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TRCcompanies.com

April 28, 2020

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

Re: Remediation Plan and Status Update – Investigation, Delineation, and Reporting Activities
WTX to EMSU Battery to Byrd Pump Crude Oil Release, Lea County, New Mexico
Unit P, Section 11, Township 20S, Range 36E (32.583989, -103.317743)
NMOCD No. 1RP-5154 / NOY1822242858

To Whom it May Concern:

On behalf of Holly Energy Partners – Operating, L.P. (HEP), TRC Environmental Corporation (TRC) has prepared this letter to request approval to modify a New Mexico Oil Conservation Division (NMOCD) approved work plan and to inform NMOCD of the status of the investigation, delineation, and reporting activities associated with HEP's WTX to EMSU Battery to Byrd Pump Crude Oil Release Site (Site). The Site is located approximately 4 miles southwest of Monument, in Lea County, New Mexico (NMOCD No. 1RP-5154 / NOY1822242858). The Site location is depicted on Figure 1.

As previously communicated to NMOCD, this project has been delayed due to a protracted access agreement negotiation with the landowner (L&K Ranch, LLC). HEP successfully concluded that negotiation in March 2020 and has retained TRC to complete the assessment of the Site. As discussed by text message and in an April 15, 2020 email, TRC and HEP request NMOCD approval to modify a previously approved work plan to delineate soil impacts at the Site. Once this approval is obtained, the modified work plan will be implemented to delineate soil impacts and, if necessary, determine if groundwater has been affected by the release.

SITE BACKGROUND

A pipeline release was identified at the Site during an aerial patrol on July 11, 2018. The pipeline was immediately inspected, the leak confirmed, and that segment of pipeline shut down for repair. The release was determined to originate from a pinhole at the bottom of a 6-inch pipeline and was initially thought to be less than 1 barrel (bbl) in volume.

HEP initiated excavation activities to remove contaminated soil and attempt to vertically delineate impacts through exploratory trenches. Excavation activities occurred between July 11 and August 6, 2018. On August 6, 2018, the excavation had reached 17 feet below ground surface (bgs) and the impacted soil had not been delineated. This determination was apparently based on field screening or observations, not analytical data. The excavation was discontinued at that point the excavated soil was returned to the excavation as backfill. The release was then reported on Form C-141 (Release Notification and Corrective Action) to Ms. Olivia Yu at the NMOCD District 1 Office in Hobbs, New Mexico on August 10, 2018, in accordance with Title 19 Chapter 15 Part 29 of the New Mexico Administrative Code (19.15.29 NMAC).

HEP retained GHD, an environmental consulting firm, to perform subsurface assessment activities in accordance with 19.15.29 NMAC. On August 16, 2018, GHD submitted a Soil Delineation Work Plan to NMOCD and to the Bureau of Land Management (the mineral owner). NMOCD approved the work plan on September 10, 2018.

The initial assessment was completed in September 2018 and included the determination of site-specific NMOCD Closure Criteria and installation of four soil borings (SB-1 through SB-4) to a maximum depth of 35 feet bgs. Although groundwater was not encountered during the investigation, the NMOCD Closure Criteria determined appropriate for the Site at that time are those for Sites with groundwater at a depth of less than 50 feet bgs.

Soil borings SB-1, SB-2, and SB-4 were each installed to a total depth of 35 feet bgs. SB-3 was terminated at a depth of 25 feet bgs due to auger refusal. As mentioned above, groundwater was not encountered in any of the borings. Soil samples collected from borings SB-1 through SB-4 were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021B, total petroleum hydrocarbons (TPH) by EPA Method 8015, and chloride by EPA Method 300. The boring locations and analytical results are shown on Figure 2 and the data are summarized in Table 1. The results indicated the following:

- Benzene and total BTEX concentrations were below the site-specific NMOCD Closure Criteria at all of the sampled locations. BTEX constituents were not detected in any of the samples from borings SB-2 through SB-4.

- Chloride and TPH concentrations were also below the Closure Criteria in all locations except for the source area boring (SB-1):

    - SB-1 (20-21 feet bgs) contained a chloride concentration of 625 mg/kg. The location was vertically delineated with a sample (77.9 mg/kg) collected from 34-35 feet bgs.

    - SB-1 (34-35 feet bgs) contained a TPH concentration of 1,240 mg/kg. This is the deepest sample obtained from the source area and thus TPH was not vertically delineated.

    - TPH was not detected in any of the samples from SB-2 through SB-4.

    - Chloride was detected in samples from SB-2 through SB-4 collected from intervals deeper than 5 feet bgs, but none of the concentrations exceeded 600 mg/kg.

On November 1, 2018 GHD and HEP submitted a Soil Assessment Report and Supplemental Assessment Work Plan (SAWP) to the NMOCD (also provided with this letter as Attachment A). NMOCD approved the SAWP on January 17, 2019. GHD obtained monitoring well permits from the New Mexico Office of State Engineer (NMOSE) on March 18, 2019. However, before HEP could implement the SAWP the access agreement negotiations with the landowner broke down. The access agreement with L&K Ranch, LLC was signed in March 2020, which has allowed HEP to proceed with this project.

PATH FORWARD/SCOPE OF WORK

HEP retained TRC to complete the next phase of corrective action activities. TRC plans to complete the release characterization in accordance with 19.15.29 NMAC and the NMOCD directive attached to the approved Form C-141. The objective is to delineate soil impacts and, if necessary, determine if groundwater has been affected by the release. However, TRC and HEP wish to modify the previously approved SAWP.

NMOCD Status Update
WTX to EMSU Release (1RP-5154 / NOY1822242858)
April 28, 2020

The NMOCD-approved SAWP called for the installation of four monitoring wells and three borings at the Site. One of the monitoring wells would be installed adjacent to the pipeline release point (the source area), the other three in the surrounding area. The three borings would also be installed in the surrounding area.

The proposed changes to the approved SAWP are:

1. TRC will install four soil borings at the four locations previously proposed as monitoring well locations, but not install the three additional locations proposed as soil boring locations. The three additional soil borings are duplicative; there is lateral delineating data from borings SB-2, SB-3 and SB-4 that have already been installed at the Site, and we plan on collecting soil samples from the four proposed soil borings to confirm lateral delineation is complete based on vertical delineation depth at the proposed source area boring. The four proposed soil borings will be converted to monitoring wells if soil impacts are not delineated 10 feet above the saturated zone.

2. TRC will attempt to continuously core the source area soil boring. The cores will be field screened using a chloride field test kit or meter and a photo-ionization detector (PID). If possible, TRC will attempt to vertically delineate chloride and TPH in soil above groundwater at this location. Following NMOCD guidance, at least 10 feet of soil that does not contain contaminants above the applicable Closure Criteria will be necessary to confirm vertical delineation of the release above groundwater.

    a. If field screening suggests that the impacts are delineated with at least 10 feet of soil above the water table, TRC will collect confirmatory soil samples and terminate the boring at that depth.

    b. If field screening suggests that the impacts are not delineated with at least 10 feet of soil above the water table, the boring will be advanced into the groundwater-bearing unit and a monitoring well will be installed in the source area.

3. The source area soil boring will guide the installation of the other three soil borings.

    a. If it appears that TPH and chloride impacts in the source area have been delineated above groundwater, TRC will install the three soil borings to the source area delineation depth and collect soil samples accordingly.

    b. If TPH and chloride impacts are not delineated above the water table in the source area, all three surrounding borings will be advanced to the uppermost groundwater-bearing unit and converted to monitoring wells.

4. The other minor changes proposed are:

    a. Well diameter will be reduced from 4 inches to 2 inches.

    b. The proposed maximum boring depth will be increased from 45 feet to 65 feet bgs. This change is based on a historical report of groundwater in the area at a depth of approximately 55 to 60 feet bgs.

c. TRC will collect soil samples from the soil boring to the north that is assumed to be an upgradient point.

The four soil borings (potentially monitoring wells depending on vertical delineation) will be installed in the same locations that were previously proposed as monitoring well locations. Those locations are provided on Figure 2.

SCHEDULE

TRC has submitted a WR-07 permit application to NMOSE to obtain a monitoring well permit for this project. NMOSE's Roswell, NM office received that application on April 1, 2020 and issued the permit on April 21, 2020. Once TRC has obtained NMOCD's approval to the changes to the SAWP, the investigation activities will commence.

CLOSING

If you have any further questions regarding the project, please do not hesitate to contact Mark Shemaria of HEP at (214) 954-6668 or Richard Varnell of TRC at (512) 626-3990.

Sincerely,

Richard Varnell, P.G., P.E.
Senior Project Manager

Shannon Hoover, P.G.
Principal Project Manager

cc: Lori Coupland, HEP, Dallas, Texas
Mark Shemaria, HEP, Dallas, Texas
Melanie Nolan, HEP, Artesia, NM
Arsin Sahba, HollyFrontier Corporation, Dallas, Texas
Bryan Gilbert, TRC, Austin, Texas

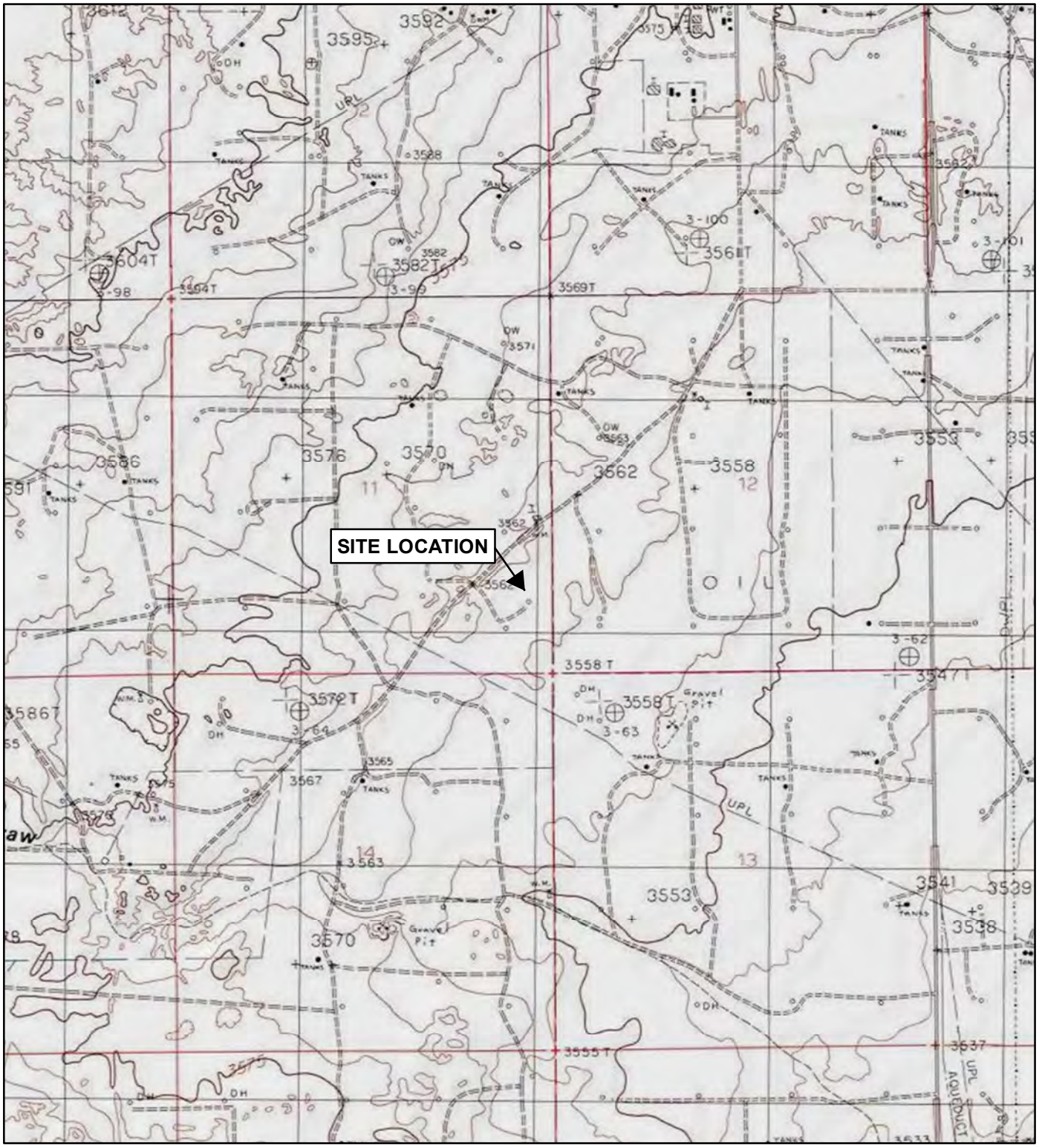
Attachments:

Table 1: Summary of Soil Sample Analytical Results
Figure 1: Topographic Map
Figure 2: Proposed Soil Boring and Monitoring Well Location Map
Attachment A: *Soil Assessment Report*, GHD, dated November 1, 2018

TABLE 1
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
WTX TO EMSU BATTERY RELEASE, LEA COUNTY, NEW MEXICO

Sample ID	Sample Depth (feet bgs)	Date	Constituents of Concern (COCs)									
			BTEX (mg/kg)					TPH (mg/kg)				Chloride (mg/kg)
			Benzene	Ethylbenzene	Toluene	Xylenes	Total BTEX	GRO	DRO	MRO	Total TPH[1]	
NMOCD Closure Criteria (GW ≤ 50' bgs)			10				50[2]				100[3]	600
SB-1	4-5	9/28/2018	< 0.00210	< 0.00210	< 0.00210	< 0.00210	< 0.00210	< 15.7	< 15.7	< 15.7	< 15.7	< 5.22
	20-21	9/28/2018	< 0.00271	< 0.00271	< 0.00271	< 0.00271	< 0.00271	< 20.4	**22.7**	< 20.4	**22.7**	**625**
	34-35	9/28/2018	<0.00242	**0.00418**	<0.00242	**0.0166**	**0.0208**	**34.1**	**1030**	**178**	**1240**	**77.9**
SB-2	4-5	9/28/2018	< 0.00215	< 0.00215	< 0.00215	< 0.00215	< 0.00215	< 16.0	< 16.0	< 16.0	< 16.0	<5.34
	10-11	9/28/2018	< 0.00225	< 0.00225	< 0.00225	< 0.00225	< 0.00225	< 16.8	< 16.8	< 16.8	< 16.8	**381**
	34-35	9/28/2018	< 0.00238	< 0.00238	< 0.00238	< 0.00238	< 0.00238	< 17.8	< 17.8	< 17.8	< 17.8	**84.2**
SB-3	4-5	9/28/2018	< 0.00231	< 0.00231	< 0.00231	< 0.00231	< 0.00231	< 17.4	< 17.4	< 17.4	< 17.4	<5.76
	24-25	9/28/2018	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 16.4	< 16.4	< 16.4	< 16.4	**37.8**
SB-4	4-5	9/28/2018	< 0.00219	< 0.00219	< 0.00219	< 0.00219	< 0.00219	< 16.2	< 16.2	< 16.2	< 16.2	<5.46
	24-25	9/28/2018	< 0.00226	< 0.00226	< 0.00226	< 0.00226	< 0.00226	< 16.9	< 16.9	< 16.9	< 16.9	**513**
	34-35	9/28/2018	< 0.00236	< 0.00236	< 0.00236	< 0.00236	< 0.00236	< 17.7	< 17.7	< 17.7	< 17.7	**262**

Notes: BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes by EPA Method 8021b.
TPH = Total Petroleum Hydrocarbons by EPA Method 8015.
GRO = Gasoline Range Organics.
DRO = Diesel Range Organics.
MRO = Motor Oil Range Organics.
NMOCD Closure Criteria = New Mexico Oil Conservation District Closure Criteria for a Site (varies with depth to groundwater).
Blank cells in NMOCD Closure Criteria rows indicate that there is no screening or action level for that constituent/Closure Criteria combination.
Data is dry weight corrected.
GW = Groundwater.
[1] = TPH is the combination of GRO + DRO + MRO concentrations.
[2] = This value is compared against the sum of the benzene + toluene + ethylbenzene + total xylenes concentrations.
[3] = This value is compared against the sum of the GRO + DRO + MRO concentrations.
' = feet.
bgs = below ground suface.
Detected concentrations reported in bold.
Yellow shading represents contaminant concentration above NMOCD Closure Criteria for sites with groundwater at depths ≤ 50' bgs.



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES - MONUMENT SOUTH, NEW MEXICO (1985).

