



SITE CHARACTERIZATION REPORT AND REMEDIATION WORKPLAN

WTX to EMSU Battery to Byrd Pump Segment
Crude Oil Release
NMOCD Incident No. NOY1822242858
Unit P, Section 11, Township 20S, Range 36E
Latitude 32.583874, Longitude -103.317460
Lea County, New Mexico

November 12, 2021

Project Number: 426140

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1.0 INTRODUCTION

TRC Environmental Corporation (TRC) has prepared this *Site Characterization Report and Remediation Workplan* on behalf of Holly Energy Partners – Operating, L.P. (HEP). This document summarizes the environmental investigation performed at a crude oil release site on HEP's WTX to EMSU Battery to Byrd Pump Segment gathering line (the "Site"). The Site is located on land owned by L&K Ranch LLC near County Road 46 in Lea County, New Mexico. The Site is located within Unit P, Section 11, Township 20 South, Range 36 East. The original coordinates reported for the release incident were latitude 32.583989, longitude -103.317743. However, while performing Site assessment activities in November 2020, it was discovered that the actual release location was approximately 80 feet further east, at latitude 32.583874, longitude -103.317460. The Site location is depicted on a topographic map in Figure 1.

Site assessment activities performed in 2018 and 2020 were documented in the December 22, 2020, *Site Characterization Report* (SCR), which was approved by New Mexico Oil Conservation Division (NMOCD) on December 31, 2020. The December 2020 SCR included recommendations to conduct additional lateral and vertical delineation of soil with total petroleum hydrocarbons (TPH) concentrations above the Site-specific NMOCD Closure Criterion, sampling of existing Site monitoring wells, and installation and sampling of one upgradient monitoring well.

A 90-day extension request to complete the additional Site assessment was submitted to NMOCD via email on March 17, 2021. In an email dated March 17, 2021, NMOCD approved the extension request and a new due date of June 15, 2021 for submittal of an updated SCR. A 60-day extension was requested by email on May 19, 2021. In an email dated June 10, 2021, NMOCD approved the extension request and a new due date of August 14, 2021 for submittal of an updated SCR. Additional soil and groundwater assessment were conducted in general accordance with the December 2020 SCR in May 2021. Based on the results of the May 2021 assessment activities, completion of at least two additional borings and collection of additional groundwater samples were proposed to and approved by NMOCD on July 16, 2021. On the same day, NMOCD approved the extension request and revised due date of November 12, 2021, to complete the additional assessment and submit an updated SCR.

This report documents the additional Site assessment activities conducted in May and October 2021, and includes a comprehensive evaluation of soil and groundwater assessment data collected at the Site and a Remediation Workplan to achieve Closure Criteria in affected soils. Boring logs and copies of laboratory analytical reports associated with the 2018 and 2020 assessment activities were included in the December 2020 SCR and are not included herein.



2.0 BACKGROUND

2.1 Release Discovery and Initial (2018) Investigation

A gathering line release was identified at the Site during an aerial patrol on July 11, 2018. The gathering line was immediately inspected, the leak confirmed, and that segment of line was shut down for repair. The release was determined to originate from a pinhole at the bottom of the 6-inch line and was initially thought to be less than 1 barrel (bbl) in volume. The gathering line is at an approximate depth of 1.5 feet below ground surface (bgs) at the release point.

HEP initiated excavation activities to remove affected soil and attempted to vertically delineate affected soil through exploratory trenches. Excavation activities occurred between July 11 and August 6, 2018. On August 6, 2018, the excavation had reached a depth of 17 feet bgs and affected soil had not been vertically delineated. This determination was based on field screening and observations of potential hydrocarbon-affected soil, not analytical data. The excavation was discontinued and the excavated soil was returned to the excavation as backfill. The release was 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 Workplan* to NMOCD and to the Bureau of Land Management (the mineral owner). NMOCD approved the August 2018 workplan on September 10, 2018.

The initial assessment was completed in September 2018, and included the determination of Site-specific NMOCD Closure Criteria and completion 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 was for sites with groundwater at a depth of less than 50 feet bgs.

Soil borings SB-1, SB-2, and SB-4 were each drilled to a total depth of 35 feet bgs. Soil boring 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 United States Environmental Protection Agency (EPA) Method 8021B, TPH by EPA Method 8015, and chloride by EPA Method 300. The results indicated the following:

- Detected concentrations and non-detect reporting limits for benzene and cumulative benzene, toluene, ethylbenzene, and xylenes (Total BTEX) were below the NMOCD Closure Criteria at all locations.



- Chloride and TPH concentrations were below the NMOCD Closure Criteria at all locations except for release area boring SB-1 as follows:
 - The sample collected from 20 to 21 feet bgs contained a chloride concentration of 625 milligrams per kilogram (mg/kg), above the Closure Criterion of 600 mg/kg. The exceedance was vertically delineated with an underlying sample collected from 34 to 35 feet bgs (77.9 mg/kg).
 - The sample collected from 34 to 35 feet bgs contained a TPH concentration of 1,240 mg/kg, above the Closure Criterion of 100 mg/kg. This was the deepest sample collected from the boring thus TPH was not vertically delineated.

TPH was not detected in any of the samples collected from SB-2 through SB-4. Chloride was detected in samples collected from SB-2 through SB-4 at intervals deeper than 5 feet bgs, but none of the concentrations exceeded the Closure Criterion of 600 mg/kg.

On November 1, 2018, HEP submitted the *Soil Assessment Report and Supplemental Assessment Work Plan* (SAWP) to the NMOCD. The NMOCD approved the SAWP on January 17, 2019. Monitoring well permits were obtained from the New Mexico Office of State Engineer (NMOSE) on March 18, 2019. The scope of work proposed in the 2018 SAWP was delayed pending access with the landowner (L&K Ranch, LLC). The access agreement with the landowner was executed in March 2020, which allowed HEP to proceed with the assessment activities proposed in the 2018 SAWP.

2.2 2020 Assessment Activities

In 2020, HEP retained TRC to complete the next phase of assessment activities. A modified assessment scope was proposed to NMOCD as compared to the scope proposed in the 2018 SAWP. The modified assessment scope was provided to NMOCD by email on April 15, 2020, and in the *Remediation Plan and Status Update* document that was submitted to NMOCD on April 29, 2020. NMOCD reviewed the *Remediation Plan and Status Update* and by email on August 26, 2020, requested that a revised C-141 Form be submitted for the Site. The revised C-141 Form was submitted on September 10, 2020. NMOCD conditionally approved the C-141 Form on September 23, 2020, with the following condition: "The release needs to be horizontally delineated at the surface." Based on this request, HEP added eight hand auger borings (SB-9 to SB-16) to the modified scope of work to laterally delineate affected soil at or near the ground surface. For the purposes of assessment activities at the Site, the upper 4 feet of soil is considered "surface soil" in accordance with 19.15.29.13 NMAC. The NMOCD-approved September 2020 C-141 is attached in Appendix A.

2.2.1 Deviations From Previously Reported Conditions

On November 2, 2020, during Site inspection prior to performing investigation activities, it was discovered that the release point coordinates initially reported were incorrect. The actual release point coordinates, as indicated by an excavated and backfilled area inside a fence, are



approximately 80 feet to the east of the initially reported release location. In addition, it appears that the locations of borings SB-1 through SB-4 and the excavation were misreported. The positions of the borings and the excavation were inverted relative to HEP's gathering line.

Based on photographs of the 2018 exploratory excavation and the location of the disturbed area inside the fence, the excavation to 17 feet bgs occurred on the north side of the gathering line, not the south side. In addition, based on the locations of four drums that contain soil cuttings, borings SB-1 to SB-4 were located to the northeast, northwest, and south of the release point; not to the north, southeast, and southwest of the release point as previously reported. TRC and HEP have reasonably assumed that the four drums were located adjacent to boring locations SB-1 to SB-4. The originally reported and actual locations of these features are provided on Figure 2. The release and excavation locations relative to the pipeline were revised and accordingly the proposed boring locations relative to the actual release point were adjusted.

2.2.2 Findings of 2020 Investigation

Summary of 2020 Soil Investigation

From November 3 to 6, 2020, hollow-stem auger (HSA) soil borings SB-05 to SB-08 were drilled to a depth of 50 feet bgs. Soil boring SB-05 was drilled adjacent to the release point while soil borings SB-06, SB-07, and SB-08 were drilled to the north, southwest, and southeast of the release point, respectively. In addition to the four HSA borings, eight hand auger borings (SB-09 to SB-16) were completed on November 6, 2020 to laterally delineate affected surface soil in the vicinity of the release point.

Soil cores were continuously collected from the HSA borings using a split spoon sampler and from the shallow borings using the hand auger bucket. Lithology, field observations of the potential presence of petroleum hydrocarbons, including hydrocarbon odor and staining, photo-ionization detector (PID) readings, and chloride test kit results were recorded for each boring. Select soil samples were collected for laboratory analysis based on field observations of the potential presence of hydrocarbons, PID readings, and chloride test kit results. The soil samples were submitted to ALS Laboratory in Houston, Texas, for laboratory analysis of BTEX by EPA Method SW8260, TPH by EPA Method 8015M, and chloride by EPA Method 300. The boring locations are depicted on Figure 3. The field observations and PID screening data for the hand auger borings are summarized in Table 1. Field observations and PID screening data for SB-05 through SB-08 were shown on the boring logs provided in Appendix B of the December 2020 SCR, and provided in Appendix B of this document as well.

Non-dedicated sampling equipment was decontaminated prior to its initial use and before each sample was collected. Following sampling, the hand auger borings were backfilled with hydrated bentonite while the HSA borings were converted to monitoring wells, as discussed below.



Summary of 2020 Groundwater Investigation

HSA borings SB-05 to SB-08 were converted to monitoring wells MW-1 through MW-4, respectively. The wells were installed to a total depth of approximately 50 feet bgs with 20 feet of 2-inch diameter schedule 40 polyvinyl chloride (PVC) 0.010-inch slotted screen and approximately 30 feet of PVC casing. Filter (sand) pack was installed in the annular space of each well from the total depth to approximately 3 to 5 feet above the top of the screened interval. A 2-foot seal of hydrated bentonite was installed above the sand pack. The remaining annular space above the bentonite seal was grouted to the surface with a cement-bentonite grout. The wells were finished with flush mount surface completions. The well locations are depicted on Figure 3. Well construction diagrams were provided in Appendix B of the December 2020 SCR, and are provided in Appendix B of this document as well.

An interface probe was used to gauge the depth to light non-aqueous phase liquid (LNAPL), if present, and groundwater. LNAPL was not detected in any of the monitoring wells. The November 2020 groundwater elevations ranged from 3,525.35 feet above mean sea level (amsl) in well MW-2 to 3,525.20 feet amsl in well MW-4. The potentiometric surface indicated groundwater flow to the southeast at an approximate gradient of 0.002 feet per foot. A summary of the groundwater elevations is provided in Table 2. A groundwater gradient map for November 2020 is presented as Figure 4.

Prior to sample collection, all four monitoring wells were developed using a surge block and pump. The wells were sampled one to two days after development using a low flow sample collection methodology. The groundwater samples were submitted to ALS Laboratory in Houston, Texas, for laboratory analysis of BTEX by EPA Method SW8260, TPH by EPA Method 8015M, chloride by EPA Method 300, and total dissolved solids (TDS) by EPA Method 2540C.

2020 Investigation Results

The 2020 analytical results are summarized below.

- TPH was detected in soil at concentrations above the Site-specific Closure Criterion of 100 mg/kg as follows:
 - TPH was detected at concentrations above the Closure Criterion in surface soil (upper 4 feet) at borings SB-05, SB-09, SB-11, SB-13, and SB-14. TPH concentrations above the Closure Criterion in surface soil were laterally delineated in all directions except south of boring SB-09, south of SB-11, north and west of boring SB-13, and east of boring SB-14. TPH-affected soil was not vertically delineated at borings SB-09, SB-11, SB-13, and SB-14.
 - TPH was detected at concentrations above the Closure Criterion in soil beneath 4 feet bgs at borings SB-05 and SB-06. TPH concentrations above the Closure Criterion in soil beneath 4 feet bgs were laterally delineated in all directions except to the north of boring SB-06.



- TPH concentrations and non-detect reporting limits in samples from borings SB-07, SB-08, SB-10, SB-12, SB-15, and SB-16 were below the Closure Criterion for the Site.
- BTEX constituents were not detected in samples from any boring except at release area boring SB-05. Total BTEX concentrations in the samples from SB-05 ranged from non-detect to 0.71 mg/kg, which are below the Closure Criterion of 50 mg/kg. Benzene was not detected in samples collected from boring SB-05.
- Chloride concentrations and non-detect reporting limits were below the Closure Criterion of 600 mg/kg in all samples collected in 2020.
- The groundwater sample analytical results indicated the following:
 - In well MW-1, TPH GRO and DRO were detected at concentrations of 0.098 milligrams per liter (mg/L) and 0.084 mg/L, respectively.
 - TPH was not detected in wells MW-2, MW-3, and MW-4.
 - Chloride was detected in all four wells at concentrations ranging from 736 to 1,260 mg/L, above the standard for chloride in a domestic water supply of 250 mg/L. While chloride was present in groundwater above the standard for domestic water supply, the chloride concentration at upgradient well MW-2 (1,210 mg/L) was generally consistent with chloride concentrations at release area and downgradient wells MW-1, MW-3, and MW-4 (736 to 1,260 mg/L). Further, chloride was detected in only 1 of 50 total soil samples (47 original samples and 3 duplicate samples) above the Closure Criterion (boring SB-1 from 20 to 21 feet bgs), and was below the Closure Criterion in numerous samples with TPH concentrations above the Closure Criterion. The distribution of chloride in groundwater beneath the Site and the absence of chloride in soil at concentrations above the Closure Criterion (exception of 1 sample) suggests the chloride concentrations in groundwater are naturally occurring or associated with an upgradient source/regional issue, and are not related to the 2018 HEP release.
 - BTEX constituents were not detected in any well.

Prior to submittal of the December 2020 SCR, HEP and TRC presented the investigation findings to Ms. Cristina Eads and Mr. Bradford Billings of NMOCD in a virtual meeting on December 17, 2020. Based on discussion during that meeting, HEP proposed and NMOCD subsequently approved the following scope of work for additional assessment at the Site:

- Lateral delineation of surface soil exceeding the TPH Closure Criterion by completing soil borings south of boring SB-09, west of boring SB-13, and east of boring SB-14, and collecting samples for TPH analysis.



- Vertical delineation of soil exceeding the TPH Closure Criterion by completing borings adjacent to borings SB-09, SB-11, SB-13, and SB-14 and collecting samples for TPH analysis.
- Lateral delineation of soil in the capillary fringe (i.e., beneath 33 feet bgs) exceeding the TPH Closure Criterion at SB-06 by completing a boring to the north-northwest of boring SB-06 and collecting samples for TPH and chloride analysis.
- Additional assessment of BTEX in soil was determined to not be necessary based on the data collected in 2018 and 2020.
- Collection of groundwater samples from MW-1 through MW-4 for analysis of BTEX, TPH, and chloride to obtain temporal data.
- Installation and sampling of a monitoring well (MW-5) at the location of the boring proposed north-northwest of SB-06 and laboratory analysis of BTEX, TPH, and chloride. Based on the November 2020 gradient map, this proposed well was upgradient of SB-06 and the release point.

The investigation findings and proposed scope of work for additional assessment were submitted to the NMOCD in the SCR on December 22, 2020, and approved by NMOCD on December 31, 2020.

2.3 2021 Assessment Activities

The assessment scope of work proposed in the December 2020 SCR was implemented in May 2021. Based on the results of the May 2021 assessment activities, at least two additional borings and collection of additional groundwater samples were proposed to and approved by the NMOCD on July 16, 2021. On the same day, the NMOCD approved the extension request and revised due date of November 12, 2021, to complete the additional assessment and submit an updated SCR. The email exchange documenting the change in scope and extension as approved by NMOCD are provided in Appendix C. HEP completed three additional borings and collected groundwater samples in October 2021. Details regarding the May and October 2021 assessment activities are provided in Sections 4.5 and 4.6. The delineation discussion presented in Section 4.6 is based on all of the assessment data collected from 2018 to 2021. An updated C-141 Form (pages 3-5 only) is provided in Appendix A for NMOCD's review and approval.

3.0 NMOCD CLOSURE CRITERIA

Rule 19.15.29 NMAC provides cleanup standards for crude oil spills. The cleanup standards (described in the rule as "Closure Criteria") are based primarily on depth to groundwater, but are also based on other criteria. Three different Closure Criteria are provided in the rule. The most stringent apply to sites where groundwater is found within 50 feet of the ground surface or if the release occurred within one of the following areas:



- Within 300 feet of any continuously flowing watercourse or any other significant watercourse.
- Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary highwater mark).
- Within 300 feet from an occupied permanent residence, school, hospital, institution or church.
- Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes.
- Within 1000 feet of any fresh water well or spring.
- Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended.
- Within 300 feet of a wetland.
- Within the area overlying a subsurface mine.
- Within an unstable area such as a karst formation.
- Within a 100-year floodplain.

Available information was reviewed to determine the Closure Criteria for the Site. The findings of this evaluation are summarized below. This information was originally provided in the December 2020 SCR and approved by NMOCD in December 2020. The information has been updated for this submittal as needed.

3.1 Groundwater Evaluation

Based on the findings of the Site investigation, the depth to groundwater at the Site varies from 36 to 38 feet bgs. Based on this information, the Closure Criteria for a Site where groundwater is found within 50 feet of the ground surface are applicable to the Site. Groundwater gradient maps for November 2020, May 2021, and October 2021 are presented as Figures 4, 5, and 6, respectively. Cumulative groundwater elevations are provided in Table 2.

3.2 Surface Features and Other Development

Although the depth to groundwater at the Site has been established, relevant information was also reviewed to determine if any of the other conditions listed above apply to the Site. As part of this process, recent aerial photographs, topographic maps, the NMOSE POD (Point of Discharge) GIS website, and information available from the Lea County, New Mexico Central Appraisal District website were reviewed. As shown on Figure 7, the Site is **not** located:



- Within 300 feet of any continuously flowing watercourse or any other significant watercourse.
 - No watercourses (rivers, streams, arroyos, etc.) are apparent within 300 feet of the Site in the aerial photography or on the topographic map (Figure 1).
- Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary highwater mark).
 - The topographic map, aerial photography, and wetland maps (discussed below) each show a stock pond located approximately 920 feet to the north of the Site. However, there is not a lakebed, sinkhole, or playa lake located within 200 feet of the Site.
- Within 300 feet from an occupied permanent residence, school, hospital, institution or church.
 - The aerial photography and information available from the Lea County, New Mexico Central Appraisal District do not show or list any permanent residence, school, hospital, institution or church within 300 feet of the Site.
- Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes.
 - No wells or springs located within 500 feet of the Site appear in any of the NMOSE records reviewed.
- Within 1,000 feet of any fresh water well or spring.
 - No fresh water wells or springs located within 1,000 feet of the Site appear in any of the records reviewed.
- Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended.
 - Based on the property and other records review, the Site is not located in incorporated municipal boundaries or within a defined municipal fresh water well field.
- Within the area overlying a subsurface mine.
 - The Site does not overlie a subsurface mine.

3.3 Wetlands, Floodplain, and Karst Geology

A review of the United States Fish and Wildlife Service (USFWS) wetlands map indicates that the Site is not located within 300 feet of a wetland. The New Mexico Bureau of Land Management (BLM) karst potential map indicates the Site is located within the “low karst potential” area. Finally, review of the Federal Emergency Management Act (FEMA) floodplain



map indicates the Site is not located in the 100-year floodplain. Figures 8, 9, and 10 depict the Site and USFWS wetlands, karst potential, and FEMA floodplain information, respectively.

4.0 SITE ASSESSMENT/CHARACTERIZATION RESULTS

19.15.29.11 NMAC requires that a SCR have the components described in Sections 4.1 through 4.6 of this document.

4.1 Site Map

As required by 19.15.29.11 NMAC, a scaled diagram showing significant Site infrastructure, sample locations, and known subsurface features such as utilities is provided on Figures 2 and 3.

4.2 Depth to Groundwater

As discussed in Section 3.1, the depth to groundwater beneath the Site varies from 36 to 38 feet bgs. According to the Geologic Map of New Mexico, soils immediately beneath the Site are mapped as quaternary-aged Eolian and piedmont deposits ("Qep"), which consist of interlayered eolian sands and piedmont-slope deposits. These eolian deposits appear to be underlain by the southern edge of the Pliocene-aged Ogallala Formation. The Ogallala Formation consists of fine to very-fine sand but also includes minor quantities of clay, silt, coarse sand, and gravel¹. Most of the Ogallala is unconsolidated, although beds of caliche have formed near the top of the formation. The lower third of the Ogallala contains a higher proportion of coarse sediments than the upper two-thirds. Extensive beds of coarse sand and gravel are found in some of the buried stream channels cut into the Mesozoic bedrock underlying the Ogallala. The Ogallala is the principal source of groundwater in Northern Lea County.

4.3 Wellhead Protection Area

The 0.5-mile wellhead protection area is shown on Figure 10. Based on the available information there are two wells (excluding soil borings and monitoring wells associated with Site assessment activities) within 0.5 mile of the release point. The wells are depicted on Figure 10 and include the following:

¹ *Ground-Water Conditions in Northern Lea County, New Mexico, Hydrologic Atlas 62*, by Sidney R. Ash, United States Geological Survey, dated 1963.



NMOSE Well ID	Distance/Direction from Release Point	Well Details
L14648-POD1 through L14648-POD7	Site	Monitoring wells and borings that were permitted in 2020 and 2021 for Site assessment activities.
L10251	675 Feet to the Southwest	Windmill used for domestic uses and livestock watering was formerly located in this approximate location. Was in use prior to 1931. No longer present.
L15041 POD1	940 feet to the North-Northeast	63-foot-deep well permitted in November 2020 for livestock watering.
L14799 POD1	0.5 mile to the Southwest	50-foot-deep well permitted in December 2019 for livestock watering.
L14816 POD7	0.5 mile to the West	Environmental soil boring completed and plugged on August 3, 2020, as part of EMSU B #865 delineation by XTO Energy.

Other than the wells listed above, there are no known water sources, including springs, other wells, or other sources of freshwater extraction, within 0.5 mile of the Site.

4.4 Distance to Nearest Significant Watercourse

The horizontal distance to the nearest significant watercourse as defined in Subsection P of 19.15.17.7 NMAC is greater than 0.5 mile from the Site (see Figure 7).

4.5 Site Characteristics

4.5.1 Summary of May 2021 Investigation

The scope of work proposed in the December 2020 SCR was conducted from May 24 to 28, 2021, as follows:

- Drilled eight borings (SB-18 through SB-25) as proposed in the December 2020 SCR and, based on field observations of potential hydrocarbon-affected soil, drilled three additional borings (SB-26 through SB-28) to laterally delineate hydrocarbon-affected surface soil (upper 4 feet) and soil beneath 4 feet bgs. Boring name SB-17 was inadvertently skipped in the boring nomenclature.
- Converted boring SB-25 to upgradient monitoring well MW-5.
- Gauged and sampled monitoring wells MW-1 through MW-5 to assess groundwater.

The field procedures used during the May 2021 assessment activities were consistent with those used during the November 2020 assessment activities. The locations of the borings and monitoring well are shown on Figure 3. A photograph log of the May 2021 assessment activities is presented as Appendix D.



May 2021 Soil Investigation

HSA soil borings SB-18, SB-19, SB-20, SB-21, and SB-26 were drilled to depths of 30 to 35 feet bgs while HSA boring SB-25 was drilled to a depth of 50 feet bgs to install well MW-5. Hand auger borings SB-22, SB-23, SB-24, SB-27, and SB-28 were completed to depths of 3.5 to 4.5 feet bgs. Soil samples were collected for laboratory analysis from all of the borings except SB-23. Boring SB-23 was completed immediately adjacent to SB-09. The two borings were completed using a hand auger to similar depths (total depth of SB-09 was 4 feet bgs; refusal in SB-23 was at a depth of 4-4.5 feet bgs). Analytical data for two samples from SB-09 (2 and 4 feet bgs) had already been obtained. SB-23 could not be completed substantially deeper than SB-09; therefore, no additional samples were collected for laboratory analysis from SB-23.

Soil cores were continuously collected from the HSA borings using a split spoon sampler and the shallow borings using the hand auger bucket. Lithology, field observations of the potential presence of petroleum hydrocarbons, including hydrocarbon odor and staining, and PID readings were recorded in all borings with the exception of hand auger borings SB-23, SB-27, and SB-28, where the PID malfunctioned thus PID readings were not measured. Chloride field test kits were additionally conducted at boring SB-25. Select soil samples were submitted to ALS Laboratory in Houston, Texas, for laboratory analysis of TPH by EPA Method 8015M based on field observations of the potential presence of hydrocarbons and PID readings. Samples collected from boring SB-25 were additionally analyzed for chloride by EPA Method 300 to assess chloride concentrations in soil northwest (i.e., upgradient) of the release point. The boring locations are depicted on Figures 3 and 11. The field observations and PID screening data for the hand auger borings are summarized in Table 1. Field observations and PID screening data for the HSA borings are provided on the boring logs in Appendix B.

The lithology observed in the borings drilled in May 2021 was generally consistent with previous soil borings drilled at the Site. At borings SB-18 through SB-24, SB-26, SB-27, and SB-28, the lithology generally consisted of fine/clayey sand from the ground surface to a depth ranging from 5 to 10 feet bgs; and alternating layers of sandy clay and sandy caliche with cobbles to a depth of 35 feet bgs (the maximum total depth of these borings). At boring SB-25, which was drilled 95 feet northwest of the release point, the lithology generally consisted of fine/clayey sand from the ground surface to a depth of 9.5 feet bgs; alternating layers of sandy caliche with cobbles and fine sand to a depth of 20 feet bgs; weathered limestone to a depth of 25 feet bgs; and alternating layers of sandy clay, fine sand, and sandy caliche with cobbles to the total depth investigated of 50 feet bgs.

