WSP USA
3300 North "A" Street
Building 1, Unit 222
Midland, Texas 79705
432.704.5178

November 19, 2021

District I
New Mexico Oil Conservation Division
1625 N. French Drive
Hobbs, New Mexico 88210

RE: Closure Request
Vast East State CTB
Incident Number NAPP2124347654
Lea County, New Mexico

To Whom It May Concern:

WSP USA Inc. (WSP) on behalf of COG Operating, LLC (COG), presents the following Closure Request detailing site assessment and soil sampling activities at the Vast East State CTB (Site) in Unit P, Section 17, Township 26 South, Range 33 East, in Lea County, New Mexico (Figure 1). The purpose of the site assessment and soil sampling activities was to assess for the presence or absence of impacts to soil following a release of produced water and crude oil within lined containment at the Site. Based on field observations, field screening activities, and soil sample laboratory analytical results, COG is submitting this Closure Request and requesting no further action (NFA) for Incident Number NAPP2124347654.

RELEASE BACKGROUND

On August 21, 2021, a water tank was overfilled by adding rainwater from the containment into the water tank. Approximately 6 barrels (bbls) of produced water and 4 bbls of crude oil were released into the lined tank battery containment. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; all 6 bbls of the released produced water and 4 bbls of the released crude oil were recovered from within the lined containment. COG reported the release to the New Mexico Oil Conservation Division (NMOCD) and submitted a Release Notification Form C-141 on August 31, 2021. The release was assigned Incident Number NAPP2124347654. A 48-hour advance notice of liner inspection was provided via email on September 8, 2021 to the NMOCD District I office. A liner integrity inspection was conducted by WSP personnel on September 10, 2021 following the fluid recovery and upon inspection, the liner was determined to be insufficient.

SITE CHARACTERIZATION

WSP characterized the Site according to Table 1, *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). Depth to groundwater at the Site is greater than 100 feet below ground surface (bgs)

based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is New Mexico Office of the State Engineer (NMOSE) well C 02273, located approximately 0.69 miles southeast of the Site. The groundwater well has a reported depth to groundwater of 120 feet bgs and a total depth of 160 feet bgs. Ground surface elevation at the groundwater well location is 3,275 feet amsl, which is approximately 12 feet higher in elevation than the Site. All wells used for depth to groundwater determination are depicted on Figure 1 and referenced well records are provided in Attachment 1.

The closest continuously flowing or significant watercourse to the Site is an intermittent riverine, located approximately 4,567 feet northwest of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (medium potential karst designation area). Site receptors are identified on Figure 1.

CLOSURE CRITERIA

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

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (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

SITE ASSESSMENT ACTIVITIES

On October 12, 2021, WSP personnel visited the Site to evaluate the release and conduct site assessment activities. WSP personnel advanced one borehole (BH01) via hand-auger at the location of the tear in the liner identified during the liner integrity inspection. Three soil samples were collected from the borehole at depths of approximately 0.5 feet, 1 foot, and 2 feet bgs. Soil from the borehole was field screened for volatile aromatic hydrocarbons and chlorides utilizing a calibrated photo-ionization detector (PID) and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations from the borehole were documented on a lithologic/soil sampling log, which is included as Attachment 2. The borehole was backfilled with the soil removed and a COG contractor repaired the tear in the liner. The borehole delineation soil sample location is depicted on Figure 2. Photographic documentation was conducted during the Site visit. A photographic log is included in Attachment 3.

The soil samples were placed directly into 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 (COC) procedures to Eurofins Laboratories (Eurofins) in Carlsbad, New Mexico, for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following EPA Method 300.0.

SOIL ANALYTICAL RESULTS

Laboratory analytical results for delineation soil samples BH01, BH01A, and BH01B indicated that benzene, BTEX, TPH-DRO/TPH-GRO, TPH, and chloride concentrations were compliant with the Closure Criteria. In addition, all delineation soil samples were compliant with the most stringent Table 1 Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical report is included as Attachment 4.

CLOSURE REQUEST

Following the failed liner integrity inspection at the Site, WSP personnel advanced one borehole, (BH01), within the lined containment to assess for the presence or absence of soil impacts resulting from the August 21, 2021 produced water and crude oil release within lined containment. Three delineation soil samples were collected from borehole BH01, at depths of approximately 0.5 feet, 1 foot, and 2 feet bgs. Laboratory analytical results for the delineation soil samples indicated that benzene, BTEX, TPH-DRO/TPH-GRO, TPH and chloride concentrations were compliant with the Closure Criteria. In addition, all delineation soil samples were compliant with the most stringent Table 1 Closure Criteria. The release was contained laterally by the lined containment and all released fluids were recovered during initial response activities. The tear in the liner was subsequently repaired.

Based on initial response efforts, absence of elevated field screening results, and soil sample laboratory analytical results compliant with the Closure Criteria directly beneath the tear in the liner, COG respectfully requests NFA for Incident Number NAPP2124347654. The final Form C-141 is included in Attachment 5.

If you have any questions or comments, please do not hesitate to contact Ms. Ashley Ager at (970) 385-1096.

Sincerely,

WSP USA Inc.