N

1 " = 2,000 '
1:24,000

0 2,000 4,000
FEET

TRC
505 East Huntland Drive
Suite #250
Austin, TX 78752
Phone: 512.329.6080
TRC - GIS

PROJECT:
HOLLY ENERGY PARTNERS
MONUMENT, LEA COUNTY, NEW MEXICO
WTX TO EMSU BATTERY RELEASE SITE

TITLE:
TOPOGRAPHIC MAP

DRAWN BY:	S. RAY
CHECKED BY:	
APPROVED BY:	
DATE:	APRIL 2020
PROJ. NO.:	374611.0000
FILE:	374611.9990_1.mxd

FIGURE 1

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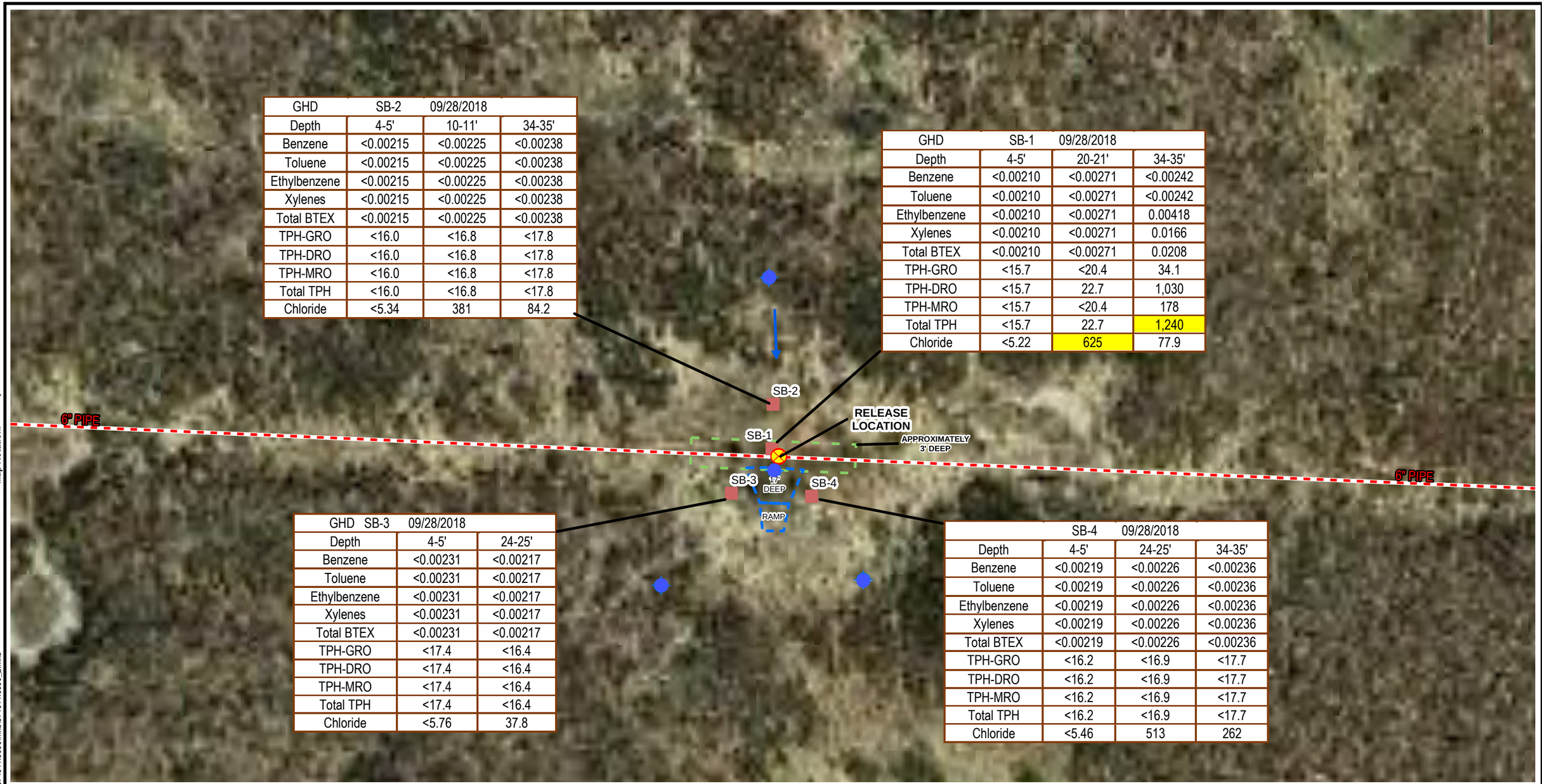
GHD	SB-2	09/28/2018	
Depth	4-5'	10-11'	34-35'
Benzene	<0.00215	<0.00225	<0.00238
Toluene	<0.00215	<0.00225	<0.00238
Ethylbenzene	<0.00215	<0.00225	<0.00238
Xylenes	<0.00215	<0.00225	<0.00238
Total BTEX	<0.00215	<0.00225	<0.00238
TPH-GRO	<16.0	<16.8	<17.8
TPH-DRO	<16.0	<16.8	<17.8
TPH-MRO	<16.0	<16.8	<17.8
Total TPH	<16.0	<16.8	<17.8
Chloride	<5.34	381	84.2

GHD	SB-1	09/28/2018	
Depth	4-5'	20-21'	34-35'
Benzene	<0.00210	<0.00271	<0.00242
Toluene	<0.00210	<0.00271	<0.00242
Ethylbenzene	<0.00210	<0.00271	0.00418
Xylenes	<0.00210	<0.00271	0.0166
Total BTEX	<0.00210	<0.00271	0.0208
TPH-GRO	<15.7	<20.4	34.1
TPH-DRO	<15.7	22.7	1,030
TPH-MRO	<15.7	<20.4	178
Total TPH	<15.7	22.7	1,240
Chloride	<5.22	625	77.9

GHD SB-3	09/28/2018	
Depth	4-5'	24-25'
Benzene	<0.00231	<0.00217
Toluene	<0.00231	<0.00217
Ethylbenzene	<0.00231	<0.00217
Xylenes	<0.00231	<0.00217
Total BTEX	<0.00231	<0.00217
TPH-GRO	<17.4	<16.4
TPH-DRO	<17.4	<16.4
TPH-MRO	<17.4	<16.4
Total TPH	<17.4	<16.4
Chloride	<5.76	37.8

	SB-4	09/28/2018	
Depth	4-5'	24-25'	34-35'
Benzene	<0.00219	<0.00226	<0.00236
Toluene	<0.00219	<0.00226	<0.00236
Ethylbenzene	<0.00219	<0.00226	<0.00236
Xylenes	<0.00219	<0.00226	<0.00236
Total BTEX	<0.00219	<0.00226	<0.00236
TPH-GRO	<16.2	<16.9	<17.7
TPH-DRO	<16.2	<16.9	<17.7
TPH-MRO	<16.2	<16.9	<17.7
Total TPH	<16.2	<16.9	<17.7
Chloride	<5.46	513	262



LEGEND

- PROPOSED SOIL BORING LOCATION
  BORINGS WILL BE CONVERTED TO MONITORING WELLS IF IMPACTS CANNOT BE VERTICALLY DELINEATED ABOVE GROUNDWATER.
- RELEASE LOCATION
- SOIL BORING LOCATION
- 6" PIPE
- ASSUMED GROUNDWATER GRADIENT DIRECTION
- FORMER EXPLORATORY TRENCH LIMITS
- FORMER EXPLORATORY EXCAVATION LIMITS
- DEPTH — DEPTH OF SAMPLE (ft)
- TPH — TOTAL PETROLEUM HYDROCARBONS CONCENTRATION (mg/kg)
- GRO — TPH AS GASOLINE RANGE ORGANICS
- DRO — TPH AS DIESEL RANGE ORGANICS
- MRO — TPH AS MOTOR OIL RANGE ORGANICS

NOTES:

1. SOIL CONCENTRATIONS PRESENTED IN MILLIGRAMS PER KILOGRAM (MG/KG).
2. HIGHLIGHTED VALUES INDICATE EXCEEDANCE OF NEW MEXICO OIL CONSERVATION DIVISION (NMOCD) SCREENING CRITERIA

N

0 15 30 Feet

1 " = 30 '

1:360

PROJECT:
HOLLY ENERGY PARTNERS
MONUMENT, LEA COUNTY NEW MEXICO
WTX TO EMSU BATTERY RELEASE SITE

TITLE:
PROPOSED SOIL BORING AND MONITORING WELL LOCATION MAP

DRAWN BY:	M. JAGOE	PROJ NO.:	374611.9990
CHECKED BY:			
APPROVED BY:			
DATE:	APRIL 2020		

FIGURE 2

TRC
505 East Huntland Drive, Suite 250
Austin, TX 78752
Phone: 512.329.6080
www.trcsolutions.com

FILE NO.: 374611.9990_2.mxd

Coordinate System: NAD 1983 2011 StatePlane New Mexico East FIPS 3001 Ft US (Foot US)
Map Rotation: 0

Plot Date: 4/21/2020, 12:38:22 PM by SRAY -- LAYOUT: ANSI B (11"x17")
Path: S:\1-PROJECTS\HOLLY_ENERGY_PARTNERS\374611.9990\mxd\374611.9990_2.mxd

ATTACHMENT A:
Soil Assessment Report, GHD, dated November 1, 2018

HOLLY ENERGY PARTNERS

November 1, 2018

Sent via e-mail to Olivia.Yu@state.nm.us

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

RE: Soil Assessment Report – WTX to EMSU Battery to Byrd Pump Crude Oil Release
1RP-5154

Dear Ms. Yu,

Please find the enclosed Soil Assessment Report for the WTX to EMSU Battery to Byrd Pump Crude Oil Release Site.

Should you have any questions or concerns, please contact me at 214-954-6668 or mark.shemaria@hollyenergy.com.

Sincerely,

Mark Shemaria

Mark Shemaria
Senior Manager Regulatory &EHS

Enclosure

Soil Assessment Report

WTX to EMSU Battery Release Site
1RP-5154
Unit P, Section 11, Township 20, Range 36
Lea County, New Mexico

Holly Energy Partners

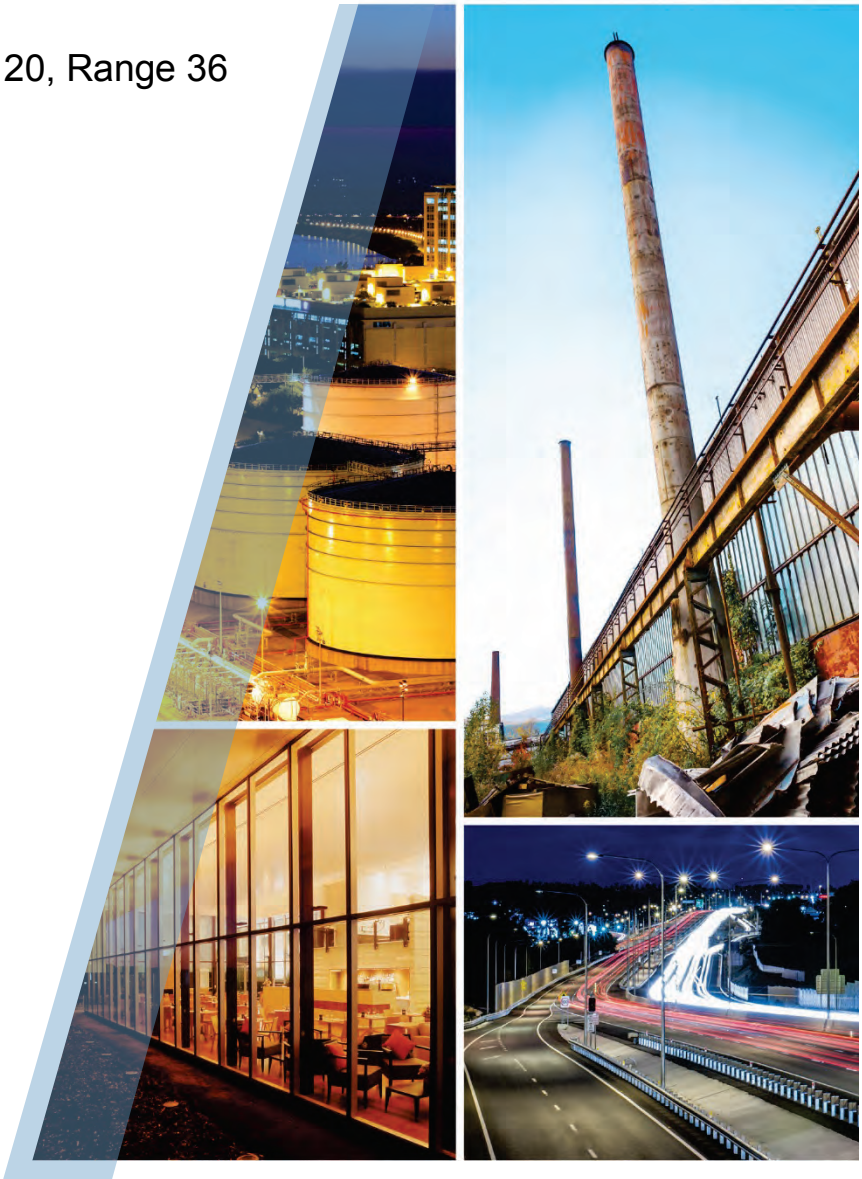


Table of Contents

Figure Index

Table Index

Appendix Index

1. Introduction

On behalf of Holly Energy Partners (HEP), GHD Services Inc. (GHD) has prepared this report summarizing soil boring installation and sampling activities at the WTX to EMSU Battery Release Site (hereafter referred to as the "Site"). The Site is located in Unit P, Section 11, Township 20, Range 36, approximately 3.2 miles southwest of Monument in eastern Lea County, New Mexico. The coordinates of the release location are Latitude 32.583989 and Longitude -103.317743. The location of the Site is presented on Figure 1 and Site details are shown on Figure 2.

2. Background

According to the New Mexico Oil Conservation Division (NMOCD) Release Notification and Corrective Action Form C-141 submitted to the agency by HEP, the release occurred on July 11, 2018 and was reported to Ms. Olivia Yu, Hobbs District 1 NMOCD office on August 10, 2018 (see attached C-141 included in Appendix A). Remediation Permit (RP) 1RP-5154 was assigned to this release incident by the NMOCD Hobbs office.

The release was initially detected during an air patrol fly over. The release was determined to have originated from a pinhole leak in the bottom of a 6" pipe. HEP personnel shut down the pipe segment and the initial release volume was estimated at less than one barrel, therefore under reportable limits. After further investigation, the volume of the spill was reported as greater than 5 barrels of crude oil, of which 0.5 barrels were recovered with a vacuum truck.

HEP began excavation activities inclusive of an exploratory trench along the pipeline to a depth of approximately three feet below ground surface (bgs) on July 11 and 17, 2018, and an exploratory deeper excavation south of the pipeline on July 23, 2018 and continued on August 6, 2018 to try and determine the vertical extent of soil impact (see Figure 2). Excavation activities were halted on August 6, 2018 because it was found that the affected area was larger and impact to soil was deeper (17 feet bgs) than originally estimated. The excavated material was used to backfill the exploratory excavation areas. The surface landowner (Klien) and the mineral owner (Bureau of Land Management (BLM)) have been notified.

3. NMOCD Closure Requirement Criteria for Soils

Subsurface investigation activities were completed in accordance with the revised and reissued Guidelines for Remediation of Leaks, Spills, and Releases Rule 19.15.29 New Mexico Administrative Code (NMAC) from the NMOCD issued on August 14, 2018. The following criteria from Table 1 (below) within NMAC 19.15.29.12 was utilized to determine site-specific screening limits:

Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l TDS	Constituent	Limit*
≤ 50 feet	Chloride**	600 mg/kg
	TPH	
	(GRO+DRO+MRO)	100 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

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

** This applies to release of produced water or other fluids which may contain chloride.

Information available from various sources including the Petroleum Recovery Research Center (PRRC) Mapping Portal, currently managed groundwater site(s) data by GHD, and the United States Geological Survey (USGS) Current Water Database for the Nation, concludes:

1. the depth to groundwater at the Site is less than 50-feet bgs;
2. the site is not within 300 feet of any continuously flowing watercourse;
3. the site is not within 200 feet of any lakebed, sinkhole or playa lake;
4. the site is not within 300 feet of an occupied permanent residence, school, etc.;
5. the site is not within 500 feet of a spring or private, domestic fresh water well;
6. the site is not within 1,000 feet of any fresh water well or spring;
7. the site is not within incorporated municipal boundaries or within a defined municipal fresh water well field;
8. the site is not within 300 feet of a wetland;
9. the site is not within an area overlying a subsurface mine;
10. the site is not within an unstable area; and
11. the site is not within a 100-year floodplain.

Consequently, the anticipated site-specific screening limits based on currently available data to be applied to this location by the NMOCD based on the revised Rule are 10 mg/kg for benzene, 50 mg/kg for total benzene, toluene, ethylbenzene, and total xylenes (BTEX), 100 mg/kg for total petroleum hydrocarbon (TPH), and 600 mg/kg for chloride.

Additionally, per NMAC19.15.29.13 (Restoration, Reclamation, and Re-vegetation), the impacted area must be remediated a minimum of 4-feet bgs with non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg. Soil cover must consist of topsoil at a thickness comparable to background topsoil thicknesses, or one foot of suitable earthen material capable of establishing and maintaining vegetation at the site. Reclamation is considered complete when all disturbed areas have established vegetative cover with a life-form ratio of plus or

minus 50 percent of pre-remedial levels, and plant cover of a minimum of 70 percent of previous levels, excluding noxious weeds.