Hydrocarbon odor and/or staining were observed as follows:

- In boring SB-18, hydrocarbon odor was observed from 10 to 30 feet bgs while hydrocarbon staining was observed from 13.5 to 28.5 feet bgs;
- In boring SB-19, hydrocarbon odor was observed from 10 to 35 feet bgs while hydrocarbon staining was observed from 11.5 to 24 feet bgs; and



- In boring SB-21, a slight hydrocarbon odor was observed from 33 to 35 feet bgs.

PID readings above 50 parts per million (ppm) were measured in boring SB-18 from 15 to 30 feet bgs with a maximum reading of 864.7 ppm at 30 feet bgs; boring SB-19 at 5 feet bgs and from 12.5 to 35 feet bgs with a maximum reading of 1,363 ppm at a depth of 35 feet bgs; and boring SB-21 at 35 feet bgs with a reading of 76.7 ppm. In boring SB-25, chloride field kit results were <289 ppm in all intervals tested except for 365 ppm at 12.5 feet bgs, 326 ppm at 20 feet bgs, and 289 ppm at 22.5 feet bgs; all field test kit results were less than the Closure Criterion of 600 mg/kg. No hydrocarbon odor, staining, or PID readings above 50 ppm were observed in the remaining borings.

Non-dedicated sampling equipment was decontaminated prior to its initial use and before each sample was collected. Following sampling, the HSA and hand auger borings were backfilled with hydrated bentonite with the exception of boring SB-25, which was converted to a monitoring well.

Based on the results of the May 2021 soil investigation:

- TPH concentrations above the Closure Criterion in surface soil (upper 4 feet) were laterally delineated in all directions at the Site; and
- TPH concentrations above the Closure Criterion in soil beneath 4 feet bgs were laterally delineated in all directions with the exception of northeast of the release location (i.e., northeast of boring SB-19 at depths ranging from 4 to 35 feet bgs) and east of the release location (i.e., east of boring SB-21 in the capillary fringe at a depth of 34 to 35 feet bgs).
- TPH concentrations above the Closure Criterion in soil beneath 4 feet bgs were vertically delineated with exception of borings SB-18, SB-19, and SB-21 where TPH concentrations in the capillary fringe at the water table exceeded the Closure Criterion.

The May 2021 soil sample analytical results are discussed in Section 4.6.1.

May 2021 Groundwater Investigation

HSA boring SB-25 was converted to monitoring well MW-5 to assess groundwater quality upgradient of the release point. The well was installed to a total depth of approximately 50 feet bgs consistent with existing wells MW-1 through MW-4. Well MW-5 was constructed using 20 feet of 2-inch diameter PVC 0.010-inch slotted screen and approximately 30 feet of PVC casing. Sand pack was installed in the annular space of each well from the bottom to approximately 3 feet above the top of the screened interval. A 2-foot seal of hydrated bentonite was installed above the sand pack. The remaining annular space above the bentonite seal was grouted to the surface with cement-bentonite grout. The well was finished with a flush mount surface completion. The location of well MW-5 is depicted on Figure 3. The well construction diagram is provided in Appendix B, and the well survey performed at the Site is provided in Appendix E.



An interface probe was used to gauge the depth to LNAPL, if present, and groundwater at wells MW-1 through MW-5. LNAPL was not detected in any of the monitoring wells. The May 2021 groundwater elevations ranged from 3,525.25 feet amsl in upgradient well MW-5 to 3,525.00 feet amsl in downgradient well MW-4. The groundwater flow in May 2021 was to the southeast at an approximate gradient of 0.002 feet per foot. A summary of the groundwater elevations is provided in Table 2. A groundwater gradient map for May 2021 is presented as Figure 5.

Prior to sample collection, well MW-5 was developed using a surge block and pump. Wells MW-1 through MW-5 were sampled using low flow methodology consistent with the November 2020 assessment activities. Groundwater samples were submitted to ALS Laboratory in Houston, Texas, for laboratory analysis of BTEX by EPA Method SW8260, TPH by EPA Method 8015M, and chloride by EPA Method 300. The sample collected from well MW-5 was additionally analyzed for TDS by EPA Method 2540C. The May 2021 groundwater sample analytical results are summarized in Section 4.6.2.

4.5.2 Summary of October 2021 Investigation

HEP discussed the initial findings of the May 2021 assessment activities with NMOCD by telephone on July 12, 2021 and formally requested NMOCD authorization to perform additional assessment, including drilling of at least two borings and resampling of the five monitoring wells, by email dated July 16, 2021. NMOCD approved the additional assessment scope and provided an extension to November 12, 2021 to complete the assessment via email on July 16, 2021. This email communication is provided in Appendix C.

The additional assessment activities were conducted from October 5 to 12, 2021, as follows:

- Drilled three borings (SB-29, SB-30, and SB-31) using a Sonic drill rig to laterally delineate hydrocarbon-affected soil beneath 4 feet bgs east and northeast of the release point; and
- Gauged and sampled existing monitoring wells MW-1 through MW-5 to assess groundwater quality beneath the Site.

The field procedures used during the October 2021 assessment activities were generally consistent with those used during the November 2020 and May 2021 assessment activities. The locations of the three additional borings are shown on Figure 3. A photograph log of the October 2021 assessment activities is presented as Appendix D.

October 2021 Soil Investigation

Borings SB-29, SB-30, and SB-31 were drilled to a depth of 35 feet bgs using a track-mounted Sonic drill rig. A Sonic drill rig was utilized because the tracks allowed the rig to access the loose, sandy surface soil conditions present east and northeast of the release point. Boring SB-29 was drilled approximately 90 feet east of the release point and boring SB-30 was drilled



approximately 90 feet northeast of the release point. Based on field observations of hydrocarbon-affected soil within the capillary fringe in boring SB-29, boring SB-31 was drilled approximately 75 feet east-northeast of boring SB-29 and approximately 170 feet east-northeast of the release point.

Soil cores were continuously collected from the Sonic borings using a 10-foot-long core barrel sampler. Lithology, field observations of the potential presence of petroleum hydrocarbons, including hydrocarbon odor and staining, and PID readings were recorded for each boring. Select soil samples were submitted to ALS Laboratory in Houston, Texas, for laboratory analysis of TPH by EPA Method 8015M based on field observations of the potential presence of hydrocarbons and PID readings. The boring locations are depicted on Figures 3 and 11. Field observations and PID screening data for the Sonic borings are provided on the boring logs in Appendix B.

The lithology observed in borings SB-29 through SB-31 was consistent with previous soil borings drilled at the Site and generally consisted of fine/clayey sand from the ground surface to a depth ranging from 5 to 9 feet bgs, and alternating layers of sandy clay and sandy caliche with cobbles to a depth of 35 feet bgs (the total depth of the borings). A fine sand lens was also observed from 7 to 9 feet bgs at boring SB-30.

Hydrocarbon odor was observed in boring SB-29 from 33 to 35 feet bgs, in boring SB-30 from 30 to 35 feet bgs, and in boring SB-31 from 30 to 35 feet bgs. No hydrocarbon staining was observed in borings SB-29 through SB-31. PID readings above 50 ppm were measured in boring SB-29 at 35 feet bgs at a reading of 847.8 ppm and in boring SB-31 at 3 feet bgs, 10 feet bgs, 17 feet bgs, and from 23 to 35 feet bgs with a maximum reading of 1,145 ppm at a depth of 25 feet bgs. The October 2021 soil sample analytical results are discussed in Section 4.6.1.

Non-dedicated sampling equipment was decontaminated prior to its initial use and before each sample was collected. Following sampling, the Sonic borings were backfilled with hydrated bentonite.

October 2021 Groundwater Investigation

An interface probe was used to gauge the depth to LNAPL, if present, and groundwater at wells MW-1 through MW-5. LNAPL was not detected in any of the monitoring wells. The October 2021 groundwater elevations ranged from 3,525.06 feet amsl in upgradient well MW-5 to 3,524.82 feet amsl in downgradient well MW-3. The October 2021 groundwater flow was to the south at an approximate gradient of 0.002 feet per foot. A summary of the groundwater elevations is provided in Table 2. A groundwater gradient map for October 2021 is presented as Figure 6.

Wells MW-1 through MW-5 were sampled using low flow methodology consistent with the November 2020 and May 2021 assessment activities. Groundwater samples were submitted to ALS Laboratory in Houston, Texas, for laboratory analysis of BTEX by EPA Method SW8260,



TPH by EPA Method 8015M, and chloride by EPA Method 300. The October 2021 groundwater sample analytical results are summarized in Section 4.6.2.

As part of an evaluation of potential soil remediation technologies at the Site (i.e., bioventing), a properly calibrated four-gas meter was used to measure soil gas conditions at an approximate depth of 35 feet bgs (i.e., just above the water table) in all five monitoring wells during groundwater sampling activities. The October 2021 soil gas results are summarized in Section 4.6.2.

4.6 May and October 2021 Analytical Results

The May and October 2021 soil and groundwater sample analytical results are summarized below. Soil sample analytical results and Closure Criteria are presented on Table 3. Soil sample locations and soil sample analytical results for TPH and chloride are depicted in Figure 11, including the areal extent of surface soil (upper 4 feet) and soil beneath 4 feet bgs with TPH and/or chloride concentrations above Closure Criteria. Monitoring well locations and the groundwater sample analytical results are depicted in Figure 12. The laboratory analytical reports are attached as Appendix F.

4.6.1 May and October 2021 Soil Sample Analytical Results

The May and October 2021 soil sample laboratory analytical results were compared to the NMOCD Closure Criteria. As previously discussed, the Closure Criteria that apply to the Site are those where groundwater is found at less than 50 feet bgs. TPH concentrations and non-detect reporting limits in all samples collected in surface soil (upper 4 feet) were below the Site-specific Closure Criterion. TPH was detected in soil beneath 4 feet bgs at concentrations above the Site-specific Closure Criterion of 100 mg/kg as follows:

- In May 2021 boring SB-18, located approximately 15 feet northwest of the release point, TPH was detected above the Closure Criterion in samples collected from depths of 4 to 5 feet bgs, 9 to 10 feet bgs, 14 to 15 feet bgs (original and duplicate samples), 19 to 20 feet bgs, 24 to 25 feet bgs, 26 to 27 feet bgs, and 29 to 30 feet bgs. The maximum TPH concentration of 12,134 mg/kg was detected in the original sample collected from 14 to 15 feet bgs.
- In May 2021 boring SB-19, located approximately 20 feet northeast of the release point, TPH was detected above the Closure Criterion in samples collected from depths of 4 to 5 feet bgs, 11 to 12 feet bgs, 19 to 20 feet bgs, 24 to 25 feet bgs, 29 to 30 feet bgs, and 34 to 35 feet bgs (original and duplicate samples). The maximum TPH concentration of 11,305.5 mg/kg was detected in the sample collected from 11 to 12 feet bgs.
- In May 2021 boring SB-21, located approximately 45 feet east of the release point, TPH was detected above the Closure Criterion in the sample collected from 34 to 35 feet bgs at a concentration of 3,600.13 mg/kg. The 34 to 35 feet bgs interval is within the capillary fringe.



- In October 2021 boring SB-29, located approximately 95 feet east of the release point (and east of boring SB-21), TPH was detected above the Closure Criterion in the original and duplicate samples collected from 34 to 35 feet bgs at a maximum concentration of 5,902.5 mg/kg (duplicate sample). The 34 to 35 feet bgs interval is within the capillary fringe.
- In October 2021 boring SB-31, located approximately 170 feet east-northeast of the release point (and east-northeast of boring SB-29), TPH was detected slightly above the Closure Criterion in the sample collected from 5 to 6 feet bgs at a concentration of 127 mg/kg. However, the exceedance is not considered to be associated with the 2018 HEP release based on the absence of TPH concentrations above the Closure Criterion from the ground surface to a depth of 30 feet bgs at borings SB-21 and SB-29, which are located between the release point and boring SB-31. Further, the other eight soil sample intervals collected from boring SB-31 did not contain TPH concentrations above the Closure Criterion. Thus, the TPH exceedance from 5 to 6 feet bgs is considered anomalous or related to another source not associated with the 2018 HEP release.
- The depth intervals discussed above with TPH concentrations above the Closure Criterion generally indicated observations of hydrocarbon odor, hydrocarbon staining, and PID readings above 50 ppm. One exception to this was in boring SB-31 from 5 to 6 feet bgs, which had no hydrocarbon odor or staining. PID measurements obtained from this location were anomalously high and inconsistent with the absence of hydrocarbon odor and staining.

TPH concentrations and non-detect reporting limits in the remaining soil samples collected from borings SB-18, SB-19, SB-21, SB-29, and SB-31 and all of the soil samples collected from borings SB-20, SB-22, SB-24 through SB-28, and SB-30 were below the Closure Criterion of 100 mg/kg. Detected chloride concentrations and non-detect reporting limits in soil samples collected from upgradient boring SB-25 were below the Closure Criterion. The May and October 2021 soil sample analytical results and Closure Criterion are presented in Table 3. Soil sample locations and TPH and chloride analytical results are depicted on Figure 11. The laboratory analytical reports are attached as Appendix F.

The following conclusions are based on the results of soil assessment activities conducted from 2018 to 2021:

- BTEX constituents were not detected in soil at concentrations above the Closure Criteria in any sample.
- Chloride was detected in soil above the Closure Criterion of 600 mg/kg in only one of the 50 original and duplicate soil samples collected and analyzed for chloride from 2018 to 2021 (boring SB-1 from 20 to 21 feet bgs), and was below the Closure Criterion in numerous samples with TPH concentrations above the Closure Criterion. The one chloride detection above the Closure Criterion was vertically delineated by a deeper



sample collected from the same boring (SB-1) at 34 to 35 feet bgs and laterally delineated by samples collected from a similar interval at boring SB-05 to the north, boring SB-3 to the east-northeast, boring SB-08 to the southeast, boring SB-26 to the south, boring SB-07 to the southwest, and boring SB-4 to the west.

- TPH was detected in soil at concentrations above the Closure Criterion of 100 mg/kg in samples collected from borings SB-1, SB-05, SB-06, SB-09, SB-11, SB-13, SB-14, SB-18, SB-19, SB-21, SB-29, and SB-31 at depths ranging from 1.5 to 40 feet bgs. TPH concentrations above the Closure Criterion in surface soil (upper 4 feet) and soil beneath 4 feet bgs have been laterally delineated. Vertical delineation was achieved with exception of borings SB-1, SB-5, SB-6, SB-18, SB-19, SB-21, and SB-29 where TPH concentrations in the capillary fringe at the water table exceeded the Closure Criterion. A detailed summary of the 2018 to 2021 soil samples with TPH concentrations above the Closure Criterion and the associated lateral delineation of these exceedances is provided on the table below.

Summary of TPH Concentrations Above Closure Criterion and Associated Lateral Delineation

Location	Boring ID	Depth Intervals with TPH Exceedance (feet bgs)	Borings and Depth Intervals Providing Lateral Delineation (feet bgs)
Surface Soil (0 to 4 feet bgs)			
Release Area	SB-05 (MW-1)	2.5-3	<u>To North and Northeast</u> SB-06 (2.5-3) SB-16 (1.5; 4) SB-19 (2-3) SB-30 (1-2)
Northeast of Release Point	SB-14	1.5; 4	<u>To East and Southeast</u> SB-08 (2-2.5) SB-10 (3)
East of Release Point	SB-09	2; 4	SB-21 (2-3) SB-24 (2; 4) SB-29 (1-2) SB-31 (3-4)
West of Release Point	SB-11	3.5	<u>To South and Southwest</u> SB-07 (2-2.5) SB-15 (2; 4) SB-26 (2-3) SB-28 (2; 3.5)



Summary of TPH Concentrations Above Closure Criterion and Associated Lateral Delineation

Location	Boring ID	Depth Intervals with TPH Exceedance (feet bgs)	Borings and Depth Intervals Providing Lateral Delineation (feet bgs)
Northwest of Release Point	SB-13	1.5; 3.5	<u>To West and Northwest</u> SB-12 (4) SB-20 (2-3) SB-25 (2-3) SB-27 (2; 3.5)
		Soil Beneath 4 feet bgs	
Release Area	SB-1	34-35	<u>To North and Northeast</u> SB-30 (5-6; 11-12; 14-15; 19-20; 25-26; 29-30; 34-35)
	SB-05 (MW-1)	16.5-17; 27.5-28; 32.5-33	
		39-40	
North of Release Point	SB-06	39.5-40	<u>To East and Southeast</u> SB-08 (14.5-15; 39.5-40) SB-31 (9-10; 16-17; 19-20; 23-24; 25-26; 30-31; 34-35)
Northeast of Release Point	SB-19	4-5; 11-12; 19-20; 24-25; 29-30	<u>To South and Southwest</u> SB-2 (4-5; 10-11; 34-35) SB-07 (34.5-35; 39.5-40; 49-50) SB-26 (4-5; 9-10; 14-15; 21-22; 29-30; 34-35)
		34-35	
East of Release Point	SB-21	34-35	<u>To West and Northwest</u> SB-4 (4-5; 24-25; 34-35)
	SB-29	34-35	
	SB-31*	5-6	
Northwest of Release Point	SB-18	4-5; 9-10; 14-15; 19-20; 24-25; 26-27; 29-30	SB-20 (4-5; 9-10; 14-15; 19-20; 24-25; 29-30; 34-35) SB-25 (11-12; 16-17; 26-27; 34-35; 39-40)

Notes:

Soil samples collected in surface soil from 0 to 4 feet bgs that exceeded the Closure Criterion shown in orange shading.

Soil samples collected between 4 feet bgs and the capillary fringe (i.e., 4 to 33 feet bgs) that exceeded the Closure Criterion shown in light blue shading.

Soil samples collected within the capillary fringe (i.e., beneath 33 feet bgs) that exceeded the Closure Criterion shown in dark blue shading.

*TPH exceedance at boring SB-31 (5 to 6 feet bgs) not attributed to 2018 HEP release and thus not laterally delineated.

The areal extent of surface soil and soil beneath 4 feet bgs with TPH and/or chloride concentrations above the Closure Criteria are depicted on Figure 11. The areal extent is based on the midpoint between borings and samples with exceedances and delineating borings and samples without exceedances at the appropriate depth interval.



The extent of surface soil (upper 4 feet) with TPH concentrations above the Closure Criterion is limited to the immediate area (i.e., within 25 feet) of the release point, while the extent of soil beneath 4 feet bgs with TPH concentrations above the Closure Criterion includes the area of the release point and extends approximately 60 feet north of the release point, 130 feet east of the release point, 20 feet south of the release point, and 40 feet west of the release point. With the exception of boring SB-31 (5 to 6 feet bgs), where the TPH exceedance is not attributed to the 2018 HEP release, TPH concentrations above the Closure Criterion in soil between 4 feet bgs and the capillary fringe (i.e., from 4 to 33 feet bgs) was limited to borings SB-05, SB-18, and SB-19, which are located within 20 feet of the release point. The remaining soil samples with TPH concentrations above the Closure Criterion only occurred within the capillary fringe (i.e., beneath 33 feet bgs) at borings SB-1, SB-6, SB-21 and SB-29, which are located more than 20 feet from the release point. This suggests a column of TPH-affected soil extends vertically from surface soil to the capillary fringe in the immediate vicinity of the release point. This column of TPH-affected soil is generally consistent with the extent of surface soil with TPH concentrations above the Closure Criterion. Hydrocarbons then likely migrated laterally within the capillary fringe at depths beneath 33 feet bgs (i.e., TPH-affected soil at borings SB-1, SB-6, SB-21 and SB-29).

4.6.2 May and October 2021 Groundwater Sample Analytical Results

The May and October 2021 groundwater sample laboratory analytical results were compared to several water quality standards as follows:

- BTEX results were compared against the Human Health Standards for Groundwater presented in NMAC 20.6.2.3103(A).
- Chloride results were compared against the Other Standards for Domestic Water Supply presented in NMAC 20.6.2.3103(B).
- TPH results were not compared against a groundwater water quality standard as NMOCD does not have an action level for TPH.

The May 2021 groundwater sample analytical results indicate the following:

- BTEX constituents were not detected in any of the wells, and the non-detect reporting limits were below the human health standards presented in NMAC 20.6.2.3103(A).
- Chloride was detected in all five wells at concentrations ranging from 849 mg/L in well MW-3 to 1,310 mg/L in well MW-4. All of the detected concentrations exceeded the chloride standard for domestic water supply of 250 mg/L. Notably, chloride was detected at a concentration of 1,170 mg/L in well MW-5, located approximately 95 feet upgradient (i.e., northwest) of the release point and beyond the extent of TPH-affected soil, and at a concentration of 1,250 mg/L in well MW-2, located approximately 40 feet upgradient (i.e., north) of the release point. Chloride concentrations at upgradient wells



MW-2 and MW-5 were generally consistent with chloride concentrations at release area well MW-1 and downgradient wells MW-3 and MW-4.

- TPH DRO was detected in all five wells at concentrations ranging from 0.064 mg/L in well MW-4 to 0.24 mg/L in well MW-1. TPH GRO and MRO were not detected. Notably, TPH DRO was detected at a concentration of 0.22 mg/L in well MW-5, located approximately 95 feet upgradient (i.e., northwest) of the release point and beyond the extent of TPH-affected soil, and at a concentration of 0.12 mg/L in well MW-2, located approximately 40 feet upgradient (i.e., north) of the release point. TPH DRO concentrations at upgradient wells MW-2 and MW-5 were consistent with TPH DRO concentrations at release area well MW-1 and downgradient wells MW-3 and MW-4.
- TDS was detected at a concentration of 3,690 mg/L in upgradient well MW-5, the only well analyzed for TDS in May 2021. The TDS concentration at MW-5 was slightly higher than the TDS concentrations (1,970 to 3,020 mg/L) from November 2020 for wells MW-1 through MW-4.

The October 2021 groundwater sample analytical results indicate the following:

- BTEX constituents were not detected in any of the wells, and the non-detect reporting limits were below the human health standards presented in NMAC 20.6.2.3103(A).
- Chloride was detected in all five wells at concentrations ranging from 862 mg/L in well MW-3 to 1,280 mg/L in wells MW-1 and MW-4. All of the detected concentrations exceeded the chloride standard for a domestic water supply of 250 mg/L. Notably, chloride was detected at a concentration of 1,230 mg/L in well MW-5, located approximately 95 feet upgradient (i.e., northwest) of the release point and beyond the extent of TPH-affected soil, and at a concentration of 1,220 mg/L in well MW-2, located approximately 40 feet upgradient (i.e., north) of the release point. Chloride concentrations at upgradient wells MW-2 and MW-5 were consistent with chloride concentrations at release area well MW-1 and downgradient wells MW-3 and MW-4.
- TPH DRO was detected in well MW-1 at a concentration of 0.052 mg/L, slightly above the laboratory reporting limit of 0.050 mg/L. TPH was not detected in the remaining four wells in October 2021.

The 2020 and 2021 groundwater assessment results indicate groundwater beneath the Site has **not** been affected by the 2018 HEP release based on the absence of BTEX constituents above laboratory reporting limits and based on the October 2021 groundwater assessment results, the general absence of TPH above laboratory reporting limits with the exception of a TPH DRO concentration detected slightly above the laboratory reporting limit in well MW-1. While chloride was present in groundwater above the standard for domestic water supply, chloride concentrations (1,170 to 1,250 mg/L) at upgradient wells MW-2 and MW-5 are generally consistent with chloride concentrations (736 to 1,280 mg/L) at release area well MW-1 and downgradient wells MW-3 and MW-4. Further, chloride was detected above the Closure



Criterion in only one of the 50 original and duplicate soil samples collected and analyzed for chloride from 2018 to 2021, and was below the Closure Criterion in numerous samples with TPH concentrations above the Closure Criterion. The distribution of chloride in groundwater beneath the Site and the absence of chloride in soil above the Closure Criterion (exception of 1 sample) indicates the chloride concentrations in groundwater are naturally occurring or associated with an upgradient source/regional issue, and are not related to the 2018 HEP release.

Groundwater sample analytical results are summarized on Table 4. Groundwater gradient maps for November 2020, May 2021, and October 2021 are presented on Figures 4, 5, and 6, respectively. The groundwater sample analytical results are depicted in Figure 12. The laboratory analytical reports are attached as Appendix F.

As discussed above, a four-gas meter was used to evaluate soil gas conditions at an approximate depth of 35 feet bgs (just above the saturated zone) in all five monitoring wells during October 2021 groundwater sampling activities. The results are presented on the table below. During aerobic respiration, oxygen is utilized by aerobic microorganisms and carbon dioxide is generated as a byproduct. As expected, the percentage of oxygen in soil gas was lowest in release area well MW-1 and slightly depressed in wells MW-2, MW-3, and MW-4 as compared to both ambient atmospheric conditions and conditions in upgradient well MW-5, which is located further from the release area than the other four wells. Carbon dioxide concentrations in soil gas were also comparatively higher in all five wells than in ambient air, and, as expected, lower in upgradient well MW-5 as compared to wells MW-1 through MW-4. These data suggest aerobic degradation is occurring predominantly in the vicinity of release area well MW-1 and, to a lesser extent, in the vicinity of wells MW-2, MW-3, and MW-4. Hydrogen sulfide, a potential byproduct of anaerobic degradation, was only detected in release area well MW-1, suggesting anaerobic degradation may also be occurring in the vicinity of release area well MW-1. Finally, the lower explosive limit (LEL) measurement in MW-1 was 2 percent, while the LEL in all other locations was 0 percent. This suggests that there is a limited volatile hydrocarbon component in the affected soil consistent with the crude oil release.

October 2021 Soil Gas Conditions in Monitoring Wells MW-1 through MW-5

Location	Oxygen (percent)	Carbon Dioxide (percent)	Lower Explosive Limit (percent)	Hydrogen Sulfide (ppm)
Ambient Air	20.9%	0.05	0	0
MW-1 (35')	2.7%	4.99*	2	8.3
MW-2 (35')	11.2%	4.99*	0	0
MW-3 (35')	14.1%	4.99*	0	0
MW-4 (35')	17.1%	4.99*	0	0
MW-5 (35')	18.0%	3.21	0	0

**Notes:**

*The upper end limit of carbon dioxide measurements is 5 percent, so the actual concentration of carbon dioxide is likely higher than 4.99%.

ppm = parts per million.