Kacei Jennings

Ashley L. Ager

Kalei Jennings
Associate Consultant

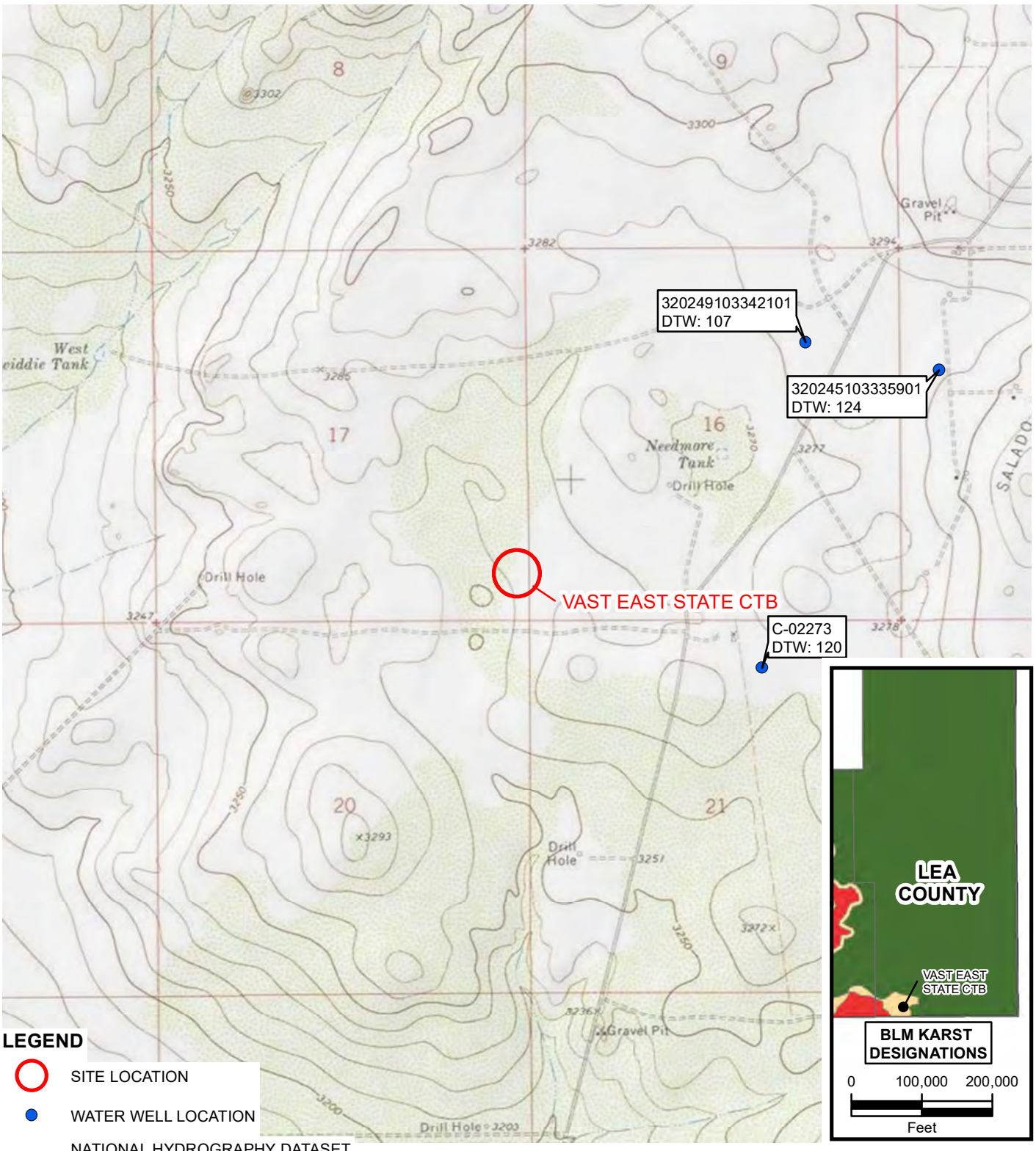
Ashley L. Ager, P.G.
Managing Director, Geologist

cc: Kelsy Waggaman, COG Operating, LLC
New Mexico State Land Office

Attachments:

Figure 1	Site Location Map
Figure 2	Delineation Soil Sample Locations
Table 1	Soil Analytical Results
Attachment 1	Referenced Well Records
Attachment 2	Lithologic/Sampling Log
Attachment 3	Photographic Log
Attachment 4	Laboratory Analytical Reports
Attachment 5	Final C-141

FIGURES



NOTE: INCIDENT NUMBER NAPP2124347654
DTW: DEPTH TO WATER IN FEET
BLM: BUREAU OF LAND MANAGEMENT

FIGURE 1
SITE LOCATION MAP
VAST EAST STATE CTB
UNIT P SEC 17 T26S R33E
LEA COUNTY, NEW MEXICO
COG OPERATING, LLC

P:\Concho Operating\GIS\31402909.120_VAST EAST STATE CTB\MXD\31402909.120_FIG01_SL_RECEPTOR_2021.mxd

LEGEND

DELINEATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA

CONTAINMENT

IMAGE COURTESY OF ESRI

0 100 200

Feet

N

NOTE: INCIDENT NUMBER NAPP2124347654
SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)

FIGURE 2
DELINEATION SOIL SAMPLE LOCATIONS
VAST EAST STATE CTB
UNIT P SEC 17 T26S R33E
LEA COUNTY, NEW MEXICO
COG OPERATING, LLC

P:\Concho Operating\GIS\31402909.120_VAST EAST STATE CTB\MXD\31402909.120_FIG02_DELINEATION_2021.mxd

TABLES

Table 1

Soil Analytical Results
Vast East State CTB
Incident Number NAPP2124347654
COG Operating, LLC
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Delineation Soil Samples										
BH01	10/12/2021	0.5	<0.00199	<0.00398	<50.0	83.9	<50.0	83.9	83.9	342
BH01A	10/12/2021	1	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	<49.9	151
BH01B	10/12/2021	2	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	<50.0	61.0

ft - feet/foot
mg/kg - milligrams per kilograms
BTEX - benzene, toluene, ethylbenzene, and total xylenes
TPH - total petroleum hydrocarbons
DRO - diesel range organics
GRO - gasoline range organics
ORO - motor oil range organics
NMOCD - New Mexico Oil Conservation Division
NMAC - New Mexico Administrative Code
< - indicates result is less than the stated laboratory method practical quantitation limit
NE - Not Established
BOLD - indicates results exceed the higher of the background sample result or applicable regulatory standard

ATTACHMENT 1: REFERENCED WELL RECORD

New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Twn	Rng	X	Y
	C 02273		1	2	21	26S	33E	634549	3545134*

Driller License: 122 **Driller Company:** UNKNOWN

Driller Name: UNKNOWN

Drill Start Date: **Drill Finish Date:** 12/31/1930 **Plug Date:**

Log File Date: **PCW Rcv Date:** **Source:**

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 5 GPM

Casing Size: 6.00 **Depth Well:** 160 feet **Depth Water:** 120 feet

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

ATTACHMENT 2: LITHOLOGIC/SAMPLING LOG

WSP USA
508 West Stevens Street
Carlsbad, New Mexico 88220

BH or PH Name: BH01	Date: 10-12-2021
Site Name: Vast East CTB	
RP or Incident Number: NAPP2124347654	
WSP Job Number: 31402909.120	

