep Batch: 16655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1816-1	PH09	Total/NA	Solid	5035	
890-1816-2	PH09	Total/NA	Solid	5035	
890-1816-3	PH09	Total/NA	Solid	5035	
890-1816-4	PH10	Total/NA	Solid	5035	
MB 880-16655/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-16655/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-16655/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-1816-1 MS	PH09	Total/NA	Solid	5035	
890-1816-1 MSD	PH09	Total/NA	Solid	5035	

## Analysis Batch: 16697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1816-1	PH09	Total/NA	Solid	8021B	16655
890-1816-2	PH09	Total/NA	Solid	8021B	16655
890-1816-3	PH09	Total/NA	Solid	8021B	16655
890-1816-4	PH10	Total/NA	Solid	8021B	16655
MB 880-16655/5-A	Method Blank	Total/NA	Solid	8021B	16655
LCS 880-16655/1-A	Lab Control Sample	Total/NA	Solid	8021B	16655
LCSD 880-16655/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	16655
890-1816-1 MS	PH09	Total/NA	Solid	8021B	16655
890-1816-1 MSD	PH09	Total/NA	Solid	8021B	16655

## Prep Batch: 16731

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1816-5	PH10	Total/NA	Solid	5035	
890-1816-6	PH10	Total/NA	Solid	5035	
890-1816-7	PH11	Total/NA	Solid	5035	
890-1816-8	PH11	Total/NA	Solid	5035	
890-1816-9	PH11	Total/NA	Solid	5035	
890-1816-10	PH12	Total/NA	Solid	5035	
890-1816-11	PH12	Total/NA	Solid	5035	
890-1816-12	PH12	Total/NA	Solid	5035	
MB 880-16731/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-16731/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-16731/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-10173-A-61-D MS	Matrix Spike	Total/NA	Solid	5035	
880-10173-A-61-E MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## Analysis Batch: 16809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1816-5	PH10	Total/NA	Solid	8021B	16731
890-1816-6	PH10	Total/NA	Solid	8021B	16731
890-1816-7	PH11	Total/NA	Solid	8021B	16731
890-1816-8	PH11	Total/NA	Solid	8021B	16731
890-1816-9	PH11	Total/NA	Solid	8021B	16731
890-1816-10	PH12	Total/NA	Solid	8021B	16731
890-1816-11	PH12	Total/NA	Solid	8021B	16731
890-1816-12	PH12	Total/NA	Solid	8021B	16731
MB 880-16731/5-A	Method Blank	Total/NA	Solid	8021B	16731
LCS 880-16731/1-A	Lab Control Sample	Total/NA	Solid	8021B	16731
LCSD 880-16731/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	16731

Eurofins Carlsbad

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

## GC VOA (Continued)

## Analysis Batch: 16809 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-10173-A-61-D MS	Matrix Spike	Total/NA	Solid	8021B	16731
880-10173-A-61-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	16731

## Analysis Batch: 17056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1816-1	PH09	Total/NA	Solid	Total BTEX	
890-1816-2	PH09	Total/NA	Solid	Total BTEX	
890-1816-3	PH09	Total/NA	Solid	Total BTEX	
890-1816-4	PH10	Total/NA	Solid	Total BTEX	
890-1816-5	PH10	Total/NA	Solid	Total BTEX	
890-1816-6	PH10	Total/NA	Solid	Total BTEX	
890-1816-7	PH11	Total/NA	Solid	Total BTEX	
890-1816-8	PH11	Total/NA	Solid	Total BTEX	
890-1816-9	PH11	Total/NA	Solid	Total BTEX	
890-1816-10	PH12	Total/NA	Solid	Total BTEX	
890-1816-11	PH12	Total/NA	Solid	Total BTEX	
890-1816-12	PH12	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Analysis Batch: 16627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1816-1	PH09	Total/NA	Solid	8015B NM	16679
890-1816-2	PH09	Total/NA	Solid	8015B NM	16679
890-1816-3	PH09	Total/NA	Solid	8015B NM	16679
890-1816-4	PH10	Total/NA	Solid	8015B NM	16679
890-1816-5	PH10	Total/NA	Solid	8015B NM	16679
890-1816-6	PH10	Total/NA	Solid	8015B NM	16679
890-1816-7	PH11	Total/NA	Solid	8015B NM	16679
890-1816-8	PH11	Total/NA	Solid	8015B NM	16679
890-1816-9	PH11	Total/NA	Solid	8015B NM	16679
890-1816-10	PH12	Total/NA	Solid	8015B NM	16679
890-1816-11	PH12	Total/NA	Solid	8015B NM	16679
890-1816-12	PH12	Total/NA	Solid	8015B NM	16679
MB 880-16679/1-A	Method Blank	Total/NA	Solid	8015B NM	16679
LCS 880-16679/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	16679
LCSD 880-16679/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	16679
890-1816-1 MS	PH09	Total/NA	Solid	8015B NM	16679
890-1816-1 MSD	PH09	Total/NA	Solid	8015B NM	16679

## Prep Batch: 16679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1816-1	PH09	Total/NA	Solid	8015NM Prep	
890-1816-2	PH09	Total/NA	Solid	8015NM Prep	
890-1816-3	PH09	Total/NA	Solid	8015NM Prep	
890-1816-4	PH10	Total/NA	Solid	8015NM Prep	
890-1816-5	PH10	Total/NA	Solid	8015NM Prep	
890-1816-6	PH10	Total/NA	Solid	8015NM Prep	
890-1816-7	PH11	Total/NA	Solid	8015NM Prep	
890-1816-8	PH11	Total/NA	Solid	8015NM Prep	
890-1816-9	PH11	Total/NA	Solid	8015NM Prep	

Eurofins Carlsbad

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

## GC Semi VOA (Continued)

## Prep Batch: 16679 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1816-10	PH12	Total/NA	Solid	8015NM Prep	
890-1816-11	PH12	Total/NA	Solid	8015NM Prep	
890-1816-12	PH12	Total/NA	Solid	8015NM Prep	
MB 880-16679/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-16679/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-16679/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1816-1 MS	PH09	Total/NA	Solid	8015NM Prep	
890-1816-1 MSD	PH09	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 17055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1816-1	PH09	Total/NA	Solid	8015 NM	
890-1816-2	PH09	Total/NA	Solid	8015 NM	
890-1816-3	PH09	Total/NA	Solid	8015 NM	
890-1816-4	PH10	Total/NA	Solid	8015 NM	
890-1816-5	PH10	Total/NA	Solid	8015 NM	
890-1816-6	PH10	Total/NA	Solid	8015 NM	
890-1816-7	PH11	Total/NA	Solid	8015 NM	
890-1816-8	PH11	Total/NA	Solid	8015 NM	
890-1816-9	PH11	Total/NA	Solid	8015 NM	
890-1816-10	PH12	Total/NA	Solid	8015 NM	
890-1816-11	PH12	Total/NA	Solid	8015 NM	
890-1816-12	PH12	Total/NA	Solid	8015 NM	

## HPLC/IC

## Leach Batch: 16761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1816-1	PH09	Soluble	Solid	DI Leach	
890-1816-2	PH09	Soluble	Solid	DI Leach	
890-1816-3	PH09	Soluble	Solid	DI Leach	
890-1816-4	PH10	Soluble	Solid	DI Leach	
890-1816-5	PH10	Soluble	Solid	DI Leach	
890-1816-6	PH10	Soluble	Solid	DI Leach	
890-1816-7	PH11	Soluble	Solid	DI Leach	
890-1816-8	PH11	Soluble	Solid	DI Leach	
890-1816-9	PH11	Soluble	Solid	DI Leach	
890-1816-10	PH12	Soluble	Solid	DI Leach	
890-1816-11	PH12	Soluble	Solid	DI Leach	
890-1816-12	PH12	Soluble	Solid	DI Leach	
MB 880-16761/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-16761/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-16761/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1816-10 MS	PH12	Soluble	Solid	DI Leach	
890-1816-10 MSD	PH12	Soluble	Solid	DI Leach	

## Analysis Batch: 16927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1816-1	PH09	Soluble	Solid	300.0	16761
890-1816-2	PH09	Soluble	Solid	300.0	16761
890-1816-3	PH09	Soluble	Solid	300.0	16761

Eurofins Carlsbad

QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

HPLC/IC (Continued)

Analysis Batch: 16927 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1816-4	PH10	Soluble	Solid	300.0	16761
890-1816-5	PH10	Soluble	Solid	300.0	16761
890-1816-6	PH10	Soluble	Solid	300.0	16761
890-1816-7	PH11	Soluble	Solid	300.0	16761
890-1816-8	PH11	Soluble	Solid	300.0	16761
890-1816-9	PH11	Soluble	Solid	300.0	16761
890-1816-10	PH12	Soluble	Solid	300.0	16761
890-1816-11	PH12	Soluble	Solid	300.0	16761
890-1816-12	PH12	Soluble	Solid	300.0	16761
MB 880-16761/1-A	Method Blank	Soluble	Solid	300.0	16761
LCS 880-16761/2-A	Lab Control Sample	Soluble	Solid	300.0	16761
LCSD 880-16761/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	16761
890-1816-10 MS	PH12	Soluble	Solid	300.0	16761
890-1816-10 MSD	PH12	Soluble	Solid	300.0	16761

Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

Client Sample ID: PH09  
Date Collected: 01/10/22 13:16  
Date Received: 01/11/22 09:19

Lab Sample ID: 890-1816-1  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	16655	01/13/22 07:30	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16697	01/13/22 10:56	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:41	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:06	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	16679	01/12/22 14:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16627	01/12/22 21:46	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	16761	01/13/22 12:05	CH	XEN MID
Soluble	Analysis	300.0		5			16927	01/16/22 00:21	SC	XEN MID

Client Sample ID: PH09  
Date Collected: 01/10/22 13:20  
Date Received: 01/11/22 09:19

Lab Sample ID: 890-1816-2  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	16655	01/13/22 07:30	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16697	01/13/22 11:16	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:41	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:06	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	16679	01/12/22 14:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16627	01/12/22 22:53	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	16761	01/13/22 12:05	CH	XEN MID
Soluble	Analysis	300.0		5			16927	01/16/22 00:28	SC	XEN MID

Client Sample ID: PH09  
Date Collected: 01/10/22 13:24  
Date Received: 01/11/22 09:19

Lab Sample ID: 890-1816-3  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	16655	01/13/22 07:30	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16697	01/13/22 11:37	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:41	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:06	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	16679	01/12/22 14:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16627	01/12/22 23:13	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	16761	01/13/22 12:05	CH	XEN MID
Soluble	Analysis	300.0		5			16927	01/16/22 00:35	SC	XEN MID

Client Sample ID: PH10  
Date Collected: 01/10/22 13:40  
Date Received: 01/11/22 09:19

Lab Sample ID: 890-1816-4  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	16655	01/13/22 07:30	MR	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16697	01/13/22 11:58	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:41	AJ	XEN MID

Eurofins Carlsbad

Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

Client Sample ID: PH10  
Date Collected: 01/10/22 13:40  
Date Received: 01/11/22 09:19

Lab Sample ID: 890-1816-4  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:06	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	16679	01/12/22 14:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16627	01/12/22 23:32	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	16761	01/13/22 12:05	CH	XEN MID
Soluble	Analysis	300.0		1			16927	01/16/22 00:42	SC	XEN MID

Client Sample ID: PH10  
Date Collected: 01/10/22 13:45  
Date Received: 01/11/22 09:19

Lab Sample ID: 890-1816-5  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	16731	01/13/22 11:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16809	01/14/22 16:04	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:41	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:06	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	16679	01/12/22 14:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16627	01/12/22 23:53	AJ	XEN MID
Soluble	Leach	DI Leach			4.96 g	50 mL	16761	01/13/22 12:05	CH	XEN MID
Soluble	Analysis	300.0		5			16927	01/16/22 01:04	SC	XEN MID

Client Sample ID: PH10  
Date Collected: 01/10/22 13:49  
Date Received: 01/11/22 09:19

Lab Sample ID: 890-1816-6  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.96 g	5 mL	16731	01/13/22 11:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16809	01/14/22 16:24	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:41	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:06	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	16679	01/12/22 14:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16627	01/13/22 00:14	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	16761	01/13/22 12:05	CH	XEN MID
Soluble	Analysis	300.0		10			16927	01/16/22 01:11	SC	XEN MID

Client Sample ID: PH11  
Date Collected: 01/10/22 14:03  
Date Received: 01/11/22 09:19

Lab Sample ID: 890-1816-7  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	16731	01/13/22 11:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16809	01/14/22 16:45	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:41	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:06	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	16679	01/12/22 14:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16627	01/13/22 00:34	AJ	XEN MID

Eurofins Carlsbad



Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

Client Sample ID: PH11  
Date Collected: 01/10/22 14:03  
Date Received: 01/11/22 09:19

Lab Sample ID: 890-1816-7  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5.05 g	50 mL	16761	01/13/22 12:05	CH	XEN MID
Soluble	Analysis	300.0		5			16927	01/16/22 01:18	SC	XEN MID

Client Sample ID: PH11  
Date Collected: 01/10/22 14:10  
Date Received: 01/11/22 09:19

Lab Sample ID: 890-1816-8  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	16731	01/13/22 11:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16809	01/14/22 17:05	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:41	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:06	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	16679	01/12/22 14:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16627	01/13/22 00:54	AJ	XEN MID
Soluble	Leach	DI Leach			4.99 g	50 mL	16761	01/13/22 12:05	CH	XEN MID
Soluble	Analysis	300.0		5			16927	01/16/22 01:25	SC	XEN MID

Client Sample ID: PH11  
Date Collected: 01/10/22 14:13  
Date Received: 01/11/22 09:19

Lab Sample ID: 890-1816-9  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	16731	01/13/22 11:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16809	01/14/22 17:26	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:41	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:06	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	16679	01/12/22 14:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16627	01/13/22 01:14	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	16761	01/13/22 12:05	CH	XEN MID
Soluble	Analysis	300.0		10			16927	01/16/22 01:32	SC	XEN MID

Client Sample ID: PH12  
Date Collected: 01/10/22 14:30  
Date Received: 01/11/22 09:19

Lab Sample ID: 890-1816-10  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	16731	01/13/22 11:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16809	01/14/22 17:46	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:41	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:06	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	16679	01/12/22 14:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16627	01/13/22 01:34	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	16761	01/13/22 12:05	CH	XEN MID
Soluble	Analysis	300.0		1			16927	01/16/22 01:39	SC	XEN MID

Eurofins Carlsbad

Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

Client Sample ID: PH12  
Date Collected: 01/10/22 14:34  
Date Received: 01/11/22 09:19

Lab Sample ID: 890-1816-11  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	16731	01/13/22 11:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16809	01/14/22 18:06	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:41	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:06	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	16679	01/12/22 14:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16627	01/13/22 02:15	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	16761	01/13/22 12:05	CH	XEN MID
Soluble	Analysis	300.0		5			16927	01/16/22 02:00	SC	XEN MID

Client Sample ID: PH12  
Date Collected: 01/10/22 14:40  
Date Received: 01/11/22 09:19

Lab Sample ID: 890-1816-12  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.05 g	5 mL	16731	01/13/22 11:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16809	01/14/22 18:27	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:41	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:06	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	16679	01/12/22 14:31	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16627	01/13/22 02:35	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	16761	01/13/22 12:05	CH	XEN MID
Soluble	Analysis	300.0		5			16927	01/17/22 15:59	SC	XEN MID

Laboratory References:

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

Accreditation/Certification Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

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

**Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

Sample Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1816-1  
SDG: 31403360.006

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1816-1	PH09	Solid	01/10/22 13:16	01/11/22 09:19	1
890-1816-2	PH09	Solid	01/10/22 13:20	01/11/22 09:19	2
890-1816-3	PH09	Solid	01/10/22 13:24	01/11/22 09:19	4
890-1816-4	PH10	Solid	01/10/22 13:40	01/11/22 09:19	1
890-1816-5	PH10	Solid	01/10/22 13:45	01/11/22 09:19	2
890-1816-6	PH10	Solid	01/10/22 13:49	01/11/22 09:19	4
890-1816-7	PH11	Solid	01/10/22 14:03	01/11/22 09:19	1
890-1816-8	PH11	Solid	01/10/22 14:10	01/11/22 09:19	2
890-1816-9	PH11	Solid	01/10/22 14:13	01/11/22 09:19	4
890-1816-10	PH12	Solid	01/10/22 14:30	01/11/22 09:19	1
890-1816-11	PH12	Solid	01/10/22 14:34	01/11/22 09:19	2
890-1816-12	PH12	Solid	01/10/22 14:40	01/11/22 09:19	4



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334  
Midland, TX (432) 704-5440 EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296  
Hobbs, NM (575) 392-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 620-2000

Chain of Custody

Work Order No: \_\_\_\_\_

Project Manager:	Joseph Hernandez	Butler (if different):	Jim Raley
Company Name:	WSP	Company Name:	WPX Energy
Address:	3300 North A Street	Address:	5315 Buena vista Dr.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carlsbad, NM 88220
Phone:	281-702-2329	Email:	Anna.Byers@wsp.com

Program: UST/PST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> KRC <input type="checkbox"/> Superfund <input type="checkbox"/>
State of Project:
Reporting Level: I <input type="checkbox"/> Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> RRP <input type="checkbox"/> Level IV <input type="checkbox"/>
Deliverables: EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other: _____

Project Name:	RDX 17-6	Turn Around:	
Project Number:	31403360.006	Routine:	<input checked="" type="checkbox"/>
P.O. Number:	NRM2019548894	Rush:	
Sampler's Name:	Gilbert Moreno	Due Date:	
<b>SAMPLE RECEIPT</b>			
Temperature (°C):	12/1.2	Temp Blank:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Received In tact:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wet Ice:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Cooler Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Thermometer ID:	TR-1-007
Sample Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Correction Factor:	0.2
		Total Containers:	-



890-1816 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0-8021)	Chloride (EPA 300.0)	ANALYSIS REQUEST	Work Order Notes
SS09	S	1.10.22	13:16	1	1	X	X	X		
SS09	S	1.10.22	13:20	2	2	X	X	X		
SS09	S	1.10.22	13:24	4	3	X	X	X		
SS10	S	1.10.22	13:40	1	4	X	X	X		
SS10	S	1.10.22	13:45	2	5	X	X	X		
SS10	S	1.10.22	13:49	4	6	X	X	X		
SS11	S	1.10.22	14:03	1	7	X	X	X		
SS11	S	1.10.22	14:10	2	8	X	X	X		
SS11	S	1.10.22	14:13	4	9	X	X	X		
SS12	S	1.10.22	14:30	1	10	X	X	X		

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn  
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		1.11.22 0919			





## Chain of Custody

**Work Order No:**

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0050 San Antonio, TX (210) 509-3334  
Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296  
Phoenix, AZ (602-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 281-3322  
Hobbs, NM (505-392-7550)

Page 4 of 4  
www.xenco.com

Project Manager:		Joseph Hernandez	Bill to: (if different)		Jim Raley
Company Name:		WSP	Company Name		WPX Energy
Address:		3300 North A Street	Address		5315 Buena vista Dr.
City, State ZIP:		Midland, TX 79705	City State ZIP		Carlsbad, NM 88220
Phone		281-702-2329	Email		Anna.Byers@wsp.com

Work Order Comments			
Program: UST/ST	<input type="checkbox"/> PRP	<input type="checkbox"/> Brownfields	<input type="checkbox"/> KRC <input type="checkbox"/> Superfund
State of Project:			
Reporting Level II	<input type="checkbox"/> Level III	<input type="checkbox"/> ST/UST	<input type="checkbox"/> RRP <input type="checkbox"/> Level IV
Deliverables: EDD	<input type="checkbox"/>	ADAPT	<input type="checkbox"/> Other:

[illegible][illegible]

<b>Total</b>	<b>200.7 / 6010</b>	<b>200.8 / 6020:</b>	<b>Circle Method(s) and Metal(s) to be analyzed</b>
8RCRA	13PPM	Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn
TCLP / SPLP	6010: 8RCRA	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xencio, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xencio will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xencio. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xencio, but not analyzed. These terms will be enforced unless previously negotiated.

	Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1	[Signature]	[Signature]	1-11-22 0419 <sup>2</sup>			
3						
5						

Printed Date 06/14/18 Row 2018

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1816-1

SDG Number: 31403360.006

Login Number: 1816

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1816-1

SDG Number: 31403360.006

Login Number: 1816

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 01/12/22 12:10 PM

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



## Environment Testing America

### ANALYTICAL REPORT

Eurofins Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-1811-1

Laboratory Sample Delivery Group: 31403360.006

Client Project/Site: RDX 17-6

For:

WSP USA Inc.  
2777 N. Stemmons Freeway  
Suite 1600  
Dallas, Texas 75207

Attn: Joseph Hernandez

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:  
1/14/2022 2:22:15 PM

Jessica Kramer, Project Manager  
(432)704-5440  
[jessica.kramer@eurofinset.com](mailto:jessica.kramer@eurofinset.com)

#### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Laboratory Job ID: 890-1811-1  
SDG: 31403360.006

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
Surrogate Summary . . . . .	10
QC Sample Results . . . . .	11
QC Association Summary . . . . .	15
Lab Chronicle . . . . .	17
Certification Summary . . . . .	19
Method Summary . . . . .	20
Sample Summary . . . . .	21
Chain of Custody . . . . .	22
Receipt Checklists . . . . .	24

1

2

3

4

5

6

7

8

9

10

11

12

13

14

Definitions/Glossary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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



Case Narrative

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

Job ID: 890-1811-1

Laboratory: Eurofins Carlsbad

Narrative	Job Narrative 890-1811-1
-----------	-----------------------------

Receipt

The samples were received on 1/7/2022 4:35 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.2°C

GC VOA

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

GC Semi VOA

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: PH01 (890-1811-1), PH01 (890-1811-2), PH02 (890-1811-3), PH02 (890-1811-4), PH03 (890-1811-5), PH03 (890-1811-6), (880-10005-A-48-D), (880-10005-A-48-E MS) and (880-10005-A-48-F MSD). Evidence of matrix interferences is not obvious.

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

HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-16629 and analytical batch 880-16695 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

Client Sample ID: PH01

Lab Sample ID: 890-1811-1

Date Collected: 01/07/22 10:00

Matrix: Solid

Date Received: 01/07/22 16:35

Sample Depth: 12

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/11/22 07:30	01/11/22 14:08	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/11/22 07:30	01/11/22 14:08	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/11/22 07:30	01/11/22 14:08	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		01/11/22 07:30	01/11/22 14:08	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/11/22 07:30	01/11/22 14:08	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		01/11/22 07:30	01/11/22 14:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	123		70 - 130	01/11/22 07:30	01/11/22 14:08	1
1,4-Difluorobenzene (Surr)	101		70 - 130	01/11/22 07:30	01/11/22 14:08	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			01/12/22 13:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			01/12/22 14:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/11/22 13:47	01/12/22 02:24	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/11/22 13:47	01/12/22 02:24	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/11/22 13:47	01/12/22 02:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	61	S1-	70 - 130	01/11/22 13:47	01/12/22 02:24	1
o-Terphenyl	64	S1-	70 - 130	01/11/22 13:47	01/12/22 02:24	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14800		99.0		mg/Kg			01/13/22 22:06	20

Client Sample ID: PH01

Lab Sample ID: 890-1811-2

Date Collected: 01/07/22 10:50

Matrix: Solid

Date Received: 01/07/22 16:35

Sample Depth: 22

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		01/11/22 07:30	01/11/22 14:28	1
Toluene	<0.00198	U	0.00198		mg/Kg		01/11/22 07:30	01/11/22 14:28	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		01/11/22 07:30	01/11/22 14:28	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		01/11/22 07:30	01/11/22 14:28	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		01/11/22 07:30	01/11/22 14:28	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		01/11/22 07:30	01/11/22 14:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	123		70 - 130	01/11/22 07:30	01/11/22 14:28	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

Client Sample ID: PH01

Lab Sample ID: 890-1811-2

Date Collected: 01/07/22 10:50

Matrix: Solid

Date Received: 01/07/22 16:35

Sample Depth: 22

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	98		70 - 130	01/11/22 07:30	01/11/22 14:28	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			01/12/22 13:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			01/12/22 14:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/11/22 13:47	01/12/22 02:47	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/11/22 13:47	01/12/22 02:47	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/11/22 13:47	01/12/22 02:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	61	S1-	70 - 130				01/11/22 13:47	01/12/22 02:47	1
o-Terphenyl	65	S1-	70 - 130				01/11/22 13:47	01/12/22 02:47	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12900	F1	99.2		mg/Kg			01/13/22 22:13	20

Client Sample ID: PH02

Lab Sample ID: 890-1811-3

Date Collected: 01/07/22 11:55

Matrix: Solid

Date Received: 01/07/22 16:35

Sample Depth: 6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		01/11/22 07:30	01/11/22 16:19	1
Toluene	<0.00199	U	0.00199		mg/Kg		01/11/22 07:30	01/11/22 16:19	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		01/11/22 07:30	01/11/22 16:19	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		01/11/22 07:30	01/11/22 16:19	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		01/11/22 07:30	01/11/22 16:19	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		01/11/22 07:30	01/11/22 16:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		70 - 130	01/11/22 07:30	01/11/22 16:19	1
1,4-Difluorobenzene (Surr)	96		70 - 130	01/11/22 07:30	01/11/22 16:19	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			01/12/22 13:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			01/12/22 14:00	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

## Client Sample ID: PH02

Lab Sample ID: 890-1811-3

Date Collected: 01/07/22 11:55

Matrix: Solid

Date Received: 01/07/22 16:35

Sample Depth: 6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/11/22 13:47	01/12/22 03:11	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/11/22 13:47	01/12/22 03:11	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/11/22 13:47	01/12/22 03:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	71		70 - 130				01/11/22 13:47	01/12/22 03:11	1
o-Terphenyl	77		70 - 130				01/11/22 13:47	01/12/22 03:11	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8430		50.0		mg/Kg			01/13/22 22:34	10

## Client Sample ID: PH02

Lab Sample ID: 890-1811-4

Date Collected: 01/07/22 13:16

Matrix: Solid

Date Received: 01/07/22 16:35

Sample Depth: 22

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		01/11/22 07:30	01/11/22 16:39	1
Toluene	<0.00198	U	0.00198		mg/Kg		01/11/22 07:30	01/11/22 16:39	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		01/11/22 07:30	01/11/22 16:39	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		01/11/22 07:30	01/11/22 16:39	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		01/11/22 07:30	01/11/22 16:39	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		01/11/22 07:30	01/11/22 16:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		70 - 130				01/11/22 07:30	01/11/22 16:39	1
1,4-Difluorobenzene (Surr)	97		70 - 130				01/11/22 07:30	01/11/22 16:39	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			01/12/22 13:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			01/12/22 14:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/11/22 13:47	01/12/22 03:34	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/11/22 13:47	01/12/22 03:34	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/11/22 13:47	01/12/22 03:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	59	S1-	70 - 130				01/11/22 13:47	01/12/22 03:34	1
o-Terphenyl	62	S1-	70 - 130				01/11/22 13:47	01/12/22 03:34	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

## Client Sample ID: PH02

Lab Sample ID: 890-1811-4

Date Collected: 01/07/22 13:16

Matrix: Solid

Date Received: 01/07/22 16:35

Sample Depth: 22

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6070		49.8		mg/Kg			01/13/22 22:41	10

## Client Sample ID: PH03

Lab Sample ID: 890-1811-5

Date Collected: 01/07/22 13:55

Matrix: Solid

Date Received: 01/07/22 16:35

Sample Depth: 6

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/11/22 07:30	01/11/22 17:00	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/11/22 07:30	01/11/22 17:00	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/11/22 07:30	01/11/22 17:00	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		01/11/22 07:30	01/11/22 17:00	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/11/22 07:30	01/11/22 17:00	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		01/11/22 07:30	01/11/22 17:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130				01/11/22 07:30	01/11/22 17:00	1
1,4-Difluorobenzene (Surr)	105		70 - 130				01/11/22 07:30	01/11/22 17:00	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			01/12/22 13:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			01/12/22 14:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/11/22 13:47	01/12/22 03:58	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/11/22 13:47	01/12/22 03:58	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/11/22 13:47	01/12/22 03:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	59	S1-	70 - 130				01/11/22 13:47	01/12/22 03:58	1
o-Terphenyl	62	S1-	70 - 130				01/11/22 13:47	01/12/22 03:58	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9860		99.4		mg/Kg			01/13/22 23:02	20

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

Client Sample ID: PH03

Lab Sample ID: 890-1811-6

Date Collected: 01/07/22 14:48

Matrix: Solid

Date Received: 01/07/22 16:35

Sample Depth: 22

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		01/11/22 07:30	01/11/22 17:20	1
Toluene	<0.00201	U	0.00201		mg/Kg		01/11/22 07:30	01/11/22 17:20	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		01/11/22 07:30	01/11/22 17:20	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		01/11/22 07:30	01/11/22 17:20	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		01/11/22 07:30	01/11/22 17:20	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		01/11/22 07:30	01/11/22 17:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130	01/11/22 07:30	01/11/22 17:20	1
1,4-Difluorobenzene (Surr)	87		70 - 130	01/11/22 07:30	01/11/22 17:20	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			01/12/22 13:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			01/12/22 14:00	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/11/22 13:47	01/12/22 04:45	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/11/22 13:47	01/12/22 04:45	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/11/22 13:47	01/12/22 04:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	62	S1-	70 - 130	01/11/22 13:47	01/12/22 04:45	1
o-Terphenyl	66	S1-	70 - 130	01/11/22 13:47	01/12/22 04:45	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	920		25.0		mg/Kg			01/13/22 23:09	5