4.6.3 Laboratory Analytical Data Quality Assurance/Quality Control Results

Data reported in work orders HS21051478, HS21060126, HS21100478, HS21100504, HS21100713, HS21100714 generated by ALS Laboratory in Houston, Texas, were reviewed to ensure that reported analytical results meet data quality objectives. It was determined by quality control data associated with analytical results that reported concentrations of target analytes are defensible and that measurement data reliability is within the expected limits of sampling and analytical error. The analytical results are usable for characterization of affected media at the Site. Analytical data review checklists and copies of the laboratory analytical reports are attached as Appendix F.

5.0 PROPOSED REMEDIATION WORKPLAN

Soil with TPH concentrations above the NMOCD Closure Criterion will be addressed by a hybrid approach due to the limited areal extent of TPH-affected surface soil, the larger areal extent and greater depth of TPH-affected soil beneath 4 feet bgs (i.e., to a maximum depth of 40 feet bgs), and the absence of groundwater impacts beneath the Site. The following remedial activities are proposed to address hydrocarbon-affected soil:

- Excavation and off-Site disposal of surface soil (upper 4 feet) with TPH concentrations above the Closure Criterion;
- Bioventing of soil beneath 4 feet bgs with TPH concentrations above the Closure Criterion contingent upon the results of a bioventing pilot test; and
- Annual groundwater monitoring during implementation of the soil remedies (i.e., excavation and bioventing, if selected).

The combination of excavation of surface soil (upper 4 feet) and bioventing of soil beneath 4 feet bgs, if bioventing is determined to be effective, will reduce the potential risk posed to human health receptors and is appropriate given the absence of hydrocarbon-affected groundwater beneath the Site. Initially, it is proposed that a bioventing pilot test be conducted to evaluate the effectiveness of the technology and determine the optimum operational parameters to maximize treatment of hydrocarbon-affected soil at depths greater than 4 feet bgs. Additional details regarding the proposed remedial activities are provided below. The extent of soil with TPH concentrations above the Closure Criteria and the proposed remediation workplan are shown on Figure 13.

As discussed above, soil at the Site was not affected by chloride as demonstrated by the absence of chloride concentrations above the Closure Criterion with the exception of only one sample (boring SB-1 from 20 to 21 feet bgs) out of 50 original and duplicate soil samples



collected and analyzed for chloride from 2018 to 2021. The presence of chloride at concentrations above the standard for domestic water supply in groundwater beneath the Site is not associated with the 2018 HEP release; the distribution of chloride in groundwater and the overall absence of chloride in soil above the Closure Criterion (exception of 1 sample) indicates the chloride concentrations in groundwater are naturally occurring or associated with an upgradient source/regional issue, and are not related to the 2018 HEP release. Thus, this Remediation Workplan does not address chloride concentrations in soil and/or groundwater.

5.1 Surface Soil Excavation and Off-Site Disposal

Excavation of surface soil with TPH concentrations above Closure Criterion will be conducted to an approximate depth of 4.5 feet bgs. The extent of surface soil with TPH concentrations above the Closure Criterion is shown on Figure 13. The soil will be excavated using a backhoe or excavator. Field observations of the potential presence of petroleum hydrocarbons, including hydrocarbon odor, staining and PID readings, will be recorded throughout the excavation. Confirmation composite soil samples will be collected from excavation sidewalls every 100 linear feet (with a minimum of one sidewall sample to be collected per side of the excavation) to document conditions at the excavation sidewalls prior to backfilling. Excavation bottom confirmation composite soil samples will be collected every 200 square feet to document conditions at the excavation bottom prior to backfilling. Sidewall and bottom confirmation samples will be submitted for laboratory analysis of TPH by EPA Method 8015M. If TPH concentrations exceed the Closure Criterion in sidewall samples, the excavation will be laterally expanded and additional sidewall samples will be collected until the Closure Criterion is achieved. TPH concentrations above the Closure Criterion in bottom confirmation samples will be used to document conditions of the underlying soil, which will be addressed as described in Section 5.2 of this report.

Excavated soil will be temporarily stockpiled on plastic sheeting at the Site, profiled, and transported off-Site for disposal at a NMOCD-permitted disposal facility under manifest. Based on existing Site data, it is estimated that approximately 200 cubic yards of soil will be excavated for off-Site disposal. The excavation will be backfilled to original grade using clean, imported fill. The area disturbed during remedial activities will be restored to a similar condition that existed prior to the release in accordance with 19.15.29.13 NMAC.

It is anticipated that excavation and backfilling will be completed within 90 days of completing the bioventing pilot test described in Section 5.2 below.

5.2 Bioventing

HEP proposes evaluating the use of bioventing to remediate hydrocarbon-affected soil beneath 4 feet bgs at the Site contingent upon the results of a bioventing pilot test. Bioventing systems are proven to facilitate bioremediation of soil affected by large-chain, non-volatile hydrocarbons such as the TPH DRO and MRO, which represent the vast majority of TPH present in soil at the Site. Bioventing facilitates bioremediation by aerating soils with ambient air, which has a high



oxygen content. The increased oxygen levels promote populations of aerobic bacteria to aerobically degrade hydrocarbons present in soil.

Bioventing is appropriate for the Site based on the following:

- According to *Procedures for Conducting Bioventing Pilot Tests and Long-Term Monitoring of Bioventing Systems* (Air Force Center for Environmental Excellence [AFCEE], 2004), "Bioventing is best suited for petroleum hydrocarbons with greater than 8 carbon atoms (C8+) such as jet fuels, diesels and heating oils." The vast majority of the TPH present at the Site is in the C8+ range, including DRO and MRO. Volatile hydrocarbons, such as the C6-C8 compounds including benzene, toluene, ethylbenzene, and xylene, are a negligible component of the hydrocarbons present in the soil at the Site.
- The interbedded sandy clays, fine/clayey sands, and sandy caliche with cobbles present in the hydrocarbon-affected area are well suited to aeration via bioventing.
- Soil gas conditions were evaluated at an approximate depth of 35 feet bgs (just above the saturated zone) in all five Site monitoring wells during October 2021. During aerobic respiration, oxygen is utilized by aerobic microorganisms and carbon dioxide is generated as a byproduct. The soil gas evaluation suggests aerobic degradation is occurring predominantly in the vicinity of release area well MW-1 and, to a lesser extent, in the vicinity of wells MW-2, MW-3, and MW-4. Aerobic respiration is likely being limited by low levels of oxygen available in the subsurface.

According to available literature, it takes approximately 3.5 pounds of oxygen to reduce 1 pound of hydrocarbons. Based on soil gas measurements at well MW-1, and as discussed above, aerobic respiration in the release area is likely being limited by the low oxygen levels present in the subsurface. Bioventing would increase oxygen concentrations and increase bioremediation rates. Literature documenting the effectiveness of bioventing is referenced in Appendix G.

The objective of bioventing, if implemented at the Site, would be to reduce TPH concentrations in soil beneath 4 feet bgs. HEP proposes that a bioventing pilot test be performed at the Site to evaluate the effectiveness of the technology and determine the optimum operational parameters to maximize treatment of hydrocarbon-affected soil.

The pilot test would consist of the following:

- Submit an underground injection control (UIC) permit application to NMOCD to inject air into the soil column at the Site. NMOCD will either approve the UIC permit or determine that a UIC permit is not required.
- Utilize a generator-powered blower to inject ambient air into release area well MW-1. The wellhead will be sealed during injection activities. The air injection rate will range from 1 to 3 cubic feet per minute per vertical foot of the screened interval in the vadose



zone. Air will be injected into MW-1 for approximately two days or until atmospheric oxygen concentrations (i.e., approximately 20.9 percent) are measured in soil gas at depth in MW-1.

- During injection at MW-1, soil gas oxygen concentrations will be periodically monitored using a four-gas meter at wells MW-2, MW-3, MW-4, and MW-5 at an approximate depth of 34 to 35 feet bgs. Soil gas carbon dioxide, hydrogen sulfide, and LEL levels will also be measured as supporting data. Additionally, wellhead pressure/vacuum will be periodically monitored at these wells. The pilot test is anticipated to have a radius of influence of approximately 50 feet based on the soils present beneath the Site.
- Following injection at MW-1, soil gas oxygen concentrations in MW-1 will be monitored at an approximate depth of 34 to 35 feet bgs over an 8 to 12-hour period to assess oxygen consumption rates over time. As above, soil gas carbon dioxide, hydrogen sulfide, and LEL levels will also be measured.

The locations of the proposed pilot test injection well (MW-1), the anticipated injection radius of influence of 50 feet, and the pilot test observation wells (MW-2, MW-3, MW-4, and MW-5) are shown on Figure 13. Following injection, the reduction in oxygen concentrations over time at depth in well MW-1 will be used to estimate aerobic degradation rates. The effectiveness of bioventing will be based on primary and secondary criteria. Primary criteria include the rate of oxygen consumption (as measured after injection ceases) and the radius of influence (as measured while injection is occurring). Secondary criteria include changes in carbon dioxide, hydrogen sulfide, and LEL levels in soil gas as measured during both the injection phase of the test and after injection ceases.

If bioventing is determined to be effective based on the results of the pilot test, a full-scale bioventing system will be designed and proposed to NMOCD prior to being installed at the Site. The pilot test data will be used to determine the optimal design and operational parameters. The findings of the pilot test will be presented in a letter report to NMOCD, and, if effective, the full-scale bioventing system design, operational schedule and timeframe, procedures for system operation and maintenance (O&M) and remediation endpoints/confirmation sampling will also be presented in the letter report. If the bioventing pilot test is not effective, the findings of the pilot test and an alternative for remediating soil will be presented in a letter report to NMOCD.

It is anticipated that the UIC permit application for the pilot test will be submitted within 30 days of NMOCD-approval of this Remediation Workplan. The bioventing pilot test and submittal of the letter report documenting the pilot test results will be completed within 180 days of approval of the UIC permit or determination by NMOCD that a UIC permit is not required. The letter report will also include design of the full-scale bioventing system (if bioventing is effective) or an alternative for remediating soil (if bioventing is not effective) to address soil beneath 4 feet bgs.



5.3 Annual Groundwater Monitoring and Reporting

While groundwater assessment results indicate groundwater beneath the Site has **not** been affected by the 2018 HEP release, annual groundwater monitoring is proposed at the Site as a conservative measure to monitor groundwater quality during implementation of the soil remedies (i.e., excavation and bioventing, if selected). Existing monitoring wells MW-1 through MW-5 will be gauged for depth to LNAPL, if present, and groundwater, and sampled using low flow methodology for laboratory analysis of TPH by EPA Method 8015M. The monitoring results will be documented in annual monitoring reports to be prepared and submitted to NMOCD within 120 days of groundwater sampling. The monitoring results may be presented with the bioventing system O&M data, if implemented at the Site. Pending NMOCD-approval of the Remediation Workplan, annual groundwater monitoring activities will commence in 2022. Annual groundwater monitoring will cease upon completion of the soil remedy.

6.0 DISTRIBUTION

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Tables

**TABLE 1
SUMMARY OF FIELD OBSERVATIONS AND MEASUREMENTS FROM HAND AUGER BORINGS
WTX TO EMSU BATTERY TO BYRD PUMP SEGMENT, LEA COUNTY, NM**

Boring Number	Location	Completion Date	Depth (feet bgs)	PID Measurement (ppm)	Chloride Test Kit Measurement (ppm)	Sample Submitted to Lab?	Lithology
SB-09	East	11/6/2020	1	0	NM	No	Sand-dominant topsoil.
			2	0	<289	Yes	
			4	0	<289	Yes	
SB-10	East	11/6/2020	1	0	NM	No	Sand-dominant topsoil.
			2	0	NM	No	Refusal on rock at 3.75 feet bgs.
			3	0	<289	Yes	
SB-11	West	11/6/2020	1	0	NM	No	Sand-dominant topsoil.
			2	0	<289	Yes	
			3.5	0	<289	Yes	
SB-12	West	11/6/2020	1	0	NM	No	Sand-dominant topsoil.
			2	0	NM	No	
			3	0	NM	No	
			4	0	<289	Yes	
SB-13	Northwest	11/6/2020	1.5	1.9	NM	No	Sand-dominant topsoil.
			2.5	1.3	<289	Yes	
			3.5	0.1	<289	Yes	
SB-14	Northeast	11/6/2020	1.5	136.3	<289	Yes	Sand-dominant topsoil.
			2	129.4	NM	No	
			3	124.6	NM	No	
			4	130.1	<289	Yes	
SB-15	South	11/6/2020	1.5	0	NM	No	Sand-dominant topsoil.
			2	0	<289	Yes	
			3	0.4	NM	No	
			4	0.2	<289	Yes	
SB-16	Northeast	11/6/2020	1.75	0	<289	Yes	Sand-dominant topsoil.
			2	0	NM	No	
			3	0	NM	No	
			4	0	<289	Yes	
SB-22	West	5/24/2021	4-4.5	0.5	NM	Yes	Sand-dominant topsoil. Refusal on rock at 4.5 feet bgs.
SB-23	East	5/24/2021	4-4.5	NM	NM	No	Sand-dominant topsoil. Refusal on rock at 4.5 feet bgs.
SB-24	Southeast	5/24/2021	2	1.0	NM	Yes	Sand-dominant topsoil. Refusal on rock at 4 feet bgs.
			4	0	NM	Yes	
SB-27	Northwest	5/28/2021	2	NM	NM	Yes	Sand-dominant topsoil.
			3.5	NM	NM	Yes	
SB-28	Southwest	5/28/2021	2	NM	NM	Yes	Sand-dominant topsoil.
			3.5	NM	NM	Yes	

Notes:

bgs = below ground surface.

ppm = parts per million.

NM = Not measured.

NA = Not applicable.

PID = Photo-ionization detector.

Please note that SB-17 does not appear on this table or in the list of boring logs because the name was inadvertently skipped.

Please refer to boring logs for lithology and field screening results at borings SB-05 through SB-08, SB-18, SB-19, SB-20, SB-21, SB-25,

SB-26, SB-29, SB-30, and SB-31. Boring logs are provided in Appendix B.

**TABLE 2
SUMMARY OF GROUNDWATER ELEVATIONS
WTX TO EMSU BATTERY TO BYRD PUMP SEGMENT, LEA COUNTY, NM**

Monitor Well ID	Well Total Depth (feet btoc)	Ground Surface at Well Elevation (feet amsl)	Well Top of Casing Elevation (feet amsl)	Screened Interval (feet btoc)	Gauging Date	Depth to LNAPL (feet btoc)	Depth to Water (feet btoc)	LNAPL Thickness (feet)	Corrected Depth to Water (feet btoc)	Corrected Groundwater Elevation (feet amsl)	Well Saturated Thickness (feet)
MW-1	49.25	3,561.71	3,561.53	30.0 - 50.0	11/07/20	ND	36.29	0.00	36.29	3,525.24	12.96
					05/28/21	ND	36.47	0.00	36.47	3,525.06	12.78
					10/12/21	ND	36.67	0.00	36.67	3,524.86	12.58
MW-2	49.49	3,563.09	3,562.94	30.0 - 50.0	11/07/20	ND	37.59	0.00	37.59	3,525.35	11.90
					05/25/21	ND	37.81	0.00	37.81	3,525.13	11.68
					10/06/21	ND	37.95	0.00	37.95	3,524.99	11.54
MW-3	49.93	3,562.91	3,562.81	30.0 - 50.0	11/07/20	ND	37.58	0.00	37.58	3,525.23	12.35
					05/25/21	ND	37.79	0.00	37.79	3,525.02	12.14
					10/12/21	ND	37.99	0.00	37.99	3,524.82	11.94
MW-4	50.31	3,563.26	3,563.12	30.0 - 50.0	11/07/20	ND	37.92	0.00	37.92	3,525.20	12.39
					05/25/21	ND	38.12	0.00	38.12	3,525.00	12.19
					10/06/21	ND	38.28	0.00	38.28	3,524.84	12.03
MW-5	49.72	3,563.62	3,563.40	30.0 - 50.0	05/28/21	ND	38.15	0.00	38.15	3,525.25	11.57
					10/12/21	ND	38.34	0.00	38.34	3,525.06	11.38

Notes:

amsl = above mean sea level.

btoc = below top of casing.

LNAPL = light non-aqueous phase liquid.

DTW = depth to water.

ND = not detected.

**TABLE 3
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
WTX TO EMSU BATTERY TO BYRD PUMP CRUDE OIL RELEASE, LEA COUNTY, NM**

Location Details	Boring ID	Depth Interval (feet bgs)	Sample Date	Constituent of Concern (COC)										
				BTEX (mg/kg)					TPH (mg/kg)				Chloride (mg/kg)	
				Benzene	Ethyl-benzene	Toluene	Total Xylenes	Total BTEX	GRO	DRO	MRO	TPH ³		
10	None	None	None	50 ²	None	None	None	100 ⁴	600					
NMOC D Closure Criteria¹														
SOURCE AREA	SB-1 (GHD)	(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-05 (MW-1)	(2.5-3')	11/3/2020	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.050	120	290	410	5.91	
		(16.5-17')	11/3/2020	<0.0048	0.16	0.0097	0.5	0.6697	200	13000	8200	21400	148	
		(27.5-28')	11/3/2020	<0.0050	0.13	<0.0050	0.18	0.31	170	11000	7300	18470	<4.98	
		(32.5-33')	11/3/2020	<0.0050	0.16	<0.0050	0.55	0.71	110	8000	6100	14210	14.0	
	(39-40')	11/3/2020	<0.0048	0.047	<0.0048	0.042	0.089	5.4	2400	2000	4405.4	60.6		
LATERAL DELINEATION	North	SB-06 (MW-2)	(2.5-3')	11/4/2020	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.050	3.6	6.8	10.4	<4.91
			(14.5-15')	11/4/2020	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.052	3.5	5.3	8.8	386
			(39.5-40')	11/4/2020	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	0.3	400	390	790.3	98.1
			Duplicate-01	11/4/2020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.36	390	470	860.36	95.5
			(47.5-48')	11/4/2020	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.048	4.2	5.1	9.3	166
	Northeast	SB-14	1.5' (16-18")	11/6/2020	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	16	9100	8000	17116	<4.99
			4' (46-48")	11/6/2020	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	13	5500	4700	10213	<5.00
			Duplicate-02	11/6/2020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	7.4	4700	4300	9007.4	<5.00
		SB-16	1.5' (13-20")	11/6/2020	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.053	2.6	6.2	8.8	<4.98
			4' (44-46")	11/6/2020	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.054	<1.7	5.1	5.1	<4.95
SB-19 (Adjacent to SB-14)		(2-3')	5/27/2021	NA	NA	NA	NA	NA	NA	<0.052	5.6	16	21.6	NA
		(4-5')	5/27/2021	NA	NA	NA	NA	NA	NA	1.9	910	1200	2111.9	NA
		(11-12')	5/27/2021	NA	NA	NA	NA	NA	NA	5.5	5700	5600	11305.5	NA
		(19-20')	5/27/2021	NA	NA	NA	NA	NA	NA	7.3	79	78	164.3	NA
		(24-25')	5/27/2021	NA	NA	NA	NA	NA	NA	32	4900	4400	9332	NA
		(29-30')	5/27/2021	NA	NA	NA	NA	NA	NA	24	6100	5100	11224	NA
		(34-35')	5/27/2021	NA	NA	NA	NA	NA	NA	56	3100	2800	5956	NA
Dup-02		5/27/2021*	NA	NA	NA	NA	NA	NA	36	4400	3800	8236	NA	
SB-30		(1-2')	10/6/2021	NA	NA	NA	NA	NA	NA	<0.052	4.5	9.4	13.9	NA
		(5-6')	10/6/2021	NA	NA	NA	NA	NA	NA	<0.049	7.9	14	21.9	NA
	(11-12')	10/6/2021	NA	NA	NA	NA	NA	NA	<0.048	41	12	53	NA	
	(14-15')	10/6/2021	NA	NA	NA	NA	NA	NA	<0.050	17	60	77	NA	
	(19-20')	10/6/2021	NA	NA	NA	NA	NA	NA	<0.048	29	7.4	36.4	NA	
	(25-26')	10/6/2021	NA	NA	NA	NA	NA	NA	<0.054	14	6.4	20.4	NA	
	(29-30')	10/6/2021	NA	NA	NA	NA	NA	NA	<0.050	6.6	8.7	15.3	NA	
(34-35')	10/6/2021	NA	NA	NA	NA	NA	NA	<0.051	6.9	23	29.9	NA		

**TABLE 3
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
WTX TO EMSU BATTERY TO BYRD PUMP CRUDE OIL RELEASE, LEA COUNTY, NM**

Location Details	Boring ID	Depth Interval (feet bgs)	Sample Date	Constituent of Concern (COC)									Chloride (mg/kg)
				BTEX (mg/kg)					TPH (mg/kg)				
				Benzene	Ethyl-benzene	Toluene	Total Xylenes	Total BTEX	GRO	DRO	MRO	TPH ³	
NMOCDC Closure Criteria¹				10	None	None	None	50²	None	None	None	100⁴	600
LATERAL DELINEATION	SB-3 (GHD)	(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-09	2' (24-26")	11/6/2020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.052	480	1400	1880	<4.96
		4' (46-48")	11/6/2020	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.054	100	700	800	<4.97
	SB-10	3' (36-38")	11/6/2020	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.050	<1.7	<3.4	<3.4	<4.99
	SB-21	(2-3')	5/27/2021	NA	NA	NA	NA	NA	<0.054	7.8	<3.4	7.8	NA
		(4-5')	5/27/2021	NA	NA	NA	NA	NA	<0.049	<1.7	3.8	3.8	NA
		(11-12')	5/27/2021	NA	NA	NA	NA	NA	<0.056	3.2	5.0	8.2	NA
		(19-20')	5/27/2021	NA	NA	NA	NA	NA	<0.050	5.2	11	16.2	NA
		(24-25')	5/27/2021	NA	NA	NA	NA	NA	<0.054	7.9	6.7	14.6	NA
		(29-30')	5/27/2021	NA	NA	NA	NA	NA	<0.054	6.8	9.3	16.1	NA
	SB-23	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	SB-29	(1-2')	10/5/2021	NA	NA	NA	NA	NA	<0.048	20	56	76	NA
		(5-6')	10/5/2021	NA	NA	NA	NA	NA	<0.050	9.1	10	19.1	NA
		(11-12')	10/5/2021	NA	NA	NA	NA	NA	<0.054	32	17	49	NA
		(14-15')	10/5/2021	NA	NA	NA	NA	NA	<0.050	12	31	43	NA
		(17-18')	10/5/2021	NA	NA	NA	NA	NA	<0.050	7.7	6.9	14.6	NA
		(25-26')	10/5/2021	NA	NA	NA	NA	NA	<0.048	6.7	6.5	13.2	NA
		(29-30')	10/5/2021	NA	NA	NA	NA	NA	<0.052	35	63	98	NA
		(34-35')	10/7/2021	NA	NA	NA	NA	NA	0.83	1300	2100	3400.83	NA
	DUP-02	10/7/2021	NA	NA	NA	NA	NA	2.5	2200	3700	5902.5	NA	
	SB-31	(3-4')	10/7/2021	NA	NA	NA	NA	NA	<0.051	41	41	82	NA
		DUP-03	10/7/2021	NA	NA	NA	NA	NA	<0.051	17	40	57	NA
		(5-6')	10/7/2021	NA	NA	NA	NA	NA	<0.056	82	45	127	NA
		(9-10')	10/7/2021	NA	NA	NA	NA	NA	<0.056	6.8	13	19.8	NA
		(16-17')	10/7/2021	NA	NA	NA	NA	NA	<0.048	3.3	6.7	10	NA
		(19-20')	10/7/2021	NA	NA	NA	NA	NA	<0.049	12	29	41	NA
		(23-24')	10/8/2021	NA	NA	NA	NA	NA	<0.052	3.9	6.7	10.6	NA
		(25-26')	10/8/2021	NA	NA	NA	NA	NA	<0.056	35	13	48	NA
	(30-31')	10/8/2021	NA	NA	NA	NA	NA	<0.052	7.1	6.2	13.3	NA	
	(34-35')	10/8/2021	NA	NA	NA	NA	NA	<0.052	21	6.7	27.7	NA	
Southeast	SB-08 (MW-4)	(2-2.5')	11/5/2020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.050	<1.7	4.1	4.1	<4.99
		(14.5-15')	11/5/2020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.054	<1.7	<3.4	<3.4	268
		(39.5-40')	11/5/2020	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.051	<1.7	<3.4	<3.4	73.2
	SB-24	(2')	5/24/2021	NA	NA	NA	NA	NA	<0.052	6.2	33	39.2	NA
		(4')	5/24/2021	NA	NA	NA	NA	NA	<0.050	<1.7	3.6	3.6	NA

**TABLE 3
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
WTX TO EMSU BATTERY TO BYRD PUMP CRUDE OIL RELEASE, LEA COUNTY, NM**