4. 2018 Soil Assessment

Four (4) soil borings (SB-1 through SB-4) were advanced at the Site in September 2018 to assess hydrocarbon and chloride concentrations in soil near the release point. Prior to mobilizing drilling equipment to the Site, the boring locations were marked and utility notifications were submitted. Boring locations were hand augured to a depth of approximately 5 feet bgs. A hollow stemmed auger (HSA) drilling rig operated by GHD subcontractor Envirotech Drilling, a New Mexico-licensed water well driller, advanced three (3) borings to total depths of 35 feet bgs, and one (1) soil boring (SB-3) to a total depth of 25 feet bgs (refusal was encountered at 25 feet bgs). During drilling, a GHD geological technician observed, visually inspected, and logged soil cuttings at 5-foot intervals and recorded subsurface lithology in accordance with the Unified Soil Classification System (USCS) on boring logs. Soil boring logs are included in Appendix B.

Soil samples were field screened for volatile organic compounds (VOCs) using a photoionization detector (PID) calibrated with isobutylene. A portion of each soil sample was placed in a ZipLoc® bag, allowed to sit for approximately 5 minutes, and then field screened for VOCs with the PID.

Three soil samples were collected for laboratory analysis from each of the three 35 foot bgs boreholes (SB-1, SB-2, and SB-4), and two soil samples were collected from the 25 foot bgs borehole (SB-3). These included a sample from the shallow soil (less than 5 ft.), the sample with highest PID reading (if elevated readings were detected), and the sample from the terminal depth of each borehole. The soil samples were sent to Xenco Laboratories (Xenco) in Midland, Texas for analysis BTEX via EPA Test Method 8021B, TPH by EPA Method 8015 Modified, and chloride by EPA Method 300.

4.1 Soil Analytical Results

Analytical results are summarized in Table 1 and the distribution of analytical results is presented in map view on Figure 2. Soil analytical results for benzene and total BTEX in all borings were below the NMOCD screening criteria (10 and 50 mg/kg, respectively). TPH was detected above the NMOCD screening criteria for total TPH (100 mg/kg) within SB-1 at a depth of 34-35 feet bgs (1,240 mg/kg), but not in the two shallower soil samples collected from SB-1. Chloride was reported at a concentration of 625 mg/kg within SB-1 at a depth of 20-21 feet bgs. This concentration slightly exceeds the NMOCD screening criteria of 600 mg/kg for chloride. All other samples were below the NMOCD screening criteria for their respective constituents.

The laboratory analytical reports are provided in Appendix C.

5. Summary of Findings

Findings of the soil assessment conducted at the Site in 2018 are summarized below:

- Soil analytical results for benzene and total BTEX in all borings were below the NMOCD screening criteria (10 and 50 mg/kg, respectively).
- TPH was reported at a concentration of 1,240 mg/kg within SB-1 at 34-35 feet bgs. This concentration exceeds the NMOCD screening criteria of 100 mg/kg for TPH.
- Chloride was reported at a concentration slightly above the NMOCD screening criteria of 600 mg/kg in the soil sample collected from SB-1 at 20-21 feet bgs (625 mg/kg).
- All other soil samples were below the NMOCD screening criteria for their respective constituents.

6. Conclusions

Analytical results associated with assessment activities conducted in September 2018 indicate the horizontal and vertical extents of the TPH and chloride impact in soil have not been fully delineated.

7. Subsequent Assessment Activities

Additional proposed soil and groundwater assessment activities are summarized in the Supplemental Assessment Work Plan included in Appendix D of this report.

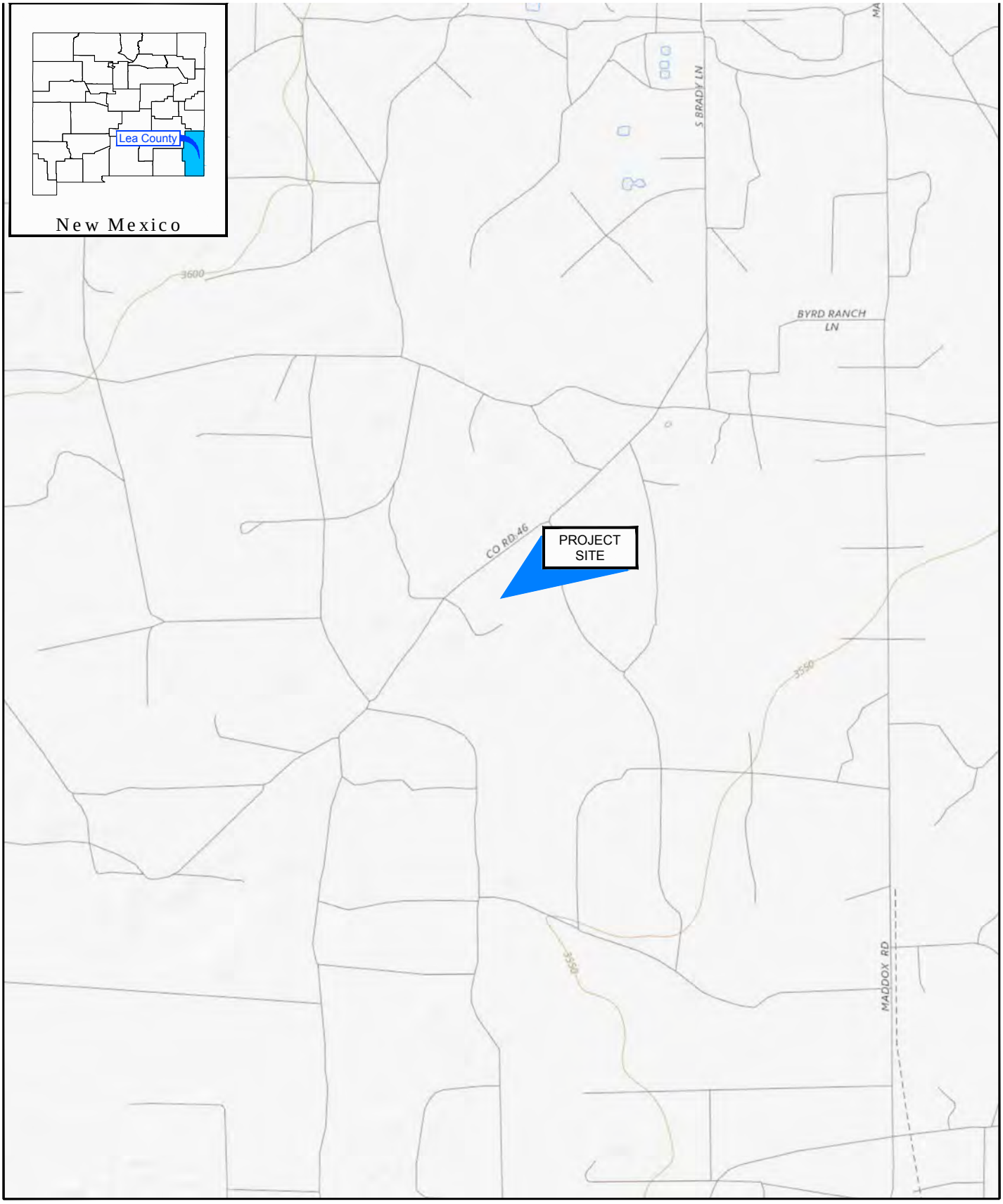
All of Which is Respectfully Submitted,

GHD

Scott Foord, P.G.,
Project Manager

James Harden, P.G.,
Senior Project Manager

Figures



Source: USGS 7.5 Minute Quad "Monument South, New Mexico"

Lat/Long: 32.583989° North, 103.317743° West

0 1000 2000ft

Coordinate System:
NAD 1983 (2011) StatePlane-
New Mexico East (US Feet)

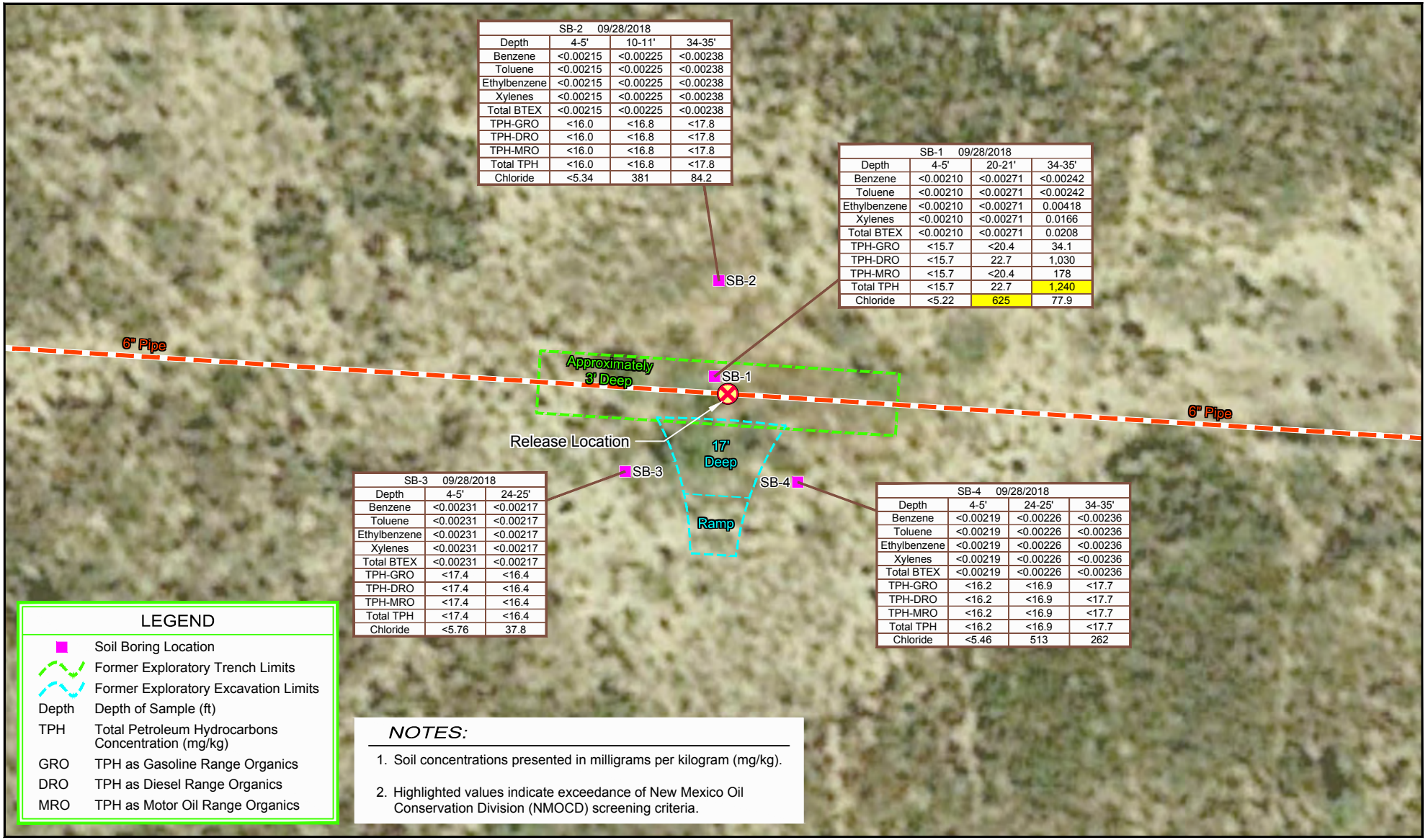
HOLLY ENERGY PARTNERS
MONUMENT, LEA COUNTY, NEW MEXICO
WTX TO EMSU BATTERY RELEASE SITE

11182283-01

Oct 19, 2018

SITE LOCATION MAP

FIGURE 1



Source: Image © 2018 Google - Imagery Date: November 2, 2017

Lat/Long: 32.583989° North, 103.317743° West

0 10 20ft

Approximate Scale

HOLLY ENERGY PARTNERS
MONUMENT, LEA COUNTY, NEW MEXICO
WTX TO EMSU BATTERY RELEASE SITE

SOIL BORING LOCATION AND ANALYICAL RESULTS MAP

11182283-01

Oct 31, 2018

FIGURE 2

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1118----\11182283-Holly Energy-WTX to EMSU\11182283-01\11182283-01(001)\11182283-01(001)GN-DL001.dwg

Tables

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
HOLLY ENERGY PARTNERS
WTX TO EMSU BATTERY RELEASE
LEA COUNTY, NEW MEXICO

Sample ID	Depth (feet)	Date	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	TPH				Chloride
								TPH-GRO	TPH-DRO	TPH-MRO	Total	
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NMOCD Screening Criteria			**10**	--	--	--	**50**	--	--	--	**100**	**600**
SB-1	4-5	9/28/2018	< 0.00210	< 0.00210	< 0.00210	< 0.00210	< 0.00210	< 15.7	< 15.7	< 15.7	< 15.7	< 5.22
	20-21	9/28/2018	< 0.00271	< 0.00271	< 0.00271	< 0.00271	< 0.00271	< 20.4	**22.7**	< 20.4	**22.7**	**625**
	34-35	9/28/2018	<0.00242	<0.00242	**0.00418**	**0.0166**	**0.0208**	**34.1**	**1030**	**178**	**1240**	**77.9**
SB-2	4-5	9/28/2018	< 0.00215	< 0.00215	< 0.00215	< 0.00215	< 0.00215	< 16.0	< 16.0	< 16.0	< 16.0	< 5.34
	10-11	9/28/2018	< 0.00225	< 0.00225	< 0.00225	< 0.00225	< 0.00225	< 16.8	< 16.8	< 16.8	< 16.8	**381**
	34-35	9/28/2018	< 0.00238	< 0.00238	< 0.00238	< 0.00238	< 0.00238	< 17.8	< 17.8	< 17.8	< 17.8	**84.2**
SB-3	4-5	9/28/2018	< 0.00231	< 0.00231	< 0.00231	< 0.00231	< 0.00231	< 17.4	< 17.4	< 17.4	< 17.4	<5.76
	24-25	9/28/2018	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 0.00217	< 16.4	< 16.4	< 16.4	< 16.4	**37.8**
SB-4	4-5	9/28/2018	< 0.00219	< 0.00219	< 0.00219	< 0.00219	< 0.00219	< 16.2	< 16.2	< 16.2	< 16.2	< 5.46
	24-25	9/28/2018	< 0.00226	< 0.00226	< 0.00226	< 0.00226	< 0.00226	< 16.9	< 16.9	< 16.9	< 16.9	**513**
	34-35	9/28/2018	< 0.00236	< 0.00236	< 0.00236	< 0.00236	< 0.00236	< 17.7	< 17.7	< 17.7	< 17.7	**262**

Notes:

1. Highlighted values indicate exceedance of NMOCD regulatory limits
2. Bolded values indicate a detection above the reporting limit
3. < = Value less than Reporting Limit (RL)
4. TPH = Total petroleum hydrocarbons
5. GRO/DRO/MRO = Gasoline/Diesel/ Motor Oil Range Organics
6. NMOCD = New Mexico Oil Conservation Division
7. NMOCD screening criteria based on depth to groundwater less than 50'

Appendices

Appendix A
Approved Soil Delineation Work Plan and C-141

HOLLY ENERGY PARTNERS

APPROVED
By Olivia Yu at 11:10 am, Sep 10, 2018

August 17, 2018

Sent via e-mail to Olivia.Yu@state.nm.us

NMOCD approves of the proposed delineation plan for 1RP-5154.

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

And

Ms. Yolanda Jimenez
Bureau of Land Management
301 Dinosaur Trail
Santa Fe, New Mexico 87508

RE: Soil Delineation Work Plan – WTX to EMSU Battery to Byrd Pump Crude Oil Release

Dear Ms. Yu and Ms. Jimenez,

Please find the enclosed Soil Delineation Work Plan for the WTX to EMSU Battery to Byrd Pump Crude Oil Release Site. We look forward to receiving your approval for implementation of delineation activities.

Should you have any questions or concerns, please contact me at 214-954-6668 or mark.shemaria@hollyenergy.com.

Sincerely,

Mark Shemaria

Mark Shemaria
Senior Manager Regulatory &EHS

Enclosure

August 16, 2018 Reference No. 11181401

Ms. Olivia Yu
Environmental Specialist, District 1
Oil Conservation Division, EMNRD
1625 N French Dr.
Hobbs, New Mexico 88240

Ms. Yolanda Jimenez
Bureau of Land Management
301 Dinosaur Trail
Santa Fe, New Mexico 87508

Re: Soil Delineation Work Plan
WTX to EMSU Battery to Byrd Pump Crude Oil Release
Unit P, Section 11, Township 20, Range 36
Lea County, New Mexico

Dear Ms. Yu and Ms. Jimenez:

On behalf of Holly Energy Partners (HEP), GHD Services (GHD) is pleased to present this Soil Delineation Work Plan to the New Mexico Oil Conservation Division (NMOCD) and Bureau of Land Management (BLM) outlining our proposed approach to delineation activities for the WTX to EMSU Battery to Byrd Pump Crude Oil Release Site (hereafter referred to as the "Site").

1. Project Information and Background

The Site is located in Unit P, Section 11, Township 20, Range 36, approximately 3.2 miles southwest of Monument in eastern Lea County, New Mexico. The coordinates of the release location are – Latitude 32.583989, Longitude -103.317743. According to the NMOCD Release Notification and Corrective Action Form C-141 submitted to the agency by HEP, the release occurred on July 11, 2018 and was reported to Ms. Olivia Yu, Hobbs District 1 NMOCD office on August 10, 2018 (see attached C-141).