Eurofins Carlsbad



## Surrogate Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-1808-A-1-A MS	Matrix Spike	113	97
890-1808-A-1-B MSD	Matrix Spike Duplicate	114	99
890-1811-1	PH01	123	101
890-1811-2	PH01	123	98
890-1811-3	PH02	111	96
890-1811-4	PH02	115	97
890-1811-5	PH03	114	105
890-1811-6	PH03	114	87
LCS 880-16375/1-A	Lab Control Sample	106	102
LCSD 880-16375/2-A	Lab Control Sample Dup	100	95
MB 880-16375/5-A	Method Blank	122	104
<b>Surrogate Legend</b>			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-10005-A-48-E MS	Matrix Spike	65 S1-	61 S1-
880-10005-A-48-F MSD	Matrix Spike Duplicate	67 S1-	64 S1-
890-1811-1	PH01	61 S1-	64 S1-
890-1811-2	PH01	61 S1-	65 S1-
890-1811-3	PH02	71	77
890-1811-4	PH02	59 S1-	62 S1-
890-1811-5	PH03	59 S1-	62 S1-
890-1811-6	PH03	62 S1-	66 S1-
LCS 880-16541/2-A	Lab Control Sample	94	92
LCSD 880-16541/3-A	Lab Control Sample Dup	97	93
MB 880-16541/1-A	Method Blank	71	76
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

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

Lab Sample ID: MB 880-16375/5-A

Matrix: Solid

Analysis Batch: 16473

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 16375

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/11/22 07:30	01/11/22 10:56	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/11/22 07:30	01/11/22 10:56	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/11/22 07:30	01/11/22 10:56	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		01/11/22 07:30	01/11/22 10:56	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/11/22 07:30	01/11/22 10:56	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		01/11/22 07:30	01/11/22 10:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	122		70 - 130	01/11/22 07:30	01/11/22 10:56	1
1,4-Difluorobenzene (Surr)	104		70 - 130	01/11/22 07:30	01/11/22 10:56	1

Lab Sample ID: LCS 880-16375/1-A

Matrix: Solid

Analysis Batch: 16473

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 16375

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.08315		mg/Kg		83	70 - 130
Toluene	0.100	0.08870		mg/Kg		89	70 - 130
Ethylbenzene	0.100	0.09339		mg/Kg		93	70 - 130
m-Xylene & p-Xylene	0.200	0.1861		mg/Kg		93	70 - 130
o-Xylene	0.100	0.08889		mg/Kg		89	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: LCSD 880-16375/2-A

Matrix: Solid

Analysis Batch: 16473

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 16375

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	0.100	0.07953		mg/Kg		80	70 - 130	4	35
Toluene	0.100	0.08523		mg/Kg		85	70 - 130	4	35
Ethylbenzene	0.100	0.08496		mg/Kg		85	70 - 130	9	35
m-Xylene & p-Xylene	0.200	0.1720		mg/Kg		86	70 - 130	8	35
o-Xylene	0.100	0.08408		mg/Kg		84	70 - 130	6	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: 890-1808-A-1-A MS

Matrix: Solid

Analysis Batch: 16473

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 16375

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<0.00202	U	0.0996	0.07065		mg/Kg		71	70 - 130
Toluene	<0.00202	U	0.0996	0.08138		mg/Kg		81	70 - 130

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

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

Lab Sample ID: 890-1808-A-1-A MS

Matrix: Solid

Analysis Batch: 16473

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 16375

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	<0.00202	U	0.0996	0.08297		mg/Kg		83	70 - 130
m-Xylene & p-Xylene	<0.00403	U	0.199	0.1604		mg/Kg		81	70 - 130
o-Xylene	<0.00202	U	0.0996	0.07909		mg/Kg		79	70 - 130
Surrogate	MS %Recovery	MS Qualifier	MS Limits						
4-Bromofluorobenzene (Surr)	113		70 - 130						
1,4-Difluorobenzene (Surr)	97		70 - 130						

Lab Sample ID: 890-1808-A-1-B MSD

Matrix: Solid

Analysis Batch: 16473

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 16375

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00202	U	0.100	0.07696		mg/Kg		77	70 - 130	9	35
Toluene	<0.00202	U	0.100	0.08435		mg/Kg		84	70 - 130	4	35
Ethylbenzene	<0.00202	U	0.100	0.08810		mg/Kg		88	70 - 130	6	35
m-Xylene & p-Xylene	<0.00403	U	0.200	0.1699		mg/Kg		85	70 - 130	6	35
o-Xylene	<0.00202	U	0.100	0.08222		mg/Kg		82	70 - 130	4	35
Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits								
4-Bromofluorobenzene (Surr)	114		70 - 130								
1,4-Difluorobenzene (Surr)	99		70 - 130								

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

Lab Sample ID: MB 880-16541/1-A

Matrix: Solid

Analysis Batch: 16483

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 16541

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/11/22 13:47	01/11/22 22:28	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/11/22 13:47	01/11/22 22:28	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/11/22 13:47	01/11/22 22:28	1
Surrogate	MB %Recovery	MB Qualifier	MB Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	71		70 - 130				01/11/22 13:47	01/11/22 22:28	1
o-Terphenyl	76		70 - 130				01/11/22 13:47	01/11/22 22:28	1

Lab Sample ID: LCS 880-16541/2-A

Matrix: Solid

Analysis Batch: 16483

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 16541

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	782.0		mg/Kg		78	70 - 130
Diesel Range Organics (Over C10-C28)	1000	894.0		mg/Kg		89	70 - 130

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

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

Lab Sample ID: LCS 880-16541/2-A

Matrix: Solid

Analysis Batch: 16483

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 16541

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	94		70 - 130
o-Terphenyl	92		70 - 130

Lab Sample ID: LCSD 880-16541/3-A

Matrix: Solid

Analysis Batch: 16483

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 16541

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	840.1		mg/Kg		84	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	1000	979.9		mg/Kg		98	70 - 130	9	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	97		70 - 130
o-Terphenyl	93		70 - 130

Lab Sample ID: 880-10005-A-48-E MS

Matrix: Solid

Analysis Batch: 16483

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 16541

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	996	728.1		mg/Kg		71	70 - 130		
Diesel Range Organics (Over C10-C28)	<49.9	U	996	786.7		mg/Kg		79	70 - 130		

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	65	S1-	70 - 130
o-Terphenyl	61	S1-	70 - 130

Lab Sample ID: 880-10005-A-48-F MSD

Matrix: Solid

Analysis Batch: 16483

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 16541

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	744.4		mg/Kg		73	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<49.9	U	999	826.5		mg/Kg		83	70 - 130	5	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	67	S1-	70 - 130
o-Terphenyl	64	S1-	70 - 130

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-16629/1-A

Matrix: Solid

Analysis Batch: 16695

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			01/13/22 19:23	1

Lab Sample ID: LCS 880-16629/2-A

Matrix: Solid

Analysis Batch: 16695

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	250	272.1		mg/Kg		109	90 - 110

Lab Sample ID: LCSD 880-16629/3-A

Matrix: Solid

Analysis Batch: 16695

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	272.5		mg/Kg		109	90 - 110	0	20

Lab Sample ID: 890-1811-2 MS

Matrix: Solid

Analysis Batch: 16695

Client Sample ID: PH01

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	12900	F1	4960	18380	F1	mg/Kg		112	90 - 110

Lab Sample ID: 890-1811-2 MSD

Matrix: Solid

Analysis Batch: 16695

Client Sample ID: PH01

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	12900	F1	4960	18190		mg/Kg		108	90 - 110	1	20

Eurofins Carlsbad

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

## GC VOA

## Prep Batch: 16375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1811-1	PH01	Total/NA	Solid	5035	
890-1811-2	PH01	Total/NA	Solid	5035	
890-1811-3	PH02	Total/NA	Solid	5035	
890-1811-4	PH02	Total/NA	Solid	5035	
890-1811-5	PH03	Total/NA	Solid	5035	
890-1811-6	PH03	Total/NA	Solid	5035	
MB 880-16375/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-16375/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-16375/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-1808-A-1-A MS	Matrix Spike	Total/NA	Solid	5035	
890-1808-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## Analysis Batch: 16473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1811-1	PH01	Total/NA	Solid	8021B	16375
890-1811-2	PH01	Total/NA	Solid	8021B	16375
890-1811-3	PH02	Total/NA	Solid	8021B	16375
890-1811-4	PH02	Total/NA	Solid	8021B	16375
890-1811-5	PH03	Total/NA	Solid	8021B	16375
890-1811-6	PH03	Total/NA	Solid	8021B	16375
MB 880-16375/5-A	Method Blank	Total/NA	Solid	8021B	16375
LCS 880-16375/1-A	Lab Control Sample	Total/NA	Solid	8021B	16375
LCSD 880-16375/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	16375
890-1808-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	16375
890-1808-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	16375

## Analysis Batch: 16668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1811-1	PH01	Total/NA	Solid	Total BTEX	
890-1811-2	PH01	Total/NA	Solid	Total BTEX	
890-1811-3	PH02	Total/NA	Solid	Total BTEX	
890-1811-4	PH02	Total/NA	Solid	Total BTEX	
890-1811-5	PH03	Total/NA	Solid	Total BTEX	
890-1811-6	PH03	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Analysis Batch: 16483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1811-1	PH01	Total/NA	Solid	8015B NM	16541
890-1811-2	PH01	Total/NA	Solid	8015B NM	16541
890-1811-3	PH02	Total/NA	Solid	8015B NM	16541
890-1811-4	PH02	Total/NA	Solid	8015B NM	16541
890-1811-5	PH03	Total/NA	Solid	8015B NM	16541
890-1811-6	PH03	Total/NA	Solid	8015B NM	16541
MB 880-16541/1-A	Method Blank	Total/NA	Solid	8015B NM	16541
LCS 880-16541/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	16541
LCSD 880-16541/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	16541
880-10005-A-48-E MS	Matrix Spike	Total/NA	Solid	8015B NM	16541
880-10005-A-48-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	16541

Eurofins Carlsbad



## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

## GC Semi VOA

## Prep Batch: 16541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1811-1	PH01	Total/NA	Solid	8015NM Prep	
890-1811-2	PH01	Total/NA	Solid	8015NM Prep	
890-1811-3	PH02	Total/NA	Solid	8015NM Prep	
890-1811-4	PH02	Total/NA	Solid	8015NM Prep	
890-1811-5	PH03	Total/NA	Solid	8015NM Prep	
890-1811-6	PH03	Total/NA	Solid	8015NM Prep	
MB 880-16541/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-16541/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-16541/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-10005-A-48-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-10005-A-48-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 16554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1811-1	PH01	Total/NA	Solid	8015 NM	
890-1811-2	PH01	Total/NA	Solid	8015 NM	
890-1811-3	PH02	Total/NA	Solid	8015 NM	
890-1811-4	PH02	Total/NA	Solid	8015 NM	
890-1811-5	PH03	Total/NA	Solid	8015 NM	
890-1811-6	PH03	Total/NA	Solid	8015 NM	

## HPLC/IC

## Leach Batch: 16629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1811-1	PH01	Soluble	Solid	DI Leach	
890-1811-2	PH01	Soluble	Solid	DI Leach	
890-1811-3	PH02	Soluble	Solid	DI Leach	
890-1811-4	PH02	Soluble	Solid	DI Leach	
890-1811-5	PH03	Soluble	Solid	DI Leach	
890-1811-6	PH03	Soluble	Solid	DI Leach	
MB 880-16629/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-16629/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-16629/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1811-2 MS	PH01	Soluble	Solid	DI Leach	
890-1811-2 MSD	PH01	Soluble	Solid	DI Leach	

## Analysis Batch: 16695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1811-1	PH01	Soluble	Solid	300.0	16629
890-1811-2	PH01	Soluble	Solid	300.0	16629
890-1811-3	PH02	Soluble	Solid	300.0	16629
890-1811-4	PH02	Soluble	Solid	300.0	16629
890-1811-5	PH03	Soluble	Solid	300.0	16629
890-1811-6	PH03	Soluble	Solid	300.0	16629
MB 880-16629/1-A	Method Blank	Soluble	Solid	300.0	16629
LCS 880-16629/2-A	Lab Control Sample	Soluble	Solid	300.0	16629
LCSD 880-16629/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	16629
890-1811-2 MS	PH01	Soluble	Solid	300.0	16629
890-1811-2 MSD	PH01	Soluble	Solid	300.0	16629

Eurofins Carlsbad

Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

Client Sample ID: PH01  
Date Collected: 01/07/22 10:00  
Date Received: 01/07/22 16:35

Lab Sample ID: 890-1811-1  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	16375	01/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16473	01/11/22 14:08	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			16668	01/12/22 13:10	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			16554	01/12/22 14:00	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	16541	01/11/22 13:47	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16483	01/12/22 02:24	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	16629	01/12/22 10:44	CH	XEN MID
Soluble	Analysis	300.0		20			16695	01/13/22 22:06	CH	XEN MID

Client Sample ID: PH01  
Date Collected: 01/07/22 10:50  
Date Received: 01/07/22 16:35

Lab Sample ID: 890-1811-2  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	16375	01/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16473	01/11/22 14:28	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			16668	01/12/22 13:10	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			16554	01/12/22 14:00	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	16541	01/11/22 13:47	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16483	01/12/22 02:47	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	16629	01/12/22 10:44	CH	XEN MID
Soluble	Analysis	300.0		20			16695	01/13/22 22:13	CH	XEN MID

Client Sample ID: PH02  
Date Collected: 01/07/22 11:55  
Date Received: 01/07/22 16:35

Lab Sample ID: 890-1811-3  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	16375	01/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16473	01/11/22 16:19	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			16668	01/12/22 13:10	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			16554	01/12/22 14:00	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	16541	01/11/22 13:47	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16483	01/12/22 03:11	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	16629	01/12/22 10:44	CH	XEN MID
Soluble	Analysis	300.0		10			16695	01/13/22 22:34	CH	XEN MID

Client Sample ID: PH02  
Date Collected: 01/07/22 13:16  
Date Received: 01/07/22 16:35

Lab Sample ID: 890-1811-4  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	16375	01/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16473	01/11/22 16:39	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			16668	01/12/22 13:10	AJ	XEN MID

Eurofins Carlsbad

Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

Client Sample ID: PH02  
Date Collected: 01/07/22 13:16  
Date Received: 01/07/22 16:35

Lab Sample ID: 890-1811-4  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			16554	01/12/22 14:00	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	16541	01/11/22 13:47	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16483	01/12/22 03:34	AJ	XEN MID
Soluble	Leach	DI Leach			5.02 g	50 mL	16629	01/12/22 10:44	CH	XEN MID
Soluble	Analysis	300.0		10			16695	01/13/22 22:41	CH	XEN MID

Client Sample ID: PH03  
Date Collected: 01/07/22 13:55  
Date Received: 01/07/22 16:35

Lab Sample ID: 890-1811-5  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	16375	01/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16473	01/11/22 17:00	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			16668	01/12/22 13:10	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			16554	01/12/22 14:00	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	16541	01/11/22 13:47	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16483	01/12/22 03:58	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	16629	01/12/22 10:44	CH	XEN MID
Soluble	Analysis	300.0		20			16695	01/13/22 23:02	CH	XEN MID

Client Sample ID: PH03  
Date Collected: 01/07/22 14:48  
Date Received: 01/07/22 16:35

Lab Sample ID: 890-1811-6  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	16375	01/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16473	01/11/22 17:20	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			16668	01/12/22 13:10	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			16554	01/12/22 14:00	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	16541	01/11/22 13:47	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16483	01/12/22 04:45	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	16629	01/12/22 10:44	CH	XEN MID
Soluble	Analysis	300.0		5			16695	01/13/22 23:09	CH	XEN MID

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

Accreditation/Certification Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

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

**Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

Sample Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1811-1  
SDG: 31403360.006

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1811-1	PH01	Solid	01/07/22 10:00	01/07/22 16:35	12
890-1811-2	PH01	Solid	01/07/22 10:50	01/07/22 16:35	22
890-1811-3	PH02	Solid	01/07/22 11:55	01/07/22 16:35	6
890-1811-4	PH02	Solid	01/07/22 13:16	01/07/22 16:35	22
890-1811-5	PH03	Solid	01/07/22 13:55	01/07/22 16:35	6
890-1811-6	PH03	Solid	01/07/22 14:48	01/07/22 16:35	22







Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334  
Midland, TX (432) 704-5440 El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296 Crasbad, NM (432) 704-5440  
Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8900 Tampa, FL (813) 520-2000 West Palm Beach, FL (561) 689-6701

## Chain of Custody

Work Order No: \_\_\_\_\_

Page 1 of 1

Project Manager:	JOSEPH HERMANDEZ	Bill to: (if different)	Jim Raley
Company Name:	WSP USA	Company Name:	WPA ENERGY
Address:	3388 NORTH A STREET	Address:	5315 BUENA VISTA DR
City, State ZIP:	MIDLAND, TX 79705	City, State ZIP:	CARLSBAD, NM 88223
Phone:	(281) 702-3329	Email:	anna.bryce@wsp.com

Program: UST/PST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/>	
State of Project:	
Reporting Level II <input type="checkbox"/> Level III <input type="checkbox"/> PST/UST <input type="checkbox"/> TRAP <input type="checkbox"/> Level IV <input type="checkbox"/>	
Deliverables: EDO <input type="checkbox"/> ADAPT <input type="checkbox"/> Other:	

## ANALYSIS REQUEST

Project Name:	RDX 17-b	Turn Around	
Project Number:	31423362.CPL	Routine	<input checked="" type="checkbox"/>
Project Location:	EDDY COUNTY	Rush:	
Sampler's Name:	GILBERT MCDONALD	Due Date:	
PO #:	PM2019018394	Quote #:	

SAMPLE RECEIPT	Temp Blank:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Wet Ice:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Temperature (°C):	3.4/3.2	Thermometer ID		
Received intact:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Correction Factor:		
Cooler Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Total Containers:		
Sample Custody Seals:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			



800-1811 Chain of Custody

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	Preservative Codes	Sample Comments
P481		S	1/7/12	1000	12'	1	PH (EPA 8450d)	
P481				1050	22'	1	BTEX (EPA 821B)	
P482				1155	6'	1	Chloride (EPA 300.0)	
P482				1316	22'	1		
P483				1355	6'	1		
P483				1448	22'	1		

Total 200.7 / 6010 200.8 / 6020:

Circle Method(s) and Metal(s) to be analyzed

8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn  
TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U  
1631 / 245.1 / 7470 / 7471 :Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<i>Jeff Davis</i>	<i>Lee Cof</i>	1.7.22 11035			

Revised Date 022619 Rev 2019 1

Eurofins Xenco, Carlsbad

Chain of Custody Record



1089 N Canal St.  
Carlsbad, NM 88220  
Phone: 575-988-3199 Fax: 575-988-3199

Client Information (Sub Contract Lab)

Client Contact: \_\_\_\_\_  
Shipping/Receiving: \_\_\_\_\_  
Company: Eurofins Xenco

Address: 1211 W. Florida Ave.,  
City: Midland  
State, Zip: TX, 79701  
Phone: 432-704-5440(Tel)  
Email: \_\_\_\_\_

Due Date Requested: 1/13/2022  
TAT Requested (days): \_\_\_\_\_

PO #: \_\_\_\_\_  
WO #: \_\_\_\_\_  
Project #: 88000203  
RDX 17-6  
Site: SSOW#

Lab Pk: \_\_\_\_\_  
Kramer, Jessica  
Email: jessica.kramer@eurofins.com  
Accreditations Required (See note): NELAP - Texas

Carrier Tracking No(s): \_\_\_\_\_  
State of Origin: New Mexico

COC No: 890-578-1  
Page: Page 1 of 1  
Job #: 890-1811-1

Preservation Codes:  
A - HCL  
B - NaOH  
C - Zn Acetate  
D - Nitric Acid  
E - NaHSO4  
F - MeOH  
G - Anchor  
H - Ascorbic Acid  
I - Ice  
J - DI Water  
K - EDTA  
L - EDA  
M - Hexane  
N - None  
O - AsNaO2  
P - Na2O4S  
Q - Na2SO3  
R - Na2S2O3  
S - H2SO4  
T - TSP Dodecylhydrate  
U - Acetone  
V - MCAA  
W - pH 4-5  
Z - other (specify)

Special Instructions/Note: \_\_\_\_\_

Sample Identification - Client ID (Lab ID)

Sample ID	Sample Date	Sample Time	Sample Type (G=Comp, G=grab)	Matrix (Monomer, Saprolite, Omastrol, BT=Trisac, Ac=Al)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	300_ORGFM_28D/DI_LEACH Chloride	8015MOD_NM/8015NM_S_Prep Full TPH	8021B/5036FP_Calc BTEX	8015MOD_Calc	Total_BTEX_GCV	Total Number of containers
PH01 (890-1811-1)	1/7/22	10:00	Mountain	Solid	X	X	X	X	X	X	X	1
PH01 (890-1811-2)	1/7/22	10:50	Mountain	Solid	X	X	X	X	X	X	X	1
PH02 (890-1811-3)	1/7/22	11:55	Mountain	Solid	X	X	X	X	X	X	X	1
PH02 (890-1811-4)	1/7/22	13:16	Mountain	Solid	X	X	X	X	X	X	X	1
PH03 (890-1811-5)	1/7/22	13:55	Mountain	Solid	X	X	X	X	X	X	X	1
PH03 (890-1811-6)	1/7/22	14:48	Mountain	Solid	X	X	X	X	X	X	X	1

Note: Since laboratory accreditations are subject to change, Eurofins South Central places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins South Central laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins South Central attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins South Central.

Possible Hazard Identification  
Unconfirmed  
Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_  
Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
☐ Return To Client ☐ Disposal By Lab ☐ Archive For \_\_\_\_\_ Months

Empty Kit Relinquished by: \_\_\_\_\_  
Date: \_\_\_\_\_  
Time: \_\_\_\_\_  
Method of Shipment: \_\_\_\_\_

Relinquished by: CUE CUP 1-10-22  
Date/Time: 1/11/2022 12:15  
Company: Xenco

Relinquished by: \_\_\_\_\_  
Date/Time: \_\_\_\_\_  
Company: \_\_\_\_\_

Relinquished by: \_\_\_\_\_  
Date/Time: \_\_\_\_\_  
Company: \_\_\_\_\_

Custody Seals Intact: \_\_\_\_\_  
Custody Seal No.: \_\_\_\_\_  
Cooler Temperature(s) °C and Other Remarks: \_\_\_\_\_

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1811-1

SDG Number: 31403360.006

Login Number: 1811

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1811-1

SDG Number: 31403360.006

Login Number: 1811

List Number: 2

Creator: Lowe, Katie

List Source: Eurofins Midland

List Creation: 01/11/22 12:18 PM

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





## Environment Testing America

### ANALYTICAL REPORT

Eurofins Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-1822-1

Laboratory Sample Delivery Group: 31403360.006

Client Project/Site: RDX 17-6

For:

WSP USA Inc.  
2777 N. Stemmons Freeway  
Suite 1600  
Dallas, Texas 75207

Attn: Joseph Hernandez

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:  
1/18/2022 3:34:35 PM

Jessica Kramer, Project Manager  
(432)704-5440  
[jessica.kramer@eurofinset.com](mailto:jessica.kramer@eurofinset.com)

#### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Laboratory Job ID: 890-1822-1  
SDG: 31403360.006

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
Surrogate Summary . . . . .	13
QC Sample Results . . . . .	15
QC Association Summary . . . . .	21
Lab Chronicle . . . . .	25
Certification Summary . . . . .	29
Method Summary . . . . .	30
Sample Summary . . . . .	31
Chain of Custody . . . . .	32
Receipt Checklists . . . . .	33

1

2

3

4

5

6

7

8

9

10

11

12

13

14



Definitions/Glossary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

Qualifiers

GC VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
F1	MS and/or MSD recovery exceeds control limits.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Case Narrative

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

Job ID: 890-1822-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative  
890-1822-1

Receipt

The samples were received on 1/12/2022 10:39 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

GC VOA

Method 8021B: Surrogate recovery for the following samples were outside control limits: (MB 880-16781/5-A) and (MB 880-16834/5-A). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-16834 and analytical batch 880-16936 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8021B: The laboratory control sample (LCS) for preparation batch 880-16834 and analytical batch 880-16936 recovered outside control limits for the following analytes: Toluene. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

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

GC Semi VOA

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: PH06 (890-1822-5), PH06 (890-1822-6), PH07 (890-1822-7), PH07 (890-1822-8), PH08 (890-1822-9), (890-1824-A-1-E MS) and (890-1824-A-1-F MSD). Evidence of matrix interferences is not obvious.

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

HPLC/IC

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

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

Client Sample ID: PH04

Lab Sample ID: 890-1822-1

Date Collected: 01/10/22 14:00

Matrix: Solid

Date Received: 01/12/22 10:39

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/17/22 07:15	01/17/22 12:35	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/17/22 07:15	01/17/22 12:35	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/17/22 07:15	01/17/22 12:35	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		01/17/22 07:15	01/17/22 12:35	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/17/22 07:15	01/17/22 12:35	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		01/17/22 07:15	01/17/22 12:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		70 - 130	01/17/22 07:15	01/17/22 12:35	1
1,4-Difluorobenzene (Surr)	101		70 - 130	01/17/22 07:15	01/17/22 12:35	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			01/17/22 14:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			01/17/22 14:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/13/22 13:55	01/15/22 03:07	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/13/22 13:55	01/15/22 03:07	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/13/22 13:55	01/15/22 03:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	72		70 - 130	01/13/22 13:55	01/15/22 03:07	1
o-Terphenyl	76		70 - 130	01/13/22 13:55	01/15/22 03:07	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	161		4.96		mg/Kg			01/18/22 09:20	1

Client Sample ID: PH04

Lab Sample ID: 890-1822-2

Date Collected: 01/10/22 14:02

Matrix: Solid

Date Received: 01/12/22 10:39

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		01/17/22 07:15	01/17/22 13:02	1
Toluene	<0.00199	U	0.00199		mg/Kg		01/17/22 07:15	01/17/22 13:02	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		01/17/22 07:15	01/17/22 13:02	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		01/17/22 07:15	01/17/22 13:02	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		01/17/22 07:15	01/17/22 13:02	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		01/17/22 07:15	01/17/22 13:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		70 - 130	01/17/22 07:15	01/17/22 13:02	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

Client Sample ID: PH04

Lab Sample ID: 890-1822-2

Date Collected: 01/10/22 14:02

Matrix: Solid

Date Received: 01/12/22 10:39

Sample Depth: 1

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	90		70 - 130	01/17/22 07:15	01/17/22 13:02	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			01/17/22 14:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			01/17/22 14:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/13/22 13:55	01/15/22 03:27	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/13/22 13:55	01/15/22 03:27	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/13/22 13:55	01/15/22 03:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	74		70 - 130				01/13/22 13:55	01/15/22 03:27	1
o-Terphenyl	78		70 - 130				01/13/22 13:55	01/15/22 03:27	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	361		4.99		mg/Kg			01/18/22 09:28	1

Client Sample ID: PH05

Lab Sample ID: 890-1822-3

Date Collected: 01/10/22 14:30

Matrix: Solid

Date Received: 01/12/22 10:39

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		01/17/22 07:15	01/17/22 13:30	1
Toluene	<0.00199	U	0.00199		mg/Kg		01/17/22 07:15	01/17/22 13:30	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		01/17/22 07:15	01/17/22 13:30	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		01/17/22 07:15	01/17/22 13:30	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		01/17/22 07:15	01/17/22 13:30	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		01/17/22 07:15	01/17/22 13:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130	01/17/22 07:15	01/17/22 13:30	1
1,4-Difluorobenzene (Surr)	103		70 - 130	01/17/22 07:15	01/17/22 13:30	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			01/17/22 14:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	56.5		49.9		mg/Kg			01/17/22 14:15	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

Client Sample ID: PH05

Lab Sample ID: 890-1822-3

Date Collected: 01/10/22 14:30

Matrix: Solid

Date Received: 01/12/22 10:39

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/13/22 13:55	01/15/22 03:48	1
Diesel Range Organics (Over C10-C28)	56.5		49.9		mg/Kg		01/13/22 13:55	01/15/22 03:48	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/13/22 13:55	01/15/22 03:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	82		70 - 130				01/13/22 13:55	01/15/22 03:48	1
o-Terphenyl	88		70 - 130				01/13/22 13:55	01/15/22 03:48	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	421		24.9		mg/Kg			01/18/22 09:51	5

Client Sample ID: PH05

Lab Sample ID: 890-1822-4

Date Collected: 01/10/22 14:32

Matrix: Solid

Date Received: 01/12/22 10:39

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		01/17/22 07:15	01/17/22 13:57	1
Toluene	<0.00199	U	0.00199		mg/Kg		01/17/22 07:15	01/17/22 13:57	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		01/17/22 07:15	01/17/22 13:57	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		01/17/22 07:15	01/17/22 13:57	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		01/17/22 07:15	01/17/22 13:57	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		01/17/22 07:15	01/17/22 13:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		70 - 130				01/17/22 07:15	01/17/22 13:57	1
1,4-Difluorobenzene (Surr)	102		70 - 130				01/17/22 07:15	01/17/22 13:57	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			01/17/22 14:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	76.8		49.9		mg/Kg			01/17/22 14:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/13/22 13:55	01/15/22 04:10	1
Diesel Range Organics (Over C10-C28)	76.8		49.9		mg/Kg		01/13/22 13:55	01/15/22 04:10	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/13/22 13:55	01/15/22 04:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	70		70 - 130				01/13/22 13:55	01/15/22 04:10	1
o-Terphenyl	75		70 - 130				01/13/22 13:55	01/15/22 04:10	1

Eurofins Carlsbad

Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

Client Sample ID: PH05  
Date Collected: 01/10/22 14:32  
Date Received: 01/12/22 10:39  
Sample Depth: 1

Lab Sample ID: 890-1822-4  
Matrix: Solid

Method: 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	195		24.9		mg/Kg			01/18/22 09:58	5

Client Sample ID: PH06  
Date Collected: 01/10/22 14:45  
Date Received: 01/12/22 10:39  
Sample Depth: 0.5

Lab Sample ID: 890-1822-5  
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U	0.00198		mg/Kg		01/17/22 07:15	01/17/22 14:25	1
Toluene	<0.00198	U	0.00198		mg/Kg		01/17/22 07:15	01/17/22 14:25	1
Ethylbenzene	<0.00198	U	0.00198		mg/Kg		01/17/22 07:15	01/17/22 14:25	1
m-Xylene & p-Xylene	<0.00397	U	0.00397		mg/Kg		01/17/22 07:15	01/17/22 14:25	1
o-Xylene	<0.00198	U	0.00198		mg/Kg		01/17/22 07:15	01/17/22 14:25	1
Xylenes, Total	<0.00397	U	0.00397		mg/Kg		01/17/22 07:15	01/17/22 14:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130				01/17/22 07:15	01/17/22 14:25	1
1,4-Difluorobenzene (Surr)	101		70 - 130				01/17/22 07:15	01/17/22 14:25	1