Location Details	Boring ID	Depth Interval (feet bgs)	Sample Date	Constituent of Concern (COC)											
				BTEX (mg/kg)					TPH (mg/kg)				Chloride (mg/kg)		
				Benzene	Ethyl-benzene	Toluene	Total Xylenes	Total BTEX	GRO	DRO	MRO	TPH ³			
NMOCDC Closure Criteria¹				10	None	None	None	50²	None	None	None	100⁴	600		
LATERAL DELINEATION	South	SB-2 (GHD)	(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-15	2' (24-26")	11/6/2020	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.054	<1.7	12	12	12	<5.00
			4' (46-48")	11/6/2020	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.050	<1.7	11	11	11	<4.97
		SB-26	(2-3')	5/28/2021	NA	NA	NA	NA	NA	<0.052	19	15	34	NA	
			(4-5')	5/28/2021	NA	NA	NA	NA	NA	<0.052	<1.7	9.3	9.3	NA	
			(9-10')	5/28/2021	NA	NA	NA	NA	NA	<0.053	2.4	5.1	7.5	NA	
			(14-15')	5/28/2021	NA	NA	NA	NA	NA	<0.052	11	16	27	NA	
			(21-22')	5/28/2021	NA	NA	NA	NA	NA	<0.054	<1.7	<3.4	<3.4	NA	
	(29-30')		5/28/2021	NA	NA	NA	NA	NA	<0.047	<1.7	<3.4	<3.4	NA		
	(34-35')		5/28/2021	NA	NA	NA	NA	NA	<0.054	<1.7	<3.4	<3.4	NA		
	Southwest	SB-07 (MW-3)	(2-2.5')	11/4/2020	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.052	52	25	77	6.57	
			(34.5-35')	11/4/2020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.051	4.1	4.2	8.3	402	
			(39.5-40')	11/4/2020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.054	<1.7	<3.4	<3.4	105	
			(49-50')	11/4/2020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.048	<1.7	<3.4	<3.4	114	
		SB-28	(2')	5/28/2021	NA	NA	NA	NA	NA	<0.050	2.4	4.4	6.8	NA	
		(3.5')	5/28/2021	NA	NA	NA	NA	NA	<0.050	<1.7	6.6	6.6	NA		
	West	SB-4 (GHD)	(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	
		SB-11	2' (24-26")	11/6/2020	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.050	5.2	28	33.2	<4.99	
			3.5' (40-43")	11/6/2020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.052	44	110	154	<4.97	
SB-12		4' (46-48")	11/6/2020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.048	<1.7	5.3	5.3	<5.00		
SB-20		(2-3')	5/27/2021	NA	NA	NA	NA	NA	<0.051	15	11	26	NA		
		(4-5')	5/27/2021	NA	NA	NA	NA	NA	<0.056	17	4.5	21.5	NA		
		(9-10')	5/27/2021	NA	NA	NA	NA	NA	<0.052	9.7	5.5	15.2	NA		
		(14-15')	5/27/2021	NA	NA	NA	NA	NA	<0.052	12	<3.4	12	NA		
		(19-20')	5/27/2021	NA	NA	NA	NA	NA	<0.058	7.7	7.0	14.7	NA		
		(24-25')	5/27/2021	NA	NA	NA	NA	NA	<0.055	5.3	13	18.3	NA		
		(29-30')	5/27/2021	NA	NA	NA	NA	NA	<0.049	<1.7	<3.4	<3.4	NA		
(34-35')	5/27/2021	NA	NA	NA	NA	NA	<0.054	2.7	5.0	7.7	NA				
SB-22	4-4.5'	5/24/2021	NA	NA	NA	NA	NA	< 0.044	< 1.7	4.4	4.4	NA			

**TABLE 3
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
WTX TO EMSU BATTERY TO BYRD PUMP CRUDE OIL RELEASE, LEA COUNTY, NM**

Location Details	Boring ID	Depth Interval (feet bgs)	Sample Date	Constituent of Concern (COC)										
				BTEX (mg/kg)					TPH (mg/kg)					Chloride (mg/kg)
				Benzene	Ethyl-benzene	Toluene	Total Xylenes	Total BTEX	GRO	DRO	MRO	TPH ³		
NMOCDC Closure Criteria¹				10	None	None	None	50²	None	None	None	100⁴	600	
LATERAL DELINEATION	Northwest	SB-13	1.5' (16-18")	11/6/2020	<0.0048	<0.0048	<0.0048	<0.0048	<0.0048	<0.052	740	2100	2840	<5.00
			3.5' (38-40")	11/6/2020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.054	87	530	617	<4.97
	SB-18 (Adjacent to SB-13)	(2-3')	5/26/2021	NA	NA	NA	NA	NA	NA	0.064	12	49	61.06	NA
		(4-5')	5/26/2021	NA	NA	NA	NA	NA	NA	0.087	240	1400	1640.09	NA
		(9-10')	5/26/2021	NA	NA	NA	NA	NA	NA	0.080	170	670	840.08	NA
		(14-15')	5/26/2021	NA	NA	NA	NA	NA	NA	34	6600	5500	12134	NA
		Dup-01	5/26/2021	NA	NA	NA	NA	NA	NA	26	5700	4500	10226	NA
		(19-20')	5/26/2021	NA	NA	NA	NA	NA	NA	130	2300	2700	5130	NA
		(24-25')	5/27/2021	NA	NA	NA	NA	NA	NA	29	2600	2400	5029	NA
		(26-27')	5/27/2021	NA	NA	NA	NA	NA	NA	14	4000	4100	8114	NA
	(29-30')	5/27/2021	NA	NA	NA	NA	NA	NA	18	5400	5100	10518	NA	
	SB-25 (MW-5)	(2-3')	5/26/2021	NA	NA	NA	NA	NA	NA	<0.052	<1.7	4.0	4.0	<4.96
		(11-12')	5/26/2021	NA	NA	NA	NA	NA	NA	<0.046	<1.7	7.7	7.7	89.7
		(16-17')	5/26/2021	NA	NA	NA	NA	NA	NA	<0.052	76	11	87	194
		(26-27')	5/26/2021	NA	NA	NA	NA	NA	NA	<0.048	13	7.1	20.1	301
		(34-35')	5/26/2021	NA	NA	NA	NA	NA	NA	<0.046	5.2	11	16.2	63.9
		(39-40')	5/26/2021	NA	NA	NA	NA	NA	NA	<0.058	88	5.1	93.1	151
	SB-27	Dup-03	5/26/2021	NA	NA	NA	NA	NA	NA	<0.050	2.8	4.4	7.2	190
		(2')	5/28/2021	NA	NA	NA	NA	NA	NA	<0.051	2.2	3.4	5.6	NA
			(3.5')	5/28/2021	NA	NA	NA	NA	NA	<0.054	1.8	<3.4	1.8	NA

Notes:

NMOCDC Closure Criteria = New Mexico Oil Conservation District Closure Criteria for a Site (varies with depth to groundwater)

1 = Closure Criteria provided for sites with groundwater at a depth of less than 50 feet bgs

BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes. TRC samples analyzed by EPA Method 8260; GHD samples analyzed by EPA Method 8021b.

2 = This value is compared with the sum of the benzene + toluene + ethylbenzene + total xylenes concentrations

TPH = Total Petroleum Hydrocarbons by EPA Method 8015.

GRO = Gasoline Range Organics.

DRO = Diesel Range Organics.

MRO = Motor Oil Range Organics.

3 = TPH is the sum of the GRO + DRO + MRO concentrations.

4 = This value is compared against the sum of the GRO + DRO + MRO concentrations.

Chloride by EPA Method 300.0.

mg/kg = milligrams of COC per kilogram of soil.

' = feet.

COC = constituent of concern.

bgs = below ground surface

GHD = Boring and samples collected by GHD.

NA = not analyzed.

NS = not sampled. No soil samples were collected for laboratory analysis from SB-23, because it could not be advanced substantially deeper than the total depth of immediately adjacent point SB-9.

Detected concentrations reported in bold.

Orange shading represents concentration above NMOCDC Closure Criteria for sites with groundwater at a depth of less than 50 feet bgs

Duplicate sample data provided immediately below paired assessment sample.

* = Sample Dup-02 is dated 5/26/2021 on the Chain of Custody and in the Analytical Data Package but was actually collected on 5/27/2021

Please note that SB-17 does not appear on this table or in the list of boring logs because the name was inadvertently skipped.

TABLE 4
SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS
WTX TO EMSU BATTERY TO BYRD PUMP CRUDE OIL RELEASE, LEA COUNTY, NM

Monitoring Well ID	Sample Date	Constituent of Concern (COC)								
		BTEX (mg/L)				TPH (mg/L)			TDS (mg/L)	Chloride (mg/L)
		Benzene	Ethyl-benzene	Toluene	Total Xylenes	GRO	DRO	MRO		
Groundwater Action Levels		0.005	0.7	1.0	0.62	None	None	None	None	250
MW-1	11/7/2020	<0.005	<0.005	<0.010	<0.005	0.098	0.084	<0.10	3000	1260
	5/28/2021	<0.005	<0.005	<0.005	<0.005	<0.0050	0.24	<0.10	NA	1270
	5/28/2021 (Dup-04)	<0.005	<0.005	<0.005	<0.005	<0.050	0.17	<0.10	NA	1250
	10/12/2021	<0.005	<0.005	<0.005	<0.005	<0.050	0.052	<0.10	NA	1280
MW-2	11/7/2020	<0.005	<0.005	<0.010	<0.005	<0.050	<0.050	<0.10	2970	1210
	5/25/2021	<0.005	<0.005	<0.005	<0.005	<0.050	0.12	<0.10	NA	1250
	10/6/2021	<0.005	<0.005	<0.005	<0.005	<0.050	<0.050	<0.10	NA	1220
MW-3	11/7/2020	<0.005	<0.005	<0.010	<0.005	<0.050	<0.050	<0.10	1970	736
	5/25/2021	<0.005	<0.005	<0.005	<0.005	<0.050	0.11	<0.10	NA	849
	10/12/2021	<0.005	<0.005	<0.005	<0.005	<0.050	<0.050	<0.10	NA	862
MW-4	11/7/2020	<0.005	<0.005	<0.010	<0.005	<0.050	<0.050	<0.10	3020	1190
	5/25/2021	<0.005	<0.005	<0.005	<0.005	<0.050	0.064	<0.10	NA	1310
	10/6/2021	<0.005	<0.005	<0.005	<0.005	<0.050	<0.050	<0.10	NA	1230
	10/6/2021 (DUP-01)	<0.005	<0.005	<0.005	<0.005	<0.050	<0.050	<0.10	NA	1280
MW-5	5/28/2021	<0.005	<0.005	<0.005	<0.005	<0.050	0.22	<0.10	3690	1170
	10/12/2021	<0.005	<0.005	<0.005	<0.005	<0.050	<0.050	<0.10	NA	1230

Notes:

Groundwater Action Levels = Human health and drinking water standards for groundwater obtained from various sources

BTEX-Human Health Standards for Groundwater obtained from NMAC 20.6.2.3103 (A).

NMOC does not have a groundwater action level for TPH.

Chloride-Other Standards for Domestic Water Supply obtained from NMAC 20.6.2.3103 (B).

BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes by EPA Method 8260.

TPH = Total Petroleum Hydrocarbons by EPA Method 8015.

GRO = Gasoline Range Organics.

DRO = Diesel Range Organics.

MRO = Motor Oil Range Organics.

Chloride by EPA Method 300.0.

COC = constituent of concern.

mg/L = milligrams of COC per Liter of groundwater.

NA = not analyzed.

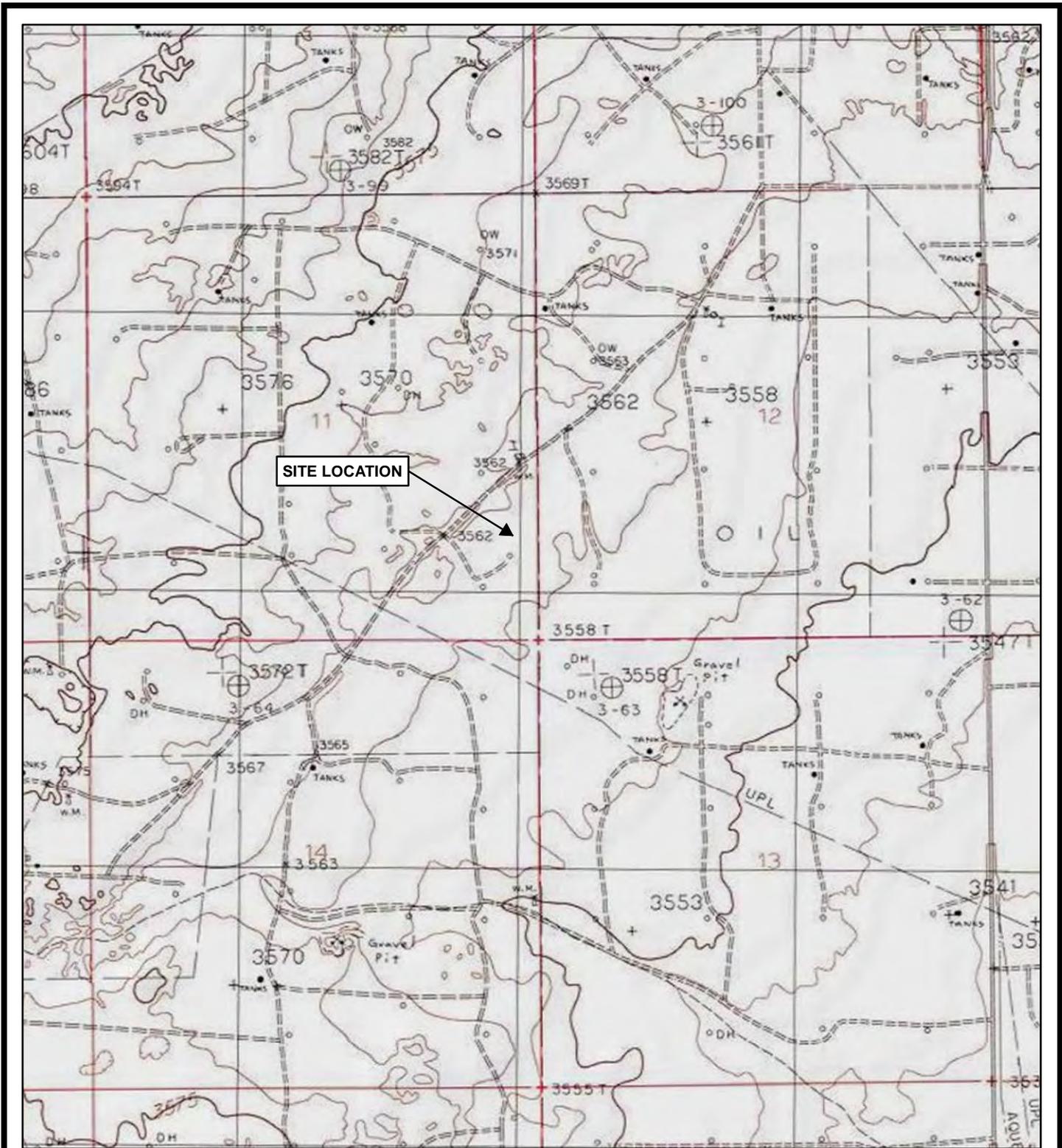
Detected concentrations reported in bold.

Gold shading represents concentration above Other Standards for Domestic Water Supply.

Duplicate sample data provided immediately below paired assessment sample.



Figures



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES - MONUMENT SOUTH, NEW MEXICO (32103-E3)



TRC
 505 East Huntland Drive
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 Austin, TX 78752
 Phone: 512.329.6080

TRC - GIS

PROJECT:	HOLLY ENERGY PARTNERS - OPERATING, L.P. MONUMENT, LEA COUNTY, NEW MEXICO WTX TO EMSU BATTERY RELEASE SITE
TITLE:	SITE LOCATION MAP

DRAWN BY:	M.JAGOE
CHECKED BY:	RDV
APPROVED BY:	S. HOOVER
DATE:	NOVEMBER 2021
PROJ. NO.:	426140
FILE:	426140_1_Site Location Map.mxd

FIGURE 1

S:\1-PROJECTS\HOLLY_ENERGY_PARTNERS\426140\mxd\Addtl\MXD\3\426140_1_Site Location Map.mxd -- Saved By: MJAGOE on 11/11/2021, 12:37:45 PM

TRC - GIS

Coordinate System: NAD 1983 2011 StatePlane New Mexico East FIPS 3001 F1 US (Foot US)

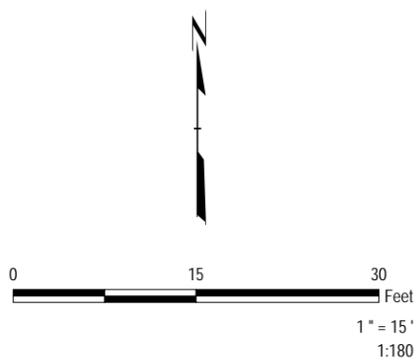
Plot Date: 11/11/2021 13:11:05 PM by MJAGOE -- LAYOUT: ANS1B(11"x17")
Path: S:\1-PROJECTS\HOLLY_ENERGY_PARTNERS\426140\mxd\Addtl\MXD3426140_2_Locations of Initially Reported and Corrected Site Features.mxd



SOURCE: BASEMAP FROM GOOGLE EARTH PRO AND THEIR DATA PARTNERS (11/2/2017).

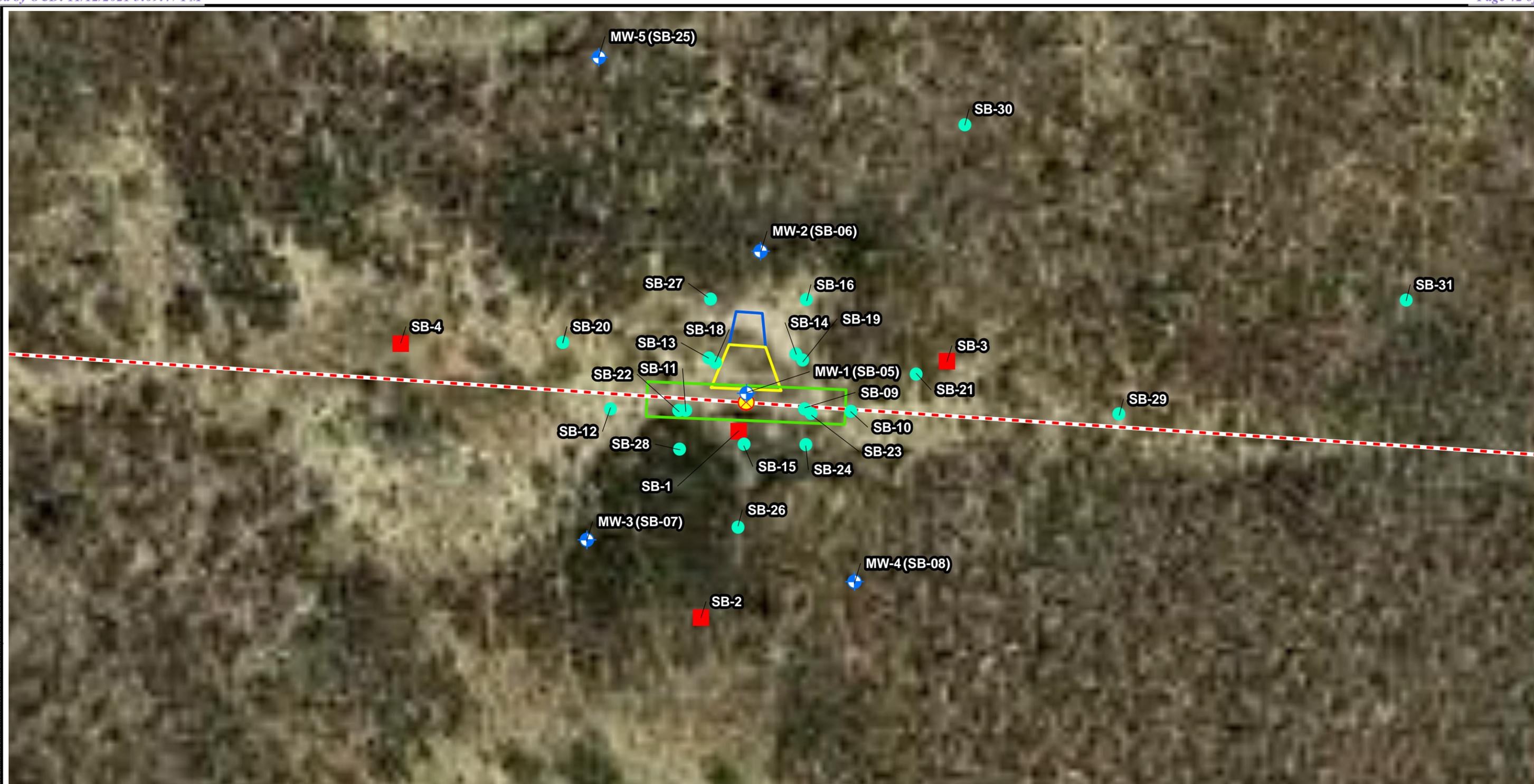
LEGEND

- RELEASE LOCATION
- SOIL BORING LOCATION (BASED ON DRUM LOCATIONS)
- 6" GATHERING LINE
- RAMP
- 3 FOOT DEEP EXCAVATION
- 17 FOOT DEEP EXCAVATION
- INITIALLY REPORTED RELEASE LOCATION
- INITIALLY REPORTED SOIL BORING LOCATION
- INITIALLY REPORTED 3 FOOT DEEP EXCAVATION
- INITIALLY REPORTED RAMP AND 17 FOOT DEEP EXCAVATION



PROJECT: HOLLY ENERGY PARTNERS - OPERATING, L.P. MONUMENT, LEA COUNTY, NEW MEXICO WTX TO EMSU BATTERY RELEASE SITE	
TITLE: LOCATIONS OF INITIALLY REPORTED AND CORRECTED SITE FEATURES	
DRAWN BY: M. JAGOE	PROJ NO.: 374611
CHECKED BY: RDV	FIGURE 2
APPROVED BY: S. HOOVER	
DATE: NOVEMBER 2021	
505 East Huntland Drive Suite #250 Austin, TX 78752 Phone: 512.329.6080	
FILE NO: 426140_2_Locations of Initially Reported and Corrected Site Features.mxd	

TRC - GIS
Coordinate System: NAD 1983 2011 StatePlane New Mexico East FIPS 3001 F1US (Foot US)
Map Rotation:
Plot Date: 11/11/2021 13:12:14 PM by MJAGOE -- LAYOUT: ANS1B(11"x17")
Path: S:\PROJECTS\HOLLY ENERGY PARTNERS\426140\mxd\426140_3_Boring and Well Location Map.mxd



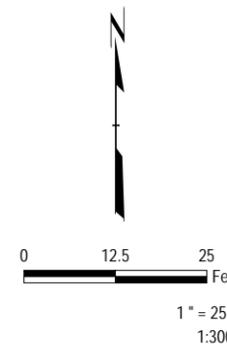
SOURCE: AERIAL IMAGERY - GOOGLE AND THEIR DATA PARTNERS (11/2/2017)

LEGEND

- GHD SOIL BORING LOCATION; SB-1; SB-2; SB-3; SB-4
- ⊕ MONITORING WELL/SOIL BORING LOCATION
- TRC SOIL BORING LOCATION
- - - 6" GATHERING LINE
- ⊗ RELEASE LOCATION
- RAMP
- 3 FOOT DEEP EXCAVATION
- 17 FOOT DEEP EXCAVATION

NOTES:

1. GHD SOIL SAMPLES (SB-1 THROUGH SB-4) COLLECTED ON 9/28/2018.
2. TRC SOIL SAMPLES (SB-05 THROUGH SB-16) COLLECTED ON 11/3-6/2020.
3. TRC SOIL SAMPLES (SB-18 THROUGH SB-28) COLLECTED ON 5/24-28/2021.
4. SB-17 INADVERTENTLY SKIPPED
5. TRC SOIL SAMPLES FROM SB-29 THROUGH SB-31 COLLECTED ON OCTOBER 5-7, 2021
6. EXCAVATION WAS BACKFILLED IN AUGUST 2018.