The release was initially detected during an air patrol fly over. The release was determined to have originated from a pinhole leak in the bottom of a pipe. HEP personnel shut down the pipe segment and the initial release volume was estimated at less than one barrel, therefore under reportable limits. HEP began excavation activities and determined that the affected area was larger than previously thought. The volume of the spill was reported as greater than 5 barrels of crude oil, of which 0.5 barrels were recovered. Excavation activities were halted on August 6, 2018 due to the discovery that the affected area was larger than originally estimated and impact to soil was deeper than anticipated (17 feet below ground surface (bgs)). The surface land owner (Klien) and the mineral owner (BLM) have been notified.

2. Soil Delineation

Depth to groundwater at the site is anticipated to be less than 50 feet bgs. As such, GHD will advance four (4) soil borings to delineate the petroleum hydrocarbon impact to soil in the vicinity of the release to total depths of approximately 35 feet below ground surface (bgs), groundwater is believed to be approximately 40-45 feet bgs at this location (see Figure 1). The following sections outline basic project details that will be completed by GHD and GHD subcontractors:

Field Program

The field program will consist of the following:

Soil Boring Installation:

- Prior to mobilizing the drilling equipment to the Site, a site visit will be performed by GHD to mark the proposed boring locations for New Mexico 811 notification. A One Call ticket will be initiated by the driller to identify subsurface hazards within the proposed drilling areas;
- Findings will be confirmed following the One Call notification and marking;
- An air-rotary drilling rig, operated by a licensed State of New Mexico water well driller, will be utilized to advance the proposed borings;
- A geologist will record the subsurface lithology and sample data on soil boring logs. At a minimum, soil samples will be collected with split-spoon samplers decontaminated between each sampling interval, initially 2-foot intervals to a depth of 10 feet bgs, then at 5-foot intervals to the maximum termination depth of 35 feet bgs;
- Soil samples collected from each sampling interval will be visually inspected, logged, and recorded for stratigraphy in accordance with the Unified Soil Classification System (USCS), and field screened for volatile organic compounds (VOCs) using a photoionization detector (PID) calibrated with isobutylene. A portion of each soil sample will be placed in a ZipLoc® bag, allowed to sit for approximately 5 minutes, and then field screened for VOCs with the PID;
- Up to three soil samples will be collected for laboratory analysis from each borehole. These will include the sample with highest PID reading and the sample from the terminal depth of each borehole. One additional sample will be collected from within each borehole;
- Selected soil samples will be submitted for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) via EPA Test Method 8021B, total petroleum hydrocarbon (TPH) by EPA Method 8015 Modified, and chloride by EPA Method 300;
- After completion of drilling and sampling activities to the target depths, each soil boring will be backfilled using a bentonite/cement slurry to the surface;

- Investigation Derived Waste (IDW - soil cuttings) generated from drilling and sampling activities will be contained in 55-gallon drums, staged on-site, and properly disposed following evaluation of soil sample analytical results and waste profiling; and
- Borings will not be advanced into the groundwater table; therefore, a plugging plan will not be required by the New Mexico State Engineer's Office.

Health and Safety Considerations

Personal protective equipment, including fire-retardant clothing, steel-toed work boots, gloves, safety glasses, H2S monitoring, and hard hats will be required during all field tasks. The project health and safety plan will be prepared, reviewed and signed by on-Site personnel, subcontractors, and authorized visitors, and maintained at the Site. A project kick-off/tail-gate safety meeting will be conducted with the field team prior to implementation of field activities each day.

Quality Assurance/ Quality Control soil sampling will be completed in accordance with our standard Quality Assurance/ Quality Control procedures designed to minimize cross-contamination between samples and to provide reliable laboratory results.

Reporting

A letter report summarizing assessment activities will be submitted to the NMOCD. The letter report will include a Site description, project history, description of field events, a discussion of results, and recommendations for a path forward.

The report will include:

- A scaled Site plan showing the locations of the soil borings and other Site features;
- Soil boring logs;
- Tabulation of field screening and laboratory analytical results;
- Copies of landfill manifests;
- Geotagged photographic documentation of field activities; and
- Assessment results and recommended path forward.

3. Work Plan Approval Request

GHD is prepared to initiate the proposed work plan activities immediately upon NMOCD and BLM concurrence. If you have any questions or comments with regards to this work plan, please do not hesitate to contact our Houston office at (713) 734-3090. Your timely response to this correspondence is appreciated.

Sincerely,

GHD

Scott Foord
Project Manager

Raaj Patel
Program Manager

SF/sh/1

Encl.

Attachments: C-141 Form

Figure 1 – Proposed Soil Boring Location Map

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Repor

Name of Company - Holly Energy Partners (HEP)	Contact - Melanie Nolan
Address 1602 W. Main, Artesia NM 88210	Telephone No. - 214-6058303
Facility Name – WTX to EMSU Battery to Byrd Pump Segment	Facility Type - Pipeline

Surface Owner - Private - Klein	Mineral Owner Federal	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	11	20	36					Lea

Latitude 32.583989 Longitude -103.317743 NAD83

NATURE OF RELEASE

Type of Release – Crude Oil	Volume of Release – Greater than 5 barrels	Volume Recovered – ½ barrel
Source of Release – Pinhole leak in bottom of pipe	Date and Hour of Occurrence - 7/11/18 1310	Date and Hour of Discovery
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

RECEIVED
By Olivia Yu at 11:33 am, Aug 10, 2018

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Air Patrol flying our West Texas Crude district spotted a leak west of Monument Jct. HEP personnel confirmed leak and shut down pipe segment. At initial encounter the release was determined to be less than a barrel of crude. Pipe repair was completed and initial excavation of contaminated soil started. Initially release was not reported due to initial estimates being under reportable limits. On 8/6/18 excavation was halted due to discovery that initial area affected is larger than previously thought. Current estimates of what has been excavated are around the 5 barrel amount but no confirmation of exact amount at this time. Surface owner has been notified of release and our Right-of-Way department is in communication with them.

Describe Area Affected and Cleanup Action Taken.* HEP is in process of hiring an outside consulting firm to perform delineation of release site in order to develop a comprehensive remediation to address the clean-up.

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

Signature: Melanie A. Nolan	OIL CONSERVATION DIVISION
Printed Name: Melanie A. Nolan	Approved by Environmental Specialist:
Title: Environmental Specialist I	Approval Date: 8/10/2018 Expiration Date:
E-mail Address: Melanie.Nolan@hollyenergy.com	Conditions of Approval: see attached directive Attached ☐
Date: 8/10/2018 Phone: 575-748-8972	

* Attach Additional Sheets If Necessary

fOY1822242653 1RP-5154 nOY1822242858 pOY1822242910

Operator/Responsible Party,

The OCD has received the form C-141 you provided on _8/10/2018_ regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number _1RP-5154__ has been assigned. **Please refer to this case number in all future correspondence.**

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

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

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District _1_ office in __Hobbs____ on or before _9/10/2018_. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

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

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

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

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

● Composite sampling is not generally allowed.

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

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

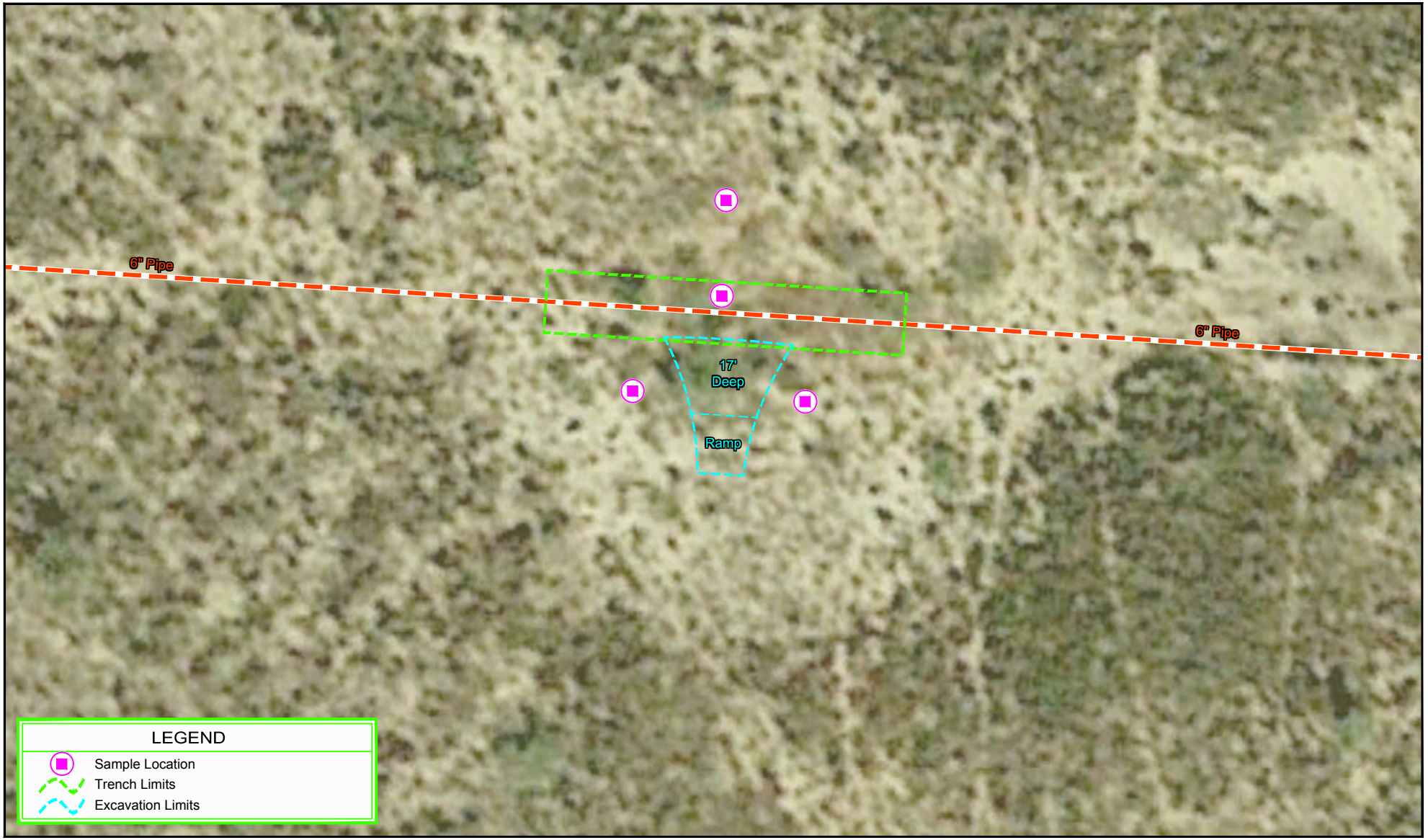
●Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less,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

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

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

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

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



Source: Image © 2018 Google - Imagery Date: November 2, 2017

Lat/Long: 32.583989° North, 103.317743° West

0 10 20ft

Approximate Scale

HOLLY ENERGY PARTNERS
MONUMENT, LEA COUNTY, NEW MEXICO
WTX TO EMSU BATTERY RELEASE SITE

11181401-00

Aug 14, 2018

PROPOSED SOIL BORING LOCATIONS

FIGURE 1

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1118----\1118140-HEP-WTX to EMSU Batt Release\Proposal\11181401-00(Proposal-01)GN-DL001.dwg

Appendix B
Boring Logs

STRATIGRAPHIC LOG (OVERBURDEN)

PROJECT NAME: WTX EMSU Battery Release Site
PROJECT NUMBER: 11182283
CLIENT: Holly Energy Pipeline
LOCATION: Lea County, New Mexico
Envirotech Drilling

HOLE DESIGNATION: SB-1
DATE COMPLETED: 28 September 2018
DRILLING METHOD: Hand Auger, HSA
FIELD PERSONNEL: Tom Kalinowski

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE VOC (ppm)
0	Sand-Silty, Brown, Moist						
2							
4			4-5	HA	1.0		0
5		5.00					
6	Caliche-White, Dry						
8							0
10		10.00					
10	Caliche-White, Dry						0
12		12.00					
12	Fine Sand-Silty tan, moist						
14							0
15		15.00					
16	Caliche-White, Dry						
18							0.4
20		20.00					
20	Fine Sand-Silty Dark Brown, Moist		20-21		1.0		
22							6.0
24							
25		25.00					
26	Fine Sand-Some caliche, white, dry						
28							5.7
30		30.00					
30	Fine Sand-Brown, Moist						
32							6.1
33		33.00					
34	Fine Sand- Some clay-Brown, white, orange		34-35		1.0		11.8
35		35.00					
36	END OF BOREHOLE @ 35.0ft BGS						
38							

NOTES: Stratigraphy descriptions are based on drill cuttings

LABORATORY ANALYSIS (HA)

OVERBURDEN LOG HOLLY ENERGY PIPELINE.GPJ CRA_CORP.GDT 18/10/18

STRATIGRAPHIC LOG (OVERBURDEN)

PROJECT NAME: WTX EMSU Battery Release Site
PROJECT NUMBER: 11182283
CLIENT: Holly Energy Pipeline
LOCATION: Lea County, New Mexico
Envirotech Drilling

HOLE DESIGNATION: SB-2
DATE COMPLETED: 28 September 2018
DRILLING METHOD: Hand Auger, HSA
FIELD PERSONNEL: Tom Kalinowski

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE VOC (ppm)
2	Fine Sand-Silty, Brown, White, Dry						0
4			4-5	HA	1.0		0
6	Fine Sand-Silty, Brown, White, Dry	5.00					5.2
8							
10	Fine Sand- Sitly, Brown, Dry, Fine gravel	10.00	10-11		1.0		17.9
12	Caliche-White, Dry	12.00					5.8
14							
16	Caliche-White, Dry	15.00					0.8
	Fine Sand, Light Tan, Dry	16.00					0.3
18							
20	Fine Sand, Caliche, White, Dry	20.00					6.5
22							
24							
26	Fine Sand, Silty, Light Tan, Dry	25.00					0.2
28							
30	Fine Sand, Silty, Some clay, Brown, Very Moist	30.00					
32							
34			34-35		1.0		2.3
36	END OF BOREHOLE @ 35.0ft BGS	35.00					
38							

NOTES: Stratigraphy descriptions are based on drill cuttings

LABORATORY ANALYSIS (4-5, 10-11, 34-35)

OVERBURDEN LOG HOLLY ENERGY PIPELINE.GPJ CRA_CORP.GDT 18/10/18

STRATIGRAPHIC LOG (OVERBURDEN)

PROJECT NAME: WTX EMSU Battery Release Site
PROJECT NUMBER: 11182283
CLIENT: Holly Energy Pipeline
LOCATION: Lea County, New Mexico
Envirotech Drilling

HOLE DESIGNATION: SB-3
DATE COMPLETED: 28 September 2018
DRILLING METHOD: Hand Auger, HSA
FIELD PERSONNEL: Tom Kalinowski

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE VOC (ppm)
2	Fine Sand, Silty Brown to White Dry						0
4			4-5	HA	1.0		0
6	Fine Sand, Silty White, Dry	5.00					
8							0
10	Caliche-White, Dry	10.00					
12							0
14							
16	Fine Sand-Silty, Some Caliche, Brown, White, Dry	15.00					
18							0
20	Caliche-White, Dry	20.00					
22							
24			24-25	X	1.0		0
26	END OF BOREHOLE @ 25.0ft BGS	25.00					
28							
30							
32							
34							
36							
38							

NOTES: Stratigraphy descriptions are based on drill cuttings

LABORATORY ANALYSIS (HA)

OVERBURDEN LOG HOLLY ENERGY PIPELINE.GPJ CRA_CORP.GDT 18/10/18

STRATIGRAPHIC LOG (OVERBURDEN)

PROJECT NAME: WTX EMSU Battery Release Site
PROJECT NUMBER: 11182283
CLIENT: Holly Energy Pipeline
LOCATION: Lea County, New Mexico
Envirotech Drilling

HOLE DESIGNATION: SB-4
DATE COMPLETED: 28 September 2018
DRILLING METHOD: Hand Auger, HSA
FIELD PERSONNEL: Tom Kalinowski

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE VOC (ppm)
0	Fine Sand-Silty, Brown to White, Dry						
2							0
4			4-5	HA	1.0		0
		5.00					
6	Fine Sand-Silty, Brown, Dry						
8							0
10		10.00					
	Fine Sand-Silty, Brown, Dry						
12							0
14							
		15.00					
16	Fine Sand-Silty, Brown, Dry						0
		17.00					
18	Caliche-White, Dry						0
20		20.00					
	Caliche-White, Dry						
22							
24			24-25		1.0		0
		25.00					
26	Fine Sand-Silty, Brown, Dry						0
		27.00					
28	Caliche-White, Dry						0
30		30.00					
	Fine Sand-Silty, Reddish Brown, Dry						
32							0
34			34-35		1.0		0
		35.00					
36	END OF BOREHOLE @ 35.0ft BGS						
38							

NOTES: Stratigraphy descriptions are based on drill cuttings

LABORATORY ANALYSIS ( )

OVERBURDEN LOG HOLLY ENERGY PIPELINE.GPJ CRA_CORP.GDT 18/10/18

Appendix C
Certified Analytical Reports

October 4, 2018

Scott Foord
GHD Services, INC- Midland
2135 S Loop 250 W Midland, TX 79703

Please find the attached Confirmation of Sample Receipt for samples received by our laboratory on 10/03/2018. The samples have been logged in for a 7 Days turnaround with results due 10/12/2018. The following is our understanding of your project requirements as described on the enclosed chain of custody form. To ensure that your needs are met, please take a moment to verify that:

1. The number and type of samples received are correct.

2. The analytical methods specified are correct.

3. Due dates for analytical results are correct.

4. Address, phone and fax information are correct.

Your samples will be retained for a period of 60 business days following receipt of the samples. After that time, they will be properly disposed of without further notice, unless there is an acknowledged written request. We reserve the right to return any unused samples, extracts or related solutions that have been identified as hazardous waste, are controlled substances under regulated protocols or have sample sizes exceeding standard analytical practices.