LITHOLOGIC / SOIL SAMPLING LOG

Logged By: PB	Method: Hand Augur		
Lat/Long: 32.03814, -103.586266	Field Screening: Hach chloride strips, PID	Hole Diameter: 4.5"	Total Depth: 2'

Comments: All chloride field screenings include a 40% correction factor
M-moist; D-dry; Y-yes; N-no; SAA-same as above

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
			N			0		
D	353	9.7	N	BH01	0.5	0.5	SP-SC	SAND, TAN, SOME CLAY AND SILT WITH CALICHE GRAVEL, MEDIUM-TO-COARSE GRAIN, POORLY GRADED, NO ODOR
D	262	12.8	N	BH01A	1	1	SP-SC	SAA
D	190.4	285	N	BH01B	2	2	SP-SC	SAND, BROWN, FINE GRAIN WITH SOME SILT, POORLY-GRADED, SLIGHT H/C ODOR, (NATIVE SOIL)

TD @ 2 ft bgs

ATTACHMENT 3: PHOTOGRAPHIC LOG

PHOTOGRAPHIC LOG		
COG Operating, LLC	VAST EAST STATE CTB Lea County, New Mexico	NAPP2124347654

Photo No.	Date
1	September 10, 2021

View of hole identified in tank battery liner during inspection.

Photo No.	Date
2	September 10, 2021

View of hole in tank battery liner.

PHOTOGRAPHIC LOG		
COG Operating, LLC	VAST EAST STATE CTB Lea County, New Mexico	NAPP2124347654

Photo No.	Date
3	October 12, 2021

View of borehole BH01 location inside tank battery containment.

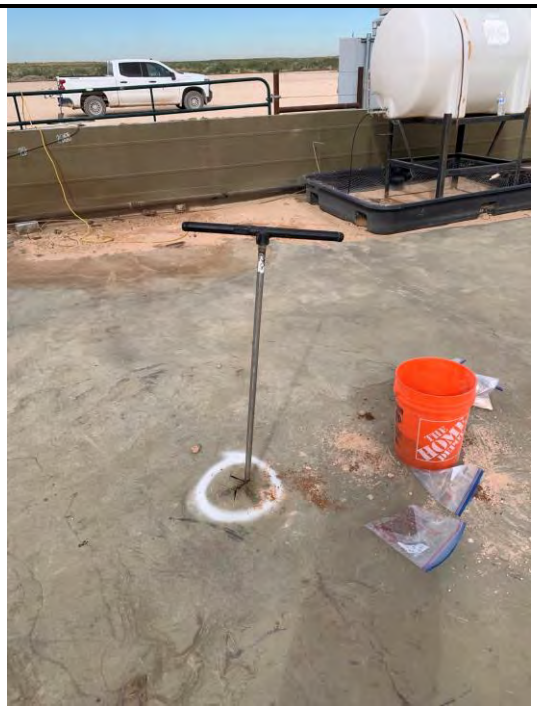


Photo No.	Date
4	October 12,2021

View of patched liner taken at the completion of delineation activities.

ATTACHMENT 4: LABORATORY ANALYTICAL RESULTS

eurofins | Environment Testing America

ANALYTICAL REPORT

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

Laboratory Job ID: 890-1419-1
Laboratory Sample Delivery Group: 31402909.12
Client Project/Site: Vast East CTB
Revision: 2

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

Attn: Kalei Jennings

JKramer

Authorized for release by:
11/4/2021 8:36:40 AM

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

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: Vast East CTB

Laboratory Job ID: 890-1419-1
SDG: 31402909.12

Table of Contents

Definitions/Glossary

Client: WSP USA Inc.
Project/Site: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

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
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: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

Job ID: 890-1419-1

Laboratory: Eurofins Xenco, Carlsbad

Narrative

Job Narrative
890-1419-1

REVISION

The report being provided is a revision of the original report sent on 10/25/2021. The report (revision 2) is being revised due to Per client request, put sample 004 on hold pending lab results.

Report revision history

The report being provided is a revision of the original report sent on 10/25/2021. The report (revision 2) is being revised due to Per client request, removed sample 004 from final report.
Revision 1 - 11/3/2021 - Reason - Per client request, re run #4 for TPH.

Receipt
The samples were received on 10/14/2021 8:21 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 5.0°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
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: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

Client Sample ID: BH01

Date Collected: 10/12/21 09:26
Date Received: 10/14/21 08:21
Sample Depth: 0.5

Lab Sample ID: 890-1419-1
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		10/15/21 13:57	10/16/21 01:52	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/15/21 13:57	10/16/21 01:52	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/15/21 13:57	10/16/21 01:52	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/15/21 13:57	10/16/21 01:52	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/15/21 13:57	10/16/21 01:52	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/15/21 13:57	10/16/21 01:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*	*10/15/21 13:57*	*10/16/21 01:52*	*1*
1,4-Difluorobenzene (Surr)	*104*		*70 - 130*	*10/15/21 13:57*	*10/16/21 01:52*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			10/20/21 15:04	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	**83.9**		50.0		mg/Kg			10/19/21 13:25	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		10/18/21 07:49	10/18/21 19:15	1
Diesel Range Organics (Over C10-C28)	**83.9**		50.0		mg/Kg		10/18/21 07:49	10/18/21 19:15	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/18/21 07:49	10/18/21 19:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*86*		*70 - 130*	*10/18/21 07:49*	*10/18/21 19:15*	*1*
o-Terphenyl	*100*		*70 - 130*	*10/18/21 07:49*	*10/18/21 19:15*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**342**		5.03		mg/Kg			10/19/21 15:44	1