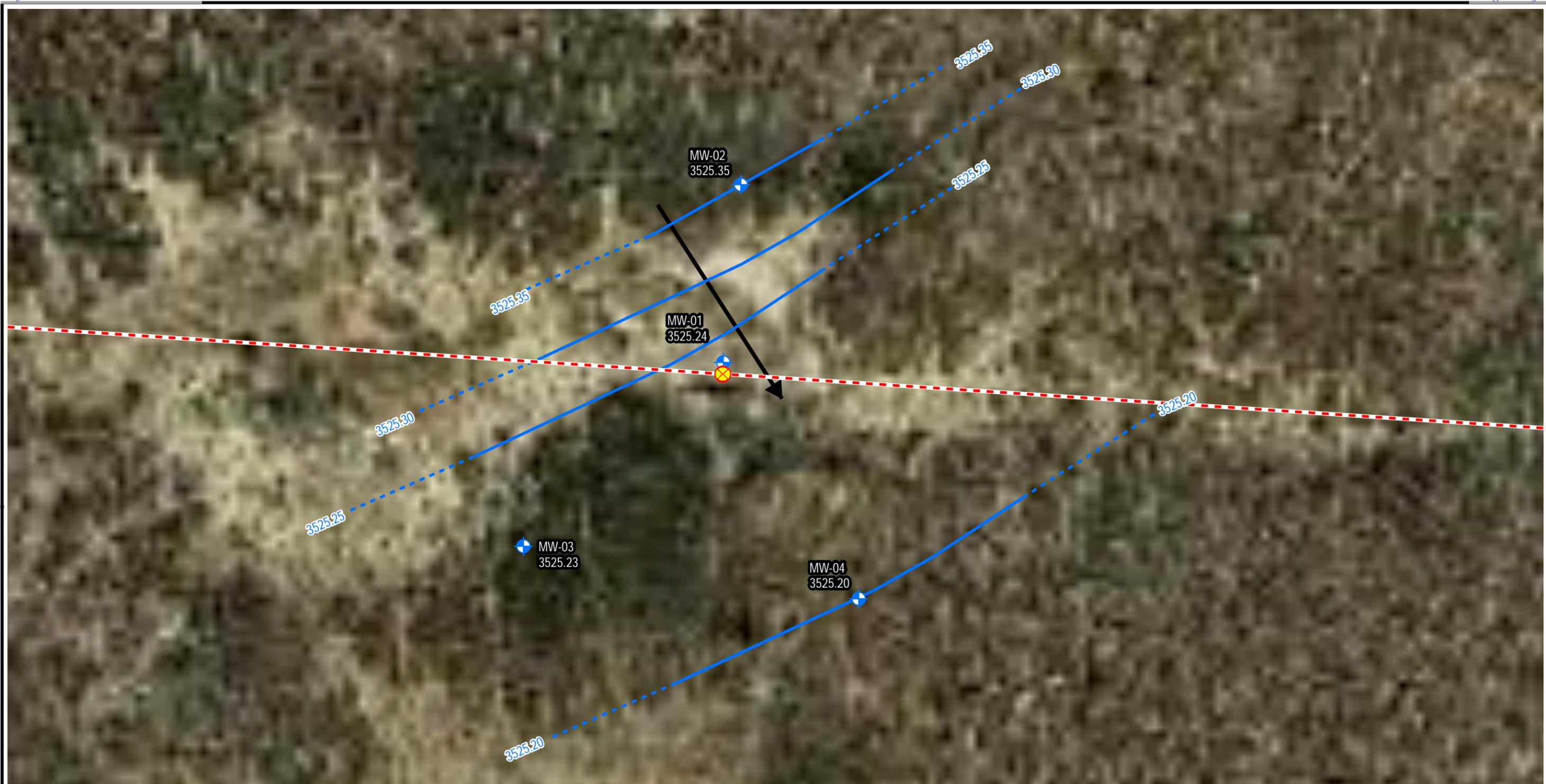


PROJECT: HOLLY ENERGY PARTNERS - OPERATING, L.P. MONUMENT, LEA COUNTY, NEW MEXICO WTX TO EMSU BATTERY RELEASE SITE	
TITLE: BORING AND WELL LOCATION MAP	
DRAWN BY: M. JAGOE	PROJ NO.: 426140
CHECKED BY: B. GILBERT	FIGURE 3
APPROVED BY: S. HOOVER	
DATE: NOVEMBER 2021	
505 East Huntland Drive, Suite 250 Austin, TX 78752 Phone: 512.329.6080 www.trcsolutions.com	
FILE NO.:	426140_3_Boring and Well Location Map.mxd

TRC - GIS

Coordinate System: NAD 1983 2011 StatePlane New Mexico East FIPS 3001 F1 US (Foot US)

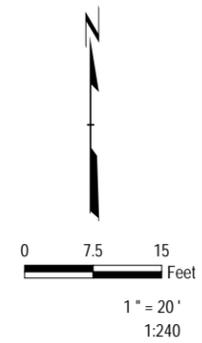
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SOURCE: AERIAL IMAGERY - GOOGLE AND THEIR DATA PARTNERS (11/2/2017)

- LEGEND**
- RELEASE LOCATION
 - MONITORING WELL
 - 6" GATHERING LINE
 - POTENTIOMETRIC CONTOUR (DASHED WHERE INFERRED)
 - 3525.25 GROUNDWATER ELEVATION

GROUNDWATER FLOW DIRECTION



PROJECT: HOLLY ENERGY PARTNERS - OPERATING, L.P. MONUMENT, LEA COUNTY, NEW MEXICO WTX TO EMSU BATTERY RELEASE SITE	
TITLE: GROUNDWATER GRADIENT MAP NOVEMBER 7, 2020	
DRAWN BY: M. JAGOE	PROJ NO.: 374611
CHECKED BY: RDV	FIGURE 4
APPROVED BY: S. HOOVER	
DATE: NOVEMBER 2021	
505 East Huntland Drive, Suite 250 Austin, TX 78752 Phone: 512.329.6080 www.trcsolutions.com	
FILE NO:	426140_4_Groundwater Gradient Map November 7 2020.mxd

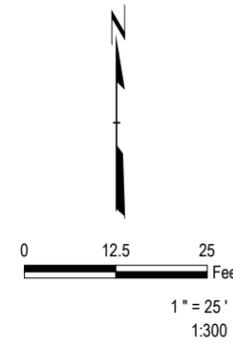
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Coordinate System: NAD 1983 2011 StatePlane New Mexico East FIPS 3001 FUS (Foot US)
TRC - GIS



SOURCE: AERIAL IMAGERY - GOOGLE AND THEIR DATA PARTNERS (11/2/2017)

LEGEND

- RELEASE LOCATION
- MONITORING WELL
- 6" GATHERING LINE
- POTENTIOMETRIC CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER ELEVATION
- GROUNDWATER FLOW DIRECTION



PROJECT:		HOLLY ENERGY PARTNERS - OPERATING, L.P. MONUMENT, LEA COUNTY, NEW MEXICO WTX TO EMSU BATTERY RELEASE SITE	
TITLE:		GROUNDWATER GRADIENT MAP MAY 25-28, 2021	
DRAWN BY:	M. JAGOE	PROJ NO.:	426140
CHECKED BY:	RDV	FIGURE 5	
APPROVED BY:	S. HOOVER		
DATE:	NOVEMBER 2021	FILE NO.: 426140_5_Groundwater Gradient Map - May 25-28, 2021.mxd	



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Coordinate System: NAD 1983 2011 StatePlane New Mexico East FIPS 3001 F1 US (Foot US)

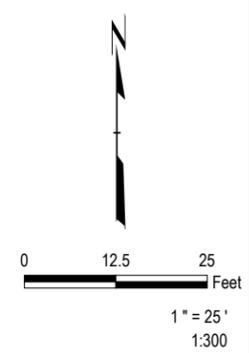
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Path: S:\1-PROJECTS\HOLLY_ENERGY_PARTNERS\426140\mxd\Addtl\MXD3426140_6_Groundwater Gradient Map - October 6-12, 2021.mxd



SOURCE: AERIAL IMAGERY - GOOGLE AND THEIR DATA PARTNERS (11/2/2017)

LEGEND

-  RELEASE LOCATION
-  MONITORING WELL
-  6" GATHERING LINE
-  POTENTIOMETRIC CONTOUR (DASHED WHERE INFERRED)
-  GROUNDWATER ELEVATION
-  GROUNDWATER FLOW DIRECTION



PROJECT: HOLLY ENERGY PARTNERS - OPERATING, L.P. MONUMENT, LEA COUNTY, NEW MEXICO WTX TO EMSU BATTERY RELEASE SITE	
TITLE: GROUNDWATER GRADIENT MAP OCTOBER 6-12, 2021	
DRAWN BY: M. JAGOE	PROJ NO.: 426140
CHECKED BY: RDV	FIGURE 6
APPROVED BY: S. HOOVER	
DATE: NOVEMBER 2021	
	
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FILE NO:	426140_6_Groundwater Gradient Map - October 6-12, 2021.mxd

TRC - GIS

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

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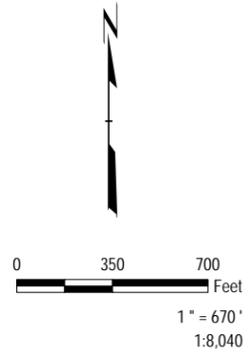
SOURCE: BASEMAP FROM GOOGLE EARTH PRO AND THEIR DATA PARTNERS (11/2/2017).

LEGEND

-  RELEASE LOCATION
-  200 FOOT RADIUS (SEE CLOSURE CRITERIA MODIFIER 1)
-  300 FOOT RADIUS (SEE CLOSURE CRITERIA MODIFIER 2)
-  500 FOOT RADIUS (SEE CLOSURE CRITERIA MODIFIER 3)
-  1000 FOOT RADIUS (SEE CLOSURE CRITERIA MODIFIER 4)

CLOSURE CRITERIA MODIFIERS

1. WITHIN 200 FEET OF ANY LAKEBED, SINKHOLE, OR PLAYA LAKE (MEASURED FROM THE ORDINARY HIGH-WATER MARK).
2. WITHIN 300 FEET OF ANY CONTINUOUSLY FLOWING WATERCOURSE OR ANY OTHER SIGNIFICANT WATERCOURSE; OR FROM AN OCCUPIED PERMANENT RESIDENCE, SCHOOL, HOSPITAL OR CHURCH.
3. WITHIN 500 FEET OF A SPRING OR A PRIVATE, DOMESTIC FRESH WATER WELL USED BY LESS THAN FIVE HOUSEHOLDS FOR DOMESTIC OR STOCK WATERING PURPOSES.
4. WITHIN 1,000 FEET OF ANY FRESH WATER WELL OR SPRING.

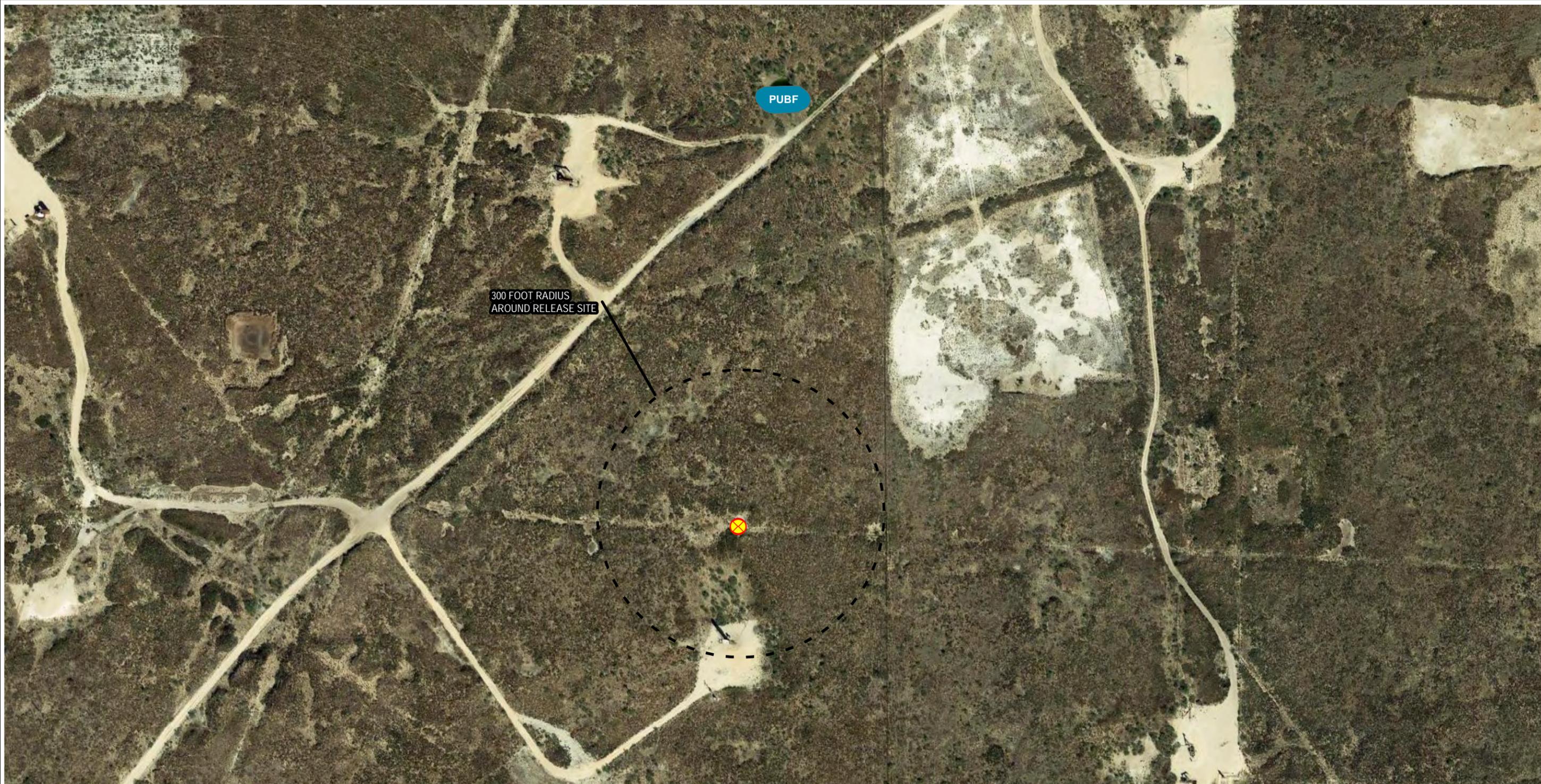


PROJECT: HOLLY ENERGY PARTNERS - OPERATING, L.P. MONUMENT, LEA COUNTY, NEW MEXICO WTX TO EMSU BATTERY RELEASE SITE	
TITLE: CLOSURE CRITERIA MODIFIERS	
DRAWN BY: M. JAGOE	PROJ NO.: 426140
CHECKED BY: RDV	FIGURE 7
APPROVED BY: S. HOOVER	
DATE: NOVEMBER 2021	505 East Huntland Drive Suite #250 Austin, TX 78752 Phone: 512.329.6080
FILE NO:	426140_7_Closure Criteria Modifiers.mxd

TRC - GIS

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

Plot Date: 11/11/2021 12:43:41 PM by MJAGOE -- LAYOUT: ANS1B(11"x17")
Path: S:\1-PROJECTS\HOLLY_ENERGY_PARTNERS\426140\mxd\Addtl\MXD3\426140_8_Wetlands_Map.mxd



300 FOOT RADIUS
AROUND RELEASE SITE

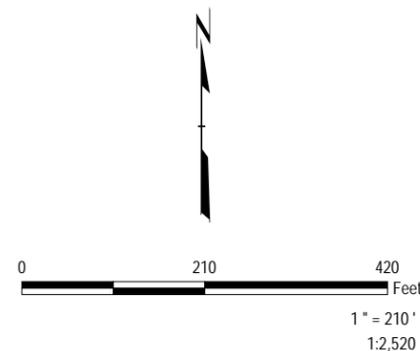
PUBF

LEGEND

-  RELEASE LOCATION
-  FRESHWATER POND

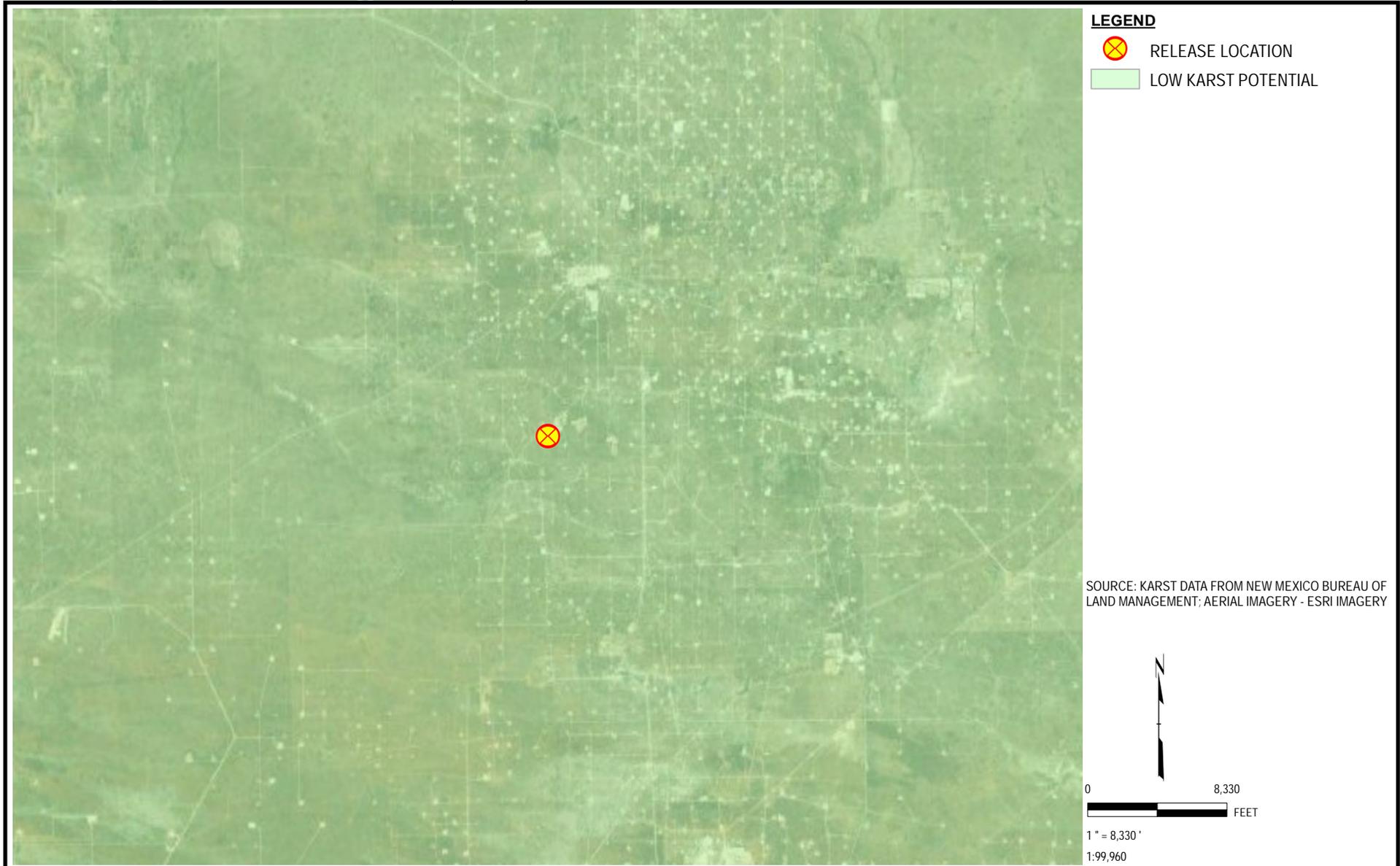
SOURCE: WETLANDS - FISH AND WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY

- NOTES:**
1. PUBF = PALUSTRINE (P), UNCONSOLIDATED BOTTOM (UB), SEMIPERMANENTLY FLOODED (F)
 2. CLOSURE CRITERIA MODIFIER APPLIES IF SITE IS WITHIN 300 FEET OF A WETLAND



PROJECT: HOLLY ENERGY PARTNERS - OPERATING, L.P. MONUMENT, LEA COUNTY, NEW MEXICO WTX TO EMSU BATTERY RELEASE SITE	
TITLE: WETLANDS MAP	
DRAWN BY: M. JAGOE	PROJ NO.: 426140
CHECKED BY: RDV	FIGURE 8
APPROVED BY: S. HOOVER	
DATE: NOVEMBER 2021	505 East Huntland Drive Suite #250 Austin, TX 78752 Phone: 512.329.6080
FILE NO:	426140_8_Wetlands Map.mxd

S:\1-PROJECTS\HOLLY_ENERGY_PARTNERS\426140\mxd\Addtl\MXD\3426140_9_Karst Potential Map.mxd -- Saved By: MJAGOE on 11/11/2021, 12:50:13 PM



LEGEND

-  RELEASE LOCATION
-  LOW KARST POTENTIAL

SOURCE: KARST DATA FROM NEW MEXICO BUREAU OF LAND MANAGEMENT; AERIAL IMAGERY - ESRI IMAGERY




1" = 8,330'
1:99,960



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

TRC - GIS

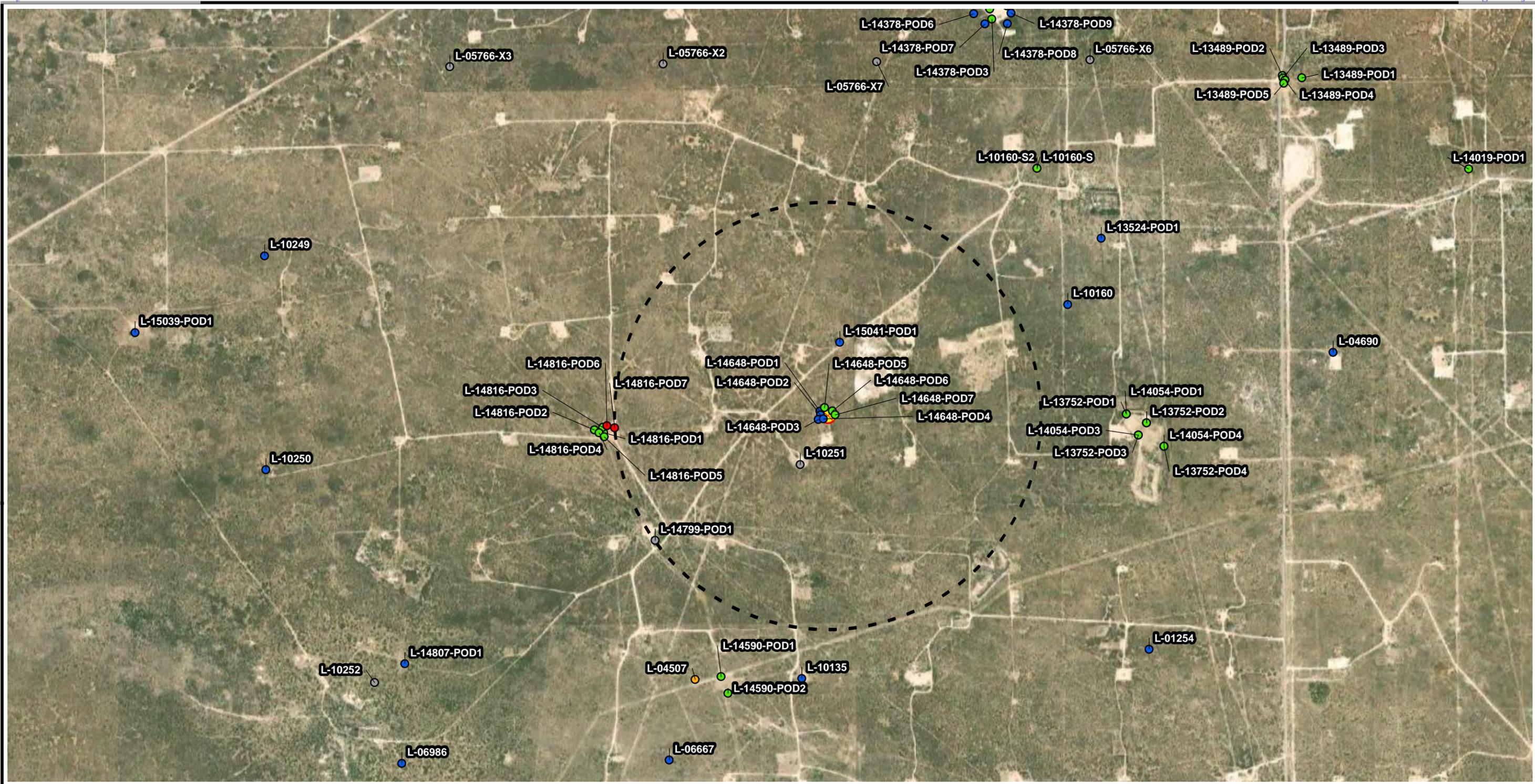
PROJECT:	HOLLY ENERGY PARTNERS - OPERATING, L.P. MONUMENT, LEA COUNTY, NEW MEXICO WTX TO EMSU BATTERY RELEASE SITE
TITLE:	KARST POTENTIAL MAP

DRAWN BY:	M. JAGOE
CHECKED BY:	RDV
APPROVED BY:	S. HOOVER
DATE:	NOVEMBER 2021
PROJ. NO.:	426140
FILE:	426140_9_Karst Potential Map.mxd
FIGURE 9	

TRC - GIS

Coordinate System: NAD 1983 2011 StatePlane New Mexico East FIPS 3001 F1 US (Foot US)

Plot Date: 11/11/2021 12:54:35 PM by MJAGOE -- LAYOUT: ANS1B(11"x17")
Path: S:\1-PROJECTS\HOLLY_ENERGY_PARTNERS\426140\mxd\Addtl\MXD3\426140_10_Floodplain and Wellhead Protection Area Map.mxd

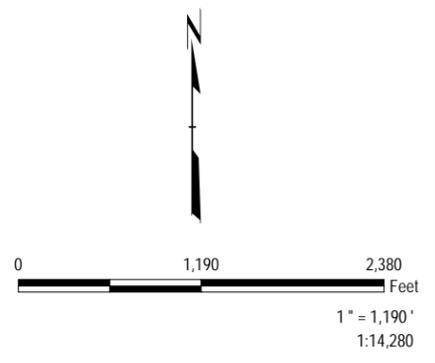


SOURCE: FLOODPLAIN - FEMA FLOOD MAP SERVICE CENTER (MSC); AERIAL IMAGERY - ERSI WORLD IMAGERY

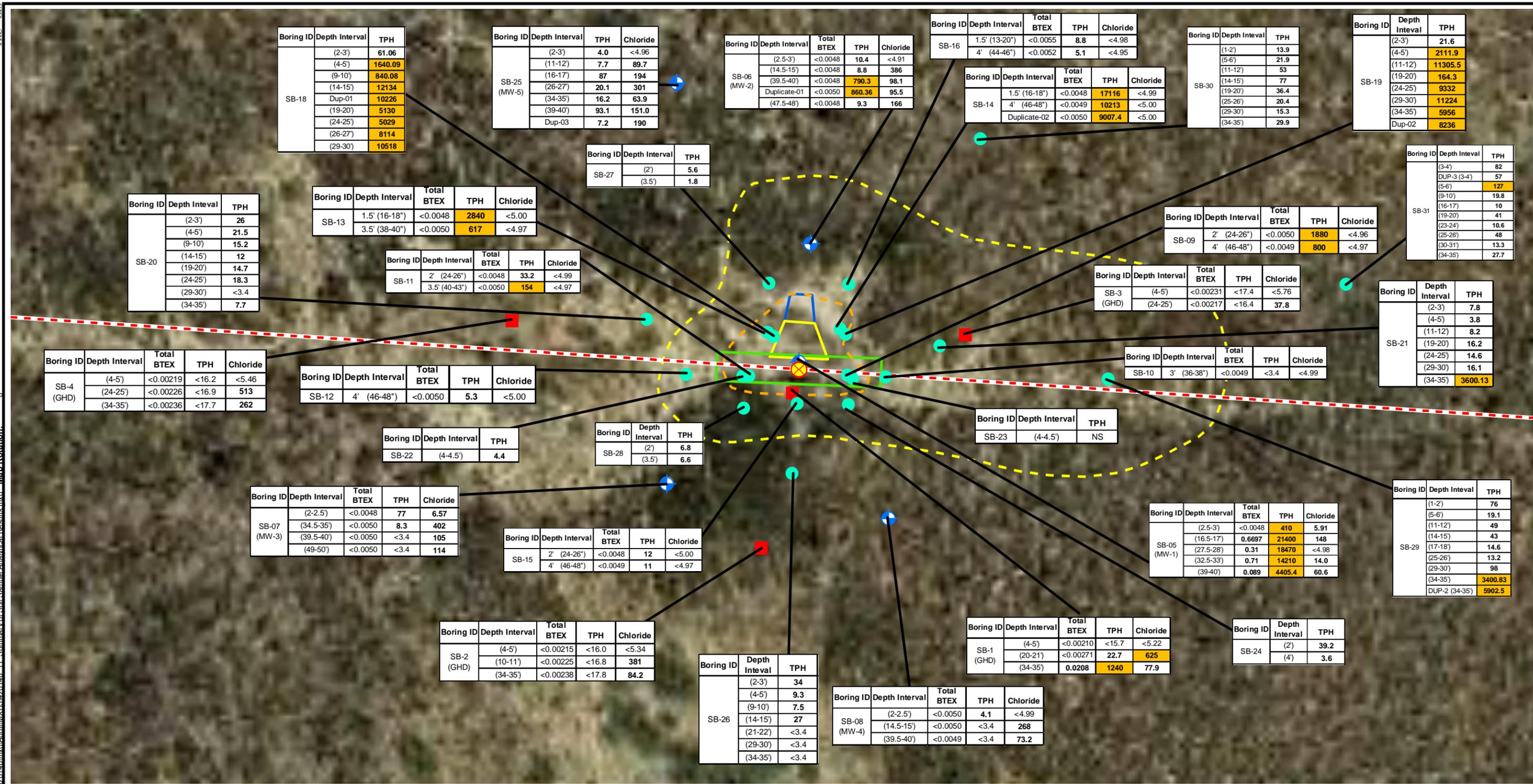
LEGEND

- NEW MEXICO
OFFICE OF STATE
ENGINEER (OSE)
POINTS OF
DIVERSION (PODS)
- ACTIVE
 - PENDING
 - CAPPED
 - PLUGGED
 - UNKNOWN
- 1/2 MILE RADIUS

NOTES:
 1. NO 100 YEAR FLOOD PLAINS IDENTIFIED WITHIN APPROXIMATELY 310 SQUARE MILES OF SITE LOCATION.
 2. OSE PODs REPRESENT WATER WELLS AND GROUNDWATER RIGHTS THAT HAVE BEEN REGISTERED WITH THE OSE.