Method: Total BTEX - Total BTEX Calculation									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397		mg/Kg			01/17/22 14:46	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			01/17/22 14:15	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/13/22 13:55	01/15/22 04:31	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/13/22 13:55	01/15/22 04:31	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/13/22 13:55	01/15/22 04:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	68	S1-	70 - 130				01/13/22 13:55	01/15/22 04:31	1
o-Terphenyl	75		70 - 130				01/13/22 13:55	01/15/22 04:31	1

Method: 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.76		4.95		mg/Kg			01/18/22 10:06	1



## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

Client Sample ID: PH06

Lab Sample ID: 890-1822-6

Date Collected: 01/10/22 14:47

Matrix: Solid

Date Received: 01/12/22 10:39

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/14/22 09:19	01/16/22 04:31	1
Toluene	<0.00200	U *+ F1	0.00200		mg/Kg		01/14/22 09:19	01/16/22 04:31	1
Ethylbenzene	<0.00200	U F1	0.00200		mg/Kg		01/14/22 09:19	01/16/22 04:31	1
m-Xylene & p-Xylene	<0.00401	U F1	0.00401		mg/Kg		01/14/22 09:19	01/16/22 04:31	1
o-Xylene	<0.00200	U F1	0.00200		mg/Kg		01/14/22 09:19	01/16/22 04:31	1
Xylenes, Total	<0.00401	U F1	0.00401		mg/Kg		01/14/22 09:19	01/16/22 04:31	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	90		70 - 130				01/14/22 09:19	01/16/22 04:31	1
1,4-Difluorobenzene (Surr)	91		70 - 130				01/14/22 09:19	01/16/22 04:31	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			01/17/22 14:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			01/17/22 14:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/13/22 13:55	01/15/22 04:52	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/13/22 13:55	01/15/22 04:52	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/13/22 13:55	01/15/22 04:52	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1-Chlorooctane	67	S1-	70 - 130				01/13/22 13:55	01/15/22 04:52	1
o-Terphenyl	72		70 - 130				01/13/22 13:55	01/15/22 04:52	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.03		5.00		mg/Kg			01/18/22 10:13	1

Client Sample ID: PH07

Lab Sample ID: 890-1822-7

Date Collected: 01/10/22 15:05

Matrix: Solid

Date Received: 01/12/22 10:39

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/14/22 09:19	01/16/22 04:57	1
Toluene	<0.00200	U *+	0.00200		mg/Kg		01/14/22 09:19	01/16/22 04:57	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/14/22 09:19	01/16/22 04:57	1
m-Xylene & p-Xylene	<0.00401	U	0.00401		mg/Kg		01/14/22 09:19	01/16/22 04:57	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/14/22 09:19	01/16/22 04:57	1
Xylenes, Total	<0.00401	U	0.00401		mg/Kg		01/14/22 09:19	01/16/22 04:57	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	131	S1+	70 - 130				01/14/22 09:19	01/16/22 04:57	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

Client Sample ID: PH07

Lab Sample ID: 890-1822-7

Date Collected: 01/10/22 15:05

Matrix: Solid

Date Received: 01/12/22 10:39

Sample Depth: 0.5

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	87		70 - 130	01/14/22 09:19	01/16/22 04:57	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00401	U	0.00401		mg/Kg			01/17/22 14:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			01/17/22 14:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/13/22 13:55	01/15/22 05:14	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/13/22 13:55	01/15/22 05:14	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/13/22 13:55	01/15/22 05:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	68	S1-	70 - 130				01/13/22 13:55	01/15/22 05:14	1
o-Terphenyl	74		70 - 130				01/13/22 13:55	01/15/22 05:14	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			01/18/22 10:21	1

Client Sample ID: PH07

Lab Sample ID: 890-1822-8

Date Collected: 01/10/22 15:07

Matrix: Solid

Date Received: 01/12/22 10:39

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		01/14/22 09:19	01/16/22 05:23	1
Toluene	<0.00201	U *	0.00201		mg/Kg		01/14/22 09:19	01/16/22 05:23	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		01/14/22 09:19	01/16/22 05:23	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		01/14/22 09:19	01/16/22 05:23	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		01/14/22 09:19	01/16/22 05:23	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		01/14/22 09:19	01/16/22 05:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		70 - 130	01/14/22 09:19	01/16/22 05:23	1
1,4-Difluorobenzene (Surr)	98		70 - 130	01/14/22 09:19	01/16/22 05:23	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			01/17/22 14:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			01/17/22 14:15	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

Client Sample ID: PH07

Lab Sample ID: 890-1822-8

Date Collected: 01/10/22 15:07

Matrix: Solid

Date Received: 01/12/22 10:39

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/13/22 13:55	01/15/22 05:35	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/13/22 13:55	01/15/22 05:35	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/13/22 13:55	01/15/22 05:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	70		70 - 130				01/13/22 13:55	01/15/22 05:35	1
o-Terphenyl	73		70 - 130				01/13/22 13:55	01/15/22 05:35	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.01	U F1	5.01		mg/Kg			01/18/22 10:28	1

Client Sample ID: PH08

Lab Sample ID: 890-1822-9

Date Collected: 01/10/22 15:10

Matrix: Solid

Date Received: 01/12/22 10:39

Sample Depth: 0.5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/14/22 09:19	01/16/22 05:50	1
Toluene	<0.00200	U *+	0.00200		mg/Kg		01/14/22 09:19	01/16/22 05:50	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/14/22 09:19	01/16/22 05:50	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		01/14/22 09:19	01/16/22 05:50	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/14/22 09:19	01/16/22 05:50	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		01/14/22 09:19	01/16/22 05:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		70 - 130				01/14/22 09:19	01/16/22 05:50	1
1,4-Difluorobenzene (Surr)	101		70 - 130				01/14/22 09:19	01/16/22 05:50	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/Kg			01/17/22 14:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			01/17/22 14:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		01/13/22 13:55	01/15/22 05:56	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		01/13/22 13:55	01/15/22 05:56	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		01/13/22 13:55	01/15/22 05:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	67	S1-	70 - 130				01/13/22 13:55	01/15/22 05:56	1
o-Terphenyl	69	S1-	70 - 130				01/13/22 13:55	01/15/22 05:56	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

## Client Sample ID: PH08

## Lab Sample ID: 890-1822-9

Date Collected: 01/10/22 15:10

Matrix: Solid

Date Received: 01/12/22 10:39

Sample Depth: 0.5

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.0		5.03		mg/Kg			01/18/22 10:51	1

## Client Sample ID: PH08

## Lab Sample ID: 890-1822-10

Date Collected: 01/10/22 15:12

Matrix: Solid

Date Received: 01/12/22 10:39

Sample Depth: 1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/14/22 09:19	01/16/22 06:17	1
Toluene	<0.00200	U *	0.00200		mg/Kg		01/14/22 09:19	01/16/22 06:17	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/14/22 09:19	01/16/22 06:17	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		01/14/22 09:19	01/16/22 06:17	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/14/22 09:19	01/16/22 06:17	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		01/14/22 09:19	01/16/22 06:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		70 - 130				01/14/22 09:19	01/16/22 06:17	1
1,4-Difluorobenzene (Surr)	96		70 - 130				01/14/22 09:19	01/16/22 06:17	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			01/17/22 14:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			01/17/22 14:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/13/22 13:59	01/14/22 09:04	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/13/22 13:59	01/14/22 09:04	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/13/22 13:59	01/14/22 09:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	73		70 - 130				01/13/22 13:59	01/14/22 09:04	1
o-Terphenyl	85		70 - 130				01/13/22 13:59	01/14/22 09:04	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	326		5.03		mg/Kg			01/18/22 10:58	1

Eurofins Carlsbad

## Surrogate Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
890-1822-1	PH04	94	101
890-1822-2	PH04	83	90
890-1822-3	PH05	99	103
890-1822-4	PH05	97	102
890-1822-5	PH06	99	101
890-1822-6	PH06	90	91
890-1822-6 MS	PH06	86	102
890-1822-6 MSD	PH06	88	105
890-1822-7	PH07	131 S1+	87
890-1822-8	PH07	93	98
890-1822-9	PH08	92	101
890-1822-10	PH08	88	96
LCS 880-16834/1-A	Lab Control Sample	97	109
LCS 880-16869/1-A	Lab Control Sample	86	103
LCSD 880-16834/2-A	Lab Control Sample Dup	99	114
LCSD 880-16869/2-A	Lab Control Sample Dup	87	103
MB 880-16781/5-A	Method Blank	62 S1-	91
MB 880-16834/5-A	Method Blank	62 S1-	93
MB 880-16869/5-A	Method Blank	70	92
<b>Surrogate Legend</b>			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1	DFBZ1
890-1829-A-1-A MS	Matrix Spike		
890-1829-A-1-B MSD	Matrix Spike Duplicate		
<b>Surrogate Legend</b>			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-1822-1	PH04	72	76
890-1822-2	PH04	74	78
890-1822-3	PH05	82	88
890-1822-4	PH05	70	75
890-1822-5	PH06	68 S1-	75
890-1822-6	PH06	67 S1-	72
890-1822-7	PH07	68 S1-	74
890-1822-8	PH07	70	73

Eurofins Carlsbad

Surrogate Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
890-1822-9	PH08	67 S1-	69 S1-
890-1822-10	PH08	73	85
890-1824-A-1-E MS	Matrix Spike	67 S1-	62 S1-
890-1824-A-1-F MSD	Matrix Spike Duplicate	66 S1-	62 S1-
LCS 880-16787/2-A	Lab Control Sample	93	87
LCSD 880-16787/3-A	Lab Control Sample Dup	90	86
MB 880-16787/1-A	Method Blank	74	85
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			



## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

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

Lab Sample ID: MB 880-16781/5-A

Matrix: Solid

Analysis Batch: 16936

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 16781

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/14/22 12:00	01/15/22 14:19	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/14/22 12:00	01/15/22 14:19	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/14/22 12:00	01/15/22 14:19	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		01/14/22 12:00	01/15/22 14:19	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/14/22 12:00	01/15/22 14:19	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		01/14/22 12:00	01/15/22 14:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	62	S1-	70 - 130	01/14/22 12:00	01/15/22 14:19	1
1,4-Difluorobenzene (Surr)	91		70 - 130	01/14/22 12:00	01/15/22 14:19	1

Lab Sample ID: MB 880-16834/5-A

Matrix: Solid

Analysis Batch: 16936

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 16834

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		01/14/22 09:19	01/16/22 04:04	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/14/22 09:19	01/16/22 04:04	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/14/22 09:19	01/16/22 04:04	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		01/14/22 09:19	01/16/22 04:04	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/14/22 09:19	01/16/22 04:04	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		01/14/22 09:19	01/16/22 04:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	62	S1-	70 - 130	01/14/22 09:19	01/16/22 04:04	1
1,4-Difluorobenzene (Surr)	93		70 - 130	01/14/22 09:19	01/16/22 04:04	1

Lab Sample ID: LCS 880-16834/1-A

Matrix: Solid

Analysis Batch: 16936

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 16834

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.1275		mg/Kg		127	70 - 130
Toluene	0.100	0.1351	*+	mg/Kg		135	70 - 130
Ethylbenzene	0.100	0.1146		mg/Kg		115	70 - 130
m-Xylene & p-Xylene	0.200	0.2390		mg/Kg		119	70 - 130
o-Xylene	0.100	0.1260		mg/Kg		126	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		70 - 130
1,4-Difluorobenzene (Surr)	109		70 - 130

Lab Sample ID: LCSD 880-16834/2-A

Matrix: Solid

Analysis Batch: 16936

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 16834

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.100	0.1144		mg/Kg		114	70 - 130	11	35

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

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

Lab Sample ID: LCSD 880-16834/2-A

Matrix: Solid

Analysis Batch: 16936

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 16834

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD
							Limits	RPD	Limit
Toluene	0.100	0.1225		mg/Kg		123	70 - 130	10	35
Ethylbenzene	0.100	0.1073		mg/Kg		107	70 - 130	7	35
m-Xylene & p-Xylene	0.200	0.2233		mg/Kg		112	70 - 130	7	35
o-Xylene	0.100	0.1180		mg/Kg		118	70 - 130	7	35

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	114		70 - 130

Lab Sample ID: 890-1822-6 MS

Matrix: Solid

Analysis Batch: 16936

Client Sample ID: PH06

Prep Type: Total/NA

Prep Batch: 16834

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.	
									Limits	RPD
Benzene	<0.00200	U	0.101	0.07676		mg/Kg		76	70 - 130	
Toluene	<0.00200	U *+ F1	0.101	0.06362	F1	mg/Kg		63	70 - 130	
Ethylbenzene	<0.00200	U F1	0.101	0.05397	F1	mg/Kg		53	70 - 130	
m-Xylene & p-Xylene	<0.00401	U F1	0.202	0.1061	F1	mg/Kg		53	70 - 130	
o-Xylene	<0.00200	U F1	0.101	0.05113	F1	mg/Kg		51	70 - 130	

Surrogate	MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	86		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: 890-1822-6 MSD

Matrix: Solid

Analysis Batch: 16936

Client Sample ID: PH06

Prep Type: Total/NA

Prep Batch: 16834

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec.		RPD
									Limits	RPD	Limit
Benzene	<0.00200	U	0.100	0.07887		mg/Kg		79	70 - 130	3	35
Toluene	<0.00200	U *+ F1	0.100	0.07217		mg/Kg		72	70 - 130	13	35
Ethylbenzene	<0.00200	U F1	0.100	0.06361	F1	mg/Kg		63	70 - 130	16	35
m-Xylene & p-Xylene	<0.00401	U F1	0.201	0.1298	F1	mg/Kg		65	70 - 130	20	35
o-Xylene	<0.00200	U F1	0.100	0.06564	F1	mg/Kg		65	70 - 130	25	35

Surrogate	MSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	88		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

Lab Sample ID: MB 880-16869/5-A

Matrix: Solid

Analysis Batch: 16968

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 16869

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.00200	U	0.00200		mg/Kg		01/17/22 07:15	01/17/22 11:39	1
Toluene	<0.00200	U	0.00200		mg/Kg		01/17/22 07:15	01/17/22 11:39	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		01/17/22 07:15	01/17/22 11:39	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		01/17/22 07:15	01/17/22 11:39	1

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

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

Lab Sample ID: MB 880-16869/5-A

Matrix: Solid

Analysis Batch: 16968

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 16869

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00200	U	0.00200		mg/Kg		01/17/22 07:15	01/17/22 11:39	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		01/17/22 07:15	01/17/22 11:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	70		70 - 130	01/17/22 07:15	01/17/22 11:39	1
1,4-Difluorobenzene (Surr)	92		70 - 130	01/17/22 07:15	01/17/22 11:39	1

Lab Sample ID: LCS 880-16869/1-A

Matrix: Solid

Analysis Batch: 16968

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 16869

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.1205		mg/Kg		120	70 - 130
Toluene	0.100	0.1091		mg/Kg		109	70 - 130
Ethylbenzene	0.100	0.09424		mg/Kg		94	70 - 130
m-Xylene & p-Xylene	0.200	0.1968		mg/Kg		98	70 - 130
o-Xylene	0.100	0.1009		mg/Kg		101	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	86		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

Lab Sample ID: LCSD 880-16869/2-A

Matrix: Solid

Analysis Batch: 16968

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 16869

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.100	0.1258		mg/Kg		126	70 - 130	4	35
Toluene	0.100	0.1142		mg/Kg		114	70 - 130	5	35
Ethylbenzene	0.100	0.09901		mg/Kg		99	70 - 130	5	35
m-Xylene & p-Xylene	0.200	0.2072		mg/Kg		104	70 - 130	5	35
o-Xylene	0.100	0.1059		mg/Kg		106	70 - 130	5	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	87		70 - 130
1,4-Difluorobenzene (Surr)	103		70 - 130

Lab Sample ID: 890-1829-A-1-A MS

Matrix: Solid

Analysis Batch: 16968

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)			
1,4-Difluorobenzene (Surr)			

Eurofins Carlsbad

QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

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

Lab Sample ID: 890-1829-A-1-B MSD  
Matrix: Solid  
Analysis Batch: 16968

Client Sample ID: Matrix Spike Duplicate  
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)			
1,4-Difluorobenzene (Surr)			

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

Lab Sample ID: MB 880-16787/1-A  
Matrix: Solid  
Analysis Batch: 16815

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 16787

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		01/13/22 13:55	01/14/22 21:18	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		01/13/22 13:55	01/14/22 21:18	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		01/13/22 13:55	01/14/22 21:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	74		70 - 130	01/13/22 13:55	01/14/22 21:18	1
o-Terphenyl	85		70 - 130	01/13/22 13:55	01/14/22 21:18	1

Lab Sample ID: LCS 880-16787/2-A  
Matrix: Solid  
Analysis Batch: 16815

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 16787

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	967.2		mg/Kg		97	70 - 130
Diesel Range Organics (Over C10-C28)	1000	804.8		mg/Kg		80	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	93		70 - 130
o-Terphenyl	87		70 - 130

Lab Sample ID: LCSD 880-16787/3-A  
Matrix: Solid  
Analysis Batch: 16815

Client Sample ID: Lab Control Sample Dup  
Prep Type: Total/NA  
Prep Batch: 16787

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	945.2		mg/Kg		95	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	1000	796.1		mg/Kg		80	70 - 130	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	90		70 - 130
o-Terphenyl	86		70 - 130

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

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

Lab Sample ID: 890-1824-A-1-E MS

Matrix: Solid

Analysis Batch: 16815

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 16787

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	996	1114		mg/Kg		108	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U	996	945.9		mg/Kg		93	70 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
1-Chlorooctane	67	S1-	70 - 130						
o-Terphenyl	62	S1-	70 - 130						

Lab Sample ID: 890-1824-A-1-F MSD

Matrix: Solid

Analysis Batch: 16815

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 16787

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	1084		mg/Kg		104	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	<49.9	U	999	951.7		mg/Kg		93	70 - 130	1	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1-Chlorooctane	66	S1-	70 - 130								
o-Terphenyl	62	S1-	70 - 130								

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-16762/1-A

Matrix: Solid

Analysis Batch: 16935

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			01/18/22 08:20	1

Lab Sample ID: LCS 880-16762/2-A

Matrix: Solid

Analysis Batch: 16935

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	250	270.7		mg/Kg		108	90 - 110

Lab Sample ID: LCSD 880-16762/3-A

Matrix: Solid

Analysis Batch: 16935

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	270.6		mg/Kg		108	90 - 110	0	20

Eurofins Carlsbad

QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 890-1822-8 MS

Matrix: Solid

Analysis Batch: 16935

Client Sample ID: PH07

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	<5.01	U F1	251	291.8	F1	mg/Kg		115	90 - 110

Lab Sample ID: 890-1822-8 MSD

Matrix: Solid

Analysis Batch: 16935

Client Sample ID: PH07

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	<5.01	U F1	251	280.1		mg/Kg		110	90 - 110	4	20



## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

## GC VOA

## Prep Batch: 16781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-16781/5-A	Method Blank	Total/NA	Solid	5035	

## Prep Batch: 16834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1822-6	PH06	Total/NA	Solid	5035	
890-1822-7	PH07	Total/NA	Solid	5035	
890-1822-8	PH07	Total/NA	Solid	5035	
890-1822-9	PH08	Total/NA	Solid	5035	
890-1822-10	PH08	Total/NA	Solid	5035	
MB 880-16834/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-16834/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-16834/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
890-1822-6 MS	PH06	Total/NA	Solid	5035	
890-1822-6 MSD	PH06	Total/NA	Solid	5035	

## Prep Batch: 16869

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1822-1	PH04	Total/NA	Solid	5035	
890-1822-2	PH04	Total/NA	Solid	5035	
890-1822-3	PH05	Total/NA	Solid	5035	
890-1822-4	PH05	Total/NA	Solid	5035	
890-1822-5	PH06	Total/NA	Solid	5035	
MB 880-16869/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-16869/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-16869/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	

## Analysis Batch: 16936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1822-6	PH06	Total/NA	Solid	8021B	16834
890-1822-7	PH07	Total/NA	Solid	8021B	16834
890-1822-8	PH07	Total/NA	Solid	8021B	16834
890-1822-9	PH08	Total/NA	Solid	8021B	16834
890-1822-10	PH08	Total/NA	Solid	8021B	16834
MB 880-16781/5-A	Method Blank	Total/NA	Solid	8021B	16781
MB 880-16834/5-A	Method Blank	Total/NA	Solid	8021B	16834
LCS 880-16834/1-A	Lab Control Sample	Total/NA	Solid	8021B	16834
LCSD 880-16834/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	16834
890-1822-6 MS	PH06	Total/NA	Solid	8021B	16834
890-1822-6 MSD	PH06	Total/NA	Solid	8021B	16834

## Analysis Batch: 16968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1822-1	PH04	Total/NA	Solid	8021B	16869
890-1822-2	PH04	Total/NA	Solid	8021B	16869
890-1822-3	PH05	Total/NA	Solid	8021B	16869
890-1822-4	PH05	Total/NA	Solid	8021B	16869
890-1822-5	PH06	Total/NA	Solid	8021B	16869
MB 880-16869/5-A	Method Blank	Total/NA	Solid	8021B	16869
LCS 880-16869/1-A	Lab Control Sample	Total/NA	Solid	8021B	16869
LCSD 880-16869/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	16869
890-1829-A-1-A MS	Matrix Spike	Total/NA	Solid	8021B	

Eurofins Carlsbad

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

## GC VOA (Continued)

## Analysis Batch: 16968 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1829-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	

## Analysis Batch: 17056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1822-1	PH04	Total/NA	Solid	Total BTEX	
890-1822-2	PH04	Total/NA	Solid	Total BTEX	
890-1822-3	PH05	Total/NA	Solid	Total BTEX	
890-1822-4	PH05	Total/NA	Solid	Total BTEX	
890-1822-5	PH06	Total/NA	Solid	Total BTEX	
890-1822-6	PH06	Total/NA	Solid	Total BTEX	
890-1822-7	PH07	Total/NA	Solid	Total BTEX	
890-1822-8	PH07	Total/NA	Solid	Total BTEX	
890-1822-9	PH08	Total/NA	Solid	Total BTEX	
890-1822-10	PH08	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Analysis Batch: 16702

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1822-10	PH08	Total/NA	Solid	8015B NM	16788

## Prep Batch: 16787

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1822-1	PH04	Total/NA	Solid	8015NM Prep	
890-1822-2	PH04	Total/NA	Solid	8015NM Prep	
890-1822-3	PH05	Total/NA	Solid	8015NM Prep	
890-1822-4	PH05	Total/NA	Solid	8015NM Prep	
890-1822-5	PH06	Total/NA	Solid	8015NM Prep	
890-1822-6	PH06	Total/NA	Solid	8015NM Prep	
890-1822-7	PH07	Total/NA	Solid	8015NM Prep	
890-1822-8	PH07	Total/NA	Solid	8015NM Prep	
890-1822-9	PH08	Total/NA	Solid	8015NM Prep	
MB 880-16787/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-16787/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-16787/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1824-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-1824-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## Prep Batch: 16788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1822-10	PH08	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 16815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1822-1	PH04	Total/NA	Solid	8015B NM	16787
890-1822-2	PH04	Total/NA	Solid	8015B NM	16787
890-1822-3	PH05	Total/NA	Solid	8015B NM	16787
890-1822-4	PH05	Total/NA	Solid	8015B NM	16787
890-1822-5	PH06	Total/NA	Solid	8015B NM	16787
890-1822-6	PH06	Total/NA	Solid	8015B NM	16787
890-1822-7	PH07	Total/NA	Solid	8015B NM	16787

Eurofins Carlsbad

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

## GC Semi VOA (Continued)

## Analysis Batch: 16815 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1822-8	PH07	Total/NA	Solid	8015B NM	16787
890-1822-9	PH08	Total/NA	Solid	8015B NM	16787
MB 880-16787/1-A	Method Blank	Total/NA	Solid	8015B NM	16787
LCS 880-16787/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	16787
LCSD 880-16787/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	16787
890-1824-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	16787
890-1824-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	16787

## Analysis Batch: 17055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1822-1	PH04	Total/NA	Solid	8015 NM	
890-1822-2	PH04	Total/NA	Solid	8015 NM	
890-1822-3	PH05	Total/NA	Solid	8015 NM	
890-1822-4	PH05	Total/NA	Solid	8015 NM	
890-1822-5	PH06	Total/NA	Solid	8015 NM	
890-1822-6	PH06	Total/NA	Solid	8015 NM	
890-1822-7	PH07	Total/NA	Solid	8015 NM	
890-1822-8	PH07	Total/NA	Solid	8015 NM	
890-1822-9	PH08	Total/NA	Solid	8015 NM	
890-1822-10	PH08	Total/NA	Solid	8015 NM	

## HPLC/IC

## Leach Batch: 16762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1822-1	PH04	Soluble	Solid	DI Leach	
890-1822-2	PH04	Soluble	Solid	DI Leach	
890-1822-3	PH05	Soluble	Solid	DI Leach	
890-1822-4	PH05	Soluble	Solid	DI Leach	
890-1822-5	PH06	Soluble	Solid	DI Leach	
890-1822-6	PH06	Soluble	Solid	DI Leach	
890-1822-7	PH07	Soluble	Solid	DI Leach	
890-1822-8	PH07	Soluble	Solid	DI Leach	
890-1822-9	PH08	Soluble	Solid	DI Leach	
890-1822-10	PH08	Soluble	Solid	DI Leach	
MB 880-16762/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-16762/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-16762/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1822-8 MS	PH07	Soluble	Solid	DI Leach	
890-1822-8 MSD	PH07	Soluble	Solid	DI Leach	

## Analysis Batch: 16935

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1822-1	PH04	Soluble	Solid	300.0	16762
890-1822-2	PH04	Soluble	Solid	300.0	16762
890-1822-3	PH05	Soluble	Solid	300.0	16762
890-1822-4	PH05	Soluble	Solid	300.0	16762
890-1822-5	PH06	Soluble	Solid	300.0	16762
890-1822-6	PH06	Soluble	Solid	300.0	16762
890-1822-7	PH07	Soluble	Solid	300.0	16762
890-1822-8	PH07	Soluble	Solid	300.0	16762

Eurofins Carlsbad

QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

HPLC/IC (Continued)

Analysis Batch: 16935 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1822-9	PH08	Soluble	Solid	300.0	16762
890-1822-10	PH08	Soluble	Solid	300.0	16762
MB 880-16762/1-A	Method Blank	Soluble	Solid	300.0	16762
LCS 880-16762/2-A	Lab Control Sample	Soluble	Solid	300.0	16762
LCSD 880-16762/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	16762
890-1822-8 MS	PH07	Soluble	Solid	300.0	16762
890-1822-8 MSD	PH07	Soluble	Solid	300.0	16762

Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

Client Sample ID: PH04  
Date Collected: 01/10/22 14:00  
Date Received: 01/12/22 10:39

Lab Sample ID: 890-1822-1  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	16869	01/17/22 07:15	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16968	01/17/22 12:35	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:46	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:15	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	16787	01/13/22 13:55	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16815	01/15/22 03:07	AJ	XEN MID
Soluble	Leach	DI Leach			5.04 g	50 mL	16762	01/13/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			16935	01/18/22 09:20	CH	XEN MID

Client Sample ID: PH04  
Date Collected: 01/10/22 14:02  
Date Received: 01/12/22 10:39

Lab Sample ID: 890-1822-2  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	16869	01/17/22 07:15	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16968	01/17/22 13:02	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:46	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:15	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	16787	01/13/22 13:55	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16815	01/15/22 03:27	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	16762	01/13/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			16935	01/18/22 09:28	CH	XEN MID

Client Sample ID: PH05  
Date Collected: 01/10/22 14:30  
Date Received: 01/12/22 10:39

Lab Sample ID: 890-1822-3  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	16869	01/17/22 07:15	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16968	01/17/22 13:30	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:46	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:15	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	16787	01/13/22 13:55	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16815	01/15/22 03:48	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	16762	01/13/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		5			16935	01/18/22 09:51	CH	XEN MID

Client Sample ID: PH05  
Date Collected: 01/10/22 14:32  
Date Received: 01/12/22 10:39

Lab Sample ID: 890-1822-4  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	16869	01/17/22 07:15	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16968	01/17/22 13:57	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:46	AJ	XEN MID

Eurofins Carlsbad

## Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

Client Sample ID: PH05

Lab Sample ID: 890-1822-4

Date Collected: 01/10/22 14:32

Matrix: Solid

Date Received: 01/12/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:15	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	16787	01/13/22 13:55	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16815	01/15/22 04:10	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	16762	01/13/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		5			16935	01/18/22 09:58	CH	XEN MID

Client Sample ID: PH06

Lab Sample ID: 890-1822-5

Date Collected: 01/10/22 14:45

Matrix: Solid

Date Received: 01/12/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	16869	01/17/22 07:15	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16968	01/17/22 14:25	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:46	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:15	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	16787	01/13/22 13:55	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16815	01/15/22 04:31	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	16762	01/13/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			16935	01/18/22 10:06	CH	XEN MID

Client Sample ID: PH06

Lab Sample ID: 890-1822-6

Date Collected: 01/10/22 14:47

Matrix: Solid

Date Received: 01/12/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	16834	01/14/22 09:19	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16936	01/16/22 04:31	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:46	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:15	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	16787	01/13/22 13:55	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16815	01/15/22 04:52	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	16762	01/13/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			16935	01/18/22 10:13	CH	XEN MID

Client Sample ID: PH07

Lab Sample ID: 890-1822-7

Date Collected: 01/10/22 15:05

Matrix: Solid

Date Received: 01/12/22 10:39

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.99 g	5 mL	16834	01/14/22 09:19	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16936	01/16/22 04:57	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:46	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:15	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	16787	01/13/22 13:55	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16815	01/15/22 05:14	AJ	XEN MID

Eurofins Carlsbad



Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

Client Sample ID: PH07  
Date Collected: 01/10/22 15:05  
Date Received: 01/12/22 10:39