Client Sample ID: BH01A

Date Collected: 10/12/21 09:29
Date Received: 10/14/21 08:21
Sample Depth: 1

Lab Sample ID: 890-1419-2
Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		10/21/21 13:00	10/22/21 12:01	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/21/21 13:00	10/22/21 12:01	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/21/21 13:00	10/22/21 12:01	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/21/21 13:00	10/22/21 12:01	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/21/21 13:00	10/22/21 12:01	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/21/21 13:00	10/22/21 12:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*139*	*S1+*	*70 - 130*	*10/21/21 13:00*	*10/22/21 12:01*	*1*

Eurofins Xenco, Carlsbad

Client Sample Results

Client: WSP USA Inc.
Project/Site: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

Client Sample ID: BH01A

Date Collected: 10/12/21 09:29
Date Received: 10/14/21 08:21
Sample Depth: 1

Lab Sample ID: 890-1419-2

Matrix: Solid

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,4-Difluorobenzene (Surr)	*91*		*70 - 130*	*10/21/21 13:00*	*10/22/21 12:01*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			10/25/21 18:48	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<49.9	U	49.9		mg/Kg			10/20/21 13:55	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	49.9		mg/Kg		10/18/21 07:49	10/18/21 19:36	1
Diesel Range Organics (Over C10-C28)	<49.9	U	49.9		mg/Kg		10/18/21 07:49	10/18/21 19:36	1
Oil Range Organics (Over C28-C36)	<49.9	U	49.9		mg/Kg		10/18/21 07:49	10/18/21 19:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	*86*		*70 - 130*	*10/18/21 07:49*	*10/18/21 19:36*	*1*
o-Terphenyl	*101*		*70 - 130*	*10/18/21 07:49*	*10/18/21 19:36*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**151**		4.95		mg/Kg			10/21/21 18:37	1

Client Sample ID: BH01B

Date Collected: 10/12/21 09:33
Date Received: 10/14/21 08:21
Sample Depth: 2

Lab Sample ID: 890-1419-3

Matrix: Solid

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00199	U	0.00199		mg/Kg		10/21/21 13:00	10/22/21 12:22	1
Toluene	<0.00199	U	0.00199		mg/Kg		10/21/21 13:00	10/22/21 12:22	1
Ethylbenzene	<0.00199	U	0.00199		mg/Kg		10/21/21 13:00	10/22/21 12:22	1
m-Xylene & p-Xylene	<0.00398	U	0.00398		mg/Kg		10/21/21 13:00	10/22/21 12:22	1
o-Xylene	<0.00199	U	0.00199		mg/Kg		10/21/21 13:00	10/22/21 12:22	1
Xylenes, Total	<0.00398	U	0.00398		mg/Kg		10/21/21 13:00	10/22/21 12:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*	*10/21/21 13:00*	*10/22/21 12:22*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*	*10/21/21 13:00*	*10/22/21 12:22*	*1*

Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00398	U	0.00398		mg/Kg			10/25/21 18:48	1

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0		mg/Kg			10/20/21 13:55	1

Eurofins Xenco, Carlsbad

Client Sample Results

Client: WSP USA Inc.
Project/Site: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

Client Sample ID: BH01B

Date Collected: 10/12/21 09:33
Date Received: 10/14/21 08:21
Sample Depth: 2

Lab Sample ID: 890-1419-3

Matrix: Solid

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

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		10/18/21 07:49	10/18/21 19:57	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/18/21 07:49	10/18/21 19:57	1
OII Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/18/21 07:49	10/18/21 19:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1-Chlorooctane	*84*		*70 - 130*	*10/18/21 07:49*	*10/18/21 19:57*	*1*
o-Terphenyl	*97*		*70 - 130*	*10/18/21 07:49*	*10/18/21 19:57*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**61.0**		5.03		mg/Kg			10/21/21 18:58	1

Surrogate Summary

Client: WSP USA Inc.
Project/Site: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-1419-1	BH01	104	104
890-1419-2	BH01A	139 S1+	91
890-1419-3	BH01B	108	96

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)	
		1CO1	OTPH1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
890-1419-1	BH01	86	100
890-1419-2	BH01A	86	101
890-1419-3	BH01B	84	97

Surrogate Legend

1CO = 1-Chlorooctane
OTPH = o-Terphenyl

QC Sample Results

Client: WSP USA Inc.
Project/Site: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-10082/5-A
Matrix: Solid
Analysis Batch: 10086

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 10082

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/21/21 13:00	10/22/21 07:08	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/21/21 13:00	10/22/21 07:08	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/21/21 13:00	10/22/21 07:08	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/21/21 13:00	10/22/21 07:08	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/21/21 13:00	10/22/21 07:08	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/21/21 13:00	10/22/21 07:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*	*10/21/21 13:00*	*10/22/21 07:08*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*	*10/21/21 13:00*	*10/22/21 07:08*	*1*

Lab Sample ID: LCS 880-10082/1-A
Matrix: Solid
Analysis Batch: 10086

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 10082

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			0.100	0.08621		mg/Kg		86	70 - 130		
Toluene			0.100	0.08303		mg/Kg		83	70 - 130		
Ethylbenzene			0.100	0.08803		mg/Kg		88	70 - 130		
m-Xylene & p-Xylene			0.200	0.1716		mg/Kg		86	70 - 130		
o-Xylene			0.100	0.08940		mg/Kg		89	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: LCSD 880-10082/2-A
Matrix: Solid
Analysis Batch: 10086

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 10082

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			0.100	0.08243		mg/Kg		82	70 - 130	4	35
Toluene			0.100	0.08181		mg/Kg		82	70 - 130	1	35
Ethylbenzene			0.100	0.08657		mg/Kg		87	70 - 130	2	35
m-Xylene & p-Xylene			0.200	0.1690		mg/Kg		84	70 - 130	2	35
o-Xylene			0.100	0.08784		mg/Kg		88	70 - 130	2	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*

Lab Sample ID: 890-1436-A-1-D MS
Matrix: Solid
Analysis Batch: 10086

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 10082

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene	<0.00199	U F1	0.0998	0.06756	F1	mg/Kg		68	70 - 130		
Toluene	<0.00199	U F1	0.0998	0.06433	F1	mg/Kg		64	70 - 130		