PROJECT: HOLLY ENERGY PARTNERS - OPERATING, L.P. MONUMENT, LEA COUNTY, NEW MEXICO WTX TO EMSU BATTERY RELEASE SITE	
TITLE: FLOODPLAIN AND WELLHEAD PROTECTION AREA MAP	
DRAWN BY: M. JAGOE	PROJ NO.: 426140
CHECKED BY: RDV	FIGURE 10
APPROVED BY: S. HOOVER	
DATE: NOVEMBER 2021	
505 East Huntland Drive Suite #250 Austin, TX 78752 Phone: 512.329.6080	
FILE NO.: 426140_10_Floodplain and Wellhead Protection Area Map.mxd	



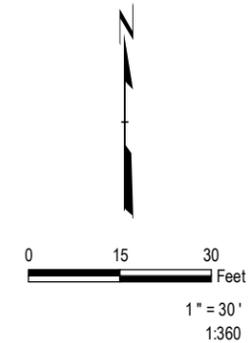
SOURCE: AERIAL IMAGERY - GOOGLE AND THEIR DATA PARTNERS (11/2/2017)

LEGEND

- RELEASE LOCATION
- GHD SOIL BORING LOCATION
- TRC SOIL BORING/MONITORING WELL LOCATION
- TRC SOIL BORING LOCATION
- 6" GATHERING LINE
- RAMP
- 3 FOOT DEEP EXCAVATION
- 17 FOOT DEEP EXCAVATION
- EXTENT OF SURFACE SOIL (0-4 FEET BGS) WITH TPH AND/OR CHLORIDE CONCENTRATIONS ABOVE SITE CLOSURE CRITERIA
- EXTENT OF SOIL BENEATH 4 FEET BGS WITH TPH AND/OR CHLORIDE CONCENTRATIONS ABOVE SITE CLOSURE CRITERIA

NOTES:

1. ORANGE SHADING REPRESENTS VALUE ABOVE CLOSURE CRITERIA.
2. GHD SOIL SAMPLES FROM SB-1 THROUGH SB-4 COLLECTED ON SEPTEMBER 28, 2018.
3. TRC SOIL SAMPLES FROM SB-05 THROUGH SB-16 COLLECTED ON NOVEMBER 3-6, 2020.
4. TRC SOIL SAMPLES FROM SB-18 THROUGH SB-28 COLLECTED ON MAY 24-28, 2021.
5. SB-17 INADVERTENTLY SKIPPED.
6. TRC SOIL SAMPLES FROM SB-29 THROUGH SB-31 COLLECTED ON OCTOBER 5-7, 2021.
7. NS = NOT SAMPLED.
8. TPH = CUMULATIVE TOTAL PETROLEUM HYDROCARBONS.
9. EXCAVATION WAS BACKFILLED IN AUGUST 2018.
10. TOTAL BTEX = CUMULATIVE BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES.



PROJECT: **HOLLY ENERGY PARTNERS - OPERATING, L.P. MONUMENT, LEA COUNTY, NEW MEXICO WTX TO EMSU BATTERY RELEASE SITE**

TITLE: **SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS**

FIGURE 11

DRAWN BY: M. JAGOE PROJ NO.: 426140
 CHECKED BY: RDV
 APPROVED BY: S. HOOVER
 DATE: NOVEMBER 2021

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

FILE NO.: 426140_11_Summary of Soil Sample Analytical Results.mxd

Well ID	COC	Concentration (mg/L)	
		5/28/2021	10/12/2021
MW-5	Benzene	<0.005	<0.005
	Ethyl- benzene	<0.005	<0.005
	Toluene	<0.005	<0.005
	Xylenes	<0.005	<0.005
	GRO	<0.050	<0.050
	DRO	0.22	<0.050
	MRO	<0.10	<0.10
	TDS	3690	NA
Chloride	1170	1230	

Well ID	COC	Concentration (mg/L)			
		11/7/2020	5/28/2021	5/28/21 (Dup-04)	10/12/2021
MW-1	Benzene	<0.005	<0.005	<0.005	<0.005
	Ethyl- benzene	<0.005	<0.005	<0.005	<0.005
	Toluene	<0.010	<0.010	<0.005	<0.005
	Xylenes	<0.005	<0.005	<0.005	<0.005
	GRO	0.098	<0.0050	<0.050	<0.050
	DRO	0.084	0.24	0.17	0.052
	MRO	<0.10	<0.10	<0.10	<0.10
	TDS	3000	NA	NA	NA
	Chloride	1260	1270	1250	1280

Well ID	COC	Concentration (mg/L)		
		11/7/2020	5/25/2021	10/12/2021
MW-3	Benzene	<0.005	<0.005	<0.005
	Ethyl- benzene	<0.005	<0.005	<0.005
	Toluene	<0.010	<0.005	<0.005
	Xylenes	<0.005	<0.005	<0.005
	GRO	<0.050	<0.050	<0.050
	DRO	<0.050	0.11	<0.050
	MRO	<0.10	<0.10	<0.10
	TDS	1970	NA	NA
	Chloride	736	849	862

Well ID	COC	Concentration (mg/L)		
		11/7/2020	5/25/2021	10/6/2021
MW-2	Benzene	<0.005	<0.005	<0.005
	Ethyl- benzene	<0.005	<0.005	<0.005
	Toluene	<0.010	<0.005	<0.005
	Xylenes	<0.005	<0.005	<0.005
	GRO	<0.050	<0.050	<0.050
	DRO	<0.050	0.12	<0.050
	MRO	<0.10	<0.10	<0.10
	TDS	2970	NA	NA
	Chloride	1210	1250	1220

Well ID	COC	Concentration (mg/L)			
		11/7/2020	5/25/2021	10/6/2021	10/6/2021 (DUP-01)
MW-4	Benzene	<0.005	<0.005	<0.005	<0.005
	Ethyl- benzene	<0.005	<0.005	<0.005	<0.005
	Toluene	<0.010	<0.005	<0.005	<0.005
	Xylenes	<0.005	<0.005	<0.005	<0.005
	GRO	<0.050	<0.050	<0.050	<0.050
	DRO	<0.050	0.064	<0.050	<0.050
	MRO	<0.10	<0.10	<0.10	<0.10
	TDS	3020	NA	NA	NA
	Chloride	1190	1310	1230	1280

LEGEND

-  RELEASE LOCATION
-  MONITORING WELL
-  6" GATHERING LINE

SOURCE: AERIAL IMAGERY - GOOGLE AND THEIR DATA PARTNERS (11/2/2017)

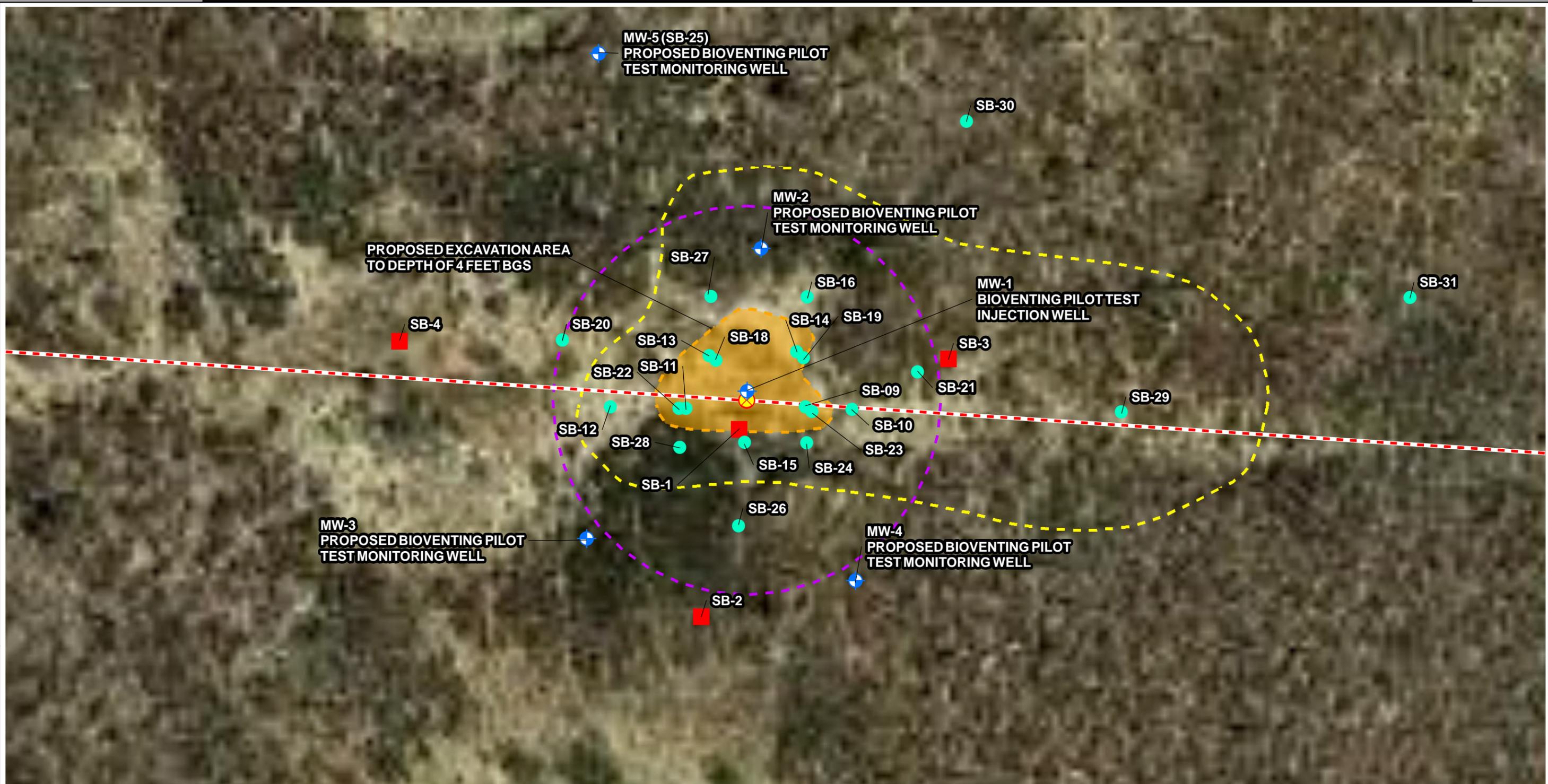
- NOTES:**
1. YELLOW SHADING REPRESENTS CONCENTRATION ABOVE STANDARDS FOR DOMESTIC WATER SUPPLY.
 2. NA = NOT ANALYZED.
 3. GRO = TOTAL PETROLEUM HYDROCARBONS, GASOLINE RANGE ORGANICS.
 4. DRO = TOTAL PETROLEUM HYDROCARBONS, DIESEL RANGE ORGANICS.
 5. MRO = TOTAL PETROLEUM HYDROCARBONS, MOTOR OIL RANGE ORGANICS.
 6. TDS = TOTAL DISSOLVED SOLIDS.
 7. mg/L = MILLIGRAMS PER LITER.




1" = 40'
1:480

PROJECT: HOLLY ENERGY PARTNERS - OPERATING, L.P. MONUMENT, LEA COUNTY, NEW MEXICO WTX TO EMSU BATTERY RELEASE SITE	
TITLE: SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS	
DRAWN BY: M. JAGOE	PROJ NO.: 426140
CHECKED BY: RDV	FIGURE 12
APPROVED BY: S. HOOVER	
DATE: NOVEMBER 2021	
	
505 East Huntland Drive, Suite 250 Austin, TX 78752 Phone: 512.329.6080 www.trcsolutions.com	
FILE NO.: 426140_12_Summary of Groundwater Sample Analytical Results.mxd	

TRC - GIS
Coordinate System: NAD 1983 2011 StatePlane New Mexico East FIPS 3001 F1 US (Foot US)
Map Rotation:
Plot Date: 11/11/2021 13:09:30 PM by MJAGOE -- LAYOUT: ANS1B(11"x17")
Path: S:\PROJECTS\HOLLY ENERGY PARTNERS\426140\13_Proposed Soil Remediation Plan.mxd

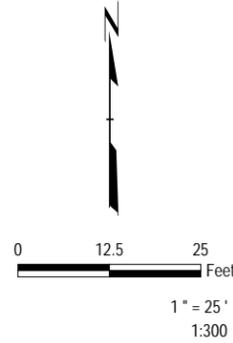


SOURCE: AERIAL IMAGERY - GOOGLE AND THEIR DATA PARTNERS (11/2/2017)

LEGEND

- GHD SOIL BORING LOCATION
- ⊕ MONITORING WELL/SOIL BORING LOCATION
- TRC SOIL BORING LOCATION
- 6" GATHERING LINE
- ⊗ RELEASE LOCATION
- ANTICIPATED BIOVENTING PILOT TEST RADIUS OF INFLUENCE (50 FEET)
- PROPOSED EXCAVATION AREA TO DEPTH OF 4.5 FEET BGS
- EXTENT OF SURFACE SOIL (0-4 FEET BGS) WITH TPH AND/OR CHLORIDE CONCENTRATIONS ABOVE SITE CLOSURE CRITERIA
- EXTENT OF SOIL BENEATH 4 FEET BGS WITH TPH AND/OR CHLORIDE CONCENTRATIONS ABOVE SITE CLOSURE CRITERIA

- NOTES:**
1. GHD SOIL SAMPLES (SB-1 THROUGH SB-4) COLLECTED ON 9/28/2018.
 2. TRC SOIL SAMPLES (SB-05 THROUGH SB-16) COLLECTED ON 11/3-6/2020.
 3. TRC SOIL SAMPLES (SB-18 THROUGH SB-28) COLLECTED ON 5/24-28/2021.
 4. SB-17 INADVERTENTLY SKIPPED
 5. TRC SOIL SAMPLES FROM SB-29 THROUGH SB-31 COLLECTED ON OCTOBER 5-7, 2021



PROJECT: HOLLY ENERGY PARTNERS - OPERATING, L.P. MONUMENT, LEA COUNTY, NEW MEXICO WTX TO EMSU BATTERY RELEASE SITE	
TITLE: PROPOSED SOIL REMEDIATION PLAN	
DRAWN BY: M. JAGOE	PROJ NO.: 426140
CHECKED BY: B. GILBERT	FIGURE 13
APPROVED BY: S. HOOVER	
DATE: NOVEMBER 2021	
505 East Huntland Drive, Suite 250 Austin, TX 78752 Phone: 512.329.6080 www.trcsolutions.com	
FILE NO.: 426140_13_Proposed Soil Remediation Plan.mxd	



**Appendix A:
Form C-141 and NMOCD Approval**

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

State of New Mexico
Energy Minerals and Natural
Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Holly Energy Partners (HEP)	OGRID: 282505
Contact Name: Melanie Nolan	Contact Telephone: 214-605-8303
Contact email: Melanie.Nolan@hollyenergy.com	Incident # (assigned by OCD) NOY1822242858
Contact mailing address: 1602 W. Main, Artesia NM 88210	

Location of Release Source

Latitude 32.583989° N Longitude -103.317743° W
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: WTX to EMSU Battery to Byrd Pump Segment	Site Type: Gathering line
Date Release Discovered: 7/11/18 1310	API# (if applicable)

Unit Letter	Section	Township	Range	County
P	11	20S	36E	Lea

Surface Owner: State Federal Tribal Private (Name: L&K Ranch LLC)

Nature and Volume of Release

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

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls): Estimated at 5 bbl	Volume Recovered (bbls): 0.5 bbl
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Air patrol flying HEP's West Texas Crude district spotted a leak west of Monument Junction. HEP personnel confirmed leak from a pinhole caused by corrosion discovered in a gathering line and shut down that line segment for immediate repair. At initial encounter the release was determined to be less than 1 barrel of crude. Line repair was completed and the initial excavation of affected soil started. The release was not initially reported due to estimates being under reportable limits. On August 6, 2018, the excavation was halted due to discovery that the initial area affected was larger than previously thought. Based on excavation efforts to date, the release was approximately 5 barrels. The surface owner has been notified of release. Project was delayed due to protracted access agreement negotiation.

Form C-141

State of New Mexico
Oil Conservation Division

Page 2

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why: 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: <u>Melanie Nolan</u> Title: <u>Environmental Specialist, Holly Energy Partners</u> Signature: <u>Melanie Nolan</u> Date: <u>9/10/2020</u> email: <u>Melanie.Nolan@hollyenergy.com</u> Telephone: <u>575-748-8972</u>
<u>OCD Only</u> Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>Unknown - Anticipated to be between 45-65 ft bgs (ft bgs)</u>
Did this release impact groundwater or surface water? <u>NOTE: WILL BE EVALUATED DURING NEXT PHASE OF SITE ASSESSMENT.</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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

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

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release **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

Form C-141

State of New Mexico

Page 4

Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

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

- Detailed description of proposed remediation technique **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: _____ Date: _____

- Approved
- Approved with Attached Conditions of Approval
- Denied
- Deferral Approved

Signature: _____ Date: _____

Varnell, Richard

From: Eads, Cristina, EMNRD <Cristina.Eads@state.nm.us>
Sent: Wednesday, September 23, 2020 5:33 PM
To: melanie.nolan
Cc: Varnell, Richard; Bratcher, Mike, EMNRD; Hamlet, Robert, EMNRD; Venegas, Victoria, EMNRD
Subject: [EXTERNAL] NOY1822242858 HOLLY ENERGY WTX TO EMSU BATTERY TO BYRD PUMP SEGM @ FOY1822242653
Attachments: (C-141 Remediation Plan) NOY1822242858.pdf

This is an **EXTERNAL** email. Do not click links or open attachments unless you validate the sender and know the content is safe.

NOY1822242858 HOLLY ENERGY WTX TO EMSU BATTERY TO BYRD PUMP SEGM @ FOY1822242653

Melanie,

The OCD has approved the Remediation Plan for incident # NOY1822242858 with the following condition:

- The release needs to be horizontally delineated at the surface.

The signed C-141 can be found in the online image data base under the incident #. Please let me know if you have any questions.

Thanks,

Cristina Eads

Environmental Bureau

EMNRD – Oil Conservation Division

5200 Oakland Avenue NE, Suite 100

Albuquerque, New Mexico 87113

505.670-5601

email: Cristina.Eads@state.nm.us



OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Incident ID	NOY1822242858
District RP	
Facility ID	
Application ID	

Remediation Plan

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

- Detailed description of proposed remediation technique **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

Form C-141
Page 3

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>Approx. 36 – 38</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

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

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

Form C-141

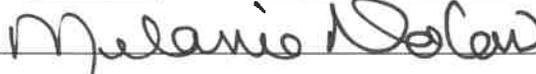
State of New Mexico
Oil Conservation Division

Page 4

Incident ID	
District RP	
Facility ID	
Application ID	

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

Printed Name: Melanie Nolan Title: Environmental Specialist, Holly Energy Partners

Signature:  Date: 11/12/21

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

OCD Only

Received by: _____ Date: _____

Form C-141

State of New Mexico
Oil Conservation Division

Page 5

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

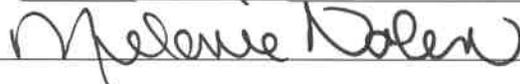
Remediation Plan Checklist: *Each of the following items must be included in the plan.*

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

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

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

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

Printed Name: Melanie Nolan Title: Environmental Specialist, Holly Energy Partners
 Signature:  Date: 11/12/21
 email: Melanie.Nolan@hollyenergy.com Telephone: 575-748-8972

OCD Only

Received by: Chad Hensley Date: 12/09/2021

- Approved Approved with Attached Conditions of Approval Denied Deferral Approved

Signature:  Date: 12/09/2021

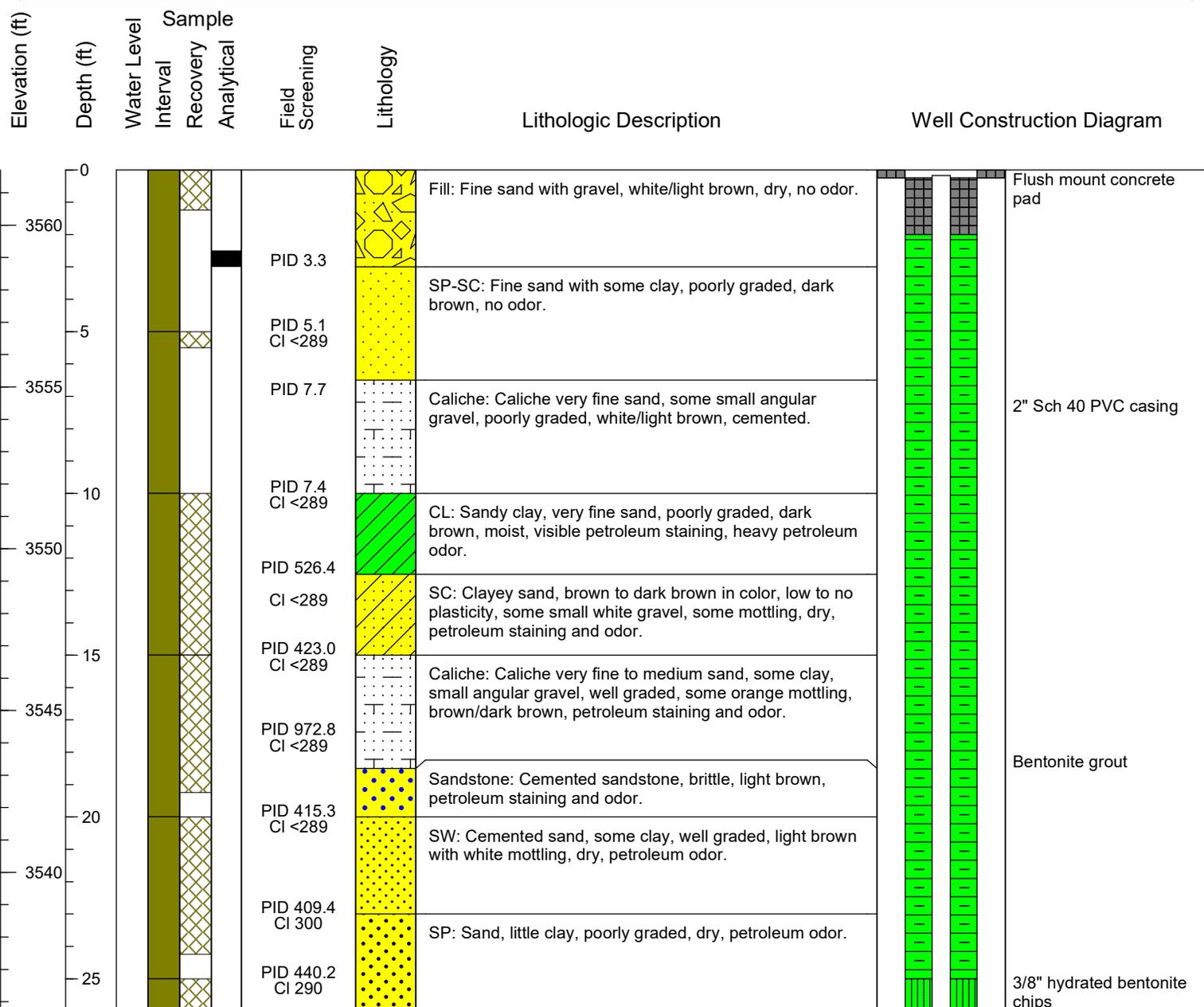


Appendix B: Boring Logs/Well Construction Diagrams



MW-01 (SB-05)