If there are any questions, please do not hesitate to contact your Project Manager and reference work order number **601287**

Confirmation of Sample Receipt # 601287

The following samples were received on Oct 03,2018 and will be analyzed as follows:

Client: GHD Services, INC- Midland
Lab PM: Debbie Simmons
Project ID: 11182283-2018-001
Project Name: WTX EMSU Battery Release Site
Location:
QC Package: Texas Level II Results per Page - Summary Cover
EDD Type:

Turnaround: 7 Days
Results Due: Oct-12-2018 17:00
Report to Scott Foord

Client Sample ID	Depth	Lab ID	Method Name (Analysis)	Matrix	Sampled
SB-1-S-4-5-180928	4-5	601287-001	Percent Moisture	Soil	09/28/18 09:15
SB-1-S-4-5-180928	4-5	601287-001	Chloride by EPA 300	Soil	09/28/18 09:15
SB-1-S-4-5-180928	4-5	601287-001	TPH By SW8015 Mod	Soil	09/28/18 09:15
SB-1-S-4-5-180928	4-5	601287-001	BTEX by EPA 8021B	Soil	09/28/18 09:15
SB-1-S-20-21-180928	20-21	601287-002	Percent Moisture	Soil	09/28/18 10:10
SB-1-S-20-21-180928	20-21	601287-002	Chloride by EPA 300	Soil	09/28/18 10:10
SB-1-S-20-21-180928	20-21	601287-002	TPH By SW8015 Mod	Soil	09/28/18 10:10
SB-1-S-20-21-180928	20-21	601287-002	BTEX by EPA 8021B	Soil	09/28/18 10:10
SB-1-S-34-35-180928	34-35	601287-003	Percent Moisture	Soil	09/28/18 10:35
SB-1-S-34-35-180928	34-35	601287-003	Chloride by EPA 300	Soil	09/28/18 10:35
SB-1-S-34-35-180928	34-35	601287-003	TPH By SW8015 Mod	Soil	09/28/18 10:35
SB-1-S-34-35-180928	34-35	601287-003	BTEX by EPA 8021B	Soil	09/28/18 10:35
SB-2-S-4-5-180928	4-5	601287-004	Percent Moisture	Soil	09/28/18 11:10
SB-2-S-4-5-180928	4-5	601287-004	Chloride by EPA 300	Soil	09/28/18 11:10
SB-2-S-4-5-180928	4-5	601287-004	TPH By SW8015 Mod	Soil	09/28/18 11:10
SB-2-S-4-5-180928	4-5	601287-004	BTEX by EPA 8021B	Soil	09/28/18 11:10
SB-2-S-10-11-180928	10-11	601287-005	Percent Moisture	Soil	09/28/18 12:05
SB-2-S-10-11-180928	10-11	601287-005	Chloride by EPA 300	Soil	09/28/18 12:05
SB-2-S-10-11-180928	10-11	601287-005	TPH By SW8015 Mod	Soil	09/28/18 12:05
SB-2-S-10-11-180928	10-11	601287-005	BTEX by EPA 8021B	Soil	09/28/18 12:05
SB-2-S-34-35-180928	34-35	601287-006	Percent Moisture	Soil	09/28/18 12:15
SB-2-S-34-35-180928	34-35	601287-006	Chloride by EPA 300	Soil	09/28/18 12:15
SB-2-S-34-35-180928	34-35	601287-006	TPH By SW8015 Mod	Soil	09/28/18 12:15
SB-2-S-34-35-180928	34-35	601287-006	BTEX by EPA 8021B	Soil	09/28/18 12:15
SB-3-S-4-5-180928	4-5	601287-007	Percent Moisture	Soil	09/28/18 12:45
SB-3-S-4-5-180928	4-5	601287-007	Chloride by EPA 300	Soil	09/28/18 12:45
SB-3-S-4-5-180928	4-5	601287-007	TPH By SW8015 Mod	Soil	09/28/18 12:45
SB-3-S-4-5-180928	4-5	601287-007	BTEX by EPA 8021B	Soil	09/28/18 12:45
SB-3-S-24-25-180928	24-25	601287-008	Percent Moisture	Soil	09/28/18 14:00
SB-3-S-24-25-180928	24-25	601287-008	Chloride by EPA 300	Soil	09/28/18 14:00
SB-3-S-24-25-180928	24-25	601287-008	TPH By SW8015 Mod	Soil	09/28/18 14:00
SB-3-S-24-25-180928	24-25	601287-008	BTEX by EPA 8021B	Soil	09/28/18 14:00
SB-4-S-4-5-180928	4-5	601287-009	Percent Moisture	Soil	09/28/18 15:10
SB-4-S-4-5-180928	4-5	601287-009	Chloride by EPA 300	Soil	09/28/18 15:10
SB-4-S-4-5-180928	4-5	601287-009	TPH By SW8015 Mod	Soil	09/28/18 15:10

Confirmation of Sample Receipt # 601287

Client: **GHD Services, INC- Midland**
Lab PM: Debbie Simmons
Project ID: 11182283-2018-001
Project Name: WTX EMSU Battery Release Site
Location:
QC Package: Texas Level II Results per Page - Summary Cover
EDD Type:

Turnaround: 7 Days
Results Due: Oct-12-2018 17:00
Report to Scott Foord

Client Sample ID	Depth	Lab ID	Method Name (Analysis)	Matrix	Sampled
SB-4-S-4-5-180928	4-5	601287-009	BTEX by EPA 8021B	Soil	09/28/18 15:10
SB-4-S-24-25-180928	24-25	601287-010	Percent Moisture	Soil	09/28/18 16:20
SB-4-S-24-25-180928	24-25	601287-010	Chloride by EPA 300	Soil	09/28/18 16:20
SB-4-S-24-25-180928	24-25	601287-010	TPH By SW8015 Mod	Soil	09/28/18 16:20
SB-4-S-24-25-180928	24-25	601287-010	BTEX by EPA 8021B	Soil	09/28/18 16:20
SB-1-S-34-35-180928	34-35	601287-011	Percent Moisture	Soil	09/28/18 17:00
SB-1-S-34-35-180928	34-35	601287-011	Chloride by EPA 300	Soil	09/28/18 17:00
SB-1-S-34-35-180928	34-35	601287-011	TPH By SW8015 Mod	Soil	09/28/18 17:00
SB-1-S-34-35-180928	34-35	601287-011	BTEX by EPA 8021B	Soil	09/28/18 17:00

Special Instructions:

Chain of Custody

Work Order No: 601207

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 2

Project Manager:	Scott Foord	Bill to: (if different)	
Company Name:	GHD	Company Name:	
Address:	2135 S. Loop 250 West	Address:	
City, State ZIP:	Midland, TX. 79703	City, State ZIP:	
Phone:	713-724-3967	Email:	Scott.Foord@ghd.com & Christopher.Knight@ghd.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	WTX to EMSU Battery Release Site	Turn Around	
Project Number:	11182283-2018-001	Routine	☑
P.O. Number:		Rush:	
Sampler's Name:		Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	3.0	Thermometer ID:	120
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No N/A	Correction Factor:	0.0
Sample Custody Seals:	Yes No N/A	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	BTEX 8021	TPH 8015	Chloride	% Moisture	Sample Comments
SB-1-S-4-5-180928	S	9-28-18	0915	4-5	2	X	X	X	X	
SB-1-S-20-21-180928			1010	20-21	2	X	X	X	X	
SB-1-S-34-35-180928			1035	34-35	2	X	X	X	X	
SB-2-S-4-5-180928			1110	4-5	2	X	X	X	X	
SB-2-S-10-11-180928			1205	10-11	2	X	X	X	X	
SB-2-S-34-35-180928			1215	34-35	2	X	X	X	X	
SB-3-S-4-5-180928			1245	4-5	2	X	X	X	X	
SB-3-S-24-25-180928			1400	24-25	2	X	X	X	X	
SB-4-S-4-5-180928			1510	4-5	2	X	X	X	X	
SB-4-S-24-25-180928	V	V	1620	24-25	2	X	X	X	X	

ANALYSIS REQUEST

Work Order Notes

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

Page 4 of 6

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		10/3 1648	2		
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

Chain of Custody

Work Order No: 601287

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 2 of 2

Project Manager:	Scott Foord	Bill to: (if different)	
Company Name:	GHD	Company Name:	
Address:	2135 S. Loop 250 West	Address:	
City, State ZIP:	Midland, TX. 79703	City, State ZIP:	
Phone:	713-724-3967	Email:	Scott.Foord@ghd.com & Christopher.Knight@ghd.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	WTX to EMSU Battery Release Site	Turn Around	
Project Number:	11182283-2018-001	Routine ☑	
P.O. Number:		Rush:	
Sampler's Name:		Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	3.3	Thermometer ID	120
Received Intact:	~~Yes~~ No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	0.0
Sample Custody Seals:	Yes (No) N/A	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	BTEX 8021	TPH 8015	Chloride	% Moisture
SB-4-S-34-35-180928	S	9-28-18	1700	34-35	2	X	X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		10/3 1648	2		
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: GHD Services, INC- Midland

Date/ Time Received: 10/03/2018 04:48:00 PM

Work Order #: 601287

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5.3
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Katie Lowe Date: 10/04/2018

Checklist reviewed by: Debbie Simmons Date: 10/04/2018

Debbie Simmons

Certificate of Analysis Summary 601287

GHD Services, INC- Midland, Midland, TX

Project Name: WTX EMSU Battery Release Site

Project Id: 11182283-2018-001
Contact: Scott Foord
Project Location:

Date Received in Lab: Wed Oct-03-18 04:48 pm
Report Date: 16-OCT-18
Project Manager: Debbie Simmons

Analysis Requested													
	Lab Id:	601287-001		601287-002		601287-003		601287-004		601287-005		601287-006	
	Field Id:	SB-1-S-4-5-180928		SB-1-S-20-21-180928		SB-1-S-34-35-180928		SB-2-S-4-5-180928		SB-2-S-10-11-180928		SB-2-S-34-35-180928	
	Depth:	4-5		20-21		34-35		4-5		10-11		34-35	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-28-18 09:15		Sep-28-18 10:10		Sep-28-18 10:35		Sep-28-18 11:10		Sep-28-18 12:05		Sep-28-18 12:15	
BTEX by EPA 8021B	***Extracted:***	Oct-09-18 17:00		Oct-09-18 17:00		Oct-09-18 17:00		Oct-09-18 17:00		Oct-09-18 17:00		Oct-09-18 17:00	
	Analyzed:	Oct-12-18 02:30		Oct-12-18 02:52		Oct-12-18 03:13		Oct-12-18 03:34		Oct-12-18 03:56		Oct-12-18 04:19	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00210	0.00210	<0.00271	0.00271	<0.00242	0.00242	<0.00215	0.00215	<0.00225	0.00225	<0.00238	0.00238
Toluene		<0.00210	0.00210	<0.00271	0.00271	<0.00242	0.00242	<0.00215	0.00215	<0.00225	0.00225	<0.00238	0.00238
Ethylbenzene		<0.00210	0.00210	<0.00271	0.00271	0.00418	0.00242	<0.00215	0.00215	<0.00225	0.00225	<0.00238	0.00238
m,p-Xylenes		<0.00419	0.00419	<0.00542	0.00542	0.0166	0.00483	<0.00431	0.00431	<0.00450	0.00450	<0.00475	0.00475
o-Xylene		<0.00210	0.00210	<0.00271	0.00271	<0.00242	0.00242	<0.00215	0.00215	<0.00225	0.00225	<0.00238	0.00238
Total Xylenes		<0.00210	0.00210	<0.00271	0.00271	0.0166	0.00242	<0.00215	0.00215	<0.00225	0.00225	<0.00238	0.00238
Total BTEX		<0.00210	0.00210	<0.00271	0.00271	0.0208	0.00242	<0.00215	0.00215	<0.00225	0.00225	<0.00238	0.00238
Chloride by EPA 300	***Extracted:***	Oct-05-18 08:30		Oct-05-18 08:30		Oct-05-18 08:30		Oct-05-18 08:30		Oct-05-18 08:30		Oct-05-18 08:30	
	Analyzed:	Oct-05-18 09:23		Oct-05-18 10:37		Oct-05-18 10:42		Oct-05-18 10:59		Oct-05-18 11:05		Oct-05-18 11:22	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<5.22	5.22	625	6.82	77.9	6.00	<5.34	5.34	381	5.61	84.2	5.91
Percent Moisture	***Extracted:***												
	Analyzed:	Oct-04-18 11:00		Oct-04-18 11:00		Oct-04-18 11:00		Oct-04-18 11:00		Oct-04-18 11:00		Oct-04-18 11:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.76		26.7		17.2		6.78		10.7		16.2	
TPH By SW8015 Mod	***Extracted:***	Oct-05-18 11:00		Oct-05-18 11:00		Oct-05-18 11:00		Oct-05-18 11:00		Oct-05-18 11:00		Oct-05-18 11:00	
	Analyzed:	Oct-05-18 12:00		Oct-05-18 12:58		Oct-05-18 13:17		Oct-05-18 13:36		Oct-05-18 13:55		Oct-05-18 14:15	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.7	15.7	<20.4	20.4	34.1	18.1	<16.0	16.0	<16.8	16.8	<17.8	17.8
Diesel Range Organics (DRO)		<15.7	15.7	22.7	20.4	1030	18.1	<16.0	16.0	<16.8	16.8	<17.8	17.8
Motor Oil Range Hydrocarbons (MRO)		<15.7	15.7	<20.4	20.4	178	18.1	<16.0	16.0	<16.8	16.8	<17.8	17.8
Total TPH		<15.7	15.7	22.7	20.4	1240	18.1	<16.0	16.0	<16.8	16.8	<17.8	17.8

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Version: 1.%

Debbie Simmons
Project Manager

Certificate of Analysis Summary 601287

GHD Services, INC- Midland, Midland, TX

Project Name: WTX EMSU Battery Release Site

Project Id: 11182283-2018-001
Contact: Scott Foord
Project Location:

Date Received in Lab: Wed Oct-03-18 04:48 pm
Report Date: 16-OCT-18
Project Manager: Debbie Simmons

Analysis Requested											
	Lab Id:	601287-007		601287-008		601287-009		601287-010		601287-011	
	Field Id:	SB-3-S-4-5-180928		SB-3-S-24-25-180928		SB-4-S-4-5-180928		SB-4-S-24-25-180928		SB-4-S-34-35-180928	
	Depth:	4-5		24-25		4-5		24-25		34-35	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-28-18 12:45		Sep-28-18 14:00		Sep-28-18 15:10		Sep-28-18 16:20		Sep-28-18 17:00	
BTEX by EPA 8021B	***Extracted:***	Oct-09-18 17:00		Oct-09-18 17:00		Oct-09-18 17:00		Oct-09-18 17:00		Oct-09-18 17:00	
	Analyzed:	Oct-12-18 04:40		Oct-12-18 05:02		Oct-12-18 05:23		Oct-12-18 06:26		Oct-12-18 06:47	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00231	0.00231	<0.00217	0.00217	<0.00219	0.00219	<0.00226	0.00226	<0.00236	0.00236
Toluene		<0.00231	0.00231	<0.00217	0.00217	<0.00219	0.00219	<0.00226	0.00226	<0.00236	0.00236
Ethylbenzene		<0.00231	0.00231	<0.00217	0.00217	<0.00219	0.00219	<0.00226	0.00226	<0.00236	0.00236
m,p-Xylenes		<0.00463	0.00463	<0.00435	0.00435	<0.00437	0.00437	<0.00452	0.00452	<0.00471	0.00471
o-Xylene		<0.00231	0.00231	<0.00217	0.00217	<0.00219	0.00219	<0.00226	0.00226	<0.00236	0.00236
Total Xylenes		<0.00231	0.00231	<0.00217	0.00217	<0.00219	0.00219	<0.00226	0.00226	<0.00236	0.00236
Total BTEX		<0.00231	0.00231	<0.00217	0.00217	<0.00219	0.00219	<0.00226	0.00226	<0.00236	0.00236
Chloride by EPA 300	***Extracted:***	Oct-05-18 08:30		Oct-05-18 08:30		Oct-05-18 08:30		Oct-05-18 08:30		Oct-05-18 08:30	
	Analyzed:	Oct-05-18 11:28		Oct-05-18 11:33		Oct-05-18 11:39		Oct-05-18 11:45		Oct-05-18 11:50	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<5.76	5.76	37.8	5.54	<5.46	5.46	513	5.59	262	5.89
Percent Moisture	***Extracted:***										
	Analyzed:	Oct-04-18 11:00		Oct-04-18 11:00		Oct-04-18 11:00		Oct-04-18 11:00		Oct-04-18 11:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		14.1		8.87		7.77		11.2		15.3	
TPH By SW8015 Mod	***Extracted:***	Oct-05-18 11:00		Oct-05-18 11:00		Oct-05-18 11:00		Oct-05-18 11:00		Oct-05-18 11:00	
	Analyzed:	Oct-05-18 14:34		Oct-05-18 14:54		Oct-05-18 15:14		Oct-05-18 15:33		Oct-05-18 16:32	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<17.4	17.4	<16.4	16.4	<16.2	16.2	<16.9	16.9	<17.7	17.7
Diesel Range Organics (DRO)		<17.4	17.4	<16.4	16.4	<16.2	16.2	<16.9	16.9	<17.7	17.7
Motor Oil Range Hydrocarbons (MRO)		<17.4	17.4	<16.4	16.4	<16.2	16.2	<16.9	16.9	<17.7	17.7
Total TPH		<17.4	17.4	<16.4	16.4	<16.2	16.2	<16.9	16.9	<17.7	17.7