Lab Sample ID: 890-1822-7  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			5 g	50 mL	16762	01/13/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			16935	01/18/22 10:21	CH	XEN MID

Client Sample ID: PH07  
Date Collected: 01/10/22 15:07  
Date Received: 01/12/22 10:39

Lab Sample ID: 890-1822-8  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	16834	01/14/22 09:19	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16936	01/16/22 05:23	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:46	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:15	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	16787	01/13/22 13:55	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16815	01/15/22 05:35	AJ	XEN MID
Soluble	Leach	DI Leach			4.99 g	50 mL	16762	01/13/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			16935	01/18/22 10:28	CH	XEN MID

Client Sample ID: PH08  
Date Collected: 01/10/22 15:10  
Date Received: 01/12/22 10:39

Lab Sample ID: 890-1822-9  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	5 mL	16834	01/14/22 09:19	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16936	01/16/22 05:50	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:46	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:15	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	16787	01/13/22 13:55	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16815	01/15/22 05:56	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	16762	01/13/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			16935	01/18/22 10:51	CH	XEN MID

Client Sample ID: PH08  
Date Collected: 01/10/22 15:12  
Date Received: 01/12/22 10:39

Lab Sample ID: 890-1822-10  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	16834	01/14/22 09:19	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	16936	01/16/22 06:17	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			17056	01/17/22 14:46	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			17055	01/17/22 14:15	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	16788	01/13/22 13:59	DM	XEN MID
Total/NA	Analysis	8015B NM		1			16702	01/14/22 09:04	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	16762	01/13/22 12:10	SC	XEN MID
Soluble	Analysis	300.0		1			16935	01/18/22 10:58	CH	XEN MID

Eurofins Carlsbad

Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

Laboratory References:

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

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

Accreditation/Certification Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

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

**Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

Sample Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1822-1  
SDG: 31403360.006

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1822-1	PH04	Solid	01/10/22 14:00	01/12/22 10:39	0.5
890-1822-2	PH04	Solid	01/10/22 14:02	01/12/22 10:39	1
890-1822-3	PH05	Solid	01/10/22 14:30	01/12/22 10:39	0.5
890-1822-4	PH05	Solid	01/10/22 14:32	01/12/22 10:39	1
890-1822-5	PH06	Solid	01/10/22 14:45	01/12/22 10:39	0.5
890-1822-6	PH06	Solid	01/10/22 14:47	01/12/22 10:39	1
890-1822-7	PH07	Solid	01/10/22 15:05	01/12/22 10:39	0.5
890-1822-8	PH07	Solid	01/10/22 15:07	01/12/22 10:39	1
890-1822-9	PH08	Solid	01/10/22 15:10	01/12/22 10:39	0.5
890-1822-10	PH08	Solid	01/10/22 15:12	01/12/22 10:39	1

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

## Chain of Custody



Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300  
Midland, TX (432) 704-5440, San Antonio, TX (210) 509-3334  
El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296  
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199

Environment Testing

Xenco

Work Order No:

www.xenco.com Page 1 of 1

Project Manager:		Bill to: (if different)	
Company Name:		Company Name:	
Address:		Address:	
City, State ZIP:		City, State ZIP:	
Phone:		Email:	

Project Name:		Turn Around	
Project Number:		Routine <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	
Project Location:		Due Date:	
Sampler's Name:		TAT starts the day received by the lab, if received by 4:30pm	
PO #:		Wet Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Project Name:		Turn Around	
Project Number:		Routine <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	
Project Location:		Due Date:	
Sampler's Name:		TAT starts the day received by the lab, if received by 4:30pm	
PO #:		Wet Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont
PH04	5	1/10/22	1400	0.5'	Grab	1
PH04	1		1402	1'		1
PH05	1		1430	0.5'		1
PH05	1		1432	1'		1
PH06	1		1440	0.5'		1
PH06	1		1447	1'		1
PH07	1		1505	0.5'		1
PH07	1		1507	1'		1
PH08	1		1510	0.5'		1
PH08	1		1512	1'		1

Total 200.7/6010 200.8/6020:		8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn	
Circle Method(s) and Metal(s) to be analyzed		TCLP/SPLP 6010 : 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471	

Project Name:		Turn Around	
Project Number:		Routine <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	
Project Location:		Due Date:	
Sampler's Name:		TAT starts the day received by the lab, if received by 4:30pm	
PO #:		Wet Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Project Name:		Turn Around	
Project Number:		Routine <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	
Project Location:		Due Date:	
Sampler's Name:		TAT starts the day received by the lab, if received by 4:30pm	
PO #:		Wet Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Project Name:		Turn Around	
Project Number:		Routine <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	
Project Location:		Due Date:	
Sampler's Name:		TAT starts the day received by the lab, if received by 4:30pm	
PO #:		Wet Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Revised Date 08/25/2022 Rev. 2062



## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1822-1

SDG Number: 31403360.006

Login Number: 1822

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1822-1

SDG Number: 31403360.006

Login Number: 1822

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 01/13/22 11:26 AM

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



## Environment Testing America

### ANALYTICAL REPORT

Eurofins Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-1927-1  
Laboratory Sample Delivery Group: 31403360.01  
Client Project/Site: RDX 17-6

For:  
WSP USA Inc.  
2777 N. Stemmons Freeway  
Suite 1600  
Dallas, Texas 75207

Attn: Joseph Hernandez

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:  
2/24/2022 4:27:36 PM

Jessica Kramer, Project Manager  
(432)704-5440  
[jessica.kramer@eurofinset.com](mailto:jessica.kramer@eurofinset.com)

#### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Laboratory Job ID: 890-1927-1  
SDG: 31403360.01

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
Surrogate Summary . . . . .	11
QC Sample Results . . . . .	13
QC Association Summary . . . . .	20
Lab Chronicle . . . . .	23
Certification Summary . . . . .	26
Method Summary . . . . .	27
Sample Summary . . . . .	28
Chain of Custody . . . . .	29
Receipt Checklists . . . . .	30

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

Definitions/Glossary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

Qualifiers

GC VOA

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

GC Semi VOA

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

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Case Narrative

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

Job ID: 890-1927-1

Laboratory: Eurofins Carlsbad

Narrative

Job Narrative  
890-1927-1

Receipt

The samples were received on 2/9/2022 1:11 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.6°C

GC VOA

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

GC Semi VOA

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-19048 and analytical batch 880-18980 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 8015MOD\_NM: Surrogate recovery for the following sample was outside control limits: (890-1919-A-1-C). Evidence of matrix interferences is not obvious.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: (MB 880-19049/1-A), (890-1924-A-9-C MS) and (890-1924-A-9-D MSD). Evidence of matrix interferences is not obvious.

Method 8015MOD\_NM: Surrogate recovery for the following samples were outside control limits: (880-11152-A-21-C MS) and (880-11152-A-21-D MSD). Evidence of matrix interferences is not obvious.

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

HPLC/IC

Method 300\_ORGFM\_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 880-19422 and analytical batch 880-19575 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

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



## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

Client Sample ID: SW17

Lab Sample ID: 890-1927-1

Date Collected: 02/09/22 09:20

Matrix: Solid

Date Received: 02/09/22 13:11

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/11/22 07:30	02/11/22 17:10	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/11/22 07:30	02/11/22 17:10	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/11/22 07:30	02/11/22 17:10	1
m-Xylene & p-Xylene	<0.00399	U	0.00399		mg/Kg		02/11/22 07:30	02/11/22 17:10	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/11/22 07:30	02/11/22 17:10	1
Xylenes, Total	<0.00399	U	0.00399		mg/Kg		02/11/22 07:30	02/11/22 17:10	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	113		70 - 130				02/11/22 07:30	02/11/22 17:10	1
1,4-Difluorobenzene (Surr)	114		70 - 130				02/11/22 07:30	02/11/22 17:10	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399		mg/Kg			02/14/22 10:01	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			02/17/22 15:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/10/22 13:35	02/12/22 06:43	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		02/10/22 13:35	02/12/22 06:43	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/10/22 13:35	02/12/22 06:43	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1-Chlorooctane	77		70 - 130				02/10/22 13:35	02/12/22 06:43	1
o-Terphenyl	78		70 - 130				02/10/22 13:35	02/12/22 06:43	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2430		100		mg/Kg			02/19/22 10:53	20

Client Sample ID: SW18

Lab Sample ID: 890-1927-2

Date Collected: 02/09/22 09:26

Matrix: Solid

Date Received: 02/09/22 13:11

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		02/11/22 07:30	02/11/22 17:30	1
Toluene	<0.00201	U	0.00201		mg/Kg		02/11/22 07:30	02/11/22 17:30	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		02/11/22 07:30	02/11/22 17:30	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		02/11/22 07:30	02/11/22 17:30	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		02/11/22 07:30	02/11/22 17:30	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		02/11/22 07:30	02/11/22 17:30	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	114		70 - 130				02/11/22 07:30	02/11/22 17:30	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

Client Sample ID: SW18

Lab Sample ID: 890-1927-2

Date Collected: 02/09/22 09:26

Matrix: Solid

Date Received: 02/09/22 13:11

Sample Depth: 0 - 4

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	112		70 - 130	02/11/22 07:30	02/11/22 17:30	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			02/14/22 09:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	354		50.0		mg/Kg			02/17/22 15:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/10/22 13:35	02/12/22 07:04	1
Diesel Range Organics (Over C10-C28)	354		50.0		mg/Kg		02/10/22 13:35	02/12/22 07:04	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/10/22 13:35	02/12/22 07:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	89		70 - 130				02/10/22 13:35	02/12/22 07:04	1
o-Terphenyl	90		70 - 130				02/10/22 13:35	02/12/22 07:04	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5230	F1	99.8		mg/Kg			02/19/22 11:02	20

Client Sample ID: SW19

Lab Sample ID: 890-1927-3

Date Collected: 02/09/22 09:35

Matrix: Solid

Date Received: 02/09/22 13:11

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		02/11/22 07:30	02/11/22 17:51	1
Toluene	<0.00199	U	0.00199		mg/Kg		02/11/22 07:30	02/11/22 17:51	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		02/11/22 07:30	02/11/22 17:51	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		02/11/22 07:30	02/11/22 17:51	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		02/11/22 07:30	02/11/22 17:51	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		02/11/22 07:30	02/11/22 17:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130	02/11/22 07:30	02/11/22 17:51	1
1,4-Difluorobenzene (Surr)	100		70 - 130	02/11/22 07:30	02/11/22 17:51	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			02/14/22 09:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			02/17/22 15:56	1

Eurofins Carlsbad

Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

Client Sample ID: SW19  
Date Collected: 02/09/22 09:35  
Date Received: 02/09/22 13:11  
Sample Depth: 0 - 4

Lab Sample ID: 890-1927-3  
Matrix: Solid

Method: 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		02/10/22 13:35	02/12/22 07:26	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		02/10/22 13:35	02/12/22 07:26	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		02/10/22 13:35	02/12/22 07:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	82		70 - 130				02/10/22 13:35	02/12/22 07:26	1
o-Terphenyl	83		70 - 130				02/10/22 13:35	02/12/22 07:26	1

Method: 300.0 - Anions, Ion Chromatography - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3700		99.8		mg/Kg			02/19/22 11:29	20

Client Sample ID: SW20  
Date Collected: 02/09/22 09:38  
Date Received: 02/09/22 13:11  
Sample Depth: 0 - 4

Lab Sample ID: 890-1927-4  
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		02/11/22 07:30	02/11/22 18:11	1
Toluene	<0.00199	U	0.00199		mg/Kg		02/11/22 07:30	02/11/22 18:11	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		02/11/22 07:30	02/11/22 18:11	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		02/11/22 07:30	02/11/22 18:11	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		02/11/22 07:30	02/11/22 18:11	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		02/11/22 07:30	02/11/22 18:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130				02/11/22 07:30	02/11/22 18:11	1
1,4-Difluorobenzene (Surr)	100		70 - 130				02/11/22 07:30	02/11/22 18:11	1

Method: Total BTEX - Total BTEX Calculation									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			02/14/22 09:43	1

Method: 8015 NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	86.3		50.0		mg/Kg			02/17/22 15:56	1

Method: 8015B NM - Diesel Range Organics (DRO) (GC)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/10/22 13:35	02/12/22 07:48	1
Diesel Range Organics (Over C10-C28)	86.3		50.0		mg/Kg		02/10/22 13:35	02/12/22 07:48	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/10/22 13:35	02/12/22 07:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	73		70 - 130				02/10/22 13:35	02/12/22 07:48	1
o-Terphenyl	72		70 - 130				02/10/22 13:35	02/12/22 07:48	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

## Client Sample ID: SW20

## Lab Sample ID: 890-1927-4

Date Collected: 02/09/22 09:38

Matrix: Solid

Date Received: 02/09/22 13:11

Sample Depth: 0 - 4

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3590		99.0		mg/Kg			02/19/22 11:37	20

## Client Sample ID: SW21

## Lab Sample ID: 890-1927-5

Date Collected: 02/09/22 09:42

Matrix: Solid

Date Received: 02/09/22 13:11

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		02/11/22 07:30	02/11/22 18:32	1
Toluene	<0.00201	U	0.00201		mg/Kg		02/11/22 07:30	02/11/22 18:32	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		02/11/22 07:30	02/11/22 18:32	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		02/11/22 07:30	02/11/22 18:32	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		02/11/22 07:30	02/11/22 18:32	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		02/11/22 07:30	02/11/22 18:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		70 - 130				02/11/22 07:30	02/11/22 18:32	1
1,4-Difluorobenzene (Surr)	97		70 - 130				02/11/22 07:30	02/11/22 18:32	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			02/14/22 09:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			02/17/22 15:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/10/22 13:28	02/11/22 02:47	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		02/10/22 13:28	02/11/22 02:47	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/10/22 13:28	02/11/22 02:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	88		70 - 130				02/10/22 13:28	02/11/22 02:47	1
o-Terphenyl	93		70 - 130				02/10/22 13:28	02/11/22 02:47	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4990		100		mg/Kg			02/19/22 12:04	20

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

Client Sample ID: SW22

Lab Sample ID: 890-1927-6

Date Collected: 02/09/22 09:45

Matrix: Solid

Date Received: 02/09/22 13:11

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		02/11/22 07:30	02/11/22 18:52	1
Toluene	<0.00201	U	0.00201		mg/Kg		02/11/22 07:30	02/11/22 18:52	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		02/11/22 07:30	02/11/22 18:52	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		02/11/22 07:30	02/11/22 18:52	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		02/11/22 07:30	02/11/22 18:52	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		02/11/22 07:30	02/11/22 18:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		70 - 130	02/11/22 07:30	02/11/22 18:52	1
1,4-Difluorobenzene (Surr)	104		70 - 130	02/11/22 07:30	02/11/22 18:52	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			02/14/22 09:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			02/17/22 15:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/10/22 13:28	02/11/22 03:09	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		02/10/22 13:28	02/11/22 03:09	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/10/22 13:28	02/11/22 03:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	89		70 - 130	02/10/22 13:28	02/11/22 03:09	1
o-Terphenyl	95		70 - 130	02/10/22 13:28	02/11/22 03:09	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9120		253		mg/Kg			02/19/22 12:13	50

Client Sample ID: SW23

Lab Sample ID: 890-1927-7

Date Collected: 02/09/22 09:47

Matrix: Solid

Date Received: 02/09/22 13:11

Sample Depth: 0 - 4

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00201	U	0.00201		mg/Kg		02/11/22 07:30	02/11/22 19:13	1
Toluene	<0.00201	U	0.00201		mg/Kg		02/11/22 07:30	02/11/22 19:13	1
Ethylbenzene	<0.00201	U	0.00201		mg/Kg		02/11/22 07:30	02/11/22 19:13	1
m-Xylene & p-Xylene	<0.00402	U	0.00402		mg/Kg		02/11/22 07:30	02/11/22 19:13	1
o-Xylene	<0.00201	U	0.00201		mg/Kg		02/11/22 07:30	02/11/22 19:13	1
Xylenes, Total	<0.00402	U	0.00402		mg/Kg		02/11/22 07:30	02/11/22 19:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130	02/11/22 07:30	02/11/22 19:13	1

Eurofins Carlsbad

## Client Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

Client Sample ID: SW23

Lab Sample ID: 890-1927-7

Date Collected: 02/09/22 09:47

Matrix: Solid

Date Received: 02/09/22 13:11

Sample Depth: 0 - 4

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	83		70 - 130	02/11/22 07:30	02/11/22 19:13	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00402	U	0.00402		mg/Kg			02/14/22 09:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			02/15/22 13:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/10/22 14:29	02/13/22 17:05	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		02/10/22 14:29	02/13/22 17:05	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/10/22 14:29	02/13/22 17:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	73		70 - 130				02/10/22 14:29	02/13/22 17:05	1
o-Terphenyl	80		70 - 130				02/10/22 14:29	02/13/22 17:05	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4450		50.1		mg/Kg			02/19/22 12:22	10

Eurofins Carlsbad



## Surrogate Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-11145-A-11-A MS	Matrix Spike	113	74
880-11145-A-11-B MSD	Matrix Spike Duplicate	105	106
890-1927-1	SW17	113	114
890-1927-2	SW18	114	112
890-1927-3	SW19	105	100
890-1927-4	SW20	105	100
890-1927-5	SW21	110	97
890-1927-6	SW22	109	104
890-1927-7	SW23	105	83
LCS 880-19014/1-A	Lab Control Sample	98	95
LCSD 880-19014/2-A	Lab Control Sample Dup	109	102
MB 880-19014/5-A	Method Blank	105	94
<b>Surrogate Legend</b>			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-11152-A-21-C MS	Matrix Spike	63 S1-	63 S1-
880-11152-A-21-D MSD	Matrix Spike Duplicate	65 S1-	64 S1-
890-1919-A-1-D MS	Matrix Spike	123	82
890-1919-A-1-E MSD	Matrix Spike Duplicate	120	85
890-1924-A-9-C MS	Matrix Spike	75	68 S1-
890-1924-A-9-D MSD	Matrix Spike Duplicate	77	68 S1-
890-1927-1	SW17	77	78
890-1927-2	SW18	89	90
890-1927-3	SW19	82	83
890-1927-4	SW20	73	72
890-1927-5	SW21	88	93
890-1927-6	SW22	89	95
890-1927-7	SW23	73	80
LCS 880-19049/2-A	Lab Control Sample	99	93
LCSD 880-19049/3-A	Lab Control Sample Dup	99	93
MB 880-19049/1-A	Method Blank	65 S1-	69 S1-
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO2 (70-130)	OTPH2 (70-130)
LCS 880-19048/2-A	Lab Control Sample	91	101

Eurofins Carlsbad

Surrogate Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

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

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO2 (70-130)	OTPH2 (70-130)
LCS 880-19055/2-A	Lab Control Sample	95	106
LCSD 880-19048/3-A	Lab Control Sample Dup	100	112
LCSD 880-19055/3-A	Lab Control Sample Dup	106	114
MB 880-19048/1-A	Method Blank	94	99
MB 880-19055/1-A	Method Blank	78	82
Surrogate Legend			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

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

Lab Sample ID: MB 880-19014/5-A

Matrix: Solid

Analysis Batch: 19116

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 19014

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		02/11/22 07:30	02/11/22 11:21	1
Toluene	<0.00200	U	0.00200		mg/Kg		02/11/22 07:30	02/11/22 11:21	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		02/11/22 07:30	02/11/22 11:21	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		02/11/22 07:30	02/11/22 11:21	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		02/11/22 07:30	02/11/22 11:21	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		02/11/22 07:30	02/11/22 11:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		70 - 130	02/11/22 07:30	02/11/22 11:21	1
1,4-Difluorobenzene (Surr)	94		70 - 130	02/11/22 07:30	02/11/22 11:21	1

Lab Sample ID: LCS 880-19014/1-A

Matrix: Solid

Analysis Batch: 19116

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 19014

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.100	0.09671		mg/Kg		97	70 - 130
Toluene	0.100	0.09263		mg/Kg		93	70 - 130
Ethylbenzene	0.100	0.09502		mg/Kg		95	70 - 130
m-Xylene & p-Xylene	0.200	0.1926		mg/Kg		96	70 - 130
o-Xylene	0.100	0.09491		mg/Kg		95	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		70 - 130
1,4-Difluorobenzene (Surr)	95		70 - 130

Lab Sample ID: LCSD 880-19014/2-A

Matrix: Solid

Analysis Batch: 19116

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 19014

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	0.100	0.1006		mg/Kg		101	70 - 130	4	35
Toluene	0.100	0.1058		mg/Kg		106	70 - 130	13	35
Ethylbenzene	0.100	0.1103		mg/Kg		110	70 - 130	15	35
m-Xylene & p-Xylene	0.200	0.2297		mg/Kg		115	70 - 130	18	35
o-Xylene	0.100	0.1138		mg/Kg		114	70 - 130	18	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	109		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: 880-11145-A-11-A MS

Matrix: Solid

Analysis Batch: 19116

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 19014

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	<0.00199	U	0.101	0.07778		mg/Kg		77	70 - 130
Toluene	<0.00199	U	0.101	0.08575		mg/Kg		85	70 - 130

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

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

Lab Sample ID: 880-11145-A-11-A MS

Matrix: Solid

Analysis Batch: 19116

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 19014

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	<0.00199	U	0.101	0.08978		mg/Kg		87	70 - 130
m-Xylene & p-Xylene	<0.00398	U	0.202	0.1859		mg/Kg		92	70 - 130
o-Xylene	<0.00199	U	0.101	0.09811		mg/Kg		97	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	113		70 - 130
1,4-Difluorobenzene (Surr)	74		70 - 130

Lab Sample ID: 880-11145-A-11-B MSD

Matrix: Solid

Analysis Batch: 19116

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 19014

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.0990	0.08904		mg/Kg		90	70 - 130	14	35
Toluene	<0.00199	U	0.0990	0.08922		mg/Kg		90	70 - 130	4	35
Ethylbenzene	<0.00199	U	0.0990	0.09292		mg/Kg		92	70 - 130	3	35
m-Xylene & p-Xylene	<0.00398	U	0.198	0.1908		mg/Kg		96	70 - 130	3	35
o-Xylene	<0.00199	U	0.0990	0.09456		mg/Kg		96	70 - 130	4	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		70 - 130
1,4-Difluorobenzene (Surr)	106		70 - 130

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

Lab Sample ID: MB 880-19048/1-A

Matrix: Solid

Analysis Batch: 18980

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 19048

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/10/22 13:28	02/10/22 20:24	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		02/10/22 13:28	02/10/22 20:24	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/10/22 13:28	02/10/22 20:24	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	94		70 - 130	02/10/22 13:28	02/10/22 20:24	1
o-Terphenyl	99		70 - 130	02/10/22 13:28	02/10/22 20:24	1

Lab Sample ID: LCS 880-19048/2-A

Matrix: Solid

Analysis Batch: 18980

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 19048

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	960.7		mg/Kg		96	70 - 130
Diesel Range Organics (Over C10-C28)	1000	944.6		mg/Kg		94	70 - 130

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

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

Lab Sample ID: LCS 880-19048/2-A

Matrix: Solid

Analysis Batch: 18980

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 19048

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	91		70 - 130
o-Terphenyl	101		70 - 130

Lab Sample ID: LCSD 880-19048/3-A

Matrix: Solid

Analysis Batch: 18980

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 19048

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1022		mg/Kg		102	70 - 130	6	20
Diesel Range Organics (Over C10-C28)	1000	1026		mg/Kg		103	70 - 130	8	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	100		70 - 130
o-Terphenyl	112		70 - 130

Lab Sample ID: 890-1919-A-1-D MS

Matrix: Solid

Analysis Batch: 18980

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 19048

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	532		1000	1613		mg/Kg		108	70 - 130		
Diesel Range Organics (Over C10-C28)	2800	F1	1000	3100	F1	mg/Kg		30	70 - 130		

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	123		70 - 130
o-Terphenyl	82		70 - 130

Lab Sample ID: 890-1919-A-1-E MSD

Matrix: Solid

Analysis Batch: 18980

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 19048

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	532		998	1549		mg/Kg		102	70 - 130	4	20
Diesel Range Organics (Over C10-C28)	2800	F1	998	3065	F1	mg/Kg		26	70 - 130	1	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	120		70 - 130
o-Terphenyl	85		70 - 130

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

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

Lab Sample ID: MB 880-19049/1-A

Matrix: Solid

Analysis Batch: 19105

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 19049

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/10/22 13:35	02/11/22 22:47	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		02/10/22 13:35	02/11/22 22:47	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/10/22 13:35	02/11/22 22:47	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1-Chlorooctane	65	S1-	70 - 130				02/10/22 13:35	02/11/22 22:47	1
o-Terphenyl	69	S1-	70 - 130				02/10/22 13:35	02/11/22 22:47	1

Lab Sample ID: LCS 880-19049/2-A

Matrix: Solid

Analysis Batch: 19105

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 19049

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	956.4		mg/Kg		96	70 - 130
Diesel Range Organics (Over C10-C28)	1000	965.5		mg/Kg		97	70 - 130
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1-Chlorooctane	99		70 - 130				
o-Terphenyl	93		70 - 130				

Lab Sample ID: LCSD 880-19049/3-A

Matrix: Solid

Analysis Batch: 19105

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 19049

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	894.9		mg/Kg		89	70 - 130	7	20
Diesel Range Organics (Over C10-C28)	1000	899.1		mg/Kg		90	70 - 130	7	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	99		70 - 130						
o-Terphenyl	93		70 - 130						

Lab Sample ID: 890-1924-A-9-C MS

Matrix: Solid

Analysis Batch: 19105

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 19049

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	1000	966.1		mg/Kg		94	70 - 130
Diesel Range Organics (Over C10-C28)	<49.9	U	1000	886.7		mg/Kg		85	70 - 130

Eurofins Carlsbad



## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

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

Lab Sample ID: 890-1924-A-9-C MS

Matrix: Solid

Analysis Batch: 19105

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 19049

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	75		70 - 130
o-Terphenyl	68	S1-	70 - 130

Lab Sample ID: 890-1924-A-9-D MSD

Matrix: Solid

Analysis Batch: 19105

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 19049

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	998	989.0		mg/Kg		97	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	<49.9	U	998	917.3		mg/Kg		89	70 - 130	3	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	77		70 - 130
o-Terphenyl	68	S1-	70 - 130

Lab Sample ID: MB 880-19055/1-A

Matrix: Solid

Analysis Batch: 19245

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 19055

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		02/10/22 14:29	02/13/22 10:50	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		02/10/22 14:29	02/13/22 10:50	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		02/10/22 14:29	02/13/22 10:50	1

	MB	MB							
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1-Chlorooctane	78		70 - 130	02/10/22 14:29	02/13/22 10:50	1			
o-Terphenyl	82		70 - 130	02/10/22 14:29	02/13/22 10:50	1			

Lab Sample ID: LCS 880-19055/2-A

Matrix: Solid

Analysis Batch: 19245

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 19055

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO)-C6-C10	1000	968.2		mg/Kg		97	70 - 130
Diesel Range Organics (Over C10-C28)	1000	939.3		mg/Kg		94	70 - 130

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	95		70 - 130
o-Terphenyl	106		70 - 130

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

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

Lab Sample ID: LCSD 880-19055/3-A

Matrix: Solid

Analysis Batch: 19245

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 19055

Analyte	Spike			LCSD		Unit	D	%Rec	%Rec.		RPD	
	Added	Result	Qualifier	Result	Qualifier				Limits	RPD	Limit	Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1021				mg/Kg		102	70 - 130	5	20	
Diesel Range Organics (Over C10-C28)	1000	1008				mg/Kg		101	70 - 130	7	20	
		LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits									
1-Chlorooctane	106		70 - 130									
o-Terphenyl	114		70 - 130									

Lab Sample ID: 880-11152-A-21-C MS

Matrix: Solid

Analysis Batch: 19245

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 19055

Analyte	Sample		Spike	MS		Unit	D	%Rec	%Rec.			
	Result	Qualifier		Result	Qualifier				Limits	RPD	Limit	Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	1000	1053		mg/Kg		103	70 - 130			
Diesel Range Organics (Over C10-C28)	<50.0	U	1000	883.9		mg/Kg		88	70 - 130			
		MS	MS									
Surrogate	%Recovery	Qualifier	Limits									
1-Chlorooctane	63	S1-	70 - 130									
o-Terphenyl	63	S1-	70 - 130									

Lab Sample ID: 880-11152-A-21-D MSD

Matrix: Solid

Analysis Batch: 19245

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 19055

Analyte	Sample		Spike	MSD		Unit	D	%Rec	%Rec.		RPD	
	Result	Qualifier		Result	Qualifier				Limits	RPD	Limit	Limit
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	998	1045		mg/Kg		102	70 - 130	1	20	
Diesel Range Organics (Over C10-C28)	<50.0	U	998	905.8		mg/Kg		91	70 - 130	2	20	
		MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits									
1-Chlorooctane	65	S1-	70 - 130									
o-Terphenyl	64	S1-	70 - 130									

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-19422/1-A

Matrix: Solid

Analysis Batch: 19575

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chloride	<5.00	U	5.00		mg/Kg			02/19/22 08:32	1

Eurofins Carlsbad

QC Sample Results

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-19422/2-A				Client Sample ID: Lab Control Sample							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 19575											
Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			250	237.4		mg/Kg		95	90 - 110		

Lab Sample ID: LCSD 880-19422/3-A				Client Sample ID: Lab Control Sample Dup							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 19575											
Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride			250	237.5		mg/Kg		95	90 - 110	0	20

Lab Sample ID: 890-1927-2 MS				Client Sample ID: SW18							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 19575											
Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	5230	F1	4990	9457	F1	mg/Kg		85	90 - 110		

Lab Sample ID: 890-1927-2 MSD				Client Sample ID: SW18							
Matrix: Solid				Prep Type: Soluble							
Analysis Batch: 19575											
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	5230	F1	4990	9514	F1	mg/Kg		86	90 - 110	1	20