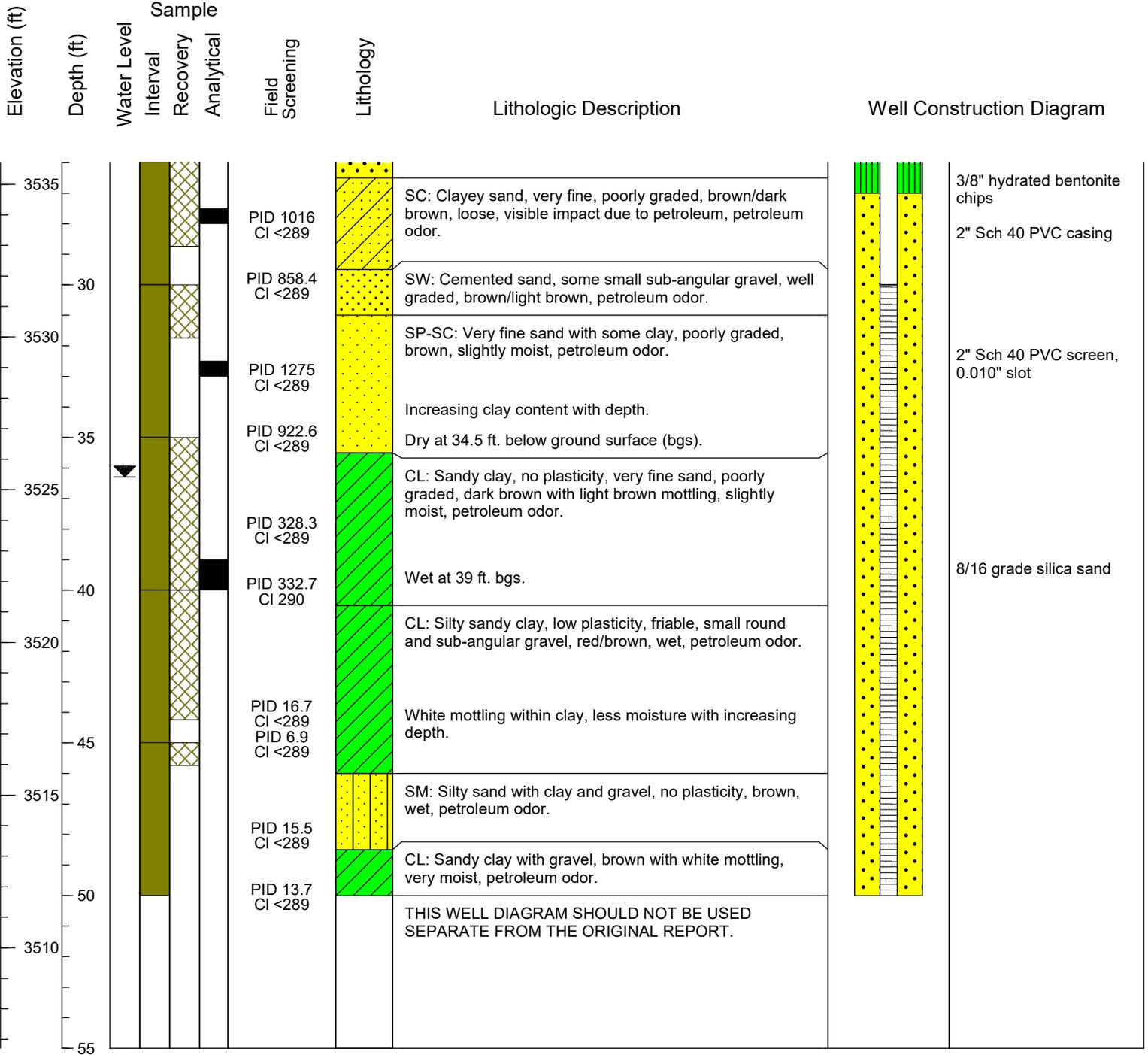
Client: Holly Energy Partners		TRC Project #: 374611
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release		Start Date: 11/03/2020
Address: Klein Ranch, Monument, NM		Finish Date: 11/03/2020
Project: Monitoring Well Installation		Permit #: NA
Drilling Company: Talon LPE	Drilling Crew: Ronnie Rodriguez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow Stem Auger		TRC Reviewer: R. Varnell
Boring Diameter (in): 7.88	Boring Depth (ft bgs): 50	Coord. System: NAD 83
Sampling Method: Grab		Latitude: 32.583908
Blow Count Method: NA		Longitude: -103.317464
Field Screening Parameter: Volatile organic compounds / Chlorine		Elevation Datum: NAD 88
Meter: MiniRAE Lite / Chlorine QuanTab Test Strips	Units: ppm / ppm	Ground Elevation (ft): 3561.71
Well Depth (ft bgs): 49.43	Well Depth (ft toc): 49.25	Well Elevation (ft): 3561.53
Casing Length (ft): 29.25	Screen Length (ft): 20.0	Well Measuring Point: Top of casing
Surface Completion: Flush mount concrete pad		Depth to Water (ft toc): 36.29
Well Development: Purged 55 gallons		Date/Time: 11/07/2020 16:00





MW-01 (SB-05)

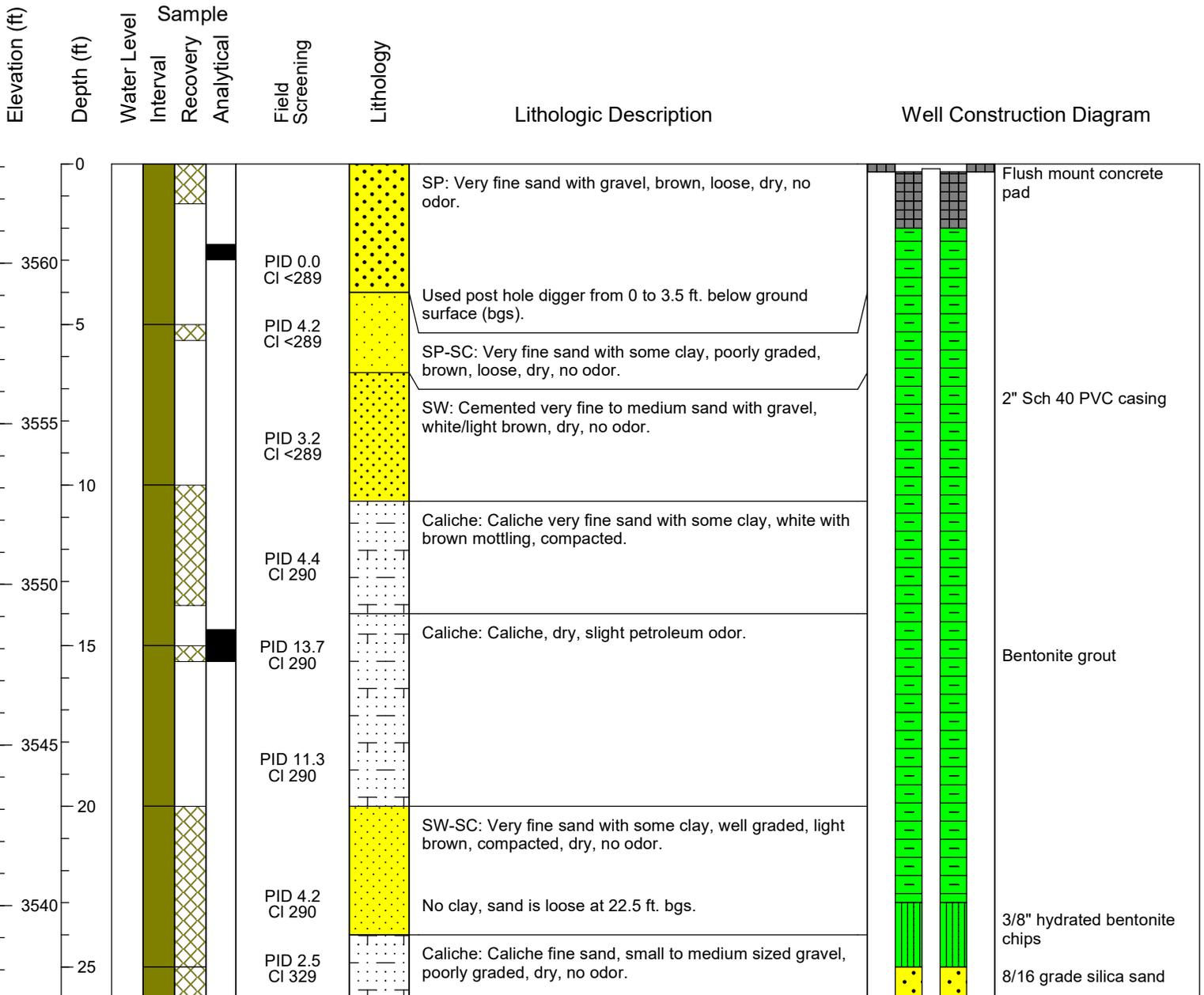
Client: Holly Energy Partners | Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release | Project #: 374611 | Page 2 of 2





MW-02 (SB-06)

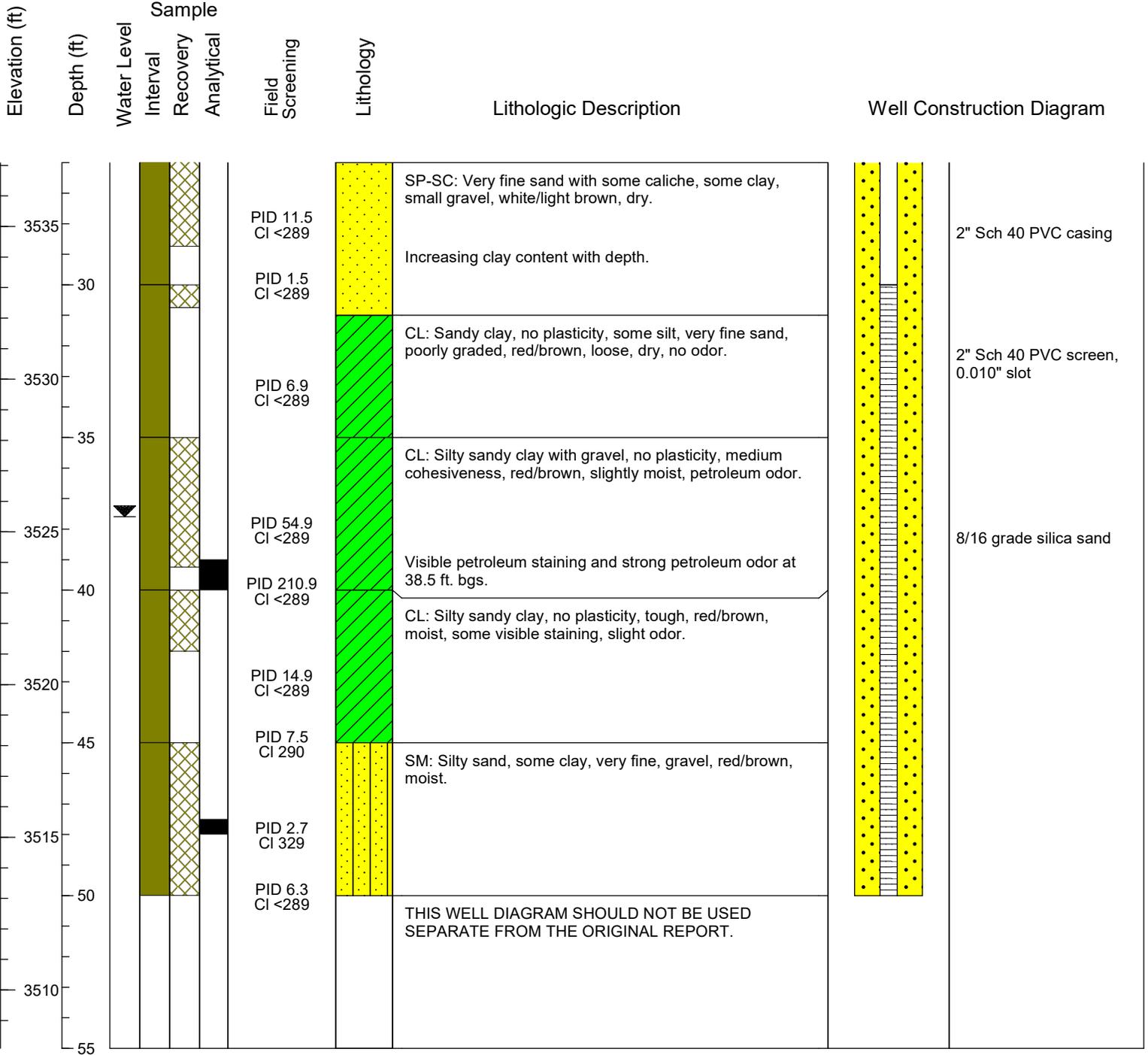
Client: Holly Energy Partners		TRC Project #: 374611
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release		Start Date: 11/04/2020
Address: Klein Rach, Monument, NM		Finish Date: 11/04/2020
Project: Monitoring Well Installation		Permit #: NA
Drilling Company: Talon LPE	Drilling Crew: Ronnie Rodriguez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow Stem Auger		TRC Reviewer: R. Varnell
Boring Diameter (in): 7.88	Boring Depth (ft bgs): 50	Coord. System: NAD 83
Sampling Method: Grab		Latitude: 32.584046
Blow Count Method: NA		Longitude: -103.317430
Field Screening Parameter: Volatile organic compounds / Chlorine		Elevation Datum: NAD 88
Meter: MiniRAE Lite / Chlorine QuanTab Test Strips	Units: ppm / ppm	Ground Elevation (ft): 3563.09
Well Depth (ft bgs): 49.64	Well Depth (ft toc): 49.49	Well Elevation (ft): 3562.94
Casing Length (ft): 29.49	Screen Length (ft): 20.0	Well Measuring Point: Top of casing
Surface Completion: Flush mount concrete pad		Depth to Water (ft toc): 37.59
Well Development: Purged 55 gallons		Date/Time: 11/07/2020 13:45



TRC BORING LOG and WELL CONSTRUCTION

MW-02 (SB-06)

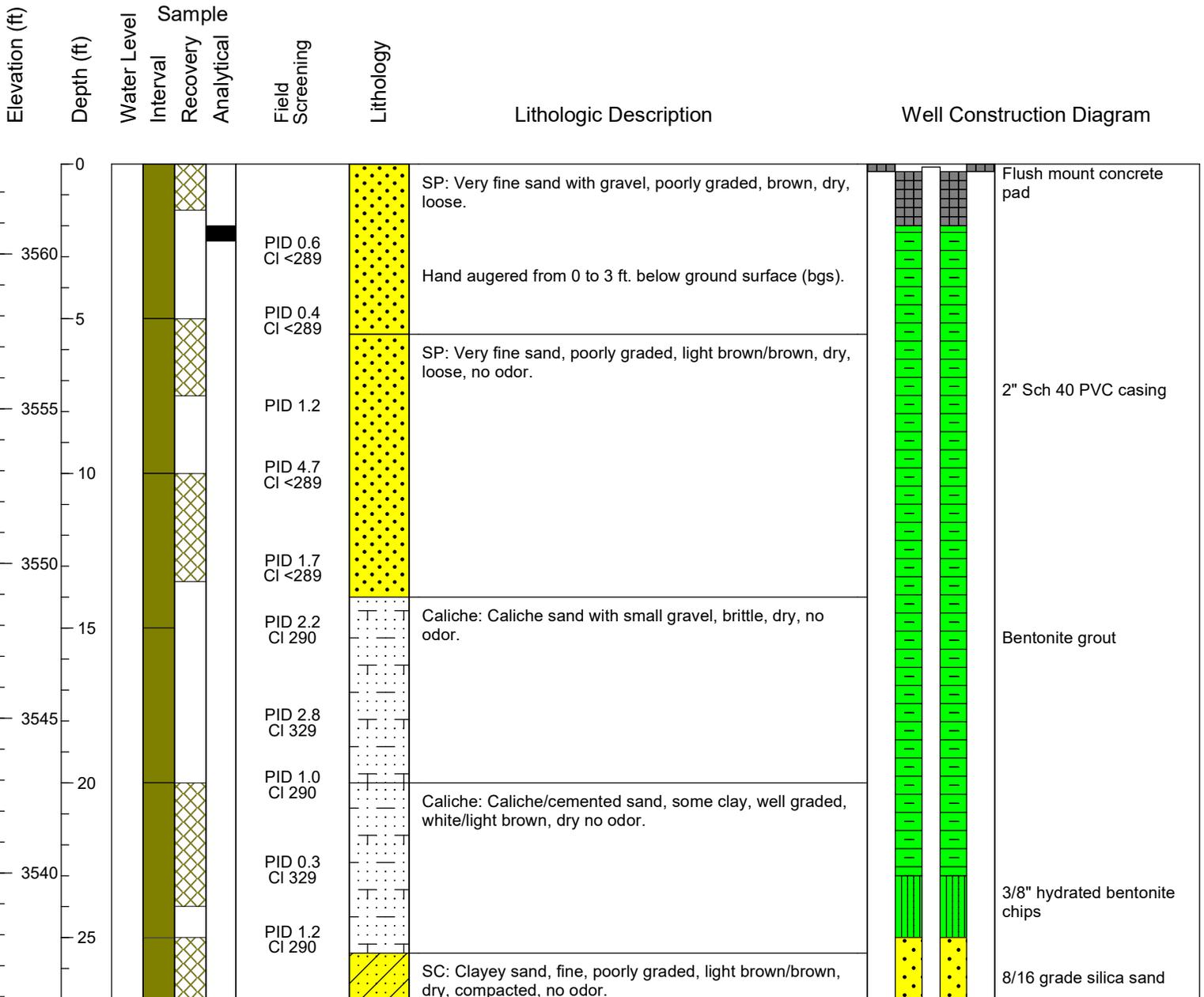
Client: Holly Energy Partners | Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release | Project #: 374611 | Page 2 of 2





MW-03 (SB-07)

Client: Holly Energy Partners		TRC Project #: 374611
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release		Start Date: 11/04/2020
Address: Klein Ranch, Monument, NM		Finish Date: 11/04/2020
Project: Monitoring Well Installation		Permit #: NA
Drilling Company: Talon LPE	Drilling Crew: Ronnie Rodriguez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow Stem Auger		TRC Reviewer: R. Varnell
Boring Diameter (in): 7.88	Boring Depth (ft bgs): 50	Coord. System: NAD 83
Sampling Method: Grab		Latitude: 32.583788
Blow Count Method: NA		Longitude: 103.317594
Field Screening Parameter: Volatile organic compounds / Chlorine		Elevation Datum: NAD 88
Meter: MiniRAE Lite / Chlorine QuanTab Test Strips	Units: ppm / mg/L	Ground Elevation (ft): 3562.91
Well Depth (ft bgs): 50.03	Well Depth (ft toc): 49.93	Well Elevation (ft): 3562.81
Casing Length (ft): 29.93	Screen Length (ft): 20.0	Well Measuring Point: Top of casing
Surface Completion: Flush mount concrete pad		Depth to Water (ft toc): 37.58
Well Development: Purged 30 gallons		Date/Time: 11/07/2020 09:00



TRC BORING LOG and WELL CONSTRUCTION

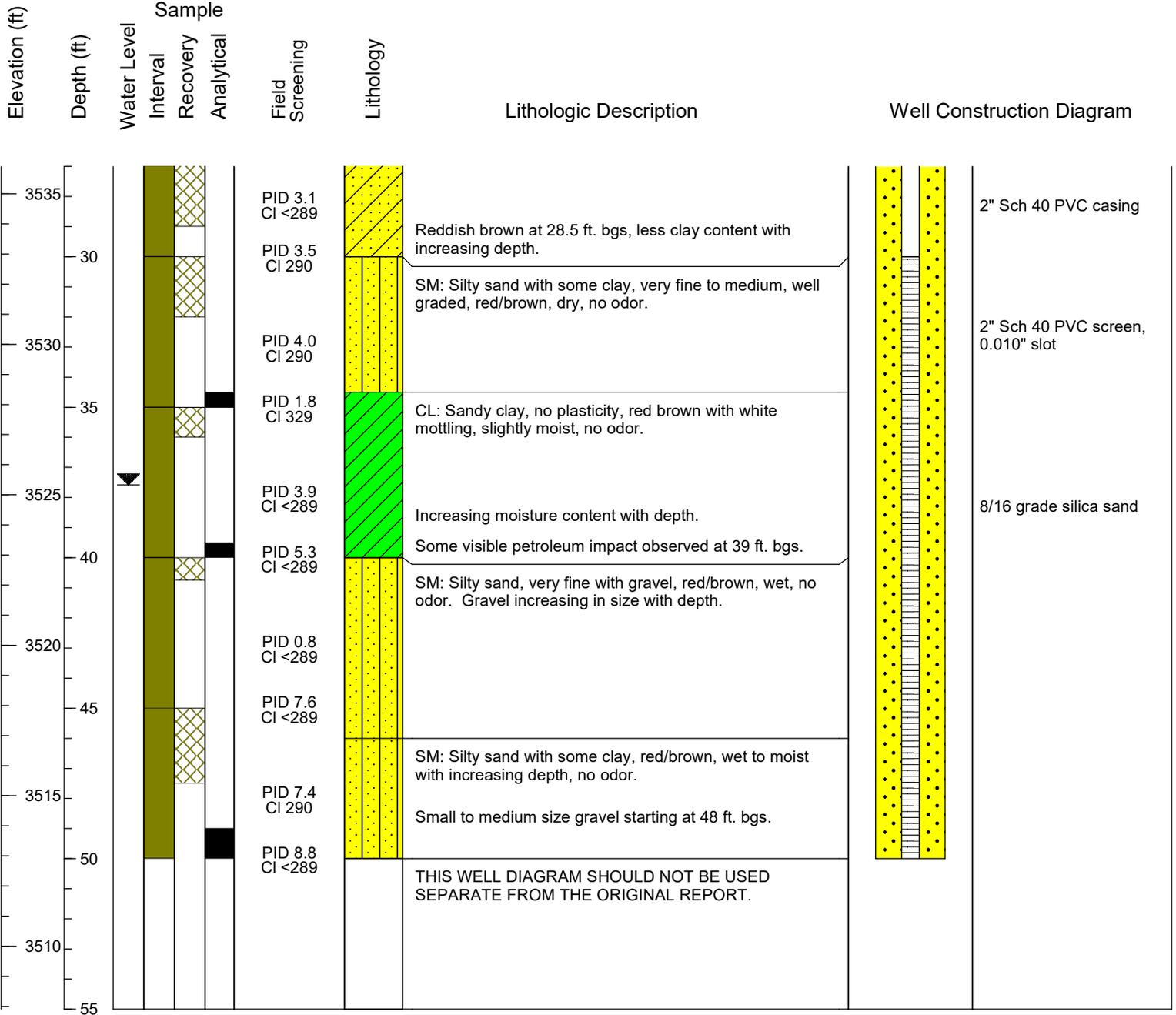
MW-03 (SB-07)

Client: Holly Energy Partners

Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release

Project #: 374611

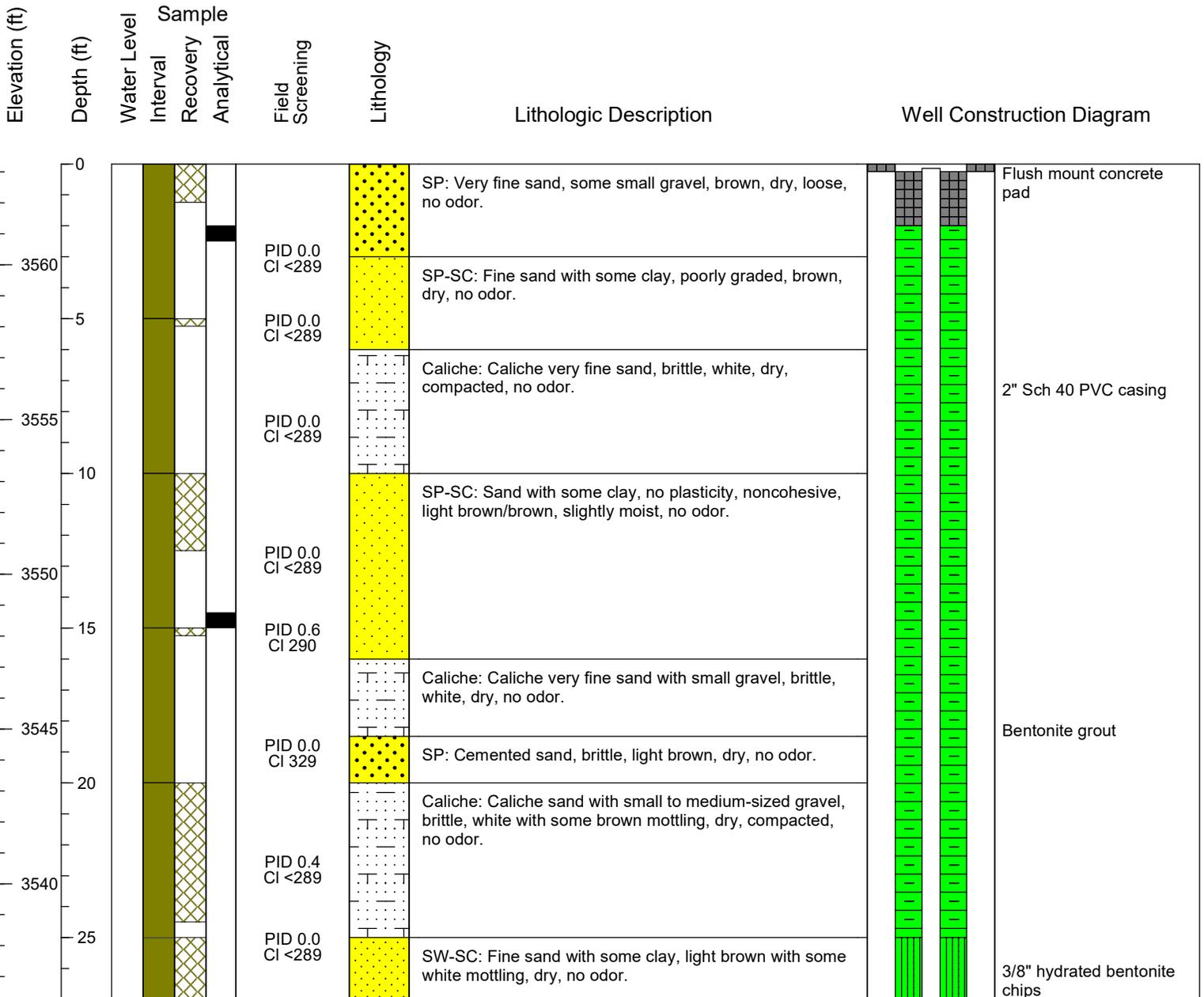
Page 2 of 2





MW-04 (SB-08)