Version: 1.%

Debbie Simmons
Project Manager

Analytical Report 601287

for

GHD Services, INC- Midland

Project Manager: Scott Foord

WTX EMSU Battery Release Site

11182283-2018-001

16-OCT-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-27), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-13)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-17)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

16-OCT-18

Project Manager: **Scott Foord**
GHD Services, INC- Midland
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **601287**
WTX EMSU Battery Release Site
Project Address:

Scott Foord:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 601287. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 601287 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Debbie Simmons

Debbie Simmons
Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

Sample Cross Reference 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-1-S-4-5-180928	S	09-28-18 09:15	4 - 5	601287-001
SB-1-S-20-21-180928	S	09-28-18 10:10	20 - 21	601287-002
SB-1-S-34-35-180928	S	09-28-18 10:35	34 - 35	601287-003
SB-2-S-4-5-180928	S	09-28-18 11:10	4 - 5	601287-004
SB-2-S-10-11-180928	S	09-28-18 12:05	10 - 11	601287-005
SB-2-S-34-35-180928	S	09-28-18 12:15	34 - 35	601287-006
SB-3-S-4-5-180928	S	09-28-18 12:45	4 - 5	601287-007
SB-3-S-24-25-180928	S	09-28-18 14:00	24 - 25	601287-008
SB-4-S-4-5-180928	S	09-28-18 15:10	4 - 5	601287-009
SB-4-S-24-25-180928	S	09-28-18 16:20	24 - 25	601287-010
SB-4-S-34-35-180928	S	09-28-18 17:00	34 - 35	601287-011

CASE NARRATIVE

Client Name: GHD Services, INC- Midland

Project Name: WTX EMSU Battery Release Site

Project ID:	*11182283-2018-001*	Report Date:	*16-OCT-18*
Work Order Number(s):	*601287*	Date Received:	*10/03/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3066220 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-1-S-4-5-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-001	Date Collected:	09.28.18 09.15	Sample Depth:	4 - 5

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	4.76
Analyst:	SCM	Date Prep:	10.05.18 08.30	Basis:	Dry Weight
Seq Number:	3065622				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.22	5.22	mg/kg	10.05.18 09.23	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	4.76
Analyst:	ARM	Date Prep:	10.05.18 11.00	Basis:	Dry Weight
Seq Number:	3065664				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.7	15.7	mg/kg	10.05.18 12.00	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.7	15.7	mg/kg	10.05.18 12.00	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.7	15.7	mg/kg	10.05.18 12.00	U	1
Total TPH	PHC635	<15.7	15.7	mg/kg	10.05.18 12.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.05.18 12.00	
o-Terphenyl	84-15-1	98	%	70-135	10.05.18 12.00	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-1-S-4-5-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-001	Date Collected:	09.28.18 09.15	Sample Depth:	4 - 5
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	4.76
Analyst:	ALJ	Date Prep:	10.09.18 17.00	Basis:	Dry Weight
Seq Number:	3066220				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00210	0.00210	mg/kg	10.12.18 02.30	U	1
Toluene	108-88-3	<0.00210	0.00210	mg/kg	10.12.18 02.30	U	1
Ethylbenzene	100-41-4	<0.00210	0.00210	mg/kg	10.12.18 02.30	U	1
m,p-Xylenes	179601-23-1	<0.00419	0.00419	mg/kg	10.12.18 02.30	U	1
o-Xylene	95-47-6	<0.00210	0.00210	mg/kg	10.12.18 02.30	U	1
Total Xylenes	1330-20-7	<0.00210	0.00210	mg/kg	10.12.18 02.30	U	1
Total BTEX		<0.00210	0.00210	mg/kg	10.12.18 02.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98	%	70-130	10.12.18 02.30	
1,4-Difluorobenzene	540-36-3	110	%	70-130	10.12.18 02.30	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-1-S-20-21-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-002	Date Collected:	09.28.18 10.10	Sample Depth:	20 - 21

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	26.72
Analyst:	SCM	Date Prep:	10.05.18 08.30	Basis:	Dry Weight
Seq Number:	3065622				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**625**	6.82	mg/kg	10.05.18 10.37		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	26.72
Analyst:	ARM	Date Prep:	10.05.18 11.00	Basis:	Dry Weight
Seq Number:	3065664				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<20.4	20.4	mg/kg	10.05.18 12.58	U	1
Diesel Range Organics (DRO)	C10C28DRO	**22.7**	20.4	mg/kg	10.05.18 12.58		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<20.4	20.4	mg/kg	10.05.18 12.58	U	1
Total TPH	PHC635	**22.7**	20.4	mg/kg	10.05.18 12.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	10.05.18 12.58	
o-Terphenyl	84-15-1	97	%	70-135	10.05.18 12.58	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-1-S-20-21-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-002	Date Collected:	09.28.18 10.10	Sample Depth:	20 - 21
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	26.72
Analyst:	ALJ	Date Prep:	10.09.18 17.00	Basis:	Dry Weight
Seq Number:	3066220				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00271	0.00271	mg/kg	10.12.18 02.52	U	1
Toluene	108-88-3	<0.00271	0.00271	mg/kg	10.12.18 02.52	U	1
Ethylbenzene	100-41-4	<0.00271	0.00271	mg/kg	10.12.18 02.52	U	1
m,p-Xylenes	179601-23-1	<0.00542	0.00542	mg/kg	10.12.18 02.52	U	1
o-Xylene	95-47-6	<0.00271	0.00271	mg/kg	10.12.18 02.52	U	1
Total Xylenes	1330-20-7	<0.00271	0.00271	mg/kg	10.12.18 02.52	U	1
Total BTEX		<0.00271	0.00271	mg/kg	10.12.18 02.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	76	%	70-130	10.12.18 02.52	
1,4-Difluorobenzene	540-36-3	109	%	70-130	10.12.18 02.52	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-1-S-34-35-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-003	Date Collected:	09.28.18 10.35	Sample Depth:	34 - 35

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	17.23
Analyst:	SCM	Date Prep:	10.05.18 08.30	Basis:	Dry Weight
Seq Number:	3065622				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**77.9**	6.00	mg/kg	10.05.18 10.42		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	17.23
Analyst:	ARM	Date Prep:	10.05.18 11.00	Basis:	Dry Weight
Seq Number:	3065664				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**34.1**	18.1	mg/kg	10.05.18 13.17		1
Diesel Range Organics (DRO)	C10C28DRO	**1030**	18.1	mg/kg	10.05.18 13.17		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**178**	18.1	mg/kg	10.05.18 13.17		1
Total TPH	PHC635	**1240**	18.1	mg/kg	10.05.18 13.17		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	10.05.18 13.17	
o-Terphenyl	84-15-1	104	%	70-135	10.05.18 13.17	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-1-S-34-35-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-003	Date Collected:	09.28.18 10.35	Sample Depth:	34 - 35
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	17.23
Analyst:	ALJ	Date Prep:	10.09.18 17.00	Basis:	Dry Weight
Seq Number:	3066220				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00242	0.00242	mg/kg	10.12.18 03.13	U	1
Toluene	108-88-3	<0.00242	0.00242	mg/kg	10.12.18 03.13	U	1
Ethylbenzene	100-41-4	**0.00418**	0.00242	mg/kg	10.12.18 03.13		1
m,p-Xylenes	179601-23-1	**0.0166**	0.00483	mg/kg	10.12.18 03.13		1
o-Xylene	95-47-6	<0.00242	0.00242	mg/kg	10.12.18 03.13	U	1
Total Xylenes	1330-20-7	**0.0166**	0.00242	mg/kg	10.12.18 03.13		1
Total BTEX		**0.0208**	0.00242	mg/kg	10.12.18 03.13		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	120	%	70-130	10.12.18 03.13	
1,4-Difluorobenzene	540-36-3	110	%	70-130	10.12.18 03.13	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-2-S-4-5-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-004	Date Collected:	09.28.18 11.10	Sample Depth:	4 - 5

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	6.78
Analyst:	SCM	Date Prep:	10.05.18 08.30	Basis:	Dry Weight
Seq Number:	3065622				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.34	5.34	mg/kg	10.05.18 10.59	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	6.78
Analyst:	ARM	Date Prep:	10.05.18 11.00	Basis:	Dry Weight
Seq Number:	3065664				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<16.0	16.0	mg/kg	10.05.18 13.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<16.0	16.0	mg/kg	10.05.18 13.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<16.0	16.0	mg/kg	10.05.18 13.36	U	1
Total TPH	PHC635	<16.0	16.0	mg/kg	10.05.18 13.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.05.18 13.36	
o-Terphenyl	84-15-1	95	%	70-135	10.05.18 13.36	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-2-S-4-5-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-004	Date Collected:	09.28.18 11.10	Sample Depth:	4 - 5
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	6.78
Analyst:	ALJ	Date Prep:	10.09.18 17.00	Basis:	Dry Weight
Seq Number:	3066220				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00215	0.00215	mg/kg	10.12.18 03.34	U	1
Toluene	108-88-3	<0.00215	0.00215	mg/kg	10.12.18 03.34	U	1
Ethylbenzene	100-41-4	<0.00215	0.00215	mg/kg	10.12.18 03.34	U	1
m,p-Xylenes	179601-23-1	<0.00431	0.00431	mg/kg	10.12.18 03.34	U	1
o-Xylene	95-47-6	<0.00215	0.00215	mg/kg	10.12.18 03.34	U	1
Total Xylenes	1330-20-7	<0.00215	0.00215	mg/kg	10.12.18 03.34	U	1
Total BTEX		<0.00215	0.00215	mg/kg	10.12.18 03.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	70-130	10.12.18 03.34	
1,4-Difluorobenzene	540-36-3	109	%	70-130	10.12.18 03.34	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-2-S-10-11-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-005	Date Collected:	09.28.18 12.05	Sample Depth:	10 - 11

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	10.67
Analyst:	SCM	Date Prep:	10.05.18 08.30	Basis:	Dry Weight
Seq Number:	3065622				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**381**	5.61	mg/kg	10.05.18 11.05		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	10.67
Analyst:	ARM	Date Prep:	10.05.18 11.00	Basis:	Dry Weight
Seq Number:	3065664				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<16.8	16.8	mg/kg	10.05.18 13.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	<16.8	16.8	mg/kg	10.05.18 13.55	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<16.8	16.8	mg/kg	10.05.18 13.55	U	1
Total TPH	PHC635	<16.8	16.8	mg/kg	10.05.18 13.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.05.18 13.55	
o-Terphenyl	84-15-1	94	%	70-135	10.05.18 13.55	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-2-S-10-11-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-005	Date Collected:	09.28.18 12.05	Sample Depth:	10 - 11
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	10.67
Analyst:	ALJ	Date Prep:	10.09.18 17.00	Basis:	Dry Weight
Seq Number:	3066220				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00225	0.00225	mg/kg	10.12.18 03.56	U	1
Toluene	108-88-3	<0.00225	0.00225	mg/kg	10.12.18 03.56	U	1
Ethylbenzene	100-41-4	<0.00225	0.00225	mg/kg	10.12.18 03.56	U	1
m,p-Xylenes	179601-23-1	<0.00450	0.00450	mg/kg	10.12.18 03.56	U	1
o-Xylene	95-47-6	<0.00225	0.00225	mg/kg	10.12.18 03.56	U	1
Total Xylenes	1330-20-7	<0.00225	0.00225	mg/kg	10.12.18 03.56	U	1
Total BTEX		<0.00225	0.00225	mg/kg	10.12.18 03.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.12.18 03.56	
4-Bromofluorobenzene	460-00-4	92	%	70-130	10.12.18 03.56	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-2-S-34-35-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-006	Date Collected:	09.28.18 12.15	Sample Depth:	34 - 35

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	16.17
Analyst:	SCM	Date Prep:	10.05.18 08.30	Basis:	Dry Weight
Seq Number:	3065622				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**84.2**	5.91	mg/kg	10.05.18 11.22		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	16.17
Analyst:	ARM	Date Prep:	10.05.18 11.00	Basis:	Dry Weight
Seq Number:	3065664				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<17.8	17.8	mg/kg	10.05.18 14.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<17.8	17.8	mg/kg	10.05.18 14.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<17.8	17.8	mg/kg	10.05.18 14.15	U	1
Total TPH	PHC635	<17.8	17.8	mg/kg	10.05.18 14.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.05.18 14.15	
o-Terphenyl	84-15-1	95	%	70-135	10.05.18 14.15	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-2-S-34-35-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-006	Date Collected:	09.28.18 12.15	Sample Depth:	34 - 35
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	16.17
Analyst:	ALJ	Date Prep:	10.09.18 17.00	Basis:	Dry Weight
Seq Number:	3066220				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00238	0.00238	mg/kg	10.12.18 04.19	U	1
Toluene	108-88-3	<0.00238	0.00238	mg/kg	10.12.18 04.19	U	1
Ethylbenzene	100-41-4	<0.00238	0.00238	mg/kg	10.12.18 04.19	U	1
m,p-Xylenes	179601-23-1	<0.00475	0.00475	mg/kg	10.12.18 04.19	U	1
o-Xylene	95-47-6	<0.00238	0.00238	mg/kg	10.12.18 04.19	U	1
Total Xylenes	1330-20-7	<0.00238	0.00238	mg/kg	10.12.18 04.19	U	1
Total BTEX		<0.00238	0.00238	mg/kg	10.12.18 04.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	87	%	70-130	10.12.18 04.19	
1,4-Difluorobenzene	540-36-3	99	%	70-130	10.12.18 04.19	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-3-S-4-5-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-007	Date Collected:	09.28.18 12.45	Sample Depth:	4 - 5

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	14.09
Analyst:	SCM	Date Prep:	10.05.18 08.30	Basis:	Dry Weight
Seq Number:	3065622				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.76	5.76	mg/kg	10.05.18 11.28	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	14.09
Analyst:	ARM	Date Prep:	10.05.18 11.00	Basis:	Dry Weight
Seq Number:	3065664				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<17.4	17.4	mg/kg	10.05.18 14.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	<17.4	17.4	mg/kg	10.05.18 14.34	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<17.4	17.4	mg/kg	10.05.18 14.34	U	1
Total TPH	PHC635	<17.4	17.4	mg/kg	10.05.18 14.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	10.05.18 14.34	
o-Terphenyl	84-15-1	93	%	70-135	10.05.18 14.34	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-3-S-4-5-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-007	Date Collected:	09.28.18 12.45	Sample Depth:	4 - 5
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	14.09
Analyst:	ALJ	Date Prep:	10.09.18 17.00	Basis:	Dry Weight
Seq Number:	3066220				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00231	0.00231	mg/kg	10.12.18 04.40	U	1
Toluene	108-88-3	<0.00231	0.00231	mg/kg	10.12.18 04.40	U	1
Ethylbenzene	100-41-4	<0.00231	0.00231	mg/kg	10.12.18 04.40	U	1
m,p-Xylenes	179601-23-1	<0.00463	0.00463	mg/kg	10.12.18 04.40	U	1
o-Xylene	95-47-6	<0.00231	0.00231	mg/kg	10.12.18 04.40	U	1
Total Xylenes	1330-20-7	<0.00231	0.00231	mg/kg	10.12.18 04.40	U	1
Total BTEX		<0.00231	0.00231	mg/kg	10.12.18 04.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	93	%	70-130	10.12.18 04.40	
1,4-Difluorobenzene	540-36-3	109	%	70-130	10.12.18 04.40	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-3-S-24-25-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-008	Date Collected:	09.28.18 14.00	Sample Depth:	24 - 25