QC Sample Results

Client: WSP USA Inc.
Project/Site: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

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

Lab Sample ID: 890-1436-A-1-D MS
Matrix: Solid
Analysis Batch: 10086

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 10082

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	<0.00199	U F1	0.0998	0.06496	F1	mg/Kg		65	70 - 130
m-Xylene & p-Xylene	<0.00398	U F1	0.200	0.1187	F1	mg/Kg		59	70 - 130
o-Xylene	<0.00199	U F1	0.0998	0.06443	F1	mg/Kg		65	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: 890-1436-A-1-E MSD
Matrix: Solid
Analysis Batch: 10086

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 10082

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00199	U F1	0.100	0.06708	F1	mg/Kg		67	70 - 130	1	35
Toluene	<0.00199	U F1	0.100	0.06296	F1	mg/Kg		63	70 - 130	2	35
Ethylbenzene	<0.00199	U F1	0.100	0.06462	F1	mg/Kg		65	70 - 130	1	35
m-Xylene & p-Xylene	<0.00398	U F1	0.200	0.1185	F1	mg/Kg		59	70 - 130	0	35
o-Xylene	<0.00199	U F1	0.100	0.06433	F1	mg/Kg		64	70 - 130	0	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: MB 880-9499/5-A
Matrix: Solid
Analysis Batch: 9522

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 9499

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/14/21 16:00	10/15/21 13:50	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/14/21 16:00	10/15/21 13:50	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/14/21 16:00	10/15/21 13:50	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/14/21 16:00	10/15/21 13:50	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/14/21 16:00	10/15/21 13:50	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/14/21 16:00	10/15/21 13:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*	*10/14/21 16:00*	*10/15/21 13:50*	*1*
1,4-Difluorobenzene (Surr)	*105*		*70 - 130*	*10/14/21 16:00*	*10/15/21 13:50*	*1*

Lab Sample ID: MB 880-9532/5-A
Matrix: Solid
Analysis Batch: 9522

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 9532

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/15/21 13:57	10/16/21 01:24	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/15/21 13:57	10/16/21 01:24	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/15/21 13:57	10/16/21 01:24	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/15/21 13:57	10/16/21 01:24	1

QC Sample Results

Client: WSP USA Inc.
Project/Site: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

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

Lab Sample ID: MB 880-9532/5-A
Matrix: Solid
Analysis Batch: 9522

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 9532

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/15/21 13:57	10/16/21 01:24	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/15/21 13:57	10/16/21 01:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*	*10/15/21 13:57*	*10/16/21 01:24*	*1*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*	*10/15/21 13:57*	*10/16/21 01:24*	*1*

Lab Sample ID: LCS 880-9532/1-A
Matrix: Solid
Analysis Batch: 9522

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 9532

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			0.100	0.09646		mg/Kg		96	70 - 130		
Toluene			0.100	0.09663		mg/Kg		97	70 - 130		
Ethylbenzene			0.100	0.1035		mg/Kg		103	70 - 130		
m-Xylene & p-Xylene			0.200	0.2024		mg/Kg		101	70 - 130		
o-Xylene			0.100	0.1151		mg/Kg		115	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*
1,4-Difluorobenzene (Surr)	*115*		*70 - 130*

Lab Sample ID: LCSD 880-9532/2-A
Matrix: Solid
Analysis Batch: 9522

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 9532

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			0.100	0.08660		mg/Kg		87	70 - 130	11	35
Toluene			0.100	0.1010		mg/Kg		101	70 - 130	4	35
Ethylbenzene			0.100	0.1046		mg/Kg		105	70 - 130	1	35
m-Xylene & p-Xylene			0.200	0.2001		mg/Kg		100	70 - 130	1	35
o-Xylene			0.100	0.1218		mg/Kg		122	70 - 130	6	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*
1,4-Difluorobenzene (Surr)	*84*		*70 - 130*

Lab Sample ID: 890-1419-1 MS
Matrix: Solid
Analysis Batch: 9522

Client Sample ID: BH01
Prep Type: Total/NA
Prep Batch: 9532

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene	<0.00199	U	0.101	0.1004		mg/Kg		99	70 - 130		
Toluene	<0.00199	U	0.101	0.1029		mg/Kg		100	70 - 130		
Ethylbenzene	<0.00199	U	0.101	0.1008		mg/Kg		98	70 - 130		
m-Xylene & p-Xylene	<0.00398	U	0.202	0.1952		mg/Kg		96	70 - 130		
o-Xylene	<0.00199	U	0.101	0.1003		mg/Kg		98	70 - 130		

QC Sample Results

Client: WSP USA Inc.
Project/Site: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

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

Lab Sample ID: 890-1419-1 MS
Matrix: Solid
Analysis Batch: 9522

Client Sample ID: BH01
Prep Type: Total/NA
Prep Batch: 9532

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	92		70 - 130
1,4-Difluorobenzene (Surr)	105		70 - 130

Lab Sample ID: 890-1419-1 MSD
Matrix: Solid
Analysis Batch: 9522

Client Sample ID: BH01
Prep Type: Total/NA
Prep Batch: 9532

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<0.00199	U	0.0996	0.09674		mg/Kg		97	70 - 130	4	35
Toluene	<0.00199	U	0.0996	0.09168		mg/Kg		90	70 - 130	11	35
Ethylbenzene	<0.00199	U	0.0996	0.09553		mg/Kg		94	70 - 130	5	35
m-Xylene & p-Xylene	<0.00398	U	0.199	0.1797		mg/Kg		89	70 - 130	8	35
o-Xylene	<0.00199	U	0.0996	0.09806		mg/Kg		97	70 - 130	2	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		70 - 130
1,4-Difluorobenzene (Surr)	115		70 - 130