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

## GC VOA

## Prep Batch: 19014

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1927-1	SW17	Total/NA	Solid	5035	
890-1927-2	SW18	Total/NA	Solid	5035	
890-1927-3	SW19	Total/NA	Solid	5035	
890-1927-4	SW20	Total/NA	Solid	5035	
890-1927-5	SW21	Total/NA	Solid	5035	
890-1927-6	SW22	Total/NA	Solid	5035	
890-1927-7	SW23	Total/NA	Solid	5035	
MB 880-19014/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-19014/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-19014/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-11145-A-11-A MS	Matrix Spike	Total/NA	Solid	5035	
880-11145-A-11-B MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## Analysis Batch: 19116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1927-1	SW17	Total/NA	Solid	8021B	19014
890-1927-2	SW18	Total/NA	Solid	8021B	19014
890-1927-3	SW19	Total/NA	Solid	8021B	19014
890-1927-4	SW20	Total/NA	Solid	8021B	19014
890-1927-5	SW21	Total/NA	Solid	8021B	19014
890-1927-6	SW22	Total/NA	Solid	8021B	19014
890-1927-7	SW23	Total/NA	Solid	8021B	19014
MB 880-19014/5-A	Method Blank	Total/NA	Solid	8021B	19014
LCS 880-19014/1-A	Lab Control Sample	Total/NA	Solid	8021B	19014
LCSD 880-19014/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	19014
880-11145-A-11-A MS	Matrix Spike	Total/NA	Solid	8021B	19014
880-11145-A-11-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	19014

## Analysis Batch: 19350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1927-2	SW18	Total/NA	Solid	Total BTEX	
890-1927-3	SW19	Total/NA	Solid	Total BTEX	
890-1927-4	SW20	Total/NA	Solid	Total BTEX	
890-1927-5	SW21	Total/NA	Solid	Total BTEX	
890-1927-6	SW22	Total/NA	Solid	Total BTEX	
890-1927-7	SW23	Total/NA	Solid	Total BTEX	

## Analysis Batch: 19367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1927-1	SW17	Total/NA	Solid	Total BTEX	

## GC Semi VOA

## Analysis Batch: 18980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1927-5	SW21	Total/NA	Solid	8015B NM	19048
890-1927-6	SW22	Total/NA	Solid	8015B NM	19048
MB 880-19048/1-A	Method Blank	Total/NA	Solid	8015B NM	19048
LCS 880-19048/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	19048
LCSD 880-19048/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	19048
890-1919-A-1-D MS	Matrix Spike	Total/NA	Solid	8015B NM	19048

Eurofins Carlsbad

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

## GC Semi VOA (Continued)

## Analysis Batch: 18980 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1919-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	19048

## Prep Batch: 19048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1927-5	SW21	Total/NA	Solid	8015NM Prep	
890-1927-6	SW22	Total/NA	Solid	8015NM Prep	
MB 880-19048/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-19048/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-19048/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1919-A-1-D MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-1919-A-1-E MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## Prep Batch: 19049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1927-1	SW17	Total/NA	Solid	8015NM Prep	
890-1927-2	SW18	Total/NA	Solid	8015NM Prep	
890-1927-3	SW19	Total/NA	Solid	8015NM Prep	
890-1927-4	SW20	Total/NA	Solid	8015NM Prep	
MB 880-19049/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-19049/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-19049/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
890-1924-A-9-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
890-1924-A-9-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## Prep Batch: 19055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1927-7	SW23	Total/NA	Solid	8015NM Prep	
MB 880-19055/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-19055/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-19055/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-11152-A-21-C MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-11152-A-21-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 19105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1927-1	SW17	Total/NA	Solid	8015B NM	19049
890-1927-2	SW18	Total/NA	Solid	8015B NM	19049
890-1927-3	SW19	Total/NA	Solid	8015B NM	19049
890-1927-4	SW20	Total/NA	Solid	8015B NM	19049
MB 880-19049/1-A	Method Blank	Total/NA	Solid	8015B NM	19049
LCS 880-19049/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	19049
LCSD 880-19049/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	19049
890-1924-A-9-C MS	Matrix Spike	Total/NA	Solid	8015B NM	19049
890-1924-A-9-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	19049

## Analysis Batch: 19245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1927-7	SW23	Total/NA	Solid	8015B NM	19055
MB 880-19055/1-A	Method Blank	Total/NA	Solid	8015B NM	19055
LCS 880-19055/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	19055
LCSD 880-19055/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	19055

Eurofins Carlsbad

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

## GC Semi VOA (Continued)

## Analysis Batch: 19245 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-11152-A-21-C MS	Matrix Spike	Total/NA	Solid	8015B NM	19055
880-11152-A-21-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	19055

## Analysis Batch: 19504

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1927-7	SW23	Total/NA	Solid	8015 NM	

## Analysis Batch: 19741

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1927-1	SW17	Total/NA	Solid	8015 NM	
890-1927-2	SW18	Total/NA	Solid	8015 NM	
890-1927-3	SW19	Total/NA	Solid	8015 NM	
890-1927-4	SW20	Total/NA	Solid	8015 NM	
890-1927-5	SW21	Total/NA	Solid	8015 NM	
890-1927-6	SW22	Total/NA	Solid	8015 NM	

## HPLC/IC

## Leach Batch: 19422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1927-1	SW17	Soluble	Solid	DI Leach	
890-1927-2	SW18	Soluble	Solid	DI Leach	
890-1927-3	SW19	Soluble	Solid	DI Leach	
890-1927-4	SW20	Soluble	Solid	DI Leach	
890-1927-5	SW21	Soluble	Solid	DI Leach	
890-1927-6	SW22	Soluble	Solid	DI Leach	
890-1927-7	SW23	Soluble	Solid	DI Leach	
MB 880-19422/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-19422/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-19422/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-1927-2 MS	SW18	Soluble	Solid	DI Leach	
890-1927-2 MSD	SW18	Soluble	Solid	DI Leach	

## Analysis Batch: 19575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1927-1	SW17	Soluble	Solid	300.0	19422
890-1927-2	SW18	Soluble	Solid	300.0	19422
890-1927-3	SW19	Soluble	Solid	300.0	19422
890-1927-4	SW20	Soluble	Solid	300.0	19422
890-1927-5	SW21	Soluble	Solid	300.0	19422
890-1927-6	SW22	Soluble	Solid	300.0	19422
890-1927-7	SW23	Soluble	Solid	300.0	19422
MB 880-19422/1-A	Method Blank	Soluble	Solid	300.0	19422
LCS 880-19422/2-A	Lab Control Sample	Soluble	Solid	300.0	19422
LCSD 880-19422/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	19422
890-1927-2 MS	SW18	Soluble	Solid	300.0	19422
890-1927-2 MSD	SW18	Soluble	Solid	300.0	19422

Eurofins Carlsbad



Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

Client Sample ID: SW17  
Date Collected: 02/09/22 09:20  
Date Received: 02/09/22 13:11

Lab Sample ID: 890-1927-1  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	19014	02/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	19116	02/11/22 17:10	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			19367	02/14/22 10:01	KL	XEN MID
Total/NA	Analysis	8015 NM		1			19741	02/17/22 15:56	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	19049	02/10/22 13:35	DM	XEN MID
Total/NA	Analysis	8015B NM		1			19105	02/12/22 06:43	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	19422	02/14/22 13:40	SC	XEN MID
Soluble	Analysis	300.0		20			19575	02/19/22 10:53	CH	XEN MID

Client Sample ID: SW18  
Date Collected: 02/09/22 09:26  
Date Received: 02/09/22 13:11

Lab Sample ID: 890-1927-2  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.97 g	5 mL	19014	02/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	19116	02/11/22 17:30	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			19350	02/14/22 09:43	KL	XEN MID
Total/NA	Analysis	8015 NM		1			19741	02/17/22 15:56	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	19049	02/10/22 13:35	DM	XEN MID
Total/NA	Analysis	8015B NM		1			19105	02/12/22 07:04	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	19422	02/14/22 13:40	SC	XEN MID
Soluble	Analysis	300.0		20			19575	02/19/22 11:02	CH	XEN MID

Client Sample ID: SW19  
Date Collected: 02/09/22 09:35  
Date Received: 02/09/22 13:11

Lab Sample ID: 890-1927-3  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.03 g	5 mL	19014	02/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	19116	02/11/22 17:51	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			19350	02/14/22 09:43	KL	XEN MID
Total/NA	Analysis	8015 NM		1			19741	02/17/22 15:56	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.02 g	10 mL	19049	02/10/22 13:35	DM	XEN MID
Total/NA	Analysis	8015B NM		1			19105	02/12/22 07:26	AJ	XEN MID
Soluble	Leach	DI Leach			5.01 g	50 mL	19422	02/14/22 13:40	SC	XEN MID
Soluble	Analysis	300.0		20			19575	02/19/22 11:29	CH	XEN MID

Client Sample ID: SW20  
Date Collected: 02/09/22 09:38  
Date Received: 02/09/22 13:11

Lab Sample ID: 890-1927-4  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.02 g	5 mL	19014	02/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	19116	02/11/22 18:11	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			19350	02/14/22 09:43	KL	XEN MID

Eurofins Carlsbad

Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

Client Sample ID: SW20  
Date Collected: 02/09/22 09:38  
Date Received: 02/09/22 13:11

Lab Sample ID: 890-1927-4  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			19741	02/17/22 15:56	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	19049	02/10/22 13:35	DM	XEN MID
Total/NA	Analysis	8015B NM		1			19105	02/12/22 07:48	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	19422	02/14/22 13:40	SC	XEN MID
Soluble	Analysis	300.0		20			19575	02/19/22 11:37	CH	XEN MID

Client Sample ID: SW21  
Date Collected: 02/09/22 09:42  
Date Received: 02/09/22 13:11

Lab Sample ID: 890-1927-5  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	19014	02/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	19116	02/11/22 18:32	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			19350	02/14/22 09:43	KL	XEN MID
Total/NA	Analysis	8015 NM		1			19741	02/17/22 15:56	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	19048	02/10/22 13:28	DM	XEN MID
Total/NA	Analysis	8015B NM		1			18980	02/11/22 02:47	AJ	XEN MID
Soluble	Leach	DI Leach			5 g	50 mL	19422	02/14/22 13:40	SC	XEN MID
Soluble	Analysis	300.0		20			19575	02/19/22 12:04	CH	XEN MID

Client Sample ID: SW22  
Date Collected: 02/09/22 09:45  
Date Received: 02/09/22 13:11

Lab Sample ID: 890-1927-6  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	19014	02/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	19116	02/11/22 18:52	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			19350	02/14/22 09:43	KL	XEN MID
Total/NA	Analysis	8015 NM		1			19741	02/17/22 15:56	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	19048	02/10/22 13:28	DM	XEN MID
Total/NA	Analysis	8015B NM		1			18980	02/11/22 03:09	AJ	XEN MID
Soluble	Leach	DI Leach			4.95 g	50 mL	19422	02/14/22 13:40	SC	XEN MID
Soluble	Analysis	300.0		50			19575	02/19/22 12:13	CH	XEN MID

Client Sample ID: SW23  
Date Collected: 02/09/22 09:47  
Date Received: 02/09/22 13:11

Lab Sample ID: 890-1927-7  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			4.98 g	5 mL	19014	02/11/22 07:30	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	19116	02/11/22 19:13	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			19350	02/14/22 09:43	KL	XEN MID
Total/NA	Analysis	8015 NM		1			19504	02/15/22 13:20	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	19055	02/10/22 14:29	DM	XEN MID
Total/NA	Analysis	8015B NM		1			19245	02/13/22 17:05	AJ	XEN MID

Eurofins Carlsbad

Lab Chronicle

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

Client Sample ID: SW23  
Date Collected: 02/09/22 09:47  
Date Received: 02/09/22 13:11

Lab Sample ID: 890-1927-7  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			4.99 g	50 mL	19422	02/14/22 13:40	SC	XEN MID
Soluble	Analysis	300.0		10			19575	02/19/22 12:22	CH	XEN MID

Laboratory References:

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

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

Accreditation/Certification Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

Laboratory: Eurofins Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH
Total BTEX		Solid	Total BTEX

Method Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

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

**Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

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

Sample Summary

Client: WSP USA Inc.  
Project/Site: RDX 17-6

Job ID: 890-1927-1  
SDG: 31403360.01

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1927-1	SW17	Solid	02/09/22 09:20	02/09/22 13:11	0 - 4
890-1927-2	SW18	Solid	02/09/22 09:26	02/09/22 13:11	0 - 4
890-1927-3	SW19	Solid	02/09/22 09:35	02/09/22 13:11	0 - 4
890-1927-4	SW20	Solid	02/09/22 09:38	02/09/22 13:11	0 - 4
890-1927-5	SW21	Solid	02/09/22 09:42	02/09/22 13:11	0 - 4
890-1927-6	SW22	Solid	02/09/22 09:45	02/09/22 13:11	0 - 4
890-1927-7	SW23	Solid	02/09/22 09:47	02/09/22 13:11	0 - 4





Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334  
Midland, TX (432) 704-5440 EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296  
Hobbs, NM (575) 392-7550 Phoenix, AZ (480) 355-0900 Atlanta, GA (770) 449-8800 Tampa, FL (813) 820-2000

Work Order No: \_\_\_\_\_  
www.xenco.com Page 1 of 1

Project Manager:	Joseph Hernandez	Bill to: (if different)	Jim Raley
Company Name:	WSP USA Inc., Permian office	Company Name:	WPX Energy
Address:	3300 North A St. Bldg 1, Unit 222	Address:	5315 Buena Vista Dr.
City, State ZIP:	Midland, TX 79705	City, State ZIP:	Carsbad NM, 88220
Phone:	781-702-2329	Email:	travis.casey@wsp.com, kalei.jennings@wsp.com, dan.moir@wsp.com

Program: UST/PST <input checked="" type="checkbox"/> PPR <input type="checkbox"/> Brownfields <input type="checkbox"/> RRC <input type="checkbox"/> Superfund <input type="checkbox"/>	
State of Project: NM	
Reporting Level: I <input type="checkbox"/> II <input type="checkbox"/> III <input checked="" type="checkbox"/> IV <input type="checkbox"/>	Deliverables: EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other: <input type="checkbox"/>

Project Name:	RDX 17-6	Turn Around	
Project Number:	31403360.01	Routine	X
P.O. Number:	nRM0019548894	Rush:	
Sampler's Name:	Travis Casey	Due Date:	
<b>SAMPLE RECEIPT</b>			
Temperature (°C):	1.8 / 1.6	Temp Blank:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Received In tact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Wet Ice:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Cooler Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> MA	Thermometer ID	TC-11-202
Sample Custody Seals:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> MA	Correction Factor:	-0.2
Total Containers:			



890-1927 Chain of Custody

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	ANALYSIS REQUEST											Sample Comments		
					Number of Containers	TPH (EPA)	BTEX (EPA)	Chlorides	Lead	Cadmium	Copper	Iron	Manganese	Mercury	Nickel		Selenium	Zinc
SW17	S	2/9/2022	9:20	0-4'	1	X	X	X	X									Composite
SW18	S	2/9/2022	9:26	0-4'	1	X	X	X	X									Composite
SW19	S	2/9/2022	9:35	0-4'	1	X	X	X	X									Composite
SW20	S	2/9/2022	9:38	0-4'	1	X	X	X	X									Composite
SW21	S	2/9/2022	9:42	0-4'	1	X	X	X	X									Composite
SW22	S	2/9/2022	9:45	0-4'	1	X	X	X	X									Composite
SW23	S	2/9/2022	9:47	0-4'	1	X	X	X	X									Composite

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM Texas 11	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed		TCLP / SPLP 6010:	8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
			1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		2/9/22 1:11			

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1927-1

SDG Number: 31403360.01

Login Number: 1927

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1927-1

SDG Number: 31403360.01

Login Number: 1927

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 02/10/22 12:21 PM

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



## APPENDIX F

### Correspondence Emails

---

## Moreno, Gilbert

---

**From:** Byers, Anna  
**Sent:** Wednesday, March 9, 2022 9:31 AM  
**To:** Moreno, Gilbert  
**Subject:** FW: Final Sampling Notification December 9th through 10th, 2021

### Anna Byers

Consultant, Geologist  
Office + 1 575-887-0101  
Mobile + 1 575-200-6754



---

**From:** Byers, Anna  
**Sent:** Tuesday, December 7, 2021 6:41 AM  
**To:** ocd.enviro@state.nm.us  
**Cc:** Raley, Jim <Jim.Raley@dmn.com>; Casey, Travis <Travis.Casey@wsp.com>; Hernandez, Joseph <Joe.Hernandez@wsp.com>  
**Subject:** Final Sampling Notification December 9th through 10th, 2021

Good morning,

WPX anticipates completing final sampling activities at the following site during Dec 9<sup>th</sup> through 10<sup>th</sup>, 2021:

### WSP

Site: RDX 17 Federal Com #006H  
API: 30-015-39308  
Incident ID: NRM2019548894  
Release Date: 07/05/2020

Thank you,

### Anna Byers

Consultant, Geologist  
*Please note the new email address.*



Email: [anna.byers@wsp.com](mailto:anna.byers@wsp.com)  
Office: + 1 575-887-0101  
Mobile: + 1 575-200-6754

WSP USA  
508 West Stevens Street  
Carlsbad, New Mexico 88220

[wsp.com](http://wsp.com)

## Moreno, Gilbert

---

**From:** Byers, Anna  
**Sent:** Wednesday, March 9, 2022 9:31 AM  
**To:** Moreno, Gilbert  
**Subject:** FW: Final Sampling Notification for Week Ending December 17th, 2021

### Anna Byers

Consultant, Geologist  
Office + 1 575-887-0101  
Mobile + 1 575-200-6754



---

**From:** Byers, Anna  
**Sent:** Friday, December 10, 2021 4:22 PM  
**To:** ocd.enviro@state.nm.us  
**Cc:** Raley, Jim <Jim.Raley@dmn.com>; Hernandez, Joseph <Joe.Hernandez@wsp.com>  
**Subject:** Final Sampling Notification for Week Ending December 17th, 2021

Good afternoon,

WPX anticipates completing final sampling activities at the following sites during next week:

#### **Dec 14<sup>th</sup> through 17<sup>th</sup>, 2021**

#### **WSP**

Site: RDX 17 Federal Com #006H  
API: 30-015-39308  
Incident ID: NRM2019548894  
Release Date: 07/05/2020

Site: RDX Federal Com 17 #026H  
API: 30-015-42752  
Incident ID: napp2134444397  
Release Date: 12/07/2021

Thank you,

### Anna Byers

Consultant, Geologist  
*Please note the new email address.*



Email: [anna.byers@wsp.com](mailto:anna.byers@wsp.com)  
Office: + 1 575-887-0101  
Mobile: + 1 575-200-6754

WSP USA



508 West Stevens Street  
Carlsbad, New Mexico 88220

[wsp.com](http://wsp.com)

## Moreno, Gilbert

---

**From:** Byers, Anna  
**Sent:** Wednesday, March 9, 2022 9:30 AM  
**To:** Moreno, Gilbert  
**Subject:** FW: Final Sampling Notification through Week Ending January 14, 2021

### Anna Byers

Consultant, Geologist  
Office + 1 575-887-0101  
Mobile + 1 575-200-6754



---

**From:** Byers, Anna <Anna.Byers@wsp.com>  
**Sent:** Tuesday, January 4, 2022 6:58 AM  
**To:** ocd.enviro@state.nm.us  
**Cc:** Hernandez, Joseph <Joe.Hernandez@wsp.com>; Raley, Jim <Jim.Raley@dmv.com>  
**Subject:** Final Sampling Notification through Week Ending January 14, 2021

Good morning,

WPX anticipates completing final sampling activities at the following site during Jan 6<sup>th</sup> through 14<sup>th</sup>, 2021:

### WSP

Site: RDX 17 Federal Com #006H  
API: [30-015-39308](#)  
Incident ID: NRM2019548894  
Release Date: 07/05/2020

Thank you,  
Anna

Get [Outlook for iOS](#)

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

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

CONDITIONS

Action 151388

CONDITIONS

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID: 246289
	Action Number: 151388
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
scott.rodgers	App ID 151388: Remediation addendum approved. Please include BLM approval in final report. Remediation due date updated to 04/25/2024.	1/26/2024

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

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

Form C-141  
Revised August 24, 2018  
Submit to appropriate OCD District office

Incident ID	NRM2019548894
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: WPX Energy Permian, LLC.	OGRID: 246289
Contact Name: Lynda Laumbach	Contact Telephone: (575) 725-1647
Contact email: Lynda.Laumbach@wpxenergy.com	Incident # (assigned by OCD)
Contact mailing address: 5315 Buena Vista Drive, Carlsbad, NM 88220	

Location of Release Source

Latitude 32.041235 Longitude -103.9018005  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: RDX 17 Federal Com #006H	Site Type: Production Facility
Date Release Discovered: 07/05/2020	API# (if applicable): 30-015-39308

Unit Letter	Section	Township	Range	County
J	17	26S	30E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (Name: )

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls):	Volume Recovered (bbls):
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls): 35	Volume Recovered (bbls): 5
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release:  
At 0830 hours PW polyline connection failed causing an estimated 35bbl of PW to be released along recently reclaimed lease road for RDX 17-13. 5bbl of PW was recovered.


$$bbl\ estimate = \frac{saturated\ soil\ volume\ (ft^3)}{4.21(\frac{ft^3}{bbl\ equivalent})} * estimated\ soil\ porosity(\%)$$

Incident ID	NRM2019548894
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? Release was over 25bbl of fluid.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Email notification was sent to Mike Bratcher, Robert Hamlet, Victoria Venegas, and Jim Griswold on 07/05/2020 at 1640 hours.	

## Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped.	
<input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Lynda Laumbach</u>	Title: <u>Environmental Specialist</u>
Signature: <u></u>	Date: <u>07/06/2020</u>
email: <u>Lynda.Laumbach@wpenergy.com</u>	Telephone: <u>(575)725-1647</u>
<b><u>OCD Only</u></b>	
Received by: <u>Ramona Marcus</u>	Date: <u>7/13/2020</u>

Incident ID	NRM2019548894
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?	>100 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" 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 checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" 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	NRM201954889
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: Lynda Laumbach Title: Environmental Specialist  
Signature:  Date: 03/23/2021  
email: Lynda.Laumbach@wpenergy.com Telephone: (575)725-1647

**OCD Only**

Received by: Cristina Eads Date: 04/19/2021

Incident ID	NRM201954889
District RP	
Facility ID	
Application ID	

## Remediation Plan

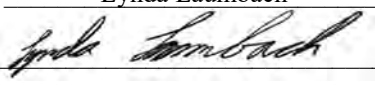
**Remediation Plan Checklist:** *Each of the following items must be included in the plan.*

- ☒ 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: Lynda Laumbach Title: Environmental Specialist  
Signature:  Date: 03/23/2021  
email: Lynda.Laumbach@wpenergy.com Telephone: (575)725-1647

**OCD Only**

Received by: Cristina Eads Date: 04/19/2021

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

Signature:  Date: 07/21/2021



March 23, 2021  
Mike Bratcher  
NMOCD District 2  
811 South First Street  
Artesia, NM 88210

Re: RDX 17 Federal Com #006H Remediation Plan (NRM2019548894)

Mr. Bratcher,

This report summarizes the remediation activities and proposed plan for remediation and closure of the Incident at the RDX 17 Federal Com #006H well pad (Site). The topographic map of the Site is provided as Figure 01. On July 5, 2020, a produced water line cracked releasing 35 barrels (bbls) of produced water along recently reclaimed lease road for RDX 17-13. 5bbl of PW was recovered using a vacuum truck.

*Well Location:* RDX 17 Federal Com #006H

*API #:* 30-015-39308

*NMOCD Reference #:* NRM2019548894

*Site Location Description:* Unit Letter J, Section 17, Township 26S, Range 30E

*Release Latitude/Longitude:* N32.041235, W103.9018005

*Land Jurisdiction:* Federal

*Estimated Depth to Groundwater:* >100 feet

### **NMOCD Site Characterization Standards**

The Closure criteria of this site was determined based on the New Mexico Administrative Code (NMAC) Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12). The Site is not located within a sensitive area. Depth to groundwater at the site is estimated to be greater than 100 feet below ground surface (bgs) based on a depth to water drill at the RDX Federal 17 #044H, located ~0.56 miles north of the location, drilled on December 12, 2020. The well was completed to a depth of 105 feet, and groundwater was not encountered or observed prior to the plugging of the well on December 15, 2020. Well log is provided as Attachment 01. Based on the criteria outlined above, the closure criteria from the NMOCD Table 1 are as follows:

- 20,000 milligrams per kilogram (mg/kg) Chloride
- 50 mg/kg Benzene, Toluene, Ethylbenzene, and xylenes (BTEX)
- 10 mg/kg Benzene
- 2,500 mg/kg Total Petroleum Hydrocarbons (TPH)
- 1,000 mg/kg Diesel range organics (DRO) + Gasoline range organics (GRO)

### **Field Activities**

On July 16, 2020, WPX personnel were onsite to confirm the release extent and collect delineation samples DS01-DS07. The area of interest is located on Figure 02. Further Surface samples SS01-SS12 were collected on March 16, 2021 to laterally delineate the release for chloride contamination.

**Sampling Activities**

Discrete samples were taken to delineate the area outside of the release extent. All samples were taken with decontaminated equipment, jarred in precleaned glass soil jars, labelled with sample name, date, Site name, and depth, and immediately placed on ice to lower sample temperatures below 4° Celsius, adhering to chain of custodies of Hall and Xenco Laboratories. Samples were analyzed for Chlorides via Method EPA 300.0, TPH via Method 8015M, and BTEX via Method 8021B.

**Laboratory Analytical Results**

The laboratory analytical results for the delineation samples DS01-DS07 were above the Standard threshold for chlorides. In addition, samples SS04, SS05, SS08, and SS12 showed elevated chlorides. The sample locations are depicted in Figure 02. All sample results are summarized in Table 01 and complete lab results are provided in Attachment 02. Results for samples analyzed for BTEX and TPH confirmed no detectable levels. Chloride analysis ranged from 57.8 mg/kg to 37,000 mg/kg.

**Proposed Workplan**

WPX plans on excavating an estimated 1,700 cubic yards to 2,200 cubic yards to address the release. The proposed excavation area is outlined in Figure 03. This number is contingent on an average depth of four feet with contamination greater than 600 mg/kg chlorides. To fully delineate the release, bore locations will be advanced at BH01-BH03 to collect vertical delineations. Complete lateral delineations will be achieved via side wall samples once the excavation has been completed. WPX also proposes to lay down an impermeable layer at four feet bgs to mitigate any further contamination migration into the subsurface.

All samples will be analyzed for Chlorides via Method EPA 300.0, TPH via Method 8015M, and BTEX via Method 8021B. All contaminated soil will be hauled to disposal at R-360 Red Bluff Facility, 5053 US Hwy 285, Orla, TX 79770.

**Proposed Schedule**

WPX plans to start this project as soon as this remediation plan is approved or by June 21, 2021 whichever comes first. An extension request or Incident Closure report will be submitted after 90 days of this remediation approval. If any questions or further information is warranted, please do not hesitate to contact me by cell phone at (575) 725-1647 or by email at [Lynda.Laumbach@wpxenergy.com](mailto:Lynda.Laumbach@wpxenergy.com).