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	8.87
Analyst:	SCM	Date Prep:	10.05.18 08.30	Basis:	Dry Weight
Seq Number:	3065622				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**37.8**	5.54	mg/kg	10.05.18 11.33		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	8.87
Analyst:	ARM	Date Prep:	10.05.18 11.00	Basis:	Dry Weight
Seq Number:	3065664				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<16.4	16.4	mg/kg	10.05.18 14.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<16.4	16.4	mg/kg	10.05.18 14.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<16.4	16.4	mg/kg	10.05.18 14.54	U	1
Total TPH	PHC635	<16.4	16.4	mg/kg	10.05.18 14.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	10.05.18 14.54	
o-Terphenyl	84-15-1	96	%	70-135	10.05.18 14.54	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-3-S-24-25-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-008	Date Collected:	09.28.18 14.00	Sample Depth:	24 - 25
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	8.87
Analyst:	ALJ	Date Prep:	10.09.18 17.00	Basis:	Dry Weight
Seq Number:	3066220				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00217	0.00217	mg/kg	10.12.18 05.02	U	1
Toluene	108-88-3	<0.00217	0.00217	mg/kg	10.12.18 05.02	U	1
Ethylbenzene	100-41-4	<0.00217	0.00217	mg/kg	10.12.18 05.02	U	1
m,p-Xylenes	179601-23-1	<0.00435	0.00435	mg/kg	10.12.18 05.02	U	1
o-Xylene	95-47-6	<0.00217	0.00217	mg/kg	10.12.18 05.02	U	1
Total Xylenes	1330-20-7	<0.00217	0.00217	mg/kg	10.12.18 05.02	U	1
Total BTEX		<0.00217	0.00217	mg/kg	10.12.18 05.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	70-130	10.12.18 05.02	
1,4-Difluorobenzene	540-36-3	108	%	70-130	10.12.18 05.02	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-4-S-4-5-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-009	Date Collected:	09.28.18 15.10	Sample Depth:	4 - 5

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	7.77
Analyst:	SCM	Date Prep:	10.05.18 08.30	Basis:	Dry Weight
Seq Number:	3065622				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.46	5.46	mg/kg	10.05.18 11.39	U	1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	7.77
Analyst:	ARM	Date Prep:	10.05.18 11.00	Basis:	Dry Weight
Seq Number:	3065664				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<16.2	16.2	mg/kg	10.05.18 15.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<16.2	16.2	mg/kg	10.05.18 15.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<16.2	16.2	mg/kg	10.05.18 15.14	U	1
Total TPH	PHC635	<16.2	16.2	mg/kg	10.05.18 15.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	10.05.18 15.14	
o-Terphenyl	84-15-1	94	%	70-135	10.05.18 15.14	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-4-S-4-5-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-009	Date Collected:	09.28.18 15.10	Sample Depth:	4 - 5
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	7.77
Analyst:	ALJ	Date Prep:	10.09.18 17.00	Basis:	Dry Weight
Seq Number:	3066220				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00219	0.00219	mg/kg	10.12.18 05.23	U	1
Toluene	108-88-3	<0.00219	0.00219	mg/kg	10.12.18 05.23	U	1
Ethylbenzene	100-41-4	<0.00219	0.00219	mg/kg	10.12.18 05.23	U	1
m,p-Xylenes	179601-23-1	<0.00437	0.00437	mg/kg	10.12.18 05.23	U	1
o-Xylene	95-47-6	<0.00219	0.00219	mg/kg	10.12.18 05.23	U	1
Total Xylenes	1330-20-7	<0.00219	0.00219	mg/kg	10.12.18 05.23	U	1
Total BTEX		<0.00219	0.00219	mg/kg	10.12.18 05.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	70-130	10.12.18 05.23	
1,4-Difluorobenzene	540-36-3	104	%	70-130	10.12.18 05.23	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-4-S-24-25-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-010	Date Collected:	09.28.18 16.20	Sample Depth:	24 - 25

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	11.21
Analyst:	SCM	Date Prep:	10.05.18 08.30	Basis:	Dry Weight
Seq Number:	3065622				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**513**	5.59	mg/kg	10.05.18 11.45		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	11.21
Analyst:	ARM	Date Prep:	10.05.18 11.00	Basis:	Dry Weight
Seq Number:	3065664				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<16.9	16.9	mg/kg	10.05.18 15.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<16.9	16.9	mg/kg	10.05.18 15.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<16.9	16.9	mg/kg	10.05.18 15.33	U	1
Total TPH	PHC635	<16.9	16.9	mg/kg	10.05.18 15.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	10.05.18 15.33	
o-Terphenyl	84-15-1	96	%	70-135	10.05.18 15.33	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-4-S-24-25-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-010	Date Collected:	09.28.18 16.20	Sample Depth:	24 - 25
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	11.21
Analyst:	ALJ	Date Prep:	10.09.18 17.00	Basis:	Dry Weight
Seq Number:	3066220				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00226	0.00226	mg/kg	10.12.18 06.26	U	1
Toluene	108-88-3	<0.00226	0.00226	mg/kg	10.12.18 06.26	U	1
Ethylbenzene	100-41-4	<0.00226	0.00226	mg/kg	10.12.18 06.26	U	1
m,p-Xylenes	179601-23-1	<0.00452	0.00452	mg/kg	10.12.18 06.26	U	1
o-Xylene	95-47-6	<0.00226	0.00226	mg/kg	10.12.18 06.26	U	1
Total Xylenes	1330-20-7	<0.00226	0.00226	mg/kg	10.12.18 06.26	U	1
Total BTEX		<0.00226	0.00226	mg/kg	10.12.18 06.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	70-130	10.12.18 06.26	
1,4-Difluorobenzene	540-36-3	109	%	70-130	10.12.18 06.26	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-4-S-34-35-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-011	Date Collected:	09.28.18 17.00	Sample Depth:	34 - 35

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	SCM			% Moisture:	15.29
Analyst:	SCM	Date Prep:	10.05.18 08.30	Basis:	Dry Weight
Seq Number:	3065622				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**262**	5.89	mg/kg	10.05.18 11.50		1

Analytical Method:	TPH By SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	15.29
Analyst:	ARM	Date Prep:	10.05.18 11.00	Basis:	Dry Weight
Seq Number:	3065664				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<17.7	17.7	mg/kg	10.05.18 16.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<17.7	17.7	mg/kg	10.05.18 16.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<17.7	17.7	mg/kg	10.05.18 16.32	U	1
Total TPH	PHC635	<17.7	17.7	mg/kg	10.05.18 16.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	90	%	70-135	10.05.18 16.32	
o-Terphenyl	84-15-1	92	%	70-135	10.05.18 16.32	

Certificate of Analytical Results 601287

GHD Services, INC- Midland, Midland, TX

WTX EMSU Battery Release Site

Sample Id:	**SB-4-S-34-35-180928**	Matrix:	Soil	Date Received:	10.03.18 16.48
Lab Sample Id:	601287-011	Date Collected:	09.28.18 17.00	Sample Depth:	34 - 35
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	15.29
Analyst:	ALJ	Date Prep:	10.09.18 17.00	Basis:	Dry Weight
Seq Number:	3066220				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00236	0.00236	mg/kg	10.12.18 06.47	U	1
Toluene	108-88-3	<0.00236	0.00236	mg/kg	10.12.18 06.47	U	1
Ethylbenzene	100-41-4	<0.00236	0.00236	mg/kg	10.12.18 06.47	U	1
m,p-Xylenes	179601-23-1	<0.00471	0.00471	mg/kg	10.12.18 06.47	U	1
o-Xylene	95-47-6	<0.00236	0.00236	mg/kg	10.12.18 06.47	U	1
Total Xylenes	1330-20-7	<0.00236	0.00236	mg/kg	10.12.18 06.47	U	1
Total BTEX		<0.00236	0.00236	mg/kg	10.12.18 06.47	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	70-130	10.12.18 06.47	
1,4-Difluorobenzene	540-36-3	103	%	70-130	10.12.18 06.47	

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.

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

QC Summary 601287

GHD Services, INC- Midland

WTX EMSU Battery Release Site

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3065622 Matrix: Solid Date Prep: 10.05.18
MB Sample Id: 7663581-1-BLK LCS Sample Id: 7663581-1-BKS LCSD Sample Id: 7663581-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	252	101	252	101	90-110	0	20	mg/kg	10.05.18 09:12	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3065622 Matrix: Soil Date Prep: 10.05.18
Parent Sample Id: 601287-001 MS Sample Id: 601287-001 S MSD Sample Id: 601287-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.896	261	263	101	265	102	90-110	1	20	mg/kg	10.05.18 09:29	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3065622 Matrix: Soil Date Prep: 10.05.18
Parent Sample Id: 601287-003 MS Sample Id: 601287-003 S MSD Sample Id: 601287-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	77.9	300	394	105	394	105	90-110	0	20	mg/kg	10.05.18 10:48	

Analytical Method: **Percent Moisture**
Seq Number: 3065426 Matrix: Solid
MB Sample Id: 3065426-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<	%	10.04.18 11:00	

Analytical Method: **Percent Moisture**
Seq Number: 3065426 Matrix: Soil
Parent Sample Id: 601287-011 MD Sample Id: 601287-011 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	15.3	15.5	1	20	%	10.04.18 11:00	

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 601287

GHD Services, INC- Midland

WTX EMSU Battery Release Site

Analytical Method: **Percent Moisture**
Seq Number: 3065426 Matrix: Soil
Parent Sample Id: 601298-001 MD Sample Id: 601298-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	4.49	4.37	3	20	%	10.04.18 11:00	

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3065664 Matrix: Solid Date Prep: 10.05.18
MB Sample Id: 7663662-1-BLK LCS Sample Id: 7663662-1-BKS LCSD Sample Id: 7663662-1-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)	<8.00	1000	994	99	938	94	70-135	6	20	mg/kg	10.05.18 11:21	
Diesel Range Organics (DRO)	<8.13	1000	1070	107	1000	100	70-135	7	20	mg/kg	10.05.18 11:21	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		125		111		70-135	%	10.05.18 11:21
o-Terphenyl	103		110		101		70-135	%	10.05.18 11:21

Analytical Method: **TPH By SW8015 Mod** Prep Method: TX1005P
Seq Number: 3065664 Matrix: Soil Date Prep: 10.05.18
Parent Sample Id: 601287-001 MS Sample Id: 601287-001 S MSD Sample Id: 601287-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.39	1050	937	89	926	88	70-135	1	20	mg/kg	10.05.18 12:19	
Diesel Range Organics (DRO)	<8.53	1050	1050	100	1060	101	70-135	1	20	mg/kg	10.05.18 12:19	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		108		70-135	%	10.05.18 12:19
o-Terphenyl	103		100		70-135	%	10.05.18 12:19

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

QC Summary 601287

GHD Services, INC- Midland

WTX EMSU Battery Release Site

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3066220 Matrix: Solid Date Prep: 10.09.18

MB Sample Id: 7664062-1-BLK LCS Sample Id: 7664062-1-BKS LCSD Sample Id: 7664062-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0905	91	0.0838	84	70-130	8	35	mg/kg	10.12.18 00:00	
Toluene	<0.00200	0.0998	0.0824	83	0.0847	85	70-130	3	35	mg/kg	10.12.18 00:00	
Ethylbenzene	<0.00200	0.0998	0.0991	99	0.0993	99	70-130	0	35	mg/kg	10.12.18 00:00	
m,p-Xylenes	<0.00399	0.200	0.193	97	0.220	109	70-130	13	35	mg/kg	10.12.18 00:00	
o-Xylene	<0.00200	0.0998	0.0931	93	0.113	113	70-130	19	35	mg/kg	10.12.18 00:00	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	111		103		100		70-130	%	10.12.18 00:00
4-Bromofluorobenzene	94		111		88		70-130	%	10.12.18 00:00

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3066220 Matrix: Soil Date Prep: 10.09.18

Parent Sample Id: 601475-011 MS Sample Id: 601475-011 S MSD Sample Id: 601475-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0741	74	0.0694	69	70-130	7	35	mg/kg	10.12.18 00:43	X
Toluene	<0.00200	0.100	0.0650	65	0.0601	60	70-130	8	35	mg/kg	10.12.18 00:43	X
Ethylbenzene	<0.00200	0.100	0.0762	76	0.0644	64	70-130	17	35	mg/kg	10.12.18 00:43	X
m,p-Xylenes	<0.00400	0.200	0.145	73	0.128	63	70-130	12	35	mg/kg	10.12.18 00:43	X
o-Xylene	<0.00200	0.100	0.0764	76	0.0670	66	70-130	13	35	mg/kg	10.12.18 00:43	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	112		120		70-130	%	10.12.18 00:43
4-Bromofluorobenzene	108		111		70-130	%	10.12.18 00:43

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

Chain of Custody

Work Order No: 601287

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

Project Manager:	Scott Foord	Bill to: (if different)	
Company Name:	GHD	Company Name:	
Address:	2135 S. Loop 250 West	Address:	
City, State ZIP:	Midland, TX. 79703	City, State ZIP:	
Phone:	713-724-3967	Email:	Scott.Foord@ghd.com & Christopher.Knight@ghd.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	WTX to EMSU Battery Release Site	Turn Around	
Project Number:	11182283-2018-001	Routine	☑
P.O. Number:		Rush:	
Sampler's Name:		Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	3.5 3.6	Thermometer ID:	IR8
Received Intact:	(Yes) No		
Cooler Custody Seals:	Yes No N/A	Correction Factor:	0.0
Sample Custody Seals:	Yes No N/A	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	BTEX 8021	TPH 8015	Chloride	% Moisture	Sample Comments
SB-1-S-4-5-180928	S	9-28-18	0915	4-5	2	X	X	X	X	
SB-1-S-20-21-180928			1010	20-21	2	X	X	X	X	
SB-1-S-34-35-180928			1035	34-35	2	X	X	X	X	
SB-2-S-4-5-180928			1110	4-5	2	X	X	X	X	
SB-2-S-10-11-180928			1205	10-11	2	X	X	X	X	
SB-2-S-34-35-180928			1215	34-35	2	X	X	X	X	
SB-3-S-4-5-180928			1245	4-5	2	X	X	X	X	
SB-3-S-24-25-180928			1400	24-25	2	X	X	X	X	
SB-4-S-4-5-180928			1510	4-5	2	X	X	X	X	
SB-4-S-24-25-180928	V	V	1620	24-25	2	X	X	X	X	

ANALYSIS REQUEST

Work Order Notes

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

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		10/3 1648	2		
3			4		
5			6		

Chain of Custody

Work Order No: 601287

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 2 of 2

Project Manager:	Scott Foord	Bill to: (if different)	
Company Name:	GHD	Company Name:	
Address:	2135 S. Loop 250 West	Address:	
City, State ZIP:	Midland, TX. 79703	City, State ZIP:	
Phone:	713-724-3967	Email:	Scott.Foord@ghd.com & Christopher.Knight@ghd.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	WTX to EMSU Battery Release Site	Turn Around	
Project Number:	11182283-2018-001	Routine ☑	
P.O. Number:		Rush:	
Sampler's Name:		Due Date:	

SAMPLE RECEIPT			
Temp Blank:	Yes (No)	Wet Ice:	(Yes) No
Temperature (°C):	3.3	Thermometer ID	100
Received Intact:	~~Yes~~ No		
Cooler Custody Seals:	Yes (No) N/A	Correction Factor:	0.0
Sample Custody Seals:	Yes (No) N/A	Total Containers:	

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	BTEX 8021	TPH 8015	Chloride	% Moisture
SB-4-S-34-35-180928	S	9-28-18	1700	34-35	2	X	X	X	X

ANALYSIS REQUEST

Work Order Notes

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

Sample Comments

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

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		10/3 1648	2		
3			4		
5			6		

Revised Date 051418 Rev. 2018.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: GHD Services, INC- Midland

Date/ Time Received: 10/03/2018 04:48:00 PM

Work Order #: 601287

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5.3
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst:

PH Device/Lot#:

Checklist completed by: Katie Lowe Date: 10/04/2018

Checklist reviewed by: Debbie Simmons Date: 10/04/2018

Appendix D
Supplemental Assessment Work Plan

November 1, 2018 Reference No. 11182283

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

Dear Ms. Yu:

Re: Supplemental Assessment Work Plan
WTX to EMSU Battery to Byrd Pump Crude Oil Release (1RP-5154)
Lea County, New Mexico

1. Project Information

The Site is located in Unit P, Section 11, Township 20, Range 36, approximately 3.2 miles southwest of Monument in eastern Lea County, New Mexico. The coordinates of the release location are Latitude 32.583989 and Longitude -103.317743. According to the New Mexico Oil Conservation Division (NMOCD) Release Notification and Corrective Action Form C-141 submitted to the agency by Holly Energy Partners (HEP), the release occurred on July 11, 2018 and was reported to Ms. Olivia Yu, Hobbs District 1 NMOCD office on August 10, 2018.

HEP began excavation activities inclusive of an exploratory trench along the pipeline to a depth of approximately three feet below ground surface (bgs) on July 11 and 17, 2018, and an exploratory deeper excavation south of the pipeline on July 23, 2018 and continued on August 6, 2018 to try and determine the vertical extent of soil impact (see Figure 1). Excavation activities were halted on August 6, 2018 because it was found that the affected area was larger and impact to soil was deeper (17 feet below ground surface (bgs)) than originally anticipated. The excavated material was used to backfill the exploratory excavation areas.