Lab Sample ID: MB 880-9954/5-A
Matrix: Solid
Analysis Batch: 10086

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 9954

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/Kg		10/20/21 10:54	10/21/21 20:12	1
Toluene	<0.00200	U	0.00200		mg/Kg		10/20/21 10:54	10/21/21 20:12	1
Ethylbenzene	<0.00200	U	0.00200		mg/Kg		10/20/21 10:54	10/21/21 20:12	1
m-Xylene & p-Xylene	<0.00400	U	0.00400		mg/Kg		10/20/21 10:54	10/21/21 20:12	1
o-Xylene	<0.00200	U	0.00200		mg/Kg		10/20/21 10:54	10/21/21 20:12	1
Xylenes, Total	<0.00400	U	0.00400		mg/Kg		10/20/21 10:54	10/21/21 20:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	118		70 - 130	10/20/21 10:54	10/21/21 20:12	1
1,4-Difluorobenzene (Surr)	103		70 - 130	10/20/21 10:54	10/21/21 20:12	1

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

Lab Sample ID: MB 880-9627/1-A
Matrix: Solid
Analysis Batch: 9621

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 9627

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0		mg/Kg		10/18/21 07:49	10/18/21 11:23	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0		mg/Kg		10/18/21 07:49	10/18/21 11:23	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0		mg/Kg		10/18/21 07:49	10/18/21 11:23	1

QC Sample Results

Client: WSP USA Inc.
Project/Site: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

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

Lab Sample ID: MB 880-9627/1-A
Matrix: Solid
Analysis Batch: 9621

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 9627

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1-Chlorooctane	91		70 - 130	10/18/21 07:49	10/18/21 11:23	1
o-Terphenyl	109		70 - 130	10/18/21 07:49	10/18/21 11:23	1

Lab Sample ID: LCS 880-9627/2-A
Matrix: Solid
Analysis Batch: 9621

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 9627

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO)-C6-C10			1000	761.6		mg/Kg		76	70 - 130		
Diesel Range Organics (Over C10-C28)			1000	774.5		mg/Kg		77	70 - 130		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1-Chlorooctane	82		70 - 130
o-Terphenyl	92		70 - 130

Lab Sample ID: LCSD 880-9627/3-A
Matrix: Solid
Analysis Batch: 9621

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 9627

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10			1000	798.9		mg/Kg		80	70 - 130	5	20
Diesel Range Organics (Over C10-C28)			1000	813.4		mg/Kg		81	70 - 130	5	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1-Chlorooctane	84		70 - 130
o-Terphenyl	93		70 - 130

Lab Sample ID: 890-1431-A-1-B MS
Matrix: Solid
Analysis Batch: 9621

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 9627

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO)-C6-C10	855		997	1649		mg/Kg		80	70 - 130		
Diesel Range Organics (Over C10-C28)	4410		997	4685	4	mg/Kg		28	70 - 130		

Surrogate	MS %Recovery	MS Qualifier	Limits
1-Chlorooctane	113		70 - 130
o-Terphenyl	58	S1-	70 - 130

QC Sample Results

Client: WSP USA Inc.
Project/Site: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

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

Lab Sample ID: 890-1431-A-1-C MSD
Matrix: Solid
Analysis Batch: 9621

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 9627

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	855		998	1689		mg/Kg		84	70 - 130	2	20
Diesel Range Organics (Over C10-C28)	4410		998	5064	4	mg/Kg		66	70 - 130	8	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1-Chlorooctane	*121*		*70 - 130*
o-Terphenyl	*65*	*S1-*	*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-9768/1-A
Matrix: Solid
Analysis Batch: 10010

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			10/21/21 15:11	1

Lab Sample ID: LCS 880-9768/2-A
Matrix: Solid
Analysis Batch: 10010

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			250	258.5		mg/Kg		103	90 - 110		

Lab Sample ID: LCSD 880-9768/3-A
Matrix: Solid
Analysis Batch: 10010

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	252.6		mg/Kg		101	90 - 110	2	20

Lab Sample ID: 890-1419-2 MS
Matrix: Solid
Analysis Batch: 10010

Client Sample ID: BH01A
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	151		248	393.5		mg/Kg		98	90 - 110		

Lab Sample ID: 890-1419-2 MSD
Matrix: Solid
Analysis Batch: 10010

Client Sample ID: BH01A
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	151		248	399.9		mg/Kg		101	90 - 110	2	20

QC Sample Results

Client: WSP USA Inc.
Project/Site: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 880-9871/1-A
Matrix: Solid
Analysis Batch: 9906

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00		mg/Kg			10/19/21 15:01	1

Lab Sample ID: LCS 880-9871/2-A
Matrix: Solid
Analysis Batch: 9906

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			250	240.9		mg/Kg		96	90 - 110		

Lab Sample ID: LCSD 880-9871/3-A
Matrix: Solid
Analysis Batch: 9906

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	242.0		mg/Kg		97	90 - 110	0	20

Lab Sample ID: 880-7246-A-32-D MS
Matrix: Solid
Analysis Batch: 9906

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	34.6		248	266.3		mg/Kg		94	90 - 110		

Lab Sample ID: 880-7246-A-32-E MSD
Matrix: Solid
Analysis Batch: 9906

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	34.6		248	268.7		mg/Kg		95	90 - 110	1	20

QC Association Summary

Client: WSP USA Inc.
Project/Site: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

GC VOA

Analysis Batch: 9522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1419-1	BH01	Total/NA	Solid	8021B	9532

Prep Batch: 9532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1419-1	BH01	Total/NA	Solid	5035	

Analysis Batch: 10032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1419-1	BH01	Total/NA	Solid	Total BTEX	

Prep Batch: 10082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1419-2	BH01A	Total/NA	Solid	5035	
890-1419-3	BH01B	Total/NA	Solid	5035	

Analysis Batch: 10086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1419-2	BH01A	Total/NA	Solid	8021B	10082
890-1419-3	BH01B	Total/NA	Solid	8021B	10082

Analysis Batch: 10526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1419-2	BH01A	Total/NA	Solid	Total BTEX	
890-1419-3	BH01B	Total/NA	Solid	Total BTEX	

GC Semi VOA

Analysis Batch: 9621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1419-1	BH01	Total/NA	Solid	8015B NM	9627
890-1419-2	BH01A	Total/NA	Solid	8015B NM	9627
890-1419-3	BH01B	Total/NA	Solid	8015B NM	9627