Best regards,



Lynda Laumbach  
Environmental Specialist

CC: Robert Hamlet, NMOCD  
Victoria Venegas, NMOCD  
Chad Hensley, NMOCD

Attachments:

Figure 01 Topography

Figure 02 Delineation Samples

Figure 03 Remediation Plan

Table 01 Soil Sample Results

Attachment 01 Water Well Data

Attachment 02 Analytical Results

# Figures



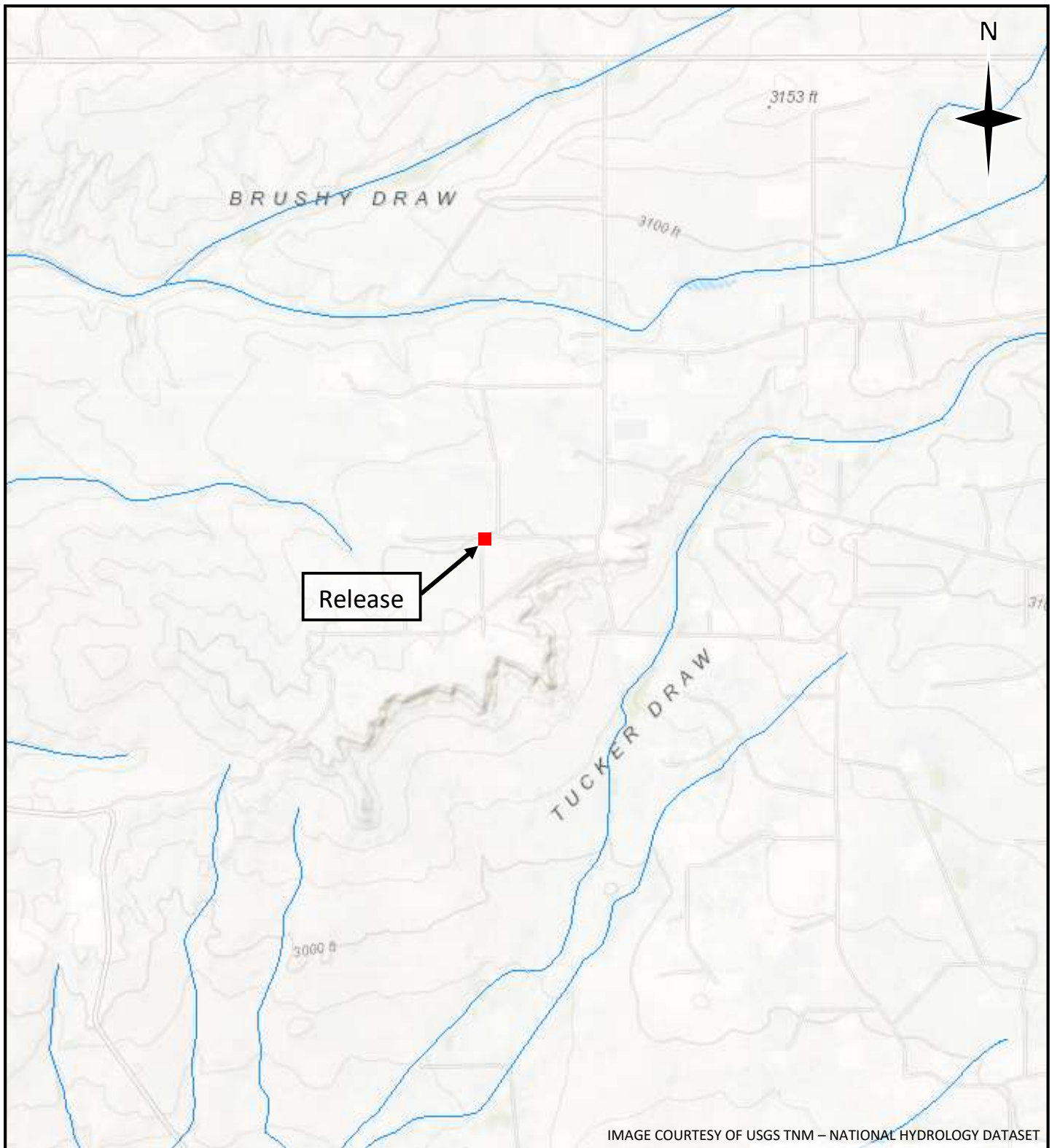


IMAGE COURTESY OF USGS TNM – NATIONAL HYDROLOGY DATASET

**WPXENERGY.**

0 0.3 0.6mi

**Legend**

- Release Location
- /// OSE Water Body

**Figure 01**

RDX 17 Federal Com #006H

30-015-39308

Permian Basin, Eddy County, NM

32.041235, -103.9018005

Date: 07/7/2020





IMAGE COURTESY OF GOOGLE EARTH 2019



## Legend

✖ Point of Release

■ Release Extent (8,785 sq. feet)

## Figure 02

RDX 17 Federal Com #006H

30-015-39308

NRM2019548894

Permian Basin, Eddy County, NM

32.041235, -103.9018005



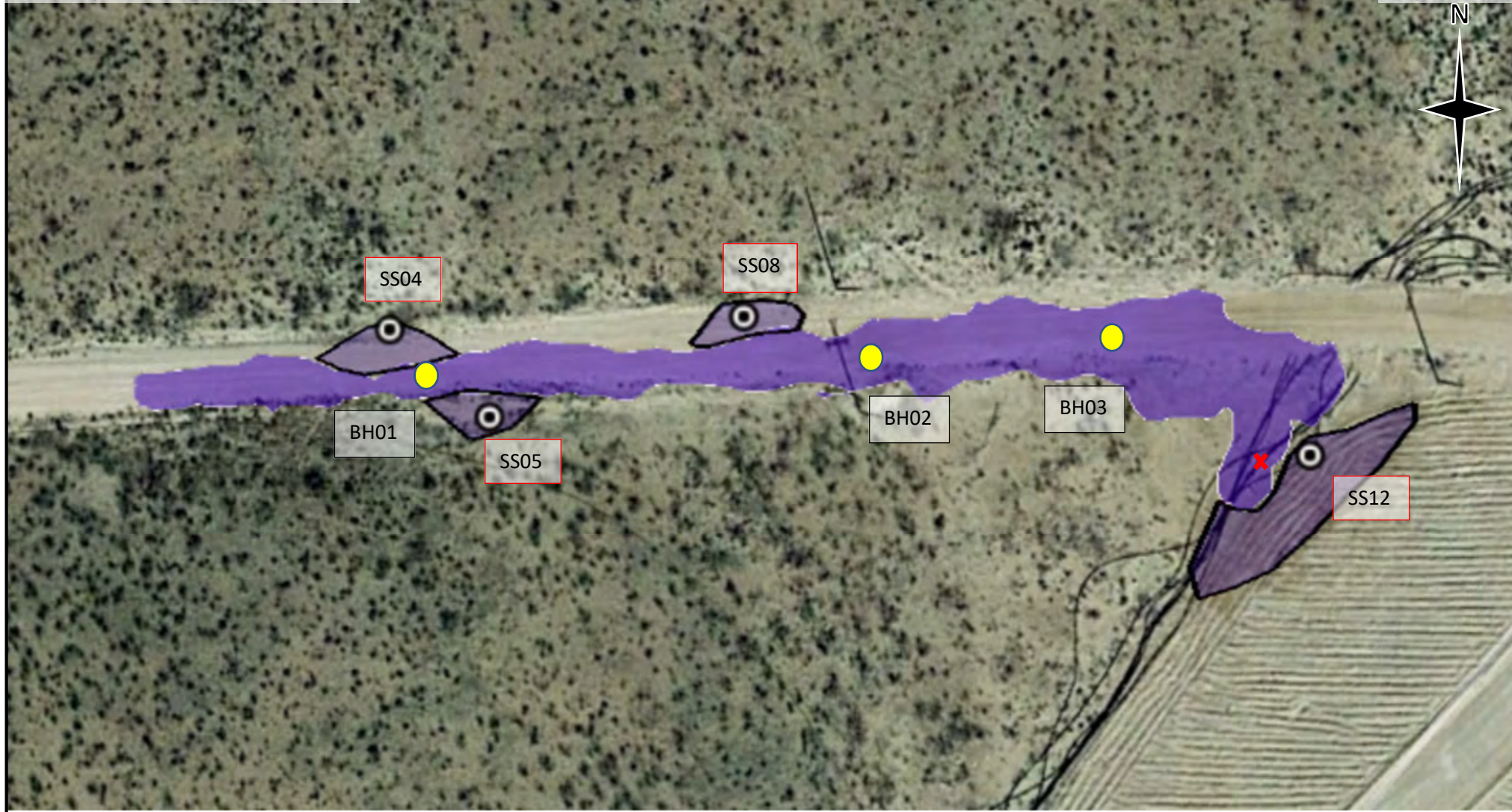


IMAGE COURTESY OF GOOGLE EARTH 2019



- Legend
- ✖ Point of Release
  - Release Extent (8,785 sq. feet)
  - Additional Area (2,966 sq. feet)

Figure 03  
RDX 17 Federal Com #006H  
30-015-39308  
NRM2019548894  
Permian Basin, Eddy County, NM  
32.041235, -103.9018005

# Tables

**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**

**RDX 17 Federal #006H**  
**NMOCD REFERENCE NUMBER: NRM2019548894**



Sample Name	Depth (ft bgs)	Sample Date	Benzene (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	GRO + DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
DS01	2	7/16/2020	-	-	-	-	-	-	-	8340
DS01A	4	7/16/2020	-	-	-	-	-	-	-	723
DS02	2	7/16/2020	-	-	-	-	-	-	-	4700
DS02A	4	7/16/2020	-	-	-	-	-	-	-	1430
DS03	2	7/16/2020	-	-	-	-	-	-	-	26700
DS03A	4	7/16/2020	-	-	-	-	-	-	-	30900
DS03B	6	7/16/2020	-	-	-	-	-	-	-	32700
DS03C	8	7/16/2020	-	-	-	-	-	-	-	27200
DS03D	10	7/16/2020	-	-	-	-	-	-	-	28400
DS04	2	7/16/2020	-	-	-	-	-	-	-	26900
DS04A	4	7/16/2020	-	-	-	-	-	-	-	23500
DS04B	6	7/16/2020	-	-	-	-	-	-	-	13800
DS04C	10	7/16/2020	-	-	-	-	-	-	-	16000
DS05	2	7/16/2020	-	-	-	-	-	-	-	26000
DS05A	4	7/16/2020	-	-	-	-	-	-	-	24300
DS05B	6	7/16/2020	-	-	-	-	-	-	-	24800
DS05C	10	7/16/2020	-	-	-	-	-	-	-	24500
DS06	2	7/16/2020	-	-	-	-	-	-	-	18800
DS06A	4	7/16/2020	-	-	-	-	-	-	-	34600
DS06B	6	7/16/2020	-	-	-	-	-	-	-	37900
DS06C	10	7/16/2020	-	-	-	-	-	-	-	28400
DS07	2	7/16/2020	-	-	<49.8	<49.8	<49.8	-	-	26300
DS07A	4	7/16/2020	-	-	<49.9	<49.9	<49.9	-	-	22500
DS07B	6	7/16/2020	-	-	-	-	-	-	-	23100
DS07C	10	7/16/2020	-	-	-	-	-	-	-	23800
SS01	0.5	3/16/2021	-	-	-	-	-	-	-	379
SS02	0.5	3/16/2021	-	-	-	-	-	-	-	440
SS03	0.5	3/16/2021	-	-	-	-	-	-	-	57.8
SS04	0.5	3/16/2021	-	-	-	-	-	-	-	888
SS05	0.5	3/16/2021	-	-	-	-	-	-	-	1060
SS06	0.5	3/16/2021	-	-	-	-	-	-	-	273
SS07	0.5	3/16/2021	-	-	-	-	-	-	-	518
SS08	0.5	3/16/2021	-	-	-	-	-	-	-	707
SS09	0.5	3/16/2021	-	-	-	-	-	-	-	125
SS10	0.5	3/16/2021	-	-	-	-	-	-	-	347
SS11	0.5	3/16/2021	-	-	-	-	-	-	-	368
SS12	0.5	3/16/2021	-	-	-	-	-	-	-	1350
<b>NMOCD Table 1 Closure Criteria</b>			<b>10</b>	<b>50</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>1000</b>	<b>2500</b>	<b>20000</b>
Reference: BTEX: benzene, toluene, ethylbenzene, and total xylenes GRO: gasoline range organics DRO: diesel range organics ft bgs: feet below ground surface NMOCD Table 1 Closure Criteria: NMAC 19.15.29 August 2018 criteria for soils impacted based on characterization mg/kg: milligrams per kilogram NMOCD: New Mexico Oil Conservation Division TPH: total petroleum hydrocarbons										

# Attachment 01: Water Well Data





### Site Investigation Report

Date of report: 1/5/2021  
Site Names: RDX 16-25 Ross Draw Unit #38  
RDX 17 #3 Ross Draw Unit #55  
RDX Fed Com 17-44H Ross Draw Unit #57  
RDX Fed Com 21-43 N Brushy Fed 35 #010H  
County: Eddy County, New Mexico  
Project No: 0397

### Site Activities

Earth Systems Response and Restoration (ESRR) field activities were conducted December 8<sup>th</sup> through the 10<sup>th</sup> in Eddy county, New Mexico. ESRR oversaw the advancement of one soil boring at the eight above-mentioned locations to an approximate depth of 105 feet (ft.) below grade surface utilizing an air-rotary drilling rig operated by a State of New Mexico licensed driller. Additionally, HRL Compliance Solutions (HRL) conducted on-site soil logging activities during the advancement of the soil borings. Please see the detailed lithologic descriptions attached.

Upon completion of the soil borings, a PVC casing fitted with 5 ft. of machine-slotted well screen at the bottom was inserted into each soil boring. The PVC casing was left in place for a minimum of 72 hours prior to being gauged by HRL Consulting on December 12<sup>th</sup> with a water level meter to determine the presence or absence of groundwater. Subsequent to gauging activities, each soil boring had the PVC casing removed and was then backfilled with its associated native soil cuttings to grade surface.

### Conclusions

Groundwater was not detected in any of the eight soil borings as determined by utilizing a water level meter after 72 hours of development. It can be reasonably determined groundwater is deeper than 105 ft. bgs in the vicinity of the advanced soil borings.

Respectfully,

Kris Williams, CHMM, REM  
Operations Manager

Attached: Drilling Locations Maps  
Soil Boring Logs




Drilling Location Site Map		
RDX 16-25	(32.039900, -103.883337)	Ross Draw Unit #38
RDX 17 #3	(32.036765, -103.895993)	Ross Draw Unit #55
RDX Federal Com 17-44H	(32.049656, -103.904054)	Ross Draw Unit #57
RDX Federal Com 21-43	(32.022571, -103.884371)	







Drilling Location Site Map


North Brushy Federal 35 #010H	(32.079909, -103.951386)
RDX Federal Com 17-44H	(32.049656, -103.904054)


 <b>HRL COMPLIANCE SOLUTIONS</b>							BORING LOG/MONITORING WELL COMPLETION DIAGRAM						
							Boring/Well Number:		Location:				
							MW-1		RDX 16-25				
							Date:		Client:				
							12/10/2020		WPX Energy				
Drilling Method:			Sampling Method:				Logged By:		Drilled By:				
Air Rotary			None				J. Linn, PG		Talon LPE				
Gravel Pack Type:			Gravel Pack Depth Interval:				Seal Type:		Seal Depth Interval:		Latitude:		
10/20 sand			3 bags				None		None		32.0399004		
Casing Type:		Diameter:		Depth Interval:			Boring Total Depth (ft. BGS):			Longitude:			
PVC		2-inch		0-105 feet bgs			110			-103.8833368			
Screen Type:		Slot:		Diameter:		Depth Interval:		Well Total Depth (ft. BGS):			Depth to Water (ft. BTOC):		
PVC		0.010-inch		2-inch		105-110 ft		110			> 110		
DTW Date:		12/16/2020											
Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	PID (ppm)	USCS	Sample ID	Lithology/Remarks			Well Completion	
0	NM	L	D	N	N	NM	SW	NS	Pale orange to pink tan well graded sand with silt				
5													
10													
15													
20													
25	NM	L	D	N	N	NM	SP	NS	Pale pinky orange poorly graded fine sand				
30													
35													
40	NM	L	D	N	N	NM	SW	NS	Orange to pale red well graded sand with gravel				
45													
50	NM	L	D	N	N	NM	SP	NS	Pale pinky orange poorly graded fine sand				
55													
60	NM	L	D	N	N	NM	SP	NS	Pale pinky orange poorly graded fine sand with minor medium and coarse sand - TD: 110' bgs				
65													
70													
75													
80													
85													
90													
95													
100													
105													
110													


 <b>HRL COMPLIANCE SOLUTIONS</b>							BORING LOG/MONITORING WELL COMPLETION DIAGRAM						
							Boring/Well Number: MW-1			Location: RDX 17 #3			
							Date: 12/8/2020			Client: WPX Energy			
Drilling Method: Air Rotary			Sampling Method: None				Logged By: J. Linn, PG			Drilled By: Talon LPE			
Gravel Pack Type: 10/20 Sand			Gravel Pack Depth Interval: 3 Bags				Seal Type: None		Seal Depth Interval: None		Latitude: 32.036765		
Casing Type: PVC		Diameter: 2-inch		Depth Interval: 0-102 feet bgs			Boring Total Depth (ft. BGS): 107			Longitude: -103.895993			
Screen Type: PVC		Slot: 0.010-inch		Diameter: 2-inch		Depth Interval: 102-107 ft		Well Total Depth (ft. BGS): 107			Depth to Water (ft. BTOC): > 107		
DTW Date: 12/16/2020													
Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	PID (ppm)	USCS	Sample ID	Lithology/Remarks			Well Completion	
0	NM	L	D	N	N	NM	SP	NS	Pale orange poorly graded fine sand				
5													
10													
15													
20													
25	NM	L	D	N	N	NM	SP	NS	Same as above with slight increase in coarse sand and gravel				
30													
35													
40													
45													
45	NM	L	D	N	N	NM	SP	NS	Pale orange poorly graded fine sand with very slight silt				
50													
55													
60													
65													
65	NM	M	SL M	N	N	NM	SM	NS	Pale red orange clayey silty fine sand with minor coarse sand and gravel				
70													
75													
80													
85													
90	NM	L	SL M	N	N	NM	SP	NS	Pale orange poorly sorted fine sand - TD 107' BGS				
95													
100													
105													
105													


 <b>HRL COMPLIANCE SOLUTIONS</b>							BORING LOG/MONITORING WELL COMPLETION DIAGRAM						
							Boring/Well Number: MW-1			Location: RDX Federal Com 17-44H			
							Date: 12/8/2020			Client: WPX Energy			
Drilling Method: Air Rotary			Sampling Method: None				Logged By: J. Linn, PG			Drilled By: Talon LPE			
Gravel Pack Type: 10/20 Sand			Gravel Pack Depth Interval: 3 Bags				Seal Type: None		Seal Depth Interval: None		Latitude: 32.049656		
Casing Type: PVC		Diameter: 2-inch		Depth Interval: 0-105 ft bgs		Boring Total Depth (ft. BGS): 110		Longitude: -103.904054					
Screen Type: PVC		Slot: 0.010-inch		Diameter: 2-inch		Depth Interval: 105 - 110 ft		Well Total Depth (ft. BGS): 110		Depth to Water (ft. BTOC): > 110			
DTW Date: 12/16/2020													
Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	PID (ppm)	USCS	Sample ID	Lithology/Remarks		Well Completion		
0	NM	L	D	N	N	NM	CE	NS	Buff to pale pink colored caliche				
5													
10													
15													
20													
25													
30													
35													
40	NM	L	D	N	N	NM	SW	NS	Pinky orange well graded sand with minor silt				
45													
50													
55													
60	NM	L	D	N	N	NM	SP	NS	Pinky pale brown orange poorly graded fine sand with minor silt				
65													
70													
75	NM	L	D	N	N	NM	SW-SM SW-SC	NS	Pinky brown orange well-graded sand with silt and clay				
80													
85													
90	NM	L	D	N	N	NM	SP	NS	Pinky pale brown orange poorly graded fine sand with minor silt - TD: 110' bgs				
95													
100													
105													




							BORING LOG/MONITORING WELL COMPLETION DIAGRAM						
							Boring/Well Number:			Location:			
							MW-1			RDX Federal Com 21-43			
							Date:			Client:			
							12/9/2020			WPX Energy			
Drilling Method:			Sampling Method:				Logged By:			Drilled By:			
Air Rotary			None				J. Linn, P.G.			Talon LPE			
Gravel Pack Type:			Gravel Pack Depth Interval:				Seal Type:		Seal Depth Interval:		Latitude:		
10/20 Sand			3 Bags				None		None		32.022571		
Casing Type:		Diameter:		Depth Interval:			Boring Total Depth (ft. BGS):			Longitude:			
PVC		2-inch		0-100 feet bgs			110			-103.884371			
Screen Type:		Slot:		Diameter:		Depth Interval:		Well Total Depth (ft. BGS):			Depth to Water (ft. BTWC):		
PVC		0.010-inch		2-inch		100 - 105 ft		105			> 105		
DTW Date:		12/16/2020											
Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	PID (ppm)	USCS	Sample ID	Lithology/Remarks			Well Completion	
0	NM	L	D	N	N	NM	SP	NS	Pale orange to tan poorly graded fine sand				
5													
10													
15													
20	NM	H	D	N	N	NM	CL	NS	Pale orange/tan/pale red clay, dry, with silt, fine sand, and minor caliche				
25													
30													
35													
40	NM	L	D	N	N	NM	SP	NS	Pale orange to pale red poorly graded fine sand				
45													
50													
55													
60	NM	L	D	N	N	NM	SP	NS	Golden yellow poorly graded fine sand with minor silt and clay				
65													
70													
75													
80	NM	L	D	N	N	NM	SP	NS	Pale orange to pale red poorly graded fine sand with minor silt/clay				
85													
90													
95													
100	NM	H	D	N	N	NM	CL	NS	Brown orange clay with silt and fine sand				
105													
100	NM	H	D	N	N	NM	SC	NS	Golden yellow and buff colored clay with fine sand - TD Boring: 110' BGS; Sand 110' - 105' BGS				
105													

 <b>HRL COMPLIANCE SOLUTIONS</b>							BORING LOG/MONITORING WELL COMPLETION DIAGRAM						
							Boring/Well Number:			Location:			
							MW-1			Ross Draw Unit #38			
							Date:			Client:			
							12/8/2020			WPX Energy			
Drilling Method:			Sampling Method:				Logged By:			Drilled By:			
Air Rotary			None				J. Linn, PG			Talon LPE			
Gravel Pack Type:			Gravel Pack Depth Interval:				Seal Type:		Seal Depth Interval:		Latitude:		
10/20 Sand			3 Bags				None		None		32.030300		
Casing Type:		Diameter:	Depth Interval:		Boring Total Depth (ft. BGS):			Longitude:					
PVC		2-inch	0-100 feet bgs		105			-103.871338					
Screen Type:		Slot:	Diameter:	Depth Interval:	Well Total Depth (ft. BGS):			Depth to Water (ft. BTOC):		DTW Date:			
PVC		0.010-inch	2-inch	100-105 ft	105			> 105		12/16/2020			
Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	PID (ppm)	USCS	Sample ID	Lithology/Remarks		Well Completion		
0	NM	L	D	N	N	NM	SW	NS	Pale orange/pale pink to buff colored fine sand with minor medium and coarse sand				
5													
10													
15													
20	NM	L	D	N	N	NM	SP	NS	Pale orange/pale pink poorly graded fine sand				
25													
30													
35	NM	L	D	N	N	NM	SP	NS	Tan/pale brown/pale orange poorly graded fine sand				
40													
45													
50													
55													
60													
65	NM	L	D	N	N	NM	SP	NS	Brick red brown poorly graded fine sand				
70													
75													
80													
85													
90													
95	NM	L	D	N	N	NM	SP	NS	Tan/pale brown/pale orange poorly graded fine sand - TD 105' BGS				
100													

 <b>HRL COMPLIANCE SOLUTIONS</b>							BORING LOG/MONITORING WELL COMPLETION DIAGRAM						
							Boring/Well Number:			Location:			
							MW-1			Ross Draw Unit #55			
							Date:			Client:			
							12/9/2020			WPX Energy			
Drilling Method:				Sampling Method:			Logged By:			Drilled By:			
Air Rotary				None			J. Linn, PG			Talon LPE			
Gravel Pack Type:				Gravel Pack Depth Interval:			Seal Type:		Seal Depth Interval:		Latitude:		
10/20 Sand				3 Bags			None		None		32.016165		
Casing Type:		Diameter:		Depth Interval:		Boring Total Depth (ft. BGS):				Longitude:			
PVC		2-inch		0-101'7"		106'7"				-103.86346			
Screen Type:		Slot:		Diameter:		Depth Interval:		Well Total Depth (ft. BGS):			Depth to Water (ft. BTOC):		
PVC		0.010-inch		2-inch		101'7" - 106'7"		106'7"			>106' 7"		
DTW Date:													
12/16/2020													
Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	PID (ppm)	USCS	Sample ID	Lithology/Remarks			Well Completion	
0	NM	L	D	N	N	NM	SP	NS	Pale pink to buff colored poorly graded sand with minor silt				
5													
10													
15													
20	NM	L	D	N	N	NM	SW	NS	Pale tan orange well graded fine sand with minor medium and coarse sand				
25													
30													
35	NM	L	D	N	N	NM	SP	NS	Pale orange brown poorly graded fine sand with minor gravel				
40													
45													
50													
55													
60	NM	L	D	N	N	NM	SP	NS	Grey poorly graded fine sand with minor gravel				
65													
70													
75													
80													
85	NM	L	D	N	N	NM	SP	NS	Darker grey poorly graded fine sand with minor silt and minor medium sand				
90													
95													
100	NM	M	D	N	N	NM	SC	NS	Dark grey fine sand with moderate silt and clay - TD 106'7"				
106'7"													

 <b>HRL COMPLIANCE SOLUTIONS</b>							BORING LOG/MONITORING WELL COMPLETION DIAGRAM						
							Boring/Well Number: MW-1			Location: Ross Draw Unit #57			
							Date: 12/9/2020			Client: WPX Energy			
Drilling Method: Air Rotary			Sampling Method: None				Logged By: J. Linn, PG			Drilled By: Talon LPE			
Gravel Pack Type: 10/20 Sand			Gravel Pack Depth Interval: 3 Bags				Seal Type: None		Seal Depth Interval: None		Latitude: 32.01032		
Casing Type: PVC		Diameter: 2-inch		Depth Interval: 0-105 feet bgs			Boring Total Depth (ft. BGS): 110			Longitude: -103.87246			
Screen Type: PVC		Slot: 0.010-inch		Diameter: 2-inch		Depth Interval: 105-110 ft		Well Total Depth (ft. BGS): 110			Depth to Water (ft. BTOC): > 110		
DTW Date: 12/16/2020													
Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	PID (ppm)	USCS	Sample ID	Lithology/Remarks			Well Completion	
0	NM	L/M	D	N	N	NM	SM	NS	Tan/pale orange/pale brown poorly graded fine sand				
5													
10													
15													
20													
25													
30													
35	NM	M	D	N	N	NM	SW	NS	Hard, dry pale pink orange well graded sand with gravel				
40													
45													
50	NM	M	D	N	N	NM	SM	NS	Pale orange red tan silty fine sand				
55													
60	NM	L	D	N	N	NM	SW	NS	Dark brown greyish well graded sand				
65													
70	NM	L/M	D to SL M	N	N	NM	SW	NS	Grey well graded sand				
75													
80													
85													
90													
95	NM	L/M	D	N	N	NM	SM	NS	Tan/pale orange/pale brown poorly graded fine sand - TD 110' bgs				
100													
105													

 <b>HRL COMPLIANCE SOLUTIONS</b>							BORING LOG/MONITORING WELL COMPLETION DIAGRAM						
							Boring/Well Number: MW-1			Location: North Brushy Federal 35 # 010H			
							Date: 12/8/2020			Client: WPX Energy			
Drilling Method: Air Rotary			Sampling Method: None				Logged By: J. Linn, PG			Drilled By: Talon LPE			
Gravel Pack Type: 10/20 Sand			Gravel Pack Depth Interval: 3 Bags				Seal Type: None		Seal Depth Interval: None		Latitude: 32.079909		
Casing Type: PVC		Diameter: 2-inch		Depth Interval: 0-100 feet bgs			Boring Total Depth (ft. BGS): 105			Longitude: -103.951386			
Screen Type: PVC		Slot: 0.010-inch		Diameter: 2-inch		Depth Interval: 100 - 105 ft		Well Total Depth (ft. BGS): 105			Depth to Water (ft. BTWC): > 105		
DTW Date: 12/16/2020													
Depth Interval (ft)	Recovery (ft)	Plasticity	Moisture	Odor	Staining	PID (ppm)	USCS	Sample ID	Lithology/Remarks			Well Completion	
0	NM	L	D	N	N	NM	CE	NS	Buff to pale pink caliche				
5													
10													
15													
20	NM	L	D	N	N	NM	SM	NS	Tan to pale red silty sand				
25													
30													
35													
40													
45													
50	NM	M	M	N	N	NM	ML	NS	Tan to pale red sandy silt with minor medium sand				
55													
60	NM	H	M	N	N	NM	CL	NS	Tan clay with minor gravel				
65													
70													
75	NM	L	D	N	N	NM	SP	NS	Pale red poorly graded fine sand with minor silt				
80													
85													
90	NM	H	D/SLM	N	N	NM	CL	NS	Grey sandy lean clay with minor medium sand and minor angular gravel				
95													
100													
90	NM	M/H	M	N	N	NM	CL	NS	Brown with orange sandy lean clay with minor medium sand and angular gravel - TD Boring: 105'				
95													
100													

# Attachment 02:

## Laboratory Analytical Results



## Certificate of Analysis Summary 667473



WPX Energy Permian Basin, LLC, Carlsbad, NM

Project Name: RDX 17 Federal Com #006H

Project Id: 07052020

Date Received in Lab: Thu 07.16.2020 16:20

Contact: Lynda Laumbach

Report Date: 07.22.2020 08:07

Project Location:

Project Manager: Jessica Kramer

<b>Analysis Requested</b>	<b>Lab Id:</b>	667473-001	667473-002	667473-003	667473-004	667473-005	667473-006
	<b>Field Id:</b>	DS01	DS01A	DS02	DS02A	DS03	DS03A
	<b>Depth:</b>	2- ft	4- ft	2- ft	4- ft	2- ft	4- ft
	<b>Matrix:</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<b>Sampled:</b>	07.16.2020 09:20	07.16.2020 09:25	07.16.2020 09:30	07.16.2020 09:35	07.16.2020 09:45	07.16.2020 09:50
<b>Chloride by EPA 300</b>	<b>Extracted:</b>	07.17.2020 16:30	07.17.2020 16:30	07.17.2020 16:30	07.17.2020 16:30	07.17.2020 16:30	07.17.2020 16:30
	<b>Analyzed:</b>	07.17.2020 20:49	07.17.2020 21:05	07.17.2020 21:11	07.17.2020 21:16	07.17.2020 21:22	07.17.2020 21:39
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		8340 200	723 100	4700 98.6	1430 99.8	26700 988	30900 1000

BRL - Below Reporting Limit

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

## Certificate of Analysis Summary 667473



WPX Energy Permian Basin, LLC, Carlsbad, NM

Project Name: RDX 17 Federal Com #006H

Project Id: 07052020

Date Received in Lab: Thu 07.16.2020 16:20

Contact: Lynda Laumbach

Report Date: 07.22.2020 08:07

Project Location:

Project Manager: Jessica Kramer

<b>Analysis Requested</b>	<b>Lab Id:</b>	667473-007	667473-008	667473-009	667473-010	667473-011	667473-012
	<b>Field Id:</b>	DS03B	DS03C	DS03D	DS04	DS04A	DS04B
	<b>Depth:</b>	6- ft	8- ft	10- ft	2- ft	4- ft	6- ft
	<b>Matrix:</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<b>Sampled:</b>	07.16.2020 09:55	07.16.2020 10:00	07.16.2020 10:05	07.16.2020 10:10	07.16.2020 10:20	07.16.2020 10:25
<b>Chloride by EPA 300</b>	<b>Extracted:</b>	07.17.2020 16:30	07.17.2020 16:30	07.17.2020 16:30	07.17.2020 16:30	07.17.2020 16:30	07.17.2020 16:30
	<b>Analyzed:</b>	07.17.2020 21:44	07.17.2020 21:50	07.17.2020 21:55	07.17.2020 22:01	07.17.2020 22:07	07.17.2020 22:23
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		32700 992	27200 998	28400 1000	26900 1010	23500 X 996	13800 1000

BRL - Below Reporting Limit

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

## Certificate of Analysis Summary 667473



WPX Energy Permian Basin, LLC, Carlsbad, NM

Project Name: RDX 17 Federal Com #006H

Project Id: 07052020

Date Received in Lab: Thu 07.16.2020 16:20

Contact: Lynda Laumbach

Report Date: 07.22.2020 08:07

Project Location:

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	667473-013	667473-014	667473-015	667473-016	667473-017	667473-018
	<i>Field Id:</i>	DS04C	DS05	DS05A	DS05B	DS05C	DS06
	<i>Depth:</i>	10- ft	2- ft	4- ft	6- ft	10- ft	2- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	07.16.2020 10:30	07.16.2020 10:45	07.16.2020 10:50	07.16.2020 10:55	07.16.2020 11:00	07.16.2020 11:15
Chloride by EPA 300	<i>Extracted:</i>	07.17.2020 16:30	07.17.2020 16:30	07.17.2020 16:30	07.17.2020 16:30	07.17.2020 16:30	07.17.2020 16:30
	<i>Analyzed:</i>	07.17.2020 22:29	07.17.2020 22:46	07.17.2020 22:51	07.17.2020 22:57	07.17.2020 23:02	07.17.2020 23:08
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		16000 1000	26000 988	24300 990	24800 994	24500 996	18800 998

BRL - Below Reporting Limit

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

## Certificate of Analysis Summary 667473



WPX Energy Permian Basin, LLC, Carlsbad, NM

Project Name: RDX 17 Federal Com #006H

Project Id: 07052020

Date Received in Lab: Thu 07.16.2020 16:20

Contact: Lynda Laumbach

Report Date: 07.22.2020 08:07

Project Location:

Project Manager: Jessica Kramer

<b>Analysis Requested</b>	<b>Lab Id:</b>	667473-019	667473-020	667473-021	667473-022	667473-023	667473-024
	<b>Field Id:</b>	DS06A	DS06B	DS06C	DS07	DS07A	DS07B
	<b>Depth:</b>	4- ft	6- ft	10- ft	2- ft	4- ft	6- ft
	<b>Matrix:</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<b>Sampled:</b>	07.16.2020 11:20	07.16.2020 11:25	07.16.2020 11:30	07.16.2020 11:50	07.16.2020 11:55	07.16.2020 12:00
<b>Chloride by EPA 300</b>	<b>Extracted:</b>	07.17.2020 16:30	07.17.2020 16:30	07.17.2020 13:25	07.17.2020 13:25	07.17.2020 13:25	07.17.2020 13:25
	<b>Analyzed:</b>	07.17.2020 23:14	07.17.2020 23:19	07.17.2020 19:53	07.17.2020 19:58	07.17.2020 20:04	07.17.2020 20:10
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		34600 990	37900 998	28400 988	26300 992	22500 992	23100 998
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>				07.17.2020 14:30	07.17.2020 14:30	
	<b>Analyzed:</b>				07.17.2020 21:02	07.17.2020 21:22	
	<b>Units/RL:</b>				mg/kg RL	mg/kg RL	
Gasoline Range Hydrocarbons (GRO)					<49.8 49.8	<49.9 49.9	
Diesel Range Organics (DRO)					<49.8 49.8	<49.9 49.9	
Motor Oil Range Hydrocarbons (MRO)					<49.8 49.8	<49.9 49.9	
Total TPH					<49.8 49.8	<49.9 49.9	

BRL - Below Reporting Limit

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

  
\_\_\_\_\_

## Certificate of Analysis Summary 667473



WPX Energy Permian Basin, LLC, Carlsbad, NM

Project Name: RDX 17 Federal Com #006H

Project Id: 07052020

Date Received in Lab: Thu 07.16.2020 16:20

Contact: Lynda Laumbach

Report Date: 07.22.2020 08:07

Project Location:

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	667473-025					
	Field Id:	DS07C					
	Depth:	10- ft					
	Matrix:	SOIL					
	Sampled:	07.16.2020 12:05					
Chloride by EPA 300	Extracted:	07.17.2020 13:25					
	Analyzed:	07.17.2020 20:15					
	Units/RL:	mg/kg RL					
Chloride		23800 1000					

BRL - Below Reporting Limit

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



# Analytical Report 667473

for

## WPX Energy Permian Basin, LLC

Project Manager: Lynda Laumbach

RDX 17 Federal Com #006H

07052020

07.22.2020

Collected By: Client

**1089 N Canal Street  
Carlsbad, NM 88220**

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

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

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





07.22.2020

Project Manager: **Lynda Laumbach**  
**WPX Energy Permian Basin, LLC**  
5315 Buena Vista Dr.  
Carlsbad, NM 88220

Reference: Eurofins Xenco, LLC Report No(s): **667473**  
**RDX 17 Federal Com #006H**  
Project Address:

**Lynda Laumbach:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 667473. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 667473 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

A handwritten signature in black ink that reads "Jessica Kramer".