Subsurface investigation activities were completed in accordance with the revised and reissued Guidelines for Remediation of Leaks, Spills, and Releases Rule 19.15.29 New Mexico Administrative Code (NMAC) from the NMOCD issued on August 14, 2018. The following criteria from Table 1 (below) within NMAC 19.15.29.12 was utilized to determine site-specific screening limits:

Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l TDS	Constituent	Limit*
≤ 50 feet	Chloride**	600 mg/kg
	TPH (GRO+DRO+MRO)	100 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

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

** This applies to release of produced water or other fluids which may contain chloride.

Information available from various sources including the Petroleum Recovery Research Center (PRRC) Mapping Portal, currently managed groundwater site(s) data by GHD, and the United States Geological Survey (USGS) Current Water Database for the Nation, concludes:

1. the depth to groundwater at the Site is less than 50-feet bgs;
2. the site is not within 300 feet of any continuously flowing watercourse;
3. the site is not within 200 feet of any lakebed, sinkhole or playa lake;
4. the site is not within 300 feet of an occupied permanent residence, school, etc.;
5. the site is not within 500 feet of a spring or private, domestic fresh water well;
6. the site is not within 1,000 feet of any fresh water well or spring;
7. the site is not within incorporated municipal boundaries or within a defined municipal fresh water well field;
8. the site is not within 300 feet of a wetland;
9. the site is not within an area overlying a subsurface mine;
10. the site is not within an unstable area; and
11. the site is not within a 100-year floodplain.

Consequently, the anticipated site-specific screening limits based on currently available data to be applied to this location by the NMOCD based on the revised Rule are 10 mg/kg for benzene, 50 mg/kg for total benzene, toluene, ethylbenzene, and total xylenes (BTEX), 100 mg/kg for total petroleum hydrocarbon (TPH), and 600 mg/kg for chloride.

Additionally, per NMAC19.15.29.13 (Restoration, Reclamation, and Re-vegetation), the impacted area must be remediated a minimum of 4-feet bgs with non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg. Soil cover must consist of topsoil at a thickness comparable to background topsoil thicknesses, or one foot of suitable earthen material capable of establishing and maintaining vegetation at the site. Reclamation is considered complete when all disturbed areas have established vegetative cover with a life-form ratio of plus or minus 50 percent of pre-remedial levels, and plant cover of a minimum of 70 percent of previous levels, excluding noxious weeds.

Four (4) soil borings (SB-1 through SB-4) were advanced at the Site in September 2018 to assess hydrocarbon and chloride concentrations in soil near the release point. Soil analytical results for benzene and total BTEX in all borings were below the NMOCD screening criteria (10 and 50 mg/kg, respectively). TPH was detected above the NMOCD screening criteria for total TPH (100 mg/kg) within SB-1 at a depth of 34-35 feet bgs (1,240 mg/kg), but not in the two shallower soil samples collected from SB-1. Chloride was reported at a concentration of 625 mg/kg within SB-1 at a depth of 20-21 feet bgs. This concentration slightly exceeds the NMOCD screening criteria of 600 mg/kg for chloride. All other samples were below the NMOCD screening criteria for their respective constituents.

Analytical results associated with assessment activities conducted in September 2018 indicate the horizontal and vertical extents of the TPH and chloride impact in soil have not been fully delineated. Additionally, there is a potential for impact to groundwater at the Site.

2. Scope of Work

Recommended supplemental assessment activities are detailed below.

2.1 Soil Boring and Monitoring Well Installation Activities

GHD is proposing the installation of three soil borings that will be completed as 4-inch diameter monitoring wells (MW-1 through MW-3) to further screen soil and groundwater for BTEX, TPH, and chloride impact, and three additional soil borings (SB-2 through SB-4) to further delineate TPH and chloride impact detected in soil samples collected from former soil boring SB-1. One additional 4-inch diameter monitoring well (MW-4) will be installed north (assumed upgradient) of SB-1 to assess background/upgradient groundwater conditions at the Site. One soil boring/monitoring well will be installed in the previously excavated area to further assess soil and groundwater conditions in that location. GHD will prepare a permit application and associated fees for the required New Mexico Office of the State Engineer (NMOSE) monitoring well permits. Proposed soil boring and monitoring well locations are depicted on Figure 1.

Prior to mobilizing drilling equipment to the Site, a utility notification will be made at least 48-hours prior to mobilization. The monitoring well locations will be cleared to 5-feet bgs or refusal with a hand auger prior to drilling activities. Each monitoring well and soil boring will be drilled with an air rotary drill rig. The rig will be operated by a New Mexico licensed water well driller.

The three soil borings will be installed to approximately 35 feet bgs (just above the groundwater table). The four monitoring wells will be installed extending approximately 10 feet into the groundwater table (estimated at approximately 35 feet bgs). The total depth of the monitoring wells are estimated at approximately 45 feet bgs. A GHD geologist will record the subsurface lithology and any sample data on the well construction diagram/soil boring logs. Soil samples will be collected at 5-foot intervals with a split spoon sampler. Soil samples will be field screened for chloride concentrations using Hach Chloride Titration strips and evaluated by the field geologist during the sampling event. Soils will also be field screened for organic vapors using a calibrated photoionization detector (PID).

Selected soil samples will be submitted for analysis of BTEX by EPA Method SW 8021B, chlorides by EPA Method 300, and TPH by EPA Method SW8015 Modified. The nature of any sampling of soils will be based on results of the chloride and PID field screening and the professional judgment of the GHD geologist with the intent to establish the depth at which soil concentrations are below the Site screening criteria. Soil sampling will be completed in accordance with our standard Quality Assurance/ Quality Control (QA/QC) procedures designed to minimize cross-contamination between samples and to provide reliable laboratory results. The total depth and construction of the wells and nature of any soil sampling will be based on the professional judgment of the GHD geologist. Soil samples will not be collected from the upgradient monitoring well borehole.

The newly installed monitoring wells will be surveyed by a State licensed surveyor. The ground surface elevation of each soil boring, including the top of casing and top of pad elevations from the monitoring wells, will be determined to the nearest hundredth of a foot.

2.2 2018 Groundwater Monitoring Activities

The newly installed monitoring wells will be sampled following installation and development. Prior to purging and sampling, static fluid levels will be measured with an electric interface probe to the nearest hundredth of a foot. After recording fluid levels, monitoring wells will be profiled using a conductivity meter. Subsequent to well gauging, the monitoring wells will be purged using EPA-approved low-flow methodology.

Groundwater samples will be placed on ice in insulated coolers and chilled to a temperature of approximately 4°C (40°F). The coolers will then be sealed for shipment and proper chain-of-custody documentation will accompany the samples for analysis of BTEX by EPA Method 8021B, TPH diesel range organics (DRO)/gasoline range organics (GRO)/motor oil range organics (MRO) by Method SW8015B, chlorides by EPA Method 300, and total dissolved solids (TDS) by Method SM2540C.

2.3 Reporting

Following completion of the field activities detailed above, a report summarizing the results of the assessment will be prepared for submittal. The report will include a Site description, project history, description of field events, a discussion of results, and recommendations (if any). Groundwater gauging data will be tabulated and a gradient map will be prepared and included in this report. Soil and groundwater analytical results collected will be tabulated in data tables and presented graphically using concentration maps. Soil boring logs and monitoring well construction logs will also be included.

If you have any questions, please contact us at 713-734-3090.

Sincerely,

GHD

Scott Foord, P.G.
Project Manager

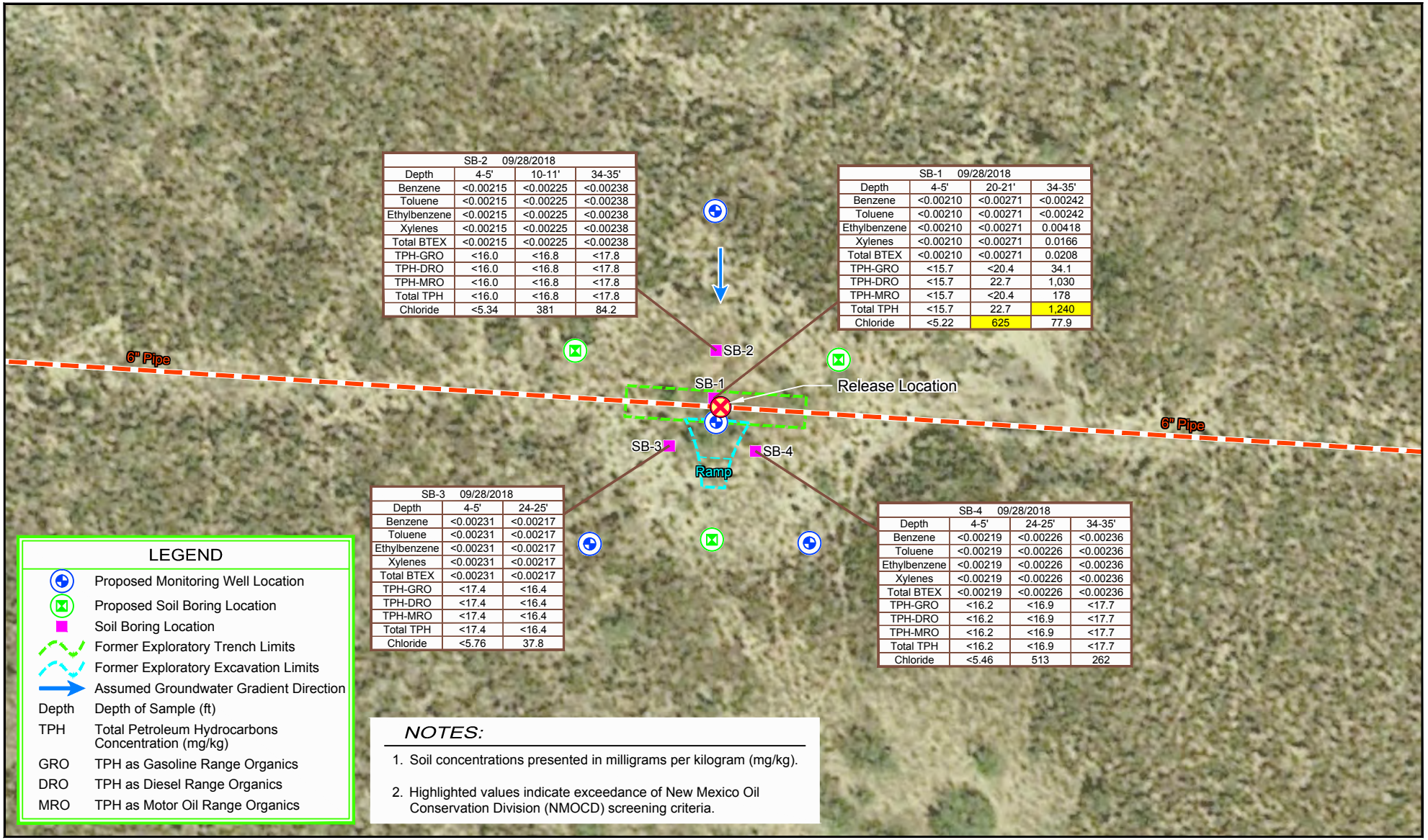
James Harden, P.G.
Senior Project Manager

SF/mss/1

Encl.

Attachment: Figure 1 – Proposed Soil Boring and Monitoring Well Locations

Figure



SB-2 09/28/2018			
Depth	4-5'	10-11'	34-35'
Benzene	<0.00215	<0.00225	<0.00238
Toluene	<0.00215	<0.00225	<0.00238
Ethylbenzene	<0.00215	<0.00225	<0.00238
Xylenes	<0.00215	<0.00225	<0.00238
Total BTEX	<0.00215	<0.00225	<0.00238
TPH-GRO	<16.0	<16.8	<17.8
TPH-DRO	<16.0	<16.8	<17.8
TPH-MRO	<16.0	<16.8	<17.8
Total TPH	<16.0	<16.8	<17.8
Chloride	<5.34	381	84.2

SB-1 09/28/2018			
Depth	4-5'	20-21'	34-35'
Benzene	<0.00210	<0.00271	<0.00242
Toluene	<0.00210	<0.00271	<0.00242
Ethylbenzene	<0.00210	<0.00271	0.00418
Xylenes	<0.00210	<0.00271	0.0166
Total BTEX	<0.00210	<0.00271	0.0208
TPH-GRO	<15.7	<20.4	34.1
TPH-DRO	<15.7	22.7	1,030
TPH-MRO	<15.7	<20.4	178
Total TPH	<15.7	22.7	1,240
Chloride	<5.22	625	77.9

SB-3 09/28/2018		
Depth	4-5'	24-25'
Benzene	<0.00231	<0.00217
Toluene	<0.00231	<0.00217
Ethylbenzene	<0.00231	<0.00217
Xylenes	<0.00231	<0.00217
Total BTEX	<0.00231	<0.00217
TPH-GRO	<17.4	<16.4
TPH-DRO	<17.4	<16.4
TPH-MRO	<17.4	<16.4
Total TPH	<17.4	<16.4
Chloride	<5.76	37.8

SB-4 09/28/2018			
Depth	4-5'	24-25'	34-35'
Benzene	<0.00219	<0.00226	<0.00236
Toluene	<0.00219	<0.00226	<0.00236
Ethylbenzene	<0.00219	<0.00226	<0.00236
Xylenes	<0.00219	<0.00226	<0.00236
Total BTEX	<0.00219	<0.00226	<0.00236
TPH-GRO	<16.2	<16.9	<17.7
TPH-DRO	<16.2	<16.9	<17.7
TPH-MRO	<16.2	<16.9	<17.7
Total TPH	<16.2	<16.9	<17.7
Chloride	<5.46	513	262

LEGEND

- Proposed Monitoring Well Location
- Proposed Soil Boring Location
- Soil Boring Location
- Former Exploratory Trench Limits
- Former Exploratory Excavation Limits
- Assumed Groundwater Gradient Direction
- Depth — Depth of Sample (ft)
- TPH — Total Petroleum Hydrocarbons Concentration (mg/kg)
- GRO — TPH as Gasoline Range Organics
- DRO — TPH as Diesel Range Organics
- MRO — TPH as Motor Oil Range Organics

NOTES:

1. Soil concentrations presented in milligrams per kilogram (mg/kg).
2. Highlighted values indicate exceedance of New Mexico Oil Conservation Division (NMOCD) screening criteria.

Source: Image © 2018 Google - Imagery Date: November 2, 2017

Lat/Long: 32.583989° North, 103.317743° West

0 20 40ft

Approximate Scale

HOLLY ENERGY PARTNERS
MONUMENT, LEA COUNTY, NEW MEXICO
WTX TO EMSU BATTERY RELEASE SITE

PROPOSED SOIL BORING AND MONITORING WELL LOCATION MAP

11182283-01

Oct 31, 2018

FIGURE 1

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1118----\11182283-Holly Energy-WTX to EMSU\Misc\11182283-01(Misc-001)GN-DL001.dwg

about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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State of New Mexico
Oil Conservation Division

Incident ID	
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:

The source of the release was stopped and the line was repaired. Approximately 0.5 bbls of free liquids were removed by HEP contractor as part of initial response. Initial observations of affected soil in the top 17 feet of soil (0-17 feet below ground surface [bgs]) were not confirmed through soil sampling as part of initial investigation. Near surface (0-4 feet bgs) soil affected by the release may still be on-site (will confirm with proposed site investigation). The impacted area has not been fenced off but is located inside a fenced ranch. No open excavations remain on-site.

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: Melanie Nolan Title: Environmental Specialist, Holly Energy Partners

Signature: Melanie Nolan Date: 9/10/2020

email: Melanie.Nolan@hollyenergy.com Telephone: 575-748-8972

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NOY1822242858
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?	Unknown - Anticipated to be between 45-65 ft bgs (ft bgs)
Did this release impact groundwater or surface water? **NOTE: WILL BE EVALUATED DURING NEXT PHASE OF SITE ASSESSMENT.**	☐ 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 **NOTE: WILL BE PROVIDED AS PART OF NEXT REPORT SUBMITTED FOR SITE.**
☒ Boring or excavation logs
☐ Photographs including date and GIS information **NOTE: WILL BE PROVIDED AS PART OF NEXT REPORT SUBMITTED FOR SITE.**
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

State of New Mexico
Oil Conservation Division

Incident ID	NOY1822242858
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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.

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: Melanie Nolan Title: Environmental Specialist, Holly Energy Partners

Signature: Melanie Nolan Date: 9/10/2020

email: Melanie.Nolan@hollyenergy.com Telephone: 575-748-8972

OCD Only

Received by: Cristina Eads Date: 09/10/2020

State of New Mexico
Oil Conservation Division

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Remediation Plan

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

☐ Detailed description of proposed remediation technique **NOTE: To Be Determined (TBD)**
☒ Scaled sitemap with GPS coordinates showing delineation points **Note: Scaled Site Map Previously Provided but GPS Coordinates Not Depicted on Map, Data Table or Boring Logs.**
☐ Estimated volume of material to be remediated **NOTE: TBD**
☒ 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) **NOTE: TBD**

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: Melanie Nolan Title: Environmental Specialist, Holly Energy Partners

Signature: Melanie Nolan Date: 9/10/2020

email: Melanie.Nolan@hollyenergy.com Telephone: 575-748-8972

OCD Only

Received by: Cristina Eads Date: 09/10/2020

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

Signature: Cristina Eads Date: 09/23/2020

State of New Mexico
Oil Conservation Division

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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: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____