Prep Batch: 9627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1419-1	BH01	Total/NA	Solid	8015NM Prep	
890-1419-2	BH01A	Total/NA	Solid	8015NM Prep	
890-1419-3	BH01B	Total/NA	Solid	8015NM Prep	

Analysis Batch: 9896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1419-1	BH01	Total/NA	Solid	8015 NM	
890-1419-2	BH01A	Total/NA	Solid	8015 NM	
890-1419-3	BH01B	Total/NA	Solid	8015 NM	

HPLC/IC

Leach Batch: 9768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1419-2	BH01A	Soluble	Solid	DI Leach	
890-1419-3	BH01B	Soluble	Solid	DI Leach	

QC Association Summary

Client: WSP USA Inc.
Project/Site: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

HPLC/IC

Leach Batch: 9871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1419-1	BH01	Soluble	Solid	DI Leach	

Analysis Batch: 9906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1419-1	BH01	Soluble	Solid	300.0	9871

Analysis Batch: 10010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-1419-2	BH01A	Soluble	Solid	300.0	9768
890-1419-3	BH01B	Soluble	Solid	300.0	9768

Lab Chronicle

Client: WSP USA Inc.
Project/Site: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

Client Sample ID: BH01
Date Collected: 10/12/21 09:26
Date Received: 10/14/21 08:21

Lab Sample ID: 890-1419-1
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			5.02 g	5 mL	9532	10/15/21 13:57	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	9522	10/16/21 01:52	MR	XEN MID
Total/NA	Analysis	Total BTEX		1			10032	10/20/21 15:04	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			9896	10/19/21 13:25	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	9627	10/18/21 07:49	AM	XEN MID
Total/NA	Analysis	8015B NM		1			9621	10/18/21 19:15	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	9871	10/19/21 12:42	CA	XEN MID
Soluble	Analysis	300.0		1			9906	10/19/21 15:44	CH	XEN MID

Client Sample ID: BH01A
Date Collected: 10/12/21 09:29
Date Received: 10/14/21 08:21

Lab Sample ID: 890-1419-2
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	10082	10/21/21 13:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	10086	10/22/21 12:01	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			10526	10/25/21 18:48	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			9896	10/20/21 13:55	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.03 g	10 mL	9627	10/18/21 07:49	AM	XEN MID
Total/NA	Analysis	8015B NM		1			9621	10/18/21 19:36	AJ	XEN MID
Soluble	Leach	DI Leach			5.05 g	50 mL	9768	10/18/21 14:26	CA	XEN MID
Soluble	Analysis	300.0		1			10010	10/21/21 18:37	CH	XEN MID

Client Sample ID: BH01B
Date Collected: 10/12/21 09:33
Date Received: 10/14/21 08:21

Lab Sample ID: 890-1419-3
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	10082	10/21/21 13:00	KL	XEN MID
Total/NA	Analysis	8021B		1	5 mL	5 mL	10086	10/22/21 12:22	KL	XEN MID
Total/NA	Analysis	Total BTEX		1			10526	10/25/21 18:48	AJ	XEN MID
Total/NA	Analysis	8015 NM		1			9896	10/20/21 13:55	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	9627	10/18/21 07:49	AM	XEN MID
Total/NA	Analysis	8015B NM		1			9621	10/18/21 19:57	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	9768	10/18/21 14:26	CA	XEN MID
Soluble	Analysis	300.0		1			10010	10/21/21 18:58	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: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

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: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

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: Vast East CTB

Job ID: 890-1419-1
SDG: 31402909.12

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-1419-1	BH01	Solid	10/12/21 09:26	10/14/21 08:21	0.5
890-1419-2	BH01A	Solid	10/12/21 09:29	10/14/21 08:21	1
890-1419-3	BH01B	Solid	10/12/21 09:33	10/14/21 08:21	2

Chain of Custody

Work Order No: _____

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296
Hobbs,NM (575-392-7550) Phoenix,AZ (480-355-0900) Atlanta,GA (770-449-8800) Tampa,FL (813-620-2000)

www.xenco.com Page 1 of 1

Project Manager:	Kalei Jennings	Bill to: (if different)	Kalei Jennings
Company Name:	WSP USA	Company Name:	WSP
Address:	3300 North A Street Bldg 1, Unit 222	Address:	3300 North A Street Bldg 1, Unit 222
City, State ZIP:	Midland, Texas 79705	City, State ZIP:	Midland, Texas 79705
Phone:	817-683-2503	Email:	kalei.jennings@wsp.com

Work Order Comments

Program: UST/PST ☐RP ☐rownfields ☐RC ☐perfund ☐
State of Project:
Reporting:Level II ☐evel III ☐T/UST ☐RP L☐vel IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Vast East CTB	Turn Around	
Project Number:	31402909.12	Routine ☐	
P.O. Number:		Rush: 3 day	
Sampler's Name:	Payton Benner	Due Date:	

SAMPLE RECEIPT				
Temp Blank:	(Yes) No	Wet Ice:	(Yes) No	
Temperature (°C):	5.2 / 5.0	Thermometer ID		
Received Intact:	(Yes) No	T-[illegible]-007		
Cooler Custody Seals:	Yes No (N/A)	Correction Factor:	-0.2	
Sample Custody Seals:	Yes No (N/A)	Total Containers:		

ANALYSIS REQUEST

890-1419 Chain of Custody

Work Order Notes

NAPP2124347654

TAT starts the day recevied by the lab, if received by 4:30pm

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	TPH (EPA 8015)	BTEX (EPA 0=8021)	Chloride (EPA 300.0)	Sample Comments
BH01	S	10/12/2021	9:26	0.5'	1	X	X	X	Discrete
BH01A	S	10/12/2021	9:29	1'	1	X	X	X	Discrete
BH01B	S	10/12/2021	9:33	2'	1	X	X	X	Discrete
BH01C	S	10/12/2021	9:40	2.5'	1	X	X	X	Discrete

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 Tl Sn U V Zn

Circle Method(s) and Metal(s) to be analyzed **TCLP / SPLP 6010**: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U **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 pbenner	N. Ott	10/14/21 8:21	2		
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Eurofins Xenco, Carlsbad
1089 N Canal St
Carlsbad NM 88220
Phone: 575-988-3199 Fax: 575-988-3199

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler	Lab PM: Kramer, Jessica	Carrier Tracking No(s)	COC No: 890-462.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: jessica kramer@eurofinset.com	State of Origin: New Mexico	Page: Page 1 of 1
Company: Eurofins Xenco		Accreditations Required (See note): NELAP - Louisiana, NELAP - Texas		Job #: 890-1419-1
Address: 1211 W Florida Ave,	Due Date Requested: 10/19/2021			
City: Midland	TAT Requested (days):			
State Zip: TX, 79701				
Phone: 432-704-5440(Tel)	PO #:			
Email	WO #:			
Project Name: Vast East CTB	Project #: 89000048			
Site:	SSOW#:			

Analysis Requested

Preservation Codes.