---

**Jessica Kramer**  
Project Manager

*A Small Business and Minority Company*

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

**Sample Cross Reference 667473****WPX Energy Permian Basin, LLC, Carlsbad, NM**

RDX 17 Federal Com #006H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
DS01	S	07.16.2020 09:20	2 ft	667473-001
DS01A	S	07.16.2020 09:25	4 ft	667473-002
DS02	S	07.16.2020 09:30	2 ft	667473-003
DS02A	S	07.16.2020 09:35	4 ft	667473-004
DS03	S	07.16.2020 09:45	2 ft	667473-005
DS03A	S	07.16.2020 09:50	4 ft	667473-006
DS03B	S	07.16.2020 09:55	6 ft	667473-007
DS03C	S	07.16.2020 10:00	8 ft	667473-008
DS03D	S	07.16.2020 10:05	10 ft	667473-009
DS04	S	07.16.2020 10:10	2 ft	667473-010
DS04A	S	07.16.2020 10:20	4 ft	667473-011
DS04B	S	07.16.2020 10:25	6 ft	667473-012
DS04C	S	07.16.2020 10:30	10 ft	667473-013
DS05	S	07.16.2020 10:45	2 ft	667473-014
DS05A	S	07.16.2020 10:50	4 ft	667473-015
DS05B	S	07.16.2020 10:55	6 ft	667473-016
DS05C	S	07.16.2020 11:00	10 ft	667473-017
DS06	S	07.16.2020 11:15	2 ft	667473-018
DS06A	S	07.16.2020 11:20	4 ft	667473-019
DS06B	S	07.16.2020 11:25	6 ft	667473-020
DS06C	S	07.16.2020 11:30	10 ft	667473-021
DS07	S	07.16.2020 11:50	2 ft	667473-022
DS07A	S	07.16.2020 11:55	4 ft	667473-023
DS07B	S	07.16.2020 12:00	6 ft	667473-024
DS07C	S	07.16.2020 12:05	10 ft	667473-025

**CASE NARRATIVE****Client Name: WPX Energy Permian Basin, LLC****Project Name: RDX 17 Federal Com #006H**Project ID: 07052020  
Work Order Number(s): 667473Report Date: 07.22.2020  
Date Received: 07.16.2020**Sample receipt non conformances and comments:****Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3132059 Chloride by EPA 300

Lab Sample ID 667473-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 667473-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020.

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



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS01**  
Lab Sample Id: 667473-001  
  
Analytical Method: Chloride by EPA 300  
Tech: **MAB**  
Analyst: **MAB**  
Seq Number: 3132059

Matrix: **Soil**  
Date Collected: 07.16.2020 09:20  
  
Date Prep: 07.17.2020 16:30

Date Received:07.16.2020 16:20  
Sample Depth: 2 ft  
  
Prep Method: E300P  
% Moisture:  
Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8340	200	mg/kg	07.17.2020 20:49		20



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS01A**  
Lab Sample Id: 667473-002  
  
Analytical Method: Chloride by EPA 300  
Tech: **MAB**  
Analyst: **MAB**  
Seq Number: 3132059

Matrix: **Soil**  
Date Collected: 07.16.2020 09:25  
  
Date Prep: 07.17.2020 16:30

Date Received:07.16.2020 16:20  
Sample Depth: 4 ft  
  
Prep Method: E300P  
% Moisture:  
Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	723	100	mg/kg	07.17.2020 21:05		10



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: <b>DS02</b>	Matrix: Soil	Date Received: 07.16.2020 16:20
Lab Sample Id: 667473-003	Date Collected: 07.16.2020 09:30	Sample Depth: 2 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 07.17.2020 16:30	Basis: Wet Weight
Seq Number: 3132059		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4700	98.6	mg/kg	07.17.2020 21:11		10





Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS02A**  
Lab Sample Id: 667473-004  
  
Analytical Method: Chloride by EPA 300  
Tech: **MAB**  
Analyst: **MAB**  
Seq Number: 3132059

Matrix: **Soil**  
Date Collected: 07.16.2020 09:35  
  
Date Prep: 07.17.2020 16:30

Date Received:07.16.2020 16:20  
Sample Depth: 4 ft  
  
Prep Method: E300P  
% Moisture:  
Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1430	99.8	mg/kg	07.17.2020 21:16		10



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS03**  
Lab Sample Id: 667473-005  
  
Analytical Method: Chloride by EPA 300  
Tech: **MAB**  
Analyst: **MAB**  
Seq Number: 3132059

Matrix: **Soil**  
Date Collected: 07.16.2020 09:45  
  
Date Prep: 07.17.2020 16:30

Date Received: 07.16.2020 16:20  
Sample Depth: 2 ft  
  
Prep Method: E300P  
% Moisture:  
Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	26700	988	mg/kg	07.17.2020 21:22		100



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: <b>DS03A</b>	Matrix: Soil	Date Received: 07.16.2020 16:20
Lab Sample Id: 667473-006	Date Collected: 07.16.2020 09:50	Sample Depth: 4 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 07.17.2020 16:30	Basis: Wet Weight
Seq Number: 3132059		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	30900	1000	mg/kg	07.17.2020 21:39		100



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: <b>DS03B</b>	Matrix: Soil	Date Received: 07.16.2020 16:20
Lab Sample Id: 667473-007	Date Collected: 07.16.2020 09:55	Sample Depth: 6 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 07.17.2020 16:30	Basis: Wet Weight
Seq Number: 3132059		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	32700	992	mg/kg	07.17.2020 21:44		100



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS03C**  
Lab Sample Id: 667473-008  
  
Analytical Method: Chloride by EPA 300  
Tech: **MAB**  
Analyst: **MAB**  
Seq Number: 3132059

Matrix: **Soil**  
Date Collected: 07.16.2020 10:00  
  
Date Prep: 07.17.2020 16:30

Date Received:07.16.2020 16:20  
Sample Depth: 8 ft  
  
Prep Method: E300P  
% Moisture:  
Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	27200	998	mg/kg	07.17.2020 21:50		100



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS03D**

Lab Sample Id: 667473-009

Analytical Method: Chloride by EPA 300

Tech: **MAB**

Analyst: **MAB**

Seq Number: 3132059

Matrix: **Soil**

Date Collected: 07.16.2020 10:05

Date Prep: 07.17.2020 16:30

Date Received:07.16.2020 16:20

Sample Depth: 10 ft

Prep Method: E300P

% Moisture:

Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	28400	1000	mg/kg	07.17.2020 21:55		100





Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: <b>DS04</b>	Matrix: Soil	Date Received: 07.16.2020 16:20
Lab Sample Id: 667473-010	Date Collected: 07.16.2020 10:10	Sample Depth: 2 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 07.17.2020 16:30	Basis: Wet Weight
Seq Number: 3132059		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	26900	1010	mg/kg	07.17.2020 22:01		100



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS04A**  
Lab Sample Id: 667473-011  
  
Analytical Method: Chloride by EPA 300  
Tech: **MAB**  
Analyst: **MAB**  
Seq Number: 3132059

Matrix: **Soil**  
Date Collected: 07.16.2020 10:20  
  
Date Prep: 07.17.2020 16:30

Date Received:07.16.2020 16:20  
Sample Depth: 4 ft  
  
Prep Method: E300P  
% Moisture:  
Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23500	996	mg/kg	07.17.2020 22:07	X	100



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS04B**  
Lab Sample Id: 667473-012  
  
Analytical Method: Chloride by EPA 300  
Tech: **MAB**  
Analyst: **MAB**  
Seq Number: 3132059

Matrix: **Soil**  
Date Collected: 07.16.2020 10:25  
  
Date Prep: 07.17.2020 16:30

Date Received: 07.16.2020 16:20  
Sample Depth: 6 ft  
  
Prep Method: E300P  
% Moisture:  
Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13800	1000	mg/kg	07.17.2020 22:23		100



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS04C**

Lab Sample Id: 667473-013

Analytical Method: Chloride by EPA 300

Tech: **MAB**

Analyst: **MAB**

Seq Number: 3132059

Matrix: **Soil**

Date Collected: 07.16.2020 10:30

Date Prep: 07.17.2020 16:30

Date Received:07.16.2020 16:20

Sample Depth: 10 ft

Prep Method: E300P

% Moisture:

Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	16000	1000	mg/kg	07.17.2020 22:29		100



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS05**  
Lab Sample Id: 667473-014  
  
Analytical Method: Chloride by EPA 300  
Tech: **MAB**  
Analyst: **MAB**  
Seq Number: 3132059

Matrix: **Soil**  
Date Collected: 07.16.2020 10:45  
  
Date Prep: 07.17.2020 16:30

Date Received:07.16.2020 16:20  
Sample Depth: 2 ft  
  
Prep Method: E300P  
% Moisture:  
Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	26000	988	mg/kg	07.17.2020 22:46		100



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS05A**  
Lab Sample Id: 667473-015  
  
Analytical Method: Chloride by EPA 300  
Tech: **MAB**  
Analyst: **MAB**  
Seq Number: 3132059

Matrix: **Soil**  
Date Collected: 07.16.2020 10:50  
  
Date Prep: 07.17.2020 16:30

Date Received:07.16.2020 16:20  
Sample Depth: 4 ft  
  
Prep Method: E300P  
% Moisture:  
Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24300	990	mg/kg	07.17.2020 22:51		100





Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS05B**  
Lab Sample Id: 667473-016  
  
Analytical Method: Chloride by EPA 300  
Tech: **MAB**  
Analyst: **MAB**  
Seq Number: 3132059

Matrix: **Soil**  
Date Collected: 07.16.2020 10:55  
  
Date Prep: 07.17.2020 16:30

Date Received:07.16.2020 16:20  
Sample Depth: 6 ft  
  
Prep Method: E300P  
% Moisture:  
Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24800	994	mg/kg	07.17.2020 22:57		100



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS05C**

Lab Sample Id: 667473-017

Analytical Method: Chloride by EPA 300

Tech: **MAB**

Analyst: **MAB**

Seq Number: 3132059

Matrix: **Soil**

Date Collected: 07.16.2020 11:00

Date Prep: 07.17.2020 16:30

Date Received:07.16.2020 16:20

Sample Depth: 10 ft

Prep Method: E300P

% Moisture:

Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	24500	996	mg/kg	07.17.2020 23:02		100



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS06**  
Lab Sample Id: 667473-018  
  
Analytical Method: Chloride by EPA 300  
Tech: **MAB**  
Analyst: **MAB**  
Seq Number: 3132059

Matrix: **Soil**  
Date Collected: 07.16.2020 11:15  
  
Date Prep: 07.17.2020 16:30

Date Received: 07.16.2020 16:20  
Sample Depth: 2 ft  
  
Prep Method: E300P  
% Moisture:  
Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	18800	998	mg/kg	07.17.2020 23:08		100



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: <b>DS06A</b>	Matrix: Soil	Date Received: 07.16.2020 16:20
Lab Sample Id: 667473-019	Date Collected: 07.16.2020 11:20	Sample Depth: 4 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 07.17.2020 16:30	Basis: Wet Weight
Seq Number: 3132059		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	34600	990	mg/kg	07.17.2020 23:14		100



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS06B**  
Lab Sample Id: 667473-020  
  
Analytical Method: Chloride by EPA 300  
Tech: **MAB**  
Analyst: **MAB**  
Seq Number: 3132059

Matrix: **Soil**  
Date Collected: 07.16.2020 11:25  
  
Date Prep: 07.17.2020 16:30

Date Received:07.16.2020 16:20  
Sample Depth: 6 ft  
  
Prep Method: E300P  
% Moisture:  
Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	37900	998	mg/kg	07.17.2020 23:19		100



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS06C**

Lab Sample Id: 667473-021

Analytical Method: Chloride by EPA 300

Tech: **MAB**

Analyst: **MAB**

Seq Number: 3132057

Matrix: **Soil**

Date Collected: 07.16.2020 11:30

Date Prep: 07.17.2020 13:25

Date Received:07.16.2020 16:20

Sample Depth: 10 ft

Prep Method: E300P

% Moisture:

Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	28400	988	mg/kg	07.17.2020 19:53		100





# Certificate of Analytical Results 667473

## WPX Energy Permian Basin, LLC, Carlsbad, NM

RDX 17 Federal Com #006H

Sample Id: **DS07** Matrix: Soil Date Received: 07.16.2020 16:20  
 Lab Sample Id: 667473-022 Date Collected: 07.16.2020 11:50 Sample Depth: 2 ft  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: MAB % Moisture:  
 Analyst: MAB Date Prep: 07.17.2020 13:25 Basis: Wet Weight  
 Seq Number: 3132057

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	26300	992	mg/kg	07.17.2020 19:58		100

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P  
 Tech: DTH % Moisture:  
 Analyst: DTH Date Prep: 07.17.2020 14:30 Basis: Wet Weight  
 Seq Number: 3132061

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	07.17.2020 21:02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	07.17.2020 21:02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	07.17.2020 21:02	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	07.17.2020 21:02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	07.17.2020 21:02	
o-Terphenyl	84-15-1	109	%	70-135	07.17.2020 21:02	



# Certificate of Analytical Results 667473

## WPX Energy Permian Basin, LLC, Carlsbad, NM

RDX 17 Federal Com #006H

Sample Id: **DS07A**  
Lab Sample Id: 667473-023

Matrix: Soil  
Date Collected: 07.16.2020 11:55

Date Received: 07.16.2020 16:20  
Sample Depth: 4 ft

Analytical Method: Chloride by EPA 300

Tech: MAB

Analyst: MAB

Seq Number: 3132057

Date Prep: 07.17.2020 13:25

Prep Method: E300P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	22500	992	mg/kg	07.17.2020 20:04		100

Analytical Method: TPH By SW8015 Mod

Tech: DTH

Analyst: DTH

Seq Number: 3132061

Date Prep: 07.17.2020 14:30

Prep Method: SW8015P

% Moisture:

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	07.17.2020 21:22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	07.17.2020 21:22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	07.17.2020 21:22	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	07.17.2020 21:22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	07.17.2020 21:22	
o-Terphenyl	84-15-1	112	%	70-135	07.17.2020 21:22	



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS07B**

Lab Sample Id: 667473-024

Analytical Method: Chloride by EPA 300

Tech: **MAB**

Analyst: **MAB**

Seq Number: 3132057

Matrix: **Soil**

Date Collected: 07.16.2020 12:00

Date Prep: 07.17.2020 13:25

Date Received:07.16.2020 16:20

Sample Depth: 6 ft

Prep Method: E300P

% Moisture:

Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23100	998	mg/kg	07.17.2020 20:10		100



Certificate of Analytical Results 667473

WPX Energy Permian Basin, LLC, Carlsbad, NM  
RDX 17 Federal Com #006H

Sample Id: **DS07C**  
Lab Sample Id: 667473-025  
  
Analytical Method: Chloride by EPA 300  
Tech: **MAB**  
Analyst: **MAB**  
Seq Number: 3132057

Matrix: **Soil**  
Date Collected: 07.16.2020 12:05  
  
Date Prep: 07.17.2020 13:25

Date Received: 07.16.2020 16:20  
Sample Depth: 10 ft  
  
Prep Method: E300P  
% Moisture:  
Basis: **Wet Weight**

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23800	1000	mg/kg	07.17.2020 20:15		100



## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

\*\* Surrogate recovered outside laboratory control limit.

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

**RL** Reporting Limit

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

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

**DL** Method Detection Limit

**NC** Non-Calculable

**SMP** Client Sample      **BLK** Method Blank

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

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

+ NELAC certification not offered for this compound.

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



**WPX Energy Permian Basin, LLC**  
RDX 17 Federal Com #006H

**Analytical Method: Chloride by EPA 300**

Seq Number: 3132057

MB Sample Id: 7707603-1-BLK

Matrix: Solid

LCS Sample Id: 7707603-1-BKS

Prep Method: E300P

Date Prep: 07.17.2020

LCSD Sample Id: 7707603-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	254	102	265	106	90-110	4	20	mg/kg	07.17.2020 17:50	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3132059

MB Sample Id: 7707604-1-BLK

Matrix: Solid

LCS Sample Id: 7707604-1-BKS

Prep Method: E300P

Date Prep: 07.17.2020

LCSD Sample Id: 7707604-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	255	102	266	106	90-110	4	20	mg/kg	07.17.2020 20:37	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3132057

Parent Sample Id: 667509-014

Matrix: Soil

MS Sample Id: 667509-014 S

Prep Method: E300P

Date Prep: 07.17.2020

MSD Sample Id: 667509-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	285	200	492	104	492	104	90-110	0	20	mg/kg	07.17.2020 18:07	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3132057

Parent Sample Id: 667509-024

Matrix: Soil

MS Sample Id: 667509-024 S

Prep Method: E300P

Date Prep: 07.17.2020

MSD Sample Id: 667509-024 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	360	200	553	97	554	97	90-110	0	20	mg/kg	07.17.2020 19:25	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3132059

Parent Sample Id: 667473-001

Matrix: Soil

MS Sample Id: 667473-001 S

Prep Method: E300P

Date Prep: 07.17.2020

MSD Sample Id: 667473-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	8340	201	8530	95	8530	94	90-110	0	20	mg/kg	07.17.2020 20:54	

**Analytical Method: Chloride by EPA 300**

Seq Number: 3132059

Parent Sample Id: 667473-011

Matrix: Soil

MS Sample Id: 667473-011 S

Prep Method: E300P

Date Prep: 07.17.2020

MSD Sample Id: 667473-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	23500	1990	21700	0	21700	0	90-110	0	20	mg/kg	07.17.2020 22:12	X

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

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

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

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





**WPX Energy Permian Basin, LLC**  
RDX 17 Federal Com #006H

**Analytical Method:** TPH By SW8015 Mod

Seq Number: 3132061

MB Sample Id: 7707606-1-BLK

Matrix: Solid

LCS Sample Id: 7707606-1-BKS

Prep Method: SW8015P

Date Prep: 07.17.2020

LCSD Sample Id: 7707606-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1040	104	1040	104	70-135	0	35	mg/kg	07.17.2020 14:31	
Diesel Range Organics (DRO)	<50.0	1000	1010	101	1180	118	70-135	16	35	mg/kg	07.17.2020 14:31	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits			Units	Analysis Date	
1-Chlorooctane	117		126		127		70-135			%	07.17.2020 14:31	
o-Terphenyl	119		126		124		70-135			%	07.17.2020 14:31	

**Analytical Method:** TPH By SW8015 Mod

Seq Number: 3132061

Matrix: Solid

MB Sample Id: 7707606-1-BLK

Prep Method: SW8015P

Date Prep: 07.17.2020

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	07.17.2020 14:10	

**Analytical Method:** TPH By SW8015 Mod

Seq Number: 3132061

Parent Sample Id: 667509-014

Matrix: Soil

MS Sample Id: 667509-014 S

Prep Method: SW8015P

Date Prep: 07.17.2020

MSD Sample Id: 667509-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	999	1010	101	948	95	70-135	6	35	mg/kg	07.17.2020 15:34	
Diesel Range Organics (DRO)	<50.0	999	1110	111	1040	104	70-135	7	35	mg/kg	07.17.2020 15:34	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits			Units	Analysis Date	
1-Chlorooctane			123		121		70-135			%	07.17.2020 15:34	
o-Terphenyl			106		100		70-135			%	07.17.2020 15:34	

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

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

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

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



# Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300, San Antonio, TX (210) 509-3334  
 Midland, TX (432) 704-5440, EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296  
 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 355-0900  
 Tampa, FL (813) 620-2000, Tallahassee, FL (850) 756-0747, Delray Beach, FL (561) 689-6701  
 Atlanta, GA (770) 449-8800

Work Order No: late 7473

Project Manager:	Lynda Laumbach	Bill to: (if different)	Lynda Laumbach
Company Name:	WPX Energy Permian, LLC.	Company Name:	WPX Energy Permian, LLC.
Address:	5315 Buena Vista Dr	Address:	5315 Buena Vista Dr
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	(575) 725-1647	Email:	Lynda.Laumbach@wpxenergy.com

Program: UST/PT <input type="checkbox"/> PRP <input type="checkbox"/> Rowfields <input type="checkbox"/> RC <input type="checkbox"/> perfund <input type="checkbox"/> State of Project: <input type="checkbox"/> Reporting Level: I <input type="checkbox"/> Level II <input type="checkbox"/> Level III <input type="checkbox"/> ST/UST <input type="checkbox"/> RRP <input type="checkbox"/> Level IV <input type="checkbox"/> Deliverables: EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other: <input type="checkbox"/>	
---	--

Project Name:	RDX 17 Federal Cont #664		Turn Around	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	Pres. Code
Project Number:	07052020		Due Date:	07/24/2020	
Project Location:	Lynda Laumbach		TAT starts the day received by the lab, if received by 4:30pm		
Sample's Name:					
PO #:					
SAMPLE RECEIPT			Temp Blank:	(Yes) No	Wet Ice:
Received Intact:	(Yes) No	Thermometer ID:	TMM007		
Cooler Custody Seals:	(Yes) No	Correction Factor:	-0.02		
Sample Custody Seals:	(Yes) No	Temperature Reading:	8.9		
Total Containers:	25	Corrected Temperature:	8.7		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	ANALYSIS REQUEST										Preservative Codes	
							Chlorides (EPA 300.00)	BTEX (Method 8021)	TPH (Method 8015)									
D501	S	07/16/2020	9:20	2'	1	1	X											
D501A	S		9:25	4'														
D502	S		9:30	2'														
D502A	S		9:35	4'														
D503	S		9:45	21														
D503A	S		9:50	4'														
D503B	S		9:55	6'														
D503C	S		10:00	8'														
D503D	S		10:05	10'														
D504	S		10:10	21														

2 samples on BTEX  
 TPH

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO<sub>2</sub> Na Sr Ti Sn U V Zn  
 Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U  
 Hg: 1631 / 245.1 / 7470 / 7471

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		07/16/2020 11:20			





# Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300, San Antonio, TX (210) 509-3334  
 Midland, TX (432) 704-5440, EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296  
 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 355-0900  
 Tampa, FL (813) 620-2000, Tallahassee, FL (850) 756-0747, Delray Beach, FL (561) 689-6701  
 Atlanta, GA (770) 449-8800

Work Order No: 1067493

www.xenco.com Page 2 of 3

Project Manager:	Lynda Laumbach	Bill to: (if different)	Lynda Laumbach
Company Name:	WPX Energy Permian, LLC.	Company Name:	WPX Energy Permian, LLC.
Address:	5315 Buena Vista Dr	Address:	5315 Buena Vista Dr
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	(575) 725-1647	Email:	Lynda.Laumbach@wpxenenergy.com

Program: <input checked="" type="checkbox"/> UST/PST <input type="checkbox"/> PRP <input type="checkbox"/> Rowfields <input type="checkbox"/> RC <input type="checkbox"/> \$pertund State of Project:	
Reporting Level: <input type="checkbox"/> I <input type="checkbox"/> II <input type="checkbox"/> III <input type="checkbox"/> ST/UST <input type="checkbox"/> RRP <input type="checkbox"/> Level IV <input type="checkbox"/>	Deliverables: EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other:

Project Name:	RDX 17 Field Com #0064	Turn Around	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	Pres. Code	
Project Number:	07052020	Due Date:	07/24/2020	TAT starts the day received by the lab, if received by 4:30pm	
Project Location:	Lynda Laumbach	PO #:			
SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes
Received Intact:	Yes	No	Thermometer ID:		
Cooler Custody Seals:	Yes	No	Temperature Factor:		
Sample Custody Seals:	Yes	No	Temperature Reading:		
Total Containers:		Corrected Temperature:			

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Parameters	ANALYSIS REQUEST	Preservative Codes	Sample Comments
D504A	S	07/16/2020	10:20	4'	6	1	Chlorides (EPA 300.00)		None: NO	DI Water: H <sub>2</sub> O
D504B	S		10:25	6'			BTEX (Method 8021)		Cool: Cool	MeOH: Me
D504C	S		10:30	16'			TPH (Method 8015)		HCL: HC	HNO <sub>3</sub> : HN
D505	S		10:45	2'					H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub>	NaOH: Na
D505A	S		10:50	4'					H <sub>3</sub> PO <sub>4</sub> : HP	
D505B	S		10:55	6'					NaHSO <sub>4</sub> : NABIS	
D505C	S		11:00	10'					Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>	
D506	S		11:15	2'					Zn Acetate+NaOH: Zn	
D506A	S		11:20	4'					NaOH+Ascorbic Acid: SAPC	
D506B	S									
D506C	S		11:25	6'						

Total 200.7 / 6010 200.8 / 6020:

Circle Method(s) and Metal(s) to be analyzed 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO<sub>2</sub> Na Sr Ti Sn U V Zn  
 TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U Hg: 1631 / 245.1 / 7470 / 7471

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		07/16/2020 16:12			





# Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300, San Antonio, TX (210) 509-3334  
 Midland, TX (432) 704-5440, EL Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296  
 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 355-0900  
 Tampa, FL (813) 620-2000, Tallahassee, FL (904) 756-0747, Delray Beach, FL (561) 689-6701  
 Atlanta, GA (770) 449-8800

Work Order No: 10044793

www.xenco.com

Page 3 of 3

Project Manager:	Lynda Laumbach	Bill to: (if different)	Lynda Laumbach
Company Name:	WPX Energy Permian, LLC.	Company Name:	WPX Energy Permian, LLC.
Address:	5315 Buena Vista Dr	Address:	5315 Buena Vista Dr
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	(575) 725-1647	Email:	Lynda.Laumbach@wpxenergy.com

<b>Program:</b> UST/PST <input type="checkbox"/> PRP <input type="checkbox"/> Lowfields <input type="checkbox"/> RC <input type="checkbox"/> <input type="checkbox"/> Perturb <input type="checkbox"/>	
<b>State of Project:</b>	
<b>Reporting Level:</b> I <input type="checkbox"/> Level II <input type="checkbox"/> Level III <input type="checkbox"/> ST/UST <input type="checkbox"/> RP <input type="checkbox"/> Level IV <input type="checkbox"/>	<b>Deliverables:</b> EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other: <input type="checkbox"/>

Project Name:	RDX 17 Federal Leach #6010	Turn Around	<input checked="" type="checkbox"/> Routine <input type="checkbox"/> Rush	Pres. Code	
Project Number:	07052020	Due Date:	07/24/2020		
Project Location:	Lynda Laumbach	TAT starts the day received by the lab, if received by 4:30pm			
Sampler's Name:	Lynda Laumbach				
PO #:					
<b>SAMPLE RECEIPT</b>					
Received In tact:	Yes	No	Temp Blank:	Yes	No
Cooler Custody Seals:	Yes	No	Wet Ice:	Yes	No
Sample Custody Seals:	Yes	No	Temperature ID:		
Total Containers:	Yes	No	Temperature Reading:		
	N/A		Corrected Temperature:		

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Chlor	BTEX	TPH (																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
-----------------------	--------	--------------	--------------	-------	-----------	-----------	-------	------	-------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO<sub>2</sub> Na Sr Ti Sn U V Zn

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		07/16/20 11:20			

# Eurofins Xenco, LLC

## Prelogin/Nonconformance Report- Sample Log-In

**Client:** WPX Energy Permian Basin, LLC**Date/ Time Received:** 07.16.2020 04.20.00 PM**Work Order #:** 667473**Acceptable Temperature Range:** 0 - 6 degC**Air and Metal samples Acceptable Range:** Ambient**Temperature Measuring device used :** T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.7
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

Samples received in bulk containers.

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

Analyst:

PH Device/Lot#:

**Checklist completed by:**

Elizabeth McClellan

Date: 07.16.2020

**Checklist reviewed by:**

Jessica Kramer

Date: 07.20.2020





Environment Testing  
America

## ANALYTICAL REPORT

Eurofins Xenco, Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-380-1

Client Project/Site: RDX Federal 17-6

For:

WPX Energy Production LLC  
5315 Buena Vista Dr  
Carlsbad, New Mexico 88220

Attn: Lynda Laumbach

Authorized for release by:  
3/22/2021 2:22:11 PM

Jessica Kramer, Project Manager  
(432)704-5440  
[jessica.kramer@eurofinset.com](mailto:jessica.kramer@eurofinset.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



Client: WPX Energy Production LLC  
Project/Site: RDX Federal 17-6

Laboratory Job ID: 890-380-1

# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Client Sample Results . . . . .	5
QC Sample Results . . . . .	7
QC Association Summary . . . . .	8
Lab Chronicle . . . . .	9
Certification Summary . . . . .	11
Method Summary . . . . .	12
Sample Summary . . . . .	13
Chain of Custody . . . . .	14
Receipt Checklists . . . . .	16

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

Definitions/Glossary

Client: WPX Energy Production LLC  
Project/Site: RDX Federal 17-6

Job ID: 890-380-1

Qualifiers

HPLC/IC

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

Glossary

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

Case Narrative

Client: WPX Energy Production LLC  
Project/Site: RDX Federal 17-6

Job ID: 890-380-1

Job ID: 890-380-1

Laboratory: Eurofins Xenco, Carlsbad

Narrative

Job Narrative  
890-380-1

Receipt

The samples were received on 3/18/2021 8:05 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.2°C

HPLC/IC

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

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

## Client Sample Results

Client: WPX Energy Production LLC  
Project/Site: RDX Federal 17-6

Job ID: 890-380-1

Client Sample ID: SS01

Lab Sample ID: 890-380-1

Date Collected: 03/16/21 13:40

Matrix: Solid

Date Received: 03/18/21 08:05

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	379		5.04		mg/Kg			03/19/21 15:38	1

Client Sample ID: SS02

Lab Sample ID: 890-380-2

Date Collected: 03/16/21 13:45

Matrix: Solid

Date Received: 03/18/21 08:05

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	440		4.96		mg/Kg			03/19/21 15:53	1

Client Sample ID: SS03

Lab Sample ID: 890-380-3

Date Collected: 03/16/21 13:50

Matrix: Solid

Date Received: 03/18/21 08:05

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	57.8		4.98		mg/Kg			03/19/21 15:58	1

Client Sample ID: SS04

Lab Sample ID: 890-380-4

Date Collected: 03/16/21 13:55

Matrix: Solid

Date Received: 03/18/21 08:05

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	888		5.02		mg/Kg			03/19/21 16:03	1

Client Sample ID: SS05

Lab Sample ID: 890-380-5

Date Collected: 03/16/21 14:00

Matrix: Solid

Date Received: 03/18/21 08:05

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1060		5.04		mg/Kg			03/19/21 16:08	1

Client Sample ID: SS06

Lab Sample ID: 890-380-6

Date Collected: 03/16/21 14:05

Matrix: Solid

Date Received: 03/18/21 08:05

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	273		5.05		mg/Kg			03/19/21 16:23	1

Client Sample ID: SS07

Lab Sample ID: 890-380-7

Date Collected: 03/16/21 14:10

Matrix: Solid

Date Received: 03/18/21 08:05

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	518		5.05		mg/Kg			03/19/21 16:28	1

Eurofins Xenco, Carlsbad

## Client Sample Results

Client: WPX Energy Production LLC  
Project/Site: RDX Federal 17-6

Job ID: 890-380-1

Client Sample ID: SS08

Lab Sample ID: 890-380-8

Date Collected: 03/16/21 14:15

Matrix: Solid

Date Received: 03/18/21 08:05

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	707		4.98		mg/Kg			03/19/21 16:33	1

Client Sample ID: SS09

Lab Sample ID: 890-380-9

Date Collected: 03/16/21 14:20

Matrix: Solid

Date Received: 03/18/21 08:05

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	125		4.95		mg/Kg			03/19/21 16:38	1

Client Sample ID: SS10

Lab Sample ID: 890-380-10

Date Collected: 03/16/21 14:25

Matrix: Solid

Date Received: 03/18/21 08:05

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	347		5.04		mg/Kg			03/19/21 16:43	1

Client Sample ID: SS11

Lab Sample ID: 890-380-11

Date Collected: 03/16/21 14:30

Matrix: Solid

Date Received: 03/18/21 08:05

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	368		25.1		mg/Kg			03/19/21 18:33	5

Client Sample ID: SS12

Lab Sample ID: 890-380-12

Date Collected: 03/16/21 14:35

Matrix: Solid

Date Received: 03/18/21 08:05

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1350		25.0		mg/Kg			03/19/21 18:39	5

Eurofins Xenco, Carlsbad

## QC Sample Results

Client: WPX Energy Production LLC  
Project/Site: RDX Federal 17-6

Job ID: 890-380-1

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-593/1-A

Matrix: Solid

Analysis Batch: 594

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			03/19/21 15:23	1

Lab Sample ID: LCS 880-593/2-A

Matrix: Solid

Analysis Batch: 594

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	250	263.4		mg/Kg		105	90 - 110

Lab Sample ID: LCSD 880-593/3-A

Matrix: Solid

Analysis Batch: 594

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	265.4		mg/Kg		106	90 - 110	1	20

Lab Sample ID: 890-380-1 MS

Matrix: Solid

Analysis Batch: 594

Client Sample ID: SS01

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	379		252	640.4		mg/Kg		104	90 - 110

Lab Sample ID: 890-380-1 MSD

Matrix: Solid

Analysis Batch: 594

Client Sample ID: SS01

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	379		252	642.6		mg/Kg		104	90 - 110	0	20

Lab Sample ID: MB 880-595/1-A

Matrix: Solid

Analysis Batch: 596

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			03/19/21 15:54	1

Lab Sample ID: LCS 880-595/2-A

Matrix: Solid

Analysis Batch: 596

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	250	249.7		mg/Kg		100	90 - 110

Lab Sample ID: LCSD 880-595/3-A

Matrix: Solid

Analysis Batch: 596

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	250.1		mg/Kg		100	90 - 110	0	20

Eurofins Xenco, Carlsbad



## QC Association Summary

Client: WPX Energy Production LLC  
Project/Site: RDX Federal 17-6

Job ID: 890-380-1

## HPLC/IC

## Leach Batch: 593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-380-1	SS01	Soluble	Solid	DI Leach	
890-380-2	SS02	Soluble	Solid	DI Leach	
890-380-3	SS03	Soluble	Solid	DI Leach	
890-380-4	SS04	Soluble	Solid	DI Leach	
890-380-5	SS05	Soluble	Solid	DI Leach	
890-380-6	SS06	Soluble	Solid	DI Leach	
890-380-7	SS07	Soluble	Solid	DI Leach	
890-380-8	SS08	Soluble	Solid	DI Leach	
890-380-9	SS09	Soluble	Solid	DI Leach	
890-380-10	SS10	Soluble	Solid	DI Leach	
MB 880-593/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-593/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-593/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
890-380-1 MS	SS01	Soluble	Solid	DI Leach	
890-380-1 MSD	SS01	Soluble	Solid	DI Leach	

## Analysis Batch: 594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-380-1	SS01	Soluble	Solid	300.0	593
890-380-2	SS02	Soluble	Solid	300.0	593
890-380-3	SS03	Soluble	Solid	300.0	593
890-380-4	SS04	Soluble	Solid	300.0	593
890-380-5	SS05	Soluble	Solid	300.0	593
890-380-6	SS06	Soluble	Solid	300.0	593
890-380-7	SS07	Soluble	Solid	300.0	593
890-380-8	SS08	Soluble	Solid	300.0	593
890-380-9	SS09	Soluble	Solid	300.0	593
890-380-10	SS10	Soluble	Solid	300.0	593
MB 880-593/1-A	Method Blank	Soluble	Solid	300.0	593
LCS 880-593/2-A	Lab Control Sample	Soluble	Solid	300.0	593
LCSD 880-593/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	593
890-380-1 MS	SS01	Soluble	Solid	300.0	593
890-380-1 MSD	SS01	Soluble	Solid	300.0	593

## Leach Batch: 595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-380-11	SS11	Soluble	Solid	DI Leach	
890-380-12	SS12	Soluble	Solid	DI Leach	
MB 880-595/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-595/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-595/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	

## Analysis Batch: 596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-380-11	SS11	Soluble	Solid	300.0	595
890-380-12	SS12	Soluble	Solid	300.0	595
MB 880-595/1-A	Method Blank	Soluble	Solid	300.0	595
LCS 880-595/2-A	Lab Control Sample	Soluble	Solid	300.0	595
LCSD 880-595/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	595

Eurofins Xenco, Carlsbad

## Lab Chronicle

Client: WPX Energy Production LLC  
Project/Site: RDX Federal 17-6

Job ID: 890-380-1

## Client Sample ID: SS01

Lab Sample ID: 890-380-1

Date Collected: 03/16/21 13:40

Matrix: Solid

Date Received: 03/18/21 08:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			593	03/19/21 10:29	CH	XM
Soluble	Analysis	300.0		1	594	03/19/21 15:38	CH	XM

## Client Sample ID: SS02

Lab Sample ID: 890-380-2

Date Collected: 03/16/21 13:45

Matrix: Solid

Date Received: 03/18/21 08:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			593	03/19/21 10:29	CH	XM
Soluble	Analysis	300.0		1	594	03/19/21 15:53	CH	XM

## Client Sample ID: SS03

Lab Sample ID: 890-380-3

Date Collected: 03/16/21 13:50

Matrix: Solid

Date Received: 03/18/21 08:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			593	03/19/21 10:29	CH	XM
Soluble	Analysis	300.0		1	594	03/19/21 15:58	CH	XM

## Client Sample ID: SS04

Lab Sample ID: 890-380-4

Date Collected: 03/16/21 13:55

Matrix: Solid

Date Received: 03/18/21 08:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			593	03/19/21 10:29	CH	XM
Soluble	Analysis	300.0		1	594	03/19/21 16:03	CH	XM

## Client Sample ID: SS05

Lab Sample ID: 890-380-5

Date Collected: 03/16/21 14:00

Matrix: Solid

Date Received: 03/18/21 08:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			593	03/19/21 10:29	CH	XM
Soluble	Analysis	300.0		1	594	03/19/21 16:08	CH	XM

## Client Sample ID: SS06

Lab Sample ID: 890-380-6

Date Collected: 03/16/21 14:05

Matrix: Solid

Date Received: 03/18/21 08:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			593	03/19/21 10:29	CH	XM
Soluble	Analysis	300.0		1	594	03/19/21 16:23	CH	XM

Eurofins Xenco, Carlsbad

## Lab Chronicle

Client: WPX Energy Production LLC  
Project/Site: RDX Federal 17-6

Job ID: 890-380-1

Client Sample ID: SS07

Lab Sample ID: 890-380-7

Date Collected: 03/16/21 14:10

Matrix: Solid

Date Received: 03/18/21 08:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			593	03/19/21 10:29	CH	XM
Soluble	Analysis	300.0		1	594	03/19/21 16:28	CH	XM

Client Sample ID: SS08

Lab Sample ID: 890-380-8

Date Collected: 03/16/21 14:15

Matrix: Solid

Date Received: 03/18/21 08:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			593	03/19/21 10:29	CH	XM
Soluble	Analysis	300.0		1	594	03/19/21 16:33	CH	XM

Client Sample ID: SS09

Lab Sample ID: 890-380-9

Date Collected: 03/16/21 14:20

Matrix: Solid

Date Received: 03/18/21 08:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			593	03/19/21 10:29	CH	XM
Soluble	Analysis	300.0		1	594	03/19/21 16:38	CH	XM

Client Sample ID: SS10

Lab Sample ID: 890-380-10

Date Collected: 03/16/21 14:25

Matrix: Solid

Date Received: 03/18/21 08:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			593	03/19/21 10:29	CH	XM
Soluble	Analysis	300.0		1	594	03/19/21 16:43	CH	XM

Client Sample ID: SS11

Lab Sample ID: 890-380-11

Date Collected: 03/16/21 14:30

Matrix: Solid

Date Received: 03/18/21 08:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			595	03/19/21 10:43	CH	XM
Soluble	Analysis	300.0		5	596	03/19/21 18:33	CH	XM

Client Sample ID: SS12

Lab Sample ID: 890-380-12

Date Collected: 03/16/21 14:35

Matrix: Solid

Date Received: 03/18/21 08:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			595	03/19/21 10:42	CH	XM
Soluble	Analysis	300.0		5	596	03/19/21 18:39	CH	XM

## Laboratory References:

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

Eurofins Xenco, Carlsbad

Accreditation/Certification Summary

Client: WPX Energy Production LLC  
Project/Site: RDX Federal 17-6

Job ID: 890-380-1

Laboratory: Eurofins Xenco, Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-20-21	06-30-21

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

Method Summary

Client: WPX Energy Production LLC  
Project/Site: RDX Federal 17-6

Job ID: 890-380-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	XM
DI Leach	Deionized Water Leaching Procedure	ASTM	XM

**Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

**Laboratory References:**

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

Sample Summary

Client: WPX Energy Production LLC  
Project/Site: RDX Federal 17-6

Job ID: 890-380-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
890-380-1	SS01	Solid	03/16/21 13:40	03/18/21 08:05	
890-380-2	SS02	Solid	03/16/21 13:45	03/18/21 08:05	
890-380-3	SS03	Solid	03/16/21 13:50	03/18/21 08:05	
890-380-4	SS04	Solid	03/16/21 13:55	03/18/21 08:05	
890-380-5	SS05	Solid	03/16/21 14:00	03/18/21 08:05	
890-380-6	SS06	Solid	03/16/21 14:05	03/18/21 08:05	
890-380-7	SS07	Solid	03/16/21 14:10	03/18/21 08:05	
890-380-8	SS08	Solid	03/16/21 14:15	03/18/21 08:05	
890-380-9	SS09	Solid	03/16/21 14:20	03/18/21 08:05	
890-380-10	SS10	Solid	03/16/21 14:25	03/18/21 08:05	
890-380-11	SS11	Solid	03/16/21 14:30	03/18/21 08:05	
890-380-12	SS12	Solid	03/16/21 14:35	03/18/21 08:05	





## Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300, San Antonio, TX (210) 509-3334  
 Midland, TX (432) 704-5440, El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296  
 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 355-0900  
 Tampa, FL (813) 620-2000, Tallahassee, FL (850) 755-0747, Delray Beach, FL (561) 689-6701  
 Atlanta, GA (770) 449-8800

Work Order No: \_\_\_\_\_

www.xenco.com Page 1 of 2

Project Manager:	Lynda Laumbach	Bill to: (if different)	Lynda Laumbach
Company Name:	WPX Energy Permian, LLC.	Company Name:	WPX Energy Permian, LLC.
Address:	5315 Buena Vista Dr	Address:	5315 Buena Vista Dr
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	(575) 725-1647	Email:	Lynda.Laumbach@wpxenergy.com

Work Order Comments	
Program: UST/PST <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RC <input type="checkbox"/> Self-perfund <input type="checkbox"/>	State of Project:
Reporting Level: I <input type="checkbox"/> Level II <input type="checkbox"/> Level III <input type="checkbox"/> ST/UST <input type="checkbox"/> PRP <input type="checkbox"/> Level IV <input type="checkbox"/>	Deliverables: EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other: _____

Project Name:	RDX Field 17-6	Turn Around	Pres. Code	ANALYSIS REQUEST		Preservative Codes	
Project Number:		<input type="checkbox"/> Routine <input checked="" type="checkbox"/> Rush				None: NO	
Project Location:	Elly County NM	Due Date:	2- Day			DI Water: H <sub>2</sub> O	
Sampler's Name:	Lynda Laumbach	TAT starts the day received by the lab, if received by 4:30pm				Cool: Cool	
PO #:						HCL: HC	
SAMPLE RECEIPT	Temp Blank:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Wet Ice:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub>
	Received Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Thermometer ID:	LM-2007			H <sub>3</sub> PO <sub>4</sub> : HP
	Cooler Custody Seals:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Correction Factor:	-0.2			NaHSO <sub>4</sub> : NABIS
	Sample Custody Seals:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Temperature Reading:	0.4 b.2			Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NASO <sub>3</sub>
	Total Containers:		Corrected Temperature:				Zn Acetate+NaOH: Zn
				Parameters		NaOH+Ascorbic Acid: SAPC	
Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Grab/Comp	# of Cont	Sample Comments
SS01	S	02/16/2021	13:40	0.5'	G	1	
SS02	S		13:45	0.5'			
SS03	S		13:50	0.5'			
SS04	S		13:55				
SS05	S		14:00				
SS06	S		14:05				
SS07	S		14:10				
SS08	S		14:15				
SS09	S		14:20				
SS10	S		14:25				



890-380 Chain of Custody

Total 200.7 / 6010	200.8 / 6020:	8RCRA 13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO <sub>2</sub>	Na	Sr	Ti	Sn	U	V	Zn												
Circle Method(s) and Metal(s) to be analyzed		TCBP/SBP/6040-8RCRA		Sb		As		Ba		Be		B		Cd		Ca		Cr		Co		Cu		Pb		Mn		Mo		Ni		Se		Ag		Ti		U		V		Zn	
		Hq: 1631 / 245.1 / 7470 / 7471																																									

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time



## Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 992-0300, San Antonio, TX (210) 509-3334  
Midland, TX (432) 704-5440, El Paso, TX (915) 585-3443, Lubbock, TX (806) 594-1296  
Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 555-0900  
Tampa, FL (813) 620-2000, Tallahassee, FL (850) 756-0747, Delray Beach, FL (561) 589-6700  
Atlanta, GA (770) 449-8800

**Work Order No:**

Page 6 of 6  
www.xenco.com

Project Manager:	Lynda Laumbach	Bill to: (if different)	Lynda Laumbach
Company Name:	WPX Energy Permian, LLC.	Company Name:	WPX Energy Permian, LLC.
Address:	5315 Buena Vista Dr	Address:	5315 Buena Vista Dr
City, State ZIP:	Carlsbad, NM 88220	City, State ZIP:	Carlsbad, NM 88220
Phone:	(575)725-1647	Email:	Lynda.Laumbach@wpxenenergy.com



Work Order Comments									
Program:	UST/PST	<input type="checkbox"/> PRP	<input type="checkbox"/> Rowfields	<input type="checkbox"/> RC	<input type="checkbox"/> S_perfund	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
State of Project:									
Reporting Level II	<input type="checkbox"/> Level III	<input type="checkbox"/> ST/UST	<input type="checkbox"/> RRP	<input type="checkbox"/> Level IV	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deliverables:	EDD	<input type="checkbox"/>	ADAPT	<input type="checkbox"/>	Other:				

Project Name:		RDX, Colson 17-6		Turn Around				ANALYSIS REQUEST										Preservative Codes			
Project Number:				<input type="checkbox"/> Routine <input checked="" type="checkbox"/> Rush		Pres. Code												None: NO		DI Water: H <sub>2</sub> O	
Project Location		Eddy County, NM		Due Date:		2- Day												Cool: Cool		MeOH: Me	
Sampler's Name:		Linda Leback		TAT starts the day received by the lab, if received by 4:30pm														HCL: HC		HNO <sub>3</sub> : HN	
PO #:																		H <sub>2</sub> SO <sub>4</sub> : H <sub>2</sub>		NaOH: Na	
<b>SAMPLE RECEIPT</b>		Temp Blank:		Yes No		Wet Ice:		Yes No										H <sub>3</sub> PO <sub>4</sub> : HP			
Received Intact:		Yes No		Thermometer ID:		Seal #												NaHSO <sub>4</sub> : NABIS			
Cooler Custody Seals:		Yes No N/A		Correction Factor:														Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> : NaSO <sub>3</sub>			
Sample Custody Seals:		Yes No N/A		Temperature Reading:														Zn Acetate+NaOH: Zn			
Total Containers:				Corrected Temperature:														NaOH+Ascorbic Acid: SASC			

[illegible]

Total	200.7 / 6010	200.8 / 6020:
8RCRA	13PPM	Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO <sub>2</sub> Na Sr Ti Sn U V Zn
<b>ICLPL-SP-LP-6040-8RCRA-Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U</b>		
Hg:	1631 / 245.1	7470 / 7477

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xencio, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xencio will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xencio. A minimum charge of \$85.00 will be applied to each project and a charge of \$5 for each sample submitted to Xencio, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		03/18/2021 8:25			

Revised Date 05/01/2020 Rev. 2020

## Login Sample Receipt Checklist

Client: WPX Energy Production LLC

Job Number: 890-380-1

Login Number: 380

List Number: 1

Creator: Clifton, Cloe

List Source: Eurofins Carlsbad

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

## Login Sample Receipt Checklist

Client: WPX Energy Production LLC

Job Number: 890-380-1

Login Number: 380

List Number: 2

Creator: Kramer, Jessica

List Source: Eurofins Midland

List Creation: 03/19/21 12:51 PM

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

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

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

QUESTIONS

Action 365586

QUESTIONS

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID:
	246289
	Action Number:
	365586
Action Type:	
[C-141] Reclamation Report C-141 (C-141-v-Reclamation)	

QUESTIONS

Prerequisites	
Incident ID (n#)	nRM2019548894
Incident Name	NRM2019548894 RDX 17 FEDERAL COM #006H @ 30-015-39308
Incident Type	Produced Water Release
Incident Status	Reclamation Report Received
Incident Well	[30-015-39308] RDX 17 FEDERAL COM #006H

Location of Release Source	
Please answer all the questions in this group.	
Site Name	RDX 17 FEDERAL COM #006H
Date Release Discovered	07/05/2020
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Equipment Failure   Flow Line - Injection   Produced Water   Released: 35 BBL   Recovered: 5 BBL   Lost: 30 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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

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

QUESTIONS, Page 2  
  
Action 365586

QUESTIONS (continued)

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID:
	246289
	Action Number:
	365586
Action Type:	
[C-141] Reclamation Report C-141 (C-141-v-Reclamation)	

QUESTIONS

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	Yes
Reasons why this would be considered a submission for a notification of a major release	From paragraph A. "Major release" determine using: (1) an unauthorized release of a volume, excluding gases, of 25 barrels or more.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response

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

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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

I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dmn.com Date: 07/19/2024
--	--



**District I**

1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**

811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**

1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**

1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

QUESTIONS, Page 3

Action 365586

**QUESTIONS (continued)**

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID:
	246289
	Action Number:
	365586
Action Type:	
[C-141] Reclamation Report C-141 (C-141-v-Reclamation)	

**QUESTIONS****Site Characterization**

Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 100 and 500 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between 1000 (ft.) and ½ (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1000 (ft.) and ½ (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Between 1 and 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Medium
A 100-year floodplain	Between ½ and 1 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	Yes

**Remediation Plan**

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No

**Soil Contamination Sampling:** (Provide the highest observable value for each, in milligrams per kilograms.)

Chloride	(EPA 300.0 or SM4500 Cl B)	37900
TPH (GRO+DRO+MRO)	(EPA SW-846 Method 8015M)	354
GRO+DRO	(EPA SW-846 Method 8015M)	354
BTEX	(EPA SW-846 Method 8021B or 8260B)	0.1
Benzene	(EPA SW-846 Method 8021B or 8260B)	0

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

On what estimated date will the remediation commence	04/03/2024
On what date will (or did) the final sampling or liner inspection occur	04/09/2024
On what date will (or was) the remediation complete(d)	04/26/2024
What is the estimated surface area (in square feet) that will be reclaimed	51715
What is the estimated volume (in cubic yards) that will be reclaimed	9740.1
What is the estimated surface area (in square feet) that will be remediated	51715
What is the estimated volume (in cubic yards) that will be remediated	9740

These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

**District I**

1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**

811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**

1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**

1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

QUESTIONS, Page 4

Action 365586

**QUESTIONS (continued)**

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID:
	246289
	Action Number:
	365586
	Action Type:
	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS****Remediation Plan (continued)**

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

**This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:**

(Select all answers below that apply.)	
(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> which OCD approved well (API) will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, out-of-state	Yes
In which state is the disposal taking place	Texas
What is the name of the out-of-state facility	R360
<b>OR</b> is the <b>off-site</b> disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

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

I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dvsn.com Date: 07/19/2024
--	---

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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

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

QUESTIONS, Page 5  
  
Action 365586

QUESTIONS (continued)

Operator:  WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID:  246289
	Action Number:  365586
	Action Type:  [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

**District I**

1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**

811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**

1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**

1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

QUESTIONS, Page 6

Action 365586

**QUESTIONS (continued)**

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID:
	246289
	Action Number:
	365586
Action Type:	
[C-141] Reclamation Report C-141 (C-141-v-Reclamation)	

**QUESTIONS**

Sampling Event Information	
Last sampling notification (C-141N) recorded	329052
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	04/11/2024
What was the (estimated) number of samples that were to be gathered	25
What was the sampling surface area in square feet	20625

**Remediation Closure Request**

Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.

Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	51715
What was the total volume (cubic yards) remediated	9740
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	21692
What was the total volume (in cubic yards) reclaimed	9740
Summarize any additional remediation activities not included by answers (above)	The Site was remediated in accordance with an approved Remediation Work Plan, ultimately removing 9,740 CY of residual impacted soil and has been backfilled with clean, locally sourced material, and recontoured to match the original conditions as close as possible.

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

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

I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dmn.com Date: 07/19/2024
--	--

**District I**

1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**

811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**

1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**

1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

QUESTIONS, Page 7

Action 365586

**QUESTIONS (continued)**

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID:	246289
	Action Number:	365586
	Action Type:	[C-141] Reclamation Report C-141 (C-141-v-Reclamation)

**QUESTIONS****Reclamation Report**

Only answer the questions in this group if all reclamation steps have been completed.

Requesting a reclamation approval with this submission	Yes
What was the total reclamation surface area (in square feet) for this site	21692
What was the total volume of replacement material (in cubic yards) for this site	9740

Per Paragraph (1) of Subsection D of 19.15.29.13 NMAC the reclamation must contain a minimum of four feet of non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0, or other test methods approved by the division. The soil cover must include a top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater.

Is the soil top layer complete and is it suitable material to establish vegetation	Yes
On what (estimated) date will (or was) the reseedling commence(d)	08/01/2024

Summarize any additional reclamation activities not included by answers (above)	Remediation area has been restored with clean backfill material and will be re-seeded with BLM Seed Mixture #3 following the appropriate BLM re-seeding guidelines for seed to sqft area ratio.
---	---

The responsible party must attach information demonstrating they have complied with all applicable reclamation requirements and any conditions or directives of the OCD. This demonstration should be in the form of attachments (in .pdf format) including a scaled site map, any proposed reseedling plans or relevant field notes, photographs of reclaimed area, and a narrative of the reclamation activities. Refer to 19.15.29.13 NMAC.

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

I hereby agree and sign off to the above statement	Name: James Raley Title: EHS Professional Email: jim.raley@dvsn.com Date: 07/19/2024
--	---

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

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

QUESTIONS, Page 8  
  
Action 365586

QUESTIONS (continued)

Operator:  WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID:  246289
	Action Number:  365586
	Action Type:  [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

QUESTIONS

<b>Revegetation Report</b>	
<i>Only answer the questions in this group if all surface restoration, reclamation and re-vegetation obligations have been satisfied.</i>	
Requesting a restoration complete approval with this submission	No
<i>Per Paragraph (4) of Subsection (D) of 19.15.29.13 NMAC for any major or minor release containing liquids, the responsible party must notify the division when reclamation and re-vegetation are complete.</i>	



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

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

CONDITIONS  
  
Action 365586

CONDITIONS

Operator: WPX Energy Permian, LLC Devon Energy - Regulatory Oklahoma City, OK 73102	OGRID: 246289
	Action Number: 365586
	Action Type: [C-141] Reclamation Report C-141 (C-141-v-Reclamation)

CONDITIONS

Created By	Condition	Condition Date
scott.rodgers	All revegetation activities will need to be documented and included in the revegetation report. The revegetation report will need to include: An executive summary of the revegetation activities including: Seed mix, Method of seeding, dates of when the release area was reseeded, information pertinent to inspections, information about any amendments added to the soil, information on how the vegetative cover established meets the life-form ratio of plus or minus fifty percent of pre-disturbance levels and a total percent plant cover of at least seventy percent of pre-disturbance levels, excluding noxious weeds per 19.15.29.13 D.(3) NMAC, and any additional information; a scaled Site Map including area that was revegetated in square feet; and pictures of the revegetated areas during reseeding activities, inspections, and final pictures when revegetation is achieved.	8/28/2024