A HCL, B NaOH, C Zn Acetate, D - Nitric Acid, E NaHSO4, F MeOH, G Amchlor, 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 Dodecahydrate, U Acetone, V MCAA, W - pH 4-5, Z other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015MOD_NM/8015NM_S_Prep Full TPH	300_ORGFM_28D/DI_LEACH Chloride	8021B/5035FP_Calc BTEX	Total_BTEX_GCV	8015MOD_Calc	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
BH01 (890-1419-1)	10/12/21	09 26 Mountain		Solid			X	X	X	X	X	1	
BH01A (890-1419-2)	10/12/21	09 29 Mountain		Solid			X	X	X	X	X	1	
BH01B (890-1419-3)	10/12/21	09 33 Mountain		Solid			X	X	X	X	X	1	
BH01C (890-1419-4)	10/12/21	09 40 Mountain		Solid			X	X	X	X	X	1	

Note: Since laboratory accreditations are subject to change Eurofins Xenco LLC places the ownership of method analyte & accreditation compliance upon out 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/tests/matrix being analyzed the samples must be shipped back to the Eurofins Xenco LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Xenco LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Xenco LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I II III, IV, Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by	Date	Time:	Method of Shipment:

	Relinquished by: Cue Cuy 10.14.21	Date/Time:	Company	Received by: Kramer	Date/Time: 10.15.21	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 1156	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks. 2 6/2.7

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-1419-1
SDG Number: 31402909.12

Login Number: 1419
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: 890-1419-1
SDG Number: 31402909.12

Login Number: 1419
List Number: 2
Creator: Kramer, Jessica

List Source: Eurofins Xenco, Midland
List Creation: 10/15/21 12:05 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	2.6/2.7
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	

ATTACHMENT 5: FINAL C-141

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

State of New Mexico
Energy Minerals and Natural Resources 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	NAPP2124347654
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	COG Operating, LLC	OGRID	229137
Contact Name	Kesly Waggaman	Contact Telephone	(432) 688-9057
Contact email	Kelsy.Waggaman@ConocoPhillips.com	Incident # *(assigned by OCD)*	NAPP2124347654
Contact mailing address	600 West Illinois Avenue, Midland, Texas 79701		

Location of Release Source

Latitude 32.03816 Longitude -103.58608
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Vast East State CTB	Site Type	Tank Battery
Date Release Discovered	August 21, 2021	API# *(if applicable)*	

Unit Letter	Section	Township	Range	County
P	17	26S	33E	Lea

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)

☒ Crude Oil	Volume Released (bbls) 4	Volume Recovered (bbls) 4
☒ Produced Water	Volume Released (bbls) 6	Volume Recovered (bbls) 6
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The release was caused by a water hauler putting rain water from containment back into water tank and water tank spilled over the top.
The release occurred within the lined facility. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area evaluated for any possible impact from the release.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2124347654
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ■ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

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.
- ■ The impacted area has been secured to protect human health and the environment.
- ■ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
- ■ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not 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: Brittany N. Esparza Title: Environmental Technician

Signature: Brittany Esparza Date: 8/31/2021

email: Brittany.Esparza@ConocoPhillips.com Telephone: (432) 221-0398

OCD Only

Received by: Ramona Marcus Date: 8/31/2021

L48 Spill Volume Estimate Form

NAPP2124347654

Facility Name & Number:	Vast East CTB
Asset Area:	DBEN
Release Discovery Date & Time:	8/21/2021 12:00PM
Release Type:	Oil Mixture
Provide any known details about the event:	Water hauler was putting rain water in tank and overflowed it

Spill Calculation - On Pad Surface Pool Spill

Convert Irregular shape into a series of rectangles	Length (ft.)	Width (ft.)	Deepest point in each of the areas (in.)	No. of boundaries of "shore" in each area	Estimated *Pool* Area (sq. ft.)	Estimated Average Depth (ft.)	Estimated volume of each pool area (bbl.)	Penetration allowance (ft.)	Total Estimated Volume of Spill (bbl.)	Percentage of Oil if Spilled Fluid is a Mixture	Total Estimated Volume of Spilled Oil (bbl.)	Total Estimated Volume of Spilled Liquid other than Oil (bbl.)
Rectangle A	50.0	30.0	1.75	4	1500.000	0.036	9.734	0.002	9.752	35.00%	3.413	6.339
Rectangle B					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle C					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle D					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle E					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle F					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle G					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle H					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle I					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
Rectangle J					0.000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!
								Total Volume Release:	9.752		3.413	6.339

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District III
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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 45578

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 45578
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rmarcus	None	8/31/2021

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2124347654
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?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2124347654
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: Kelsy Waggaman Title: Environmental Coordinator

Signature: Date: 11/19/2021

email: kelsy.waggaman@conocophillips.com Telephone: (505) 577-9071

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2124347654
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: Kelsy Waggaman Title: Environmental Coordinator

Signature: _____ Date: 11/19/2021

email: kelsy.waggaman@conocophillips.com Telephone: (505) 577-9071

OCD Only

Received by: Chad Hensley Date: 12/21/2021

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

Closure Approved by: _____ Date: 12/21/2021

Printed Name: Chad Hensley Title: Environmental Specialist Advanced

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CONDITIONS

Action 62825

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 62825
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
chensley	None	12/21/2021