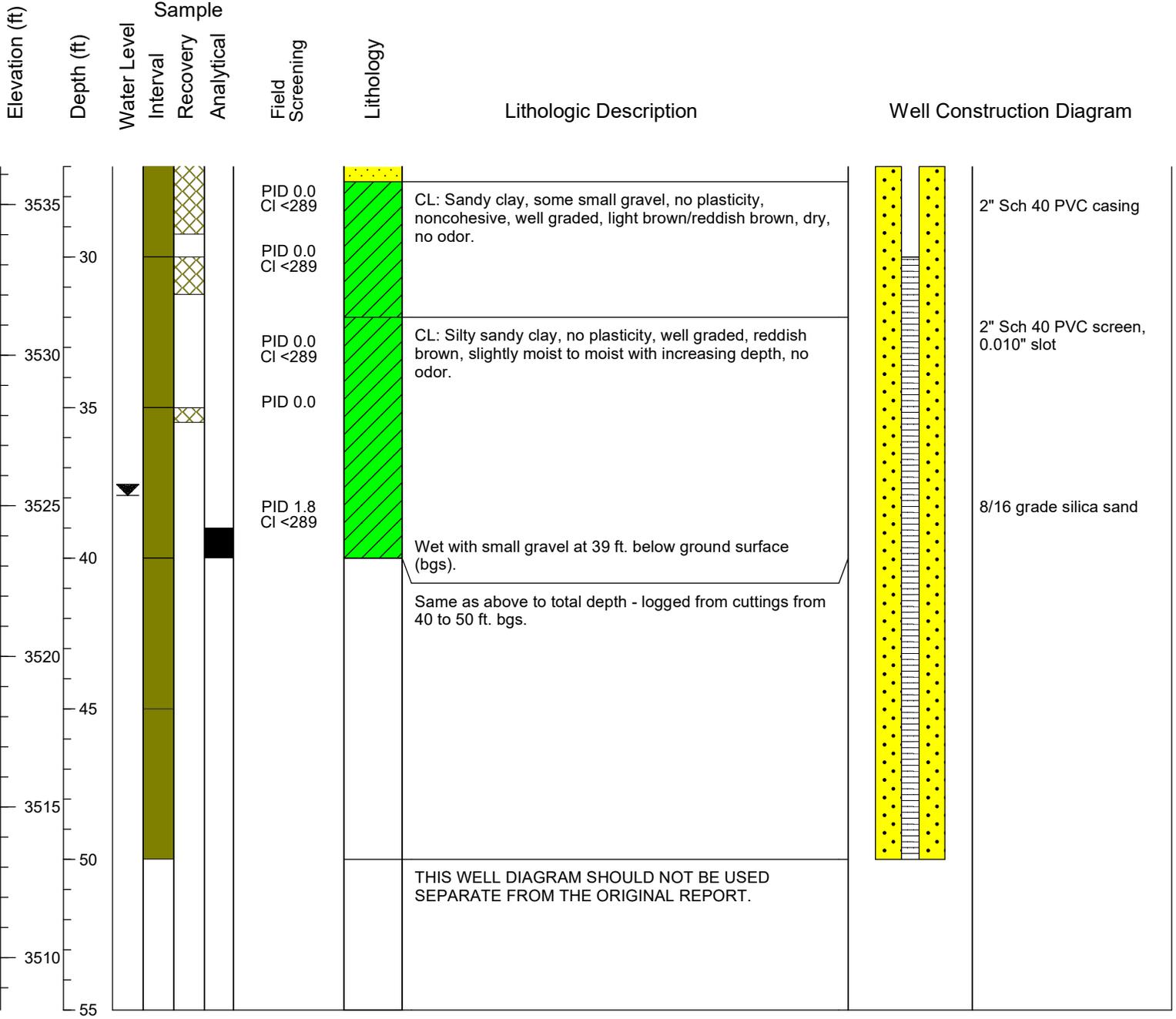
Client: Holly Energy Partners		TRC Project #: 374611
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release		Start Date: 11/05/2020
Address: Klein Ranch, Monument, NM		Finish Date: 11/05/2020
Project: Monitoring Well Installation		Permit #: NA
Drilling Company: Talon LPE	Drilling Crew: Ronnie Rodriguez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow Stem Auger		TRC Reviewer: R. Varnell
Boring Diameter (in): 7.88	Boring Depth (ft bgs): 50	Coord. System: NAD 83
Sampling Method: Grab		Latitude: 32.583756
Blow Count Method: NA		Longitude: -103.317355
Field Screening Parameter: Volatile organic compounds / Chlorine		Elevation Datum: NAD 88
Meter: MiniRAE Lite / Chlorine QuanTab Test Strips	Units: ppm / ppm	Ground Elevation (ft): 3563.26
Well Depth (ft bgs): 50.45	Well Depth (ft toc): 50.31	Well Elevation (ft): 3563.12
Casing Length (ft): 30.31	Screen Length (ft): 20.0	Well Measuring Point: Top of casing
Surface Completion: Flush mount concrete pad		Depth to Water (ft toc): 37.92
Well Development: Purged 100 gallons		Date/Time: 11/07/2020 11:45





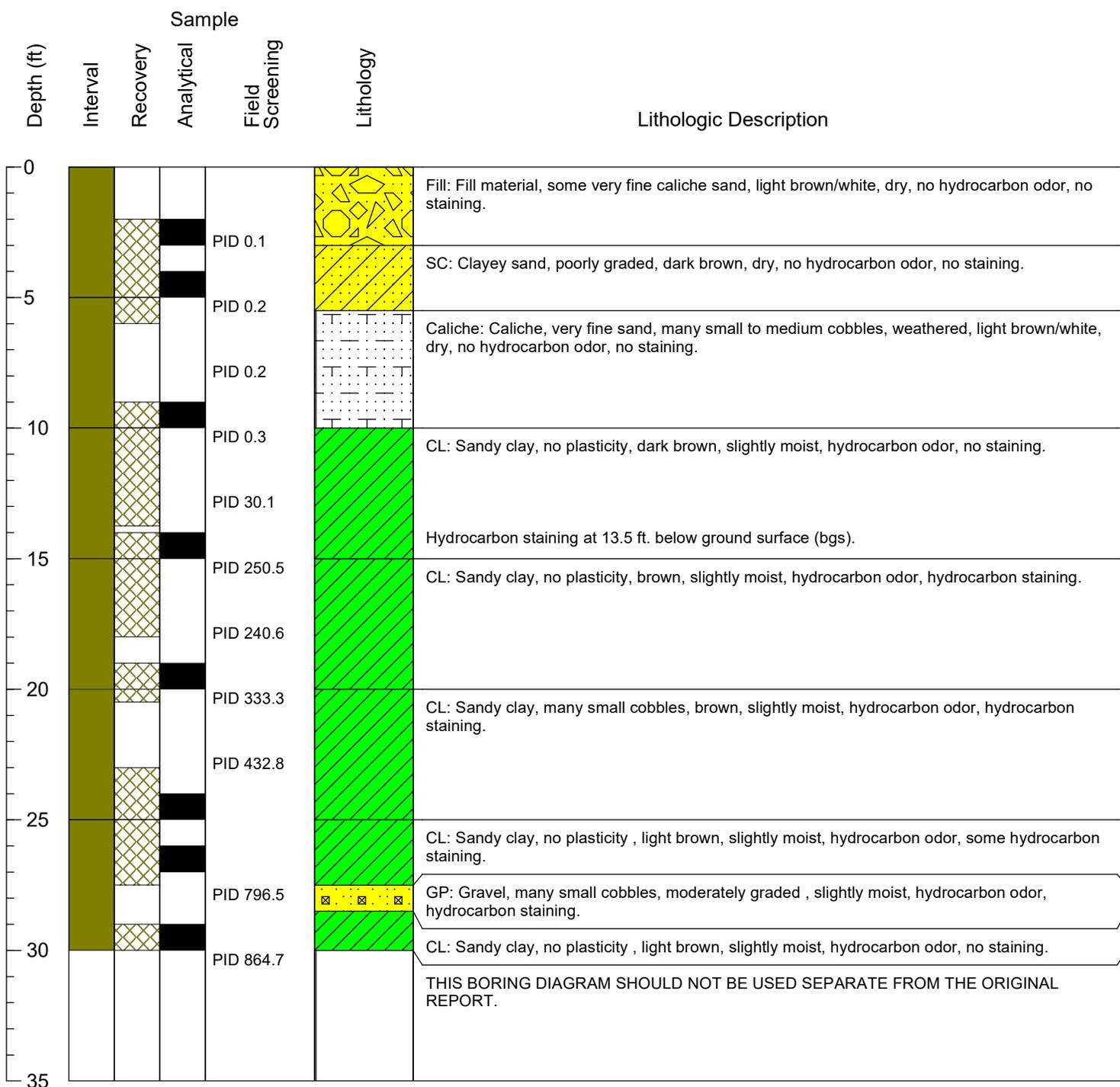
MW-04 (SB-08)

Client: Holly Energy Partners | Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release | Project #: 374611 | Page 2 of 2



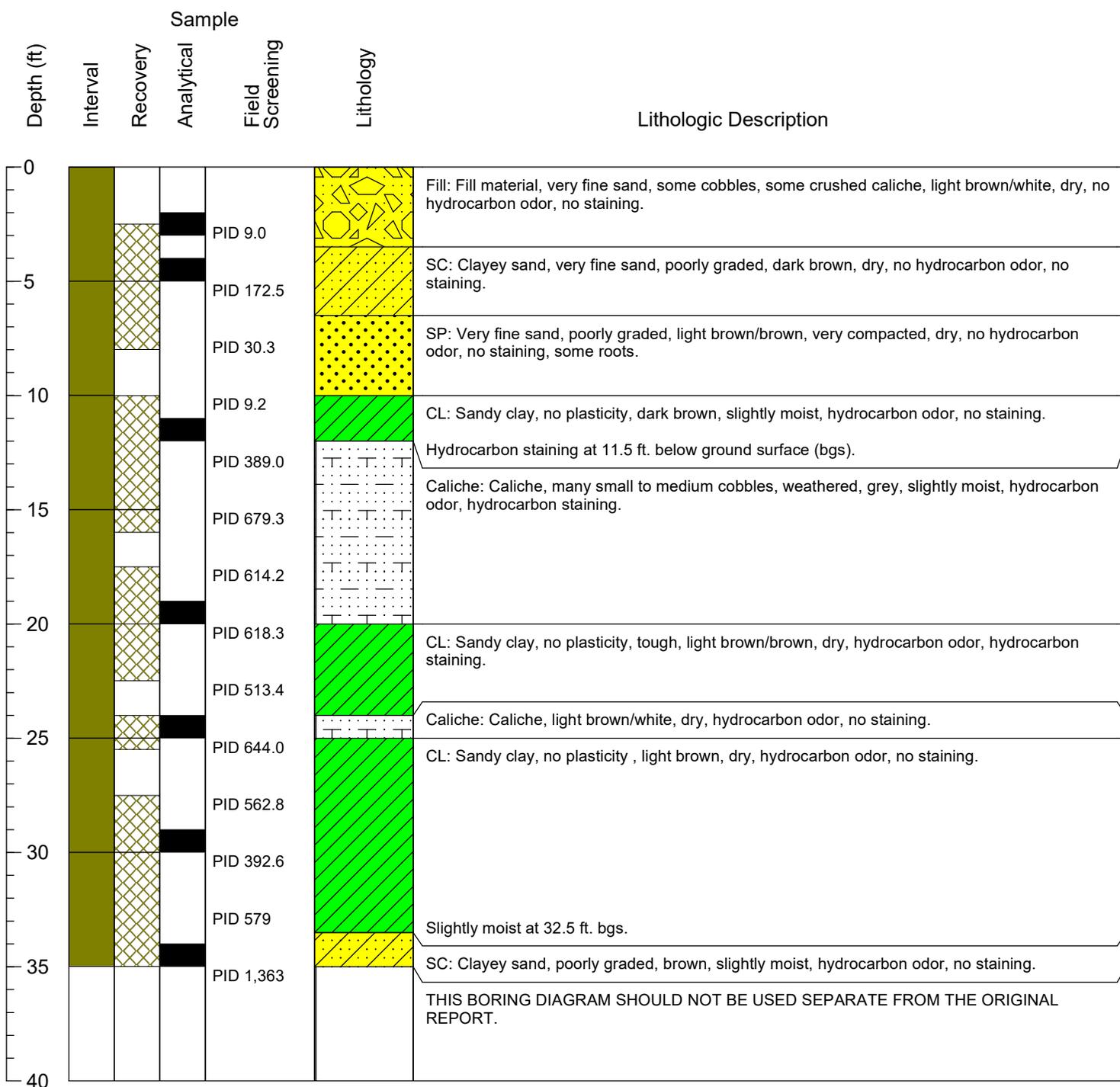
TRC BORING LOG SB-18

Client: Holly Energy Partners		TRC Project #: 426140
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release		Start Date: 5/26/2021
Address: Klein Ranch, Monument, NM		Finish Date: 5/27/2021
Project: Site Assessment		Permit #: N/A
Drilling Company: Talon LPE	Drilling Crew: Ronnie Rodriguez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow-Stem Auger		TRC Reviewer: R. Varnell
Boring Diameter (in): 7.875	Boring Depth (ft bgs): 30.0	Coord. Sys.: WGS 84
Sampling Method: Continuous 5-ft Core Sampler		Latitude: 32.5839465
Blow Count Method: N/A	Grout: 3/8" Hydrated Bentonite Chips	Longitude: -103.3174910
Field Screening Parameter: Volatile Organic Compounds		Elevation Datum: N/A
Meter: MiniRAE 3000	Units: ppm	Ground Elevation (ft): NM



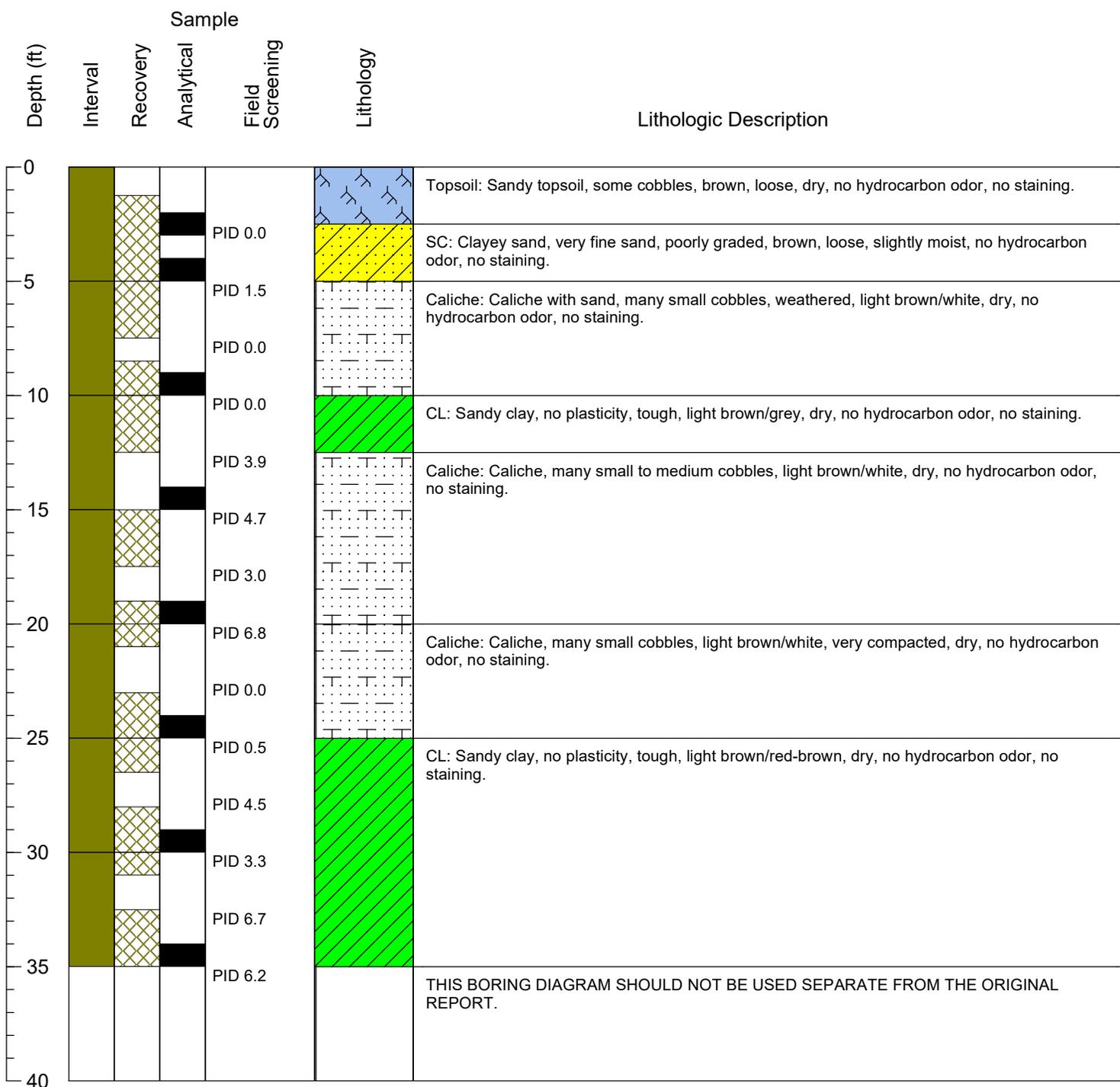
TRC BORING LOG SB-19

Client: Holly Energy Partners		TRC Project #: 426140
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release		Start Date: 5/27/2021
Address: Klein Ranch, Monument, NM		Finish Date: 5/27/2021
Project: Site Assessment		Permit #: N/A
Drilling Company: Talon LPE	Drilling Crew: Ronnie Rodriguez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow-Stem Auger		TRC Reviewer: R. Varnell
Boring Diameter (in): 7.875	Boring Depth (ft bgs): 35.0	Coord. Sys.: WGS 84
Sampling Method: Continuous 5-ft Core Sampler		Latitude: 32.5839482
Blow Count Method: N/A	Grout: 3/8" Hydrated Bentonite Chips	Longitude: -103.3179482
Field Screening Parameter: Volatile Organic Compounds		Elevation Datum: N/A
Meter: MiniRAE 3000	Units: ppm	Ground Elevation (ft): NM



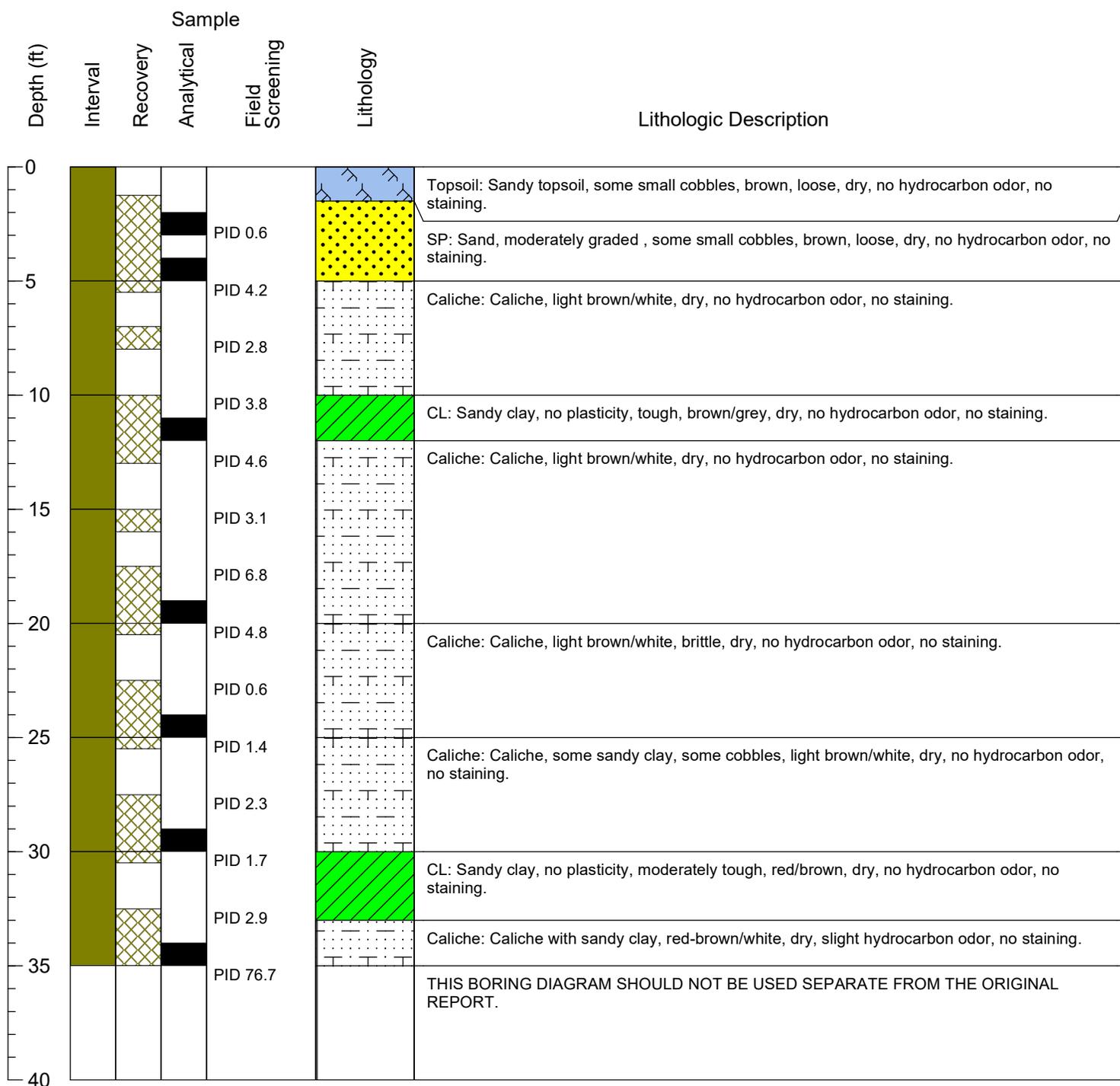
TRC BORING LOG SB-20

Client: Holly Energy Partners		TRC Project #: 426140
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release		Start Date: 5/27/2021
Address: Klein Ranch, Monument, NM		Finish Date: 5/27/2021
Project: Site Assessment		Permit #: N/A
Drilling Company: Talon LPE	Drilling Crew: Ronnie Rodriguez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow-Stem Auger		TRC Reviewer: R. Varnell
Boring Diameter (in): 7.875	Boring Depth (ft bgs): 35.0	Coord. Sys.: WGS 84
Sampling Method: Continuous 5-ft Core Sampler		Latitude: 32.5839688
Blow Count Method: N/A	Grout: 3/8" Hydrated Bentonite Chips	Longitude: -103.3175976
Field Screening Parameter: Volatile Organic Compounds		Elevation Datum: N/A
Meter: MiniRAE 3000	Units: ppm	Ground Elevation (ft): NM



TRC BORING LOG SB-21

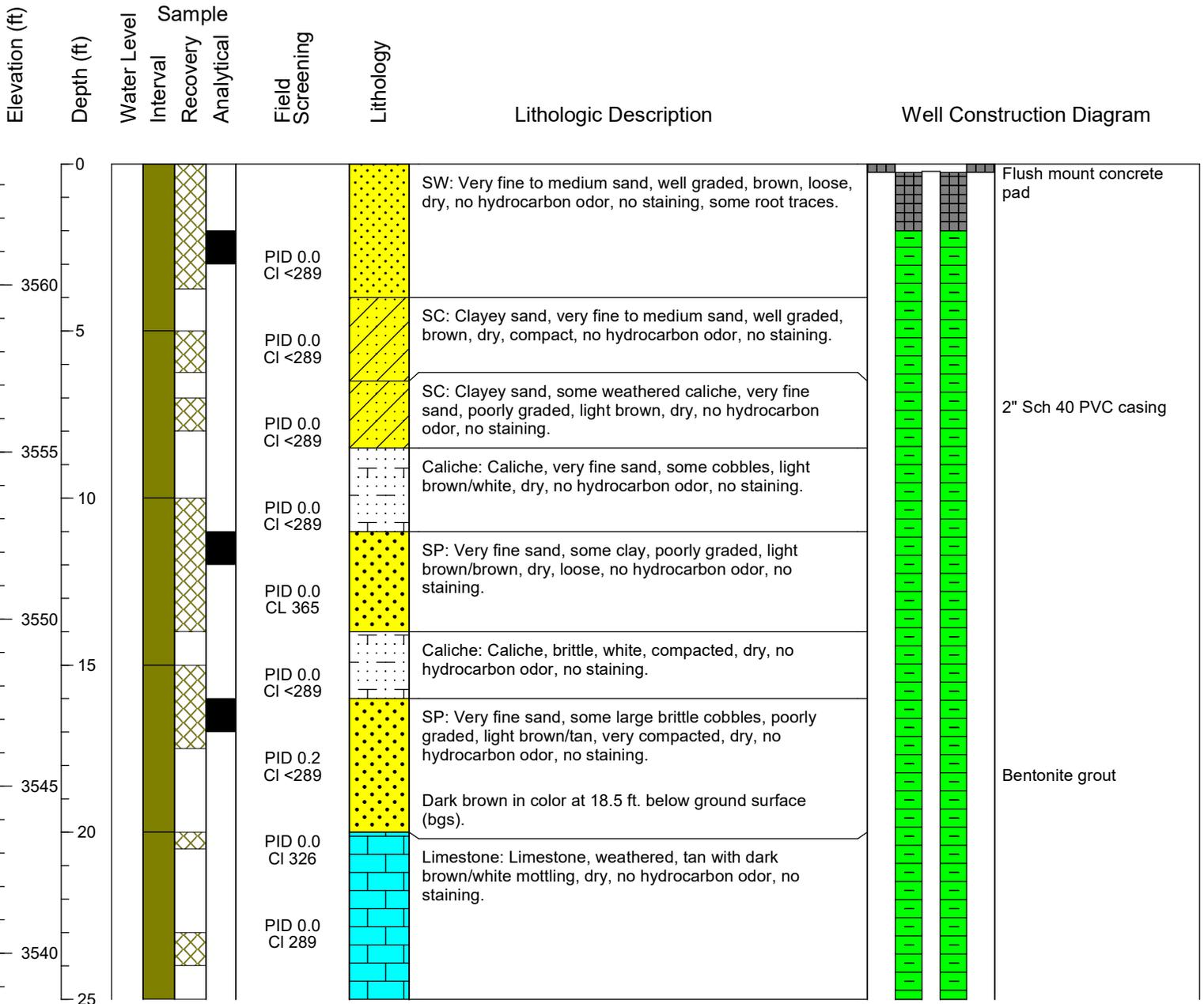
Client: Holly Energy Partners		TRC Project #: 426140
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release		Start Date: 5/27/2021
Address: Klein Ranch, Monument, NM		Finish Date: 5/28/2021
Project: Site Assessment		Permit #: N/A
Drilling Company: Talon LPE	Drilling Crew: Ronnie Rodriguez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow-Stem Auger		TRC Reviewer: R. Varnell
Boring Diameter (in): 7.875	Boring Depth (ft bgs): 35.0	Coord. Sys.: WGS 84
Sampling Method: Continuous 5-ft Core Sampler		Latitude: 32.5839180
Blow Count Method: N/A	Grout: 3/8" Hydrated Bentonite Chips	Longitude: -103.3173414
Field Screening Parameter: Volatile Organic Compounds		Elevation Datum: N/A
Meter: MiniRAE 3000	Units: ppm	Ground Elevation (ft): NM





MW-05 (SB-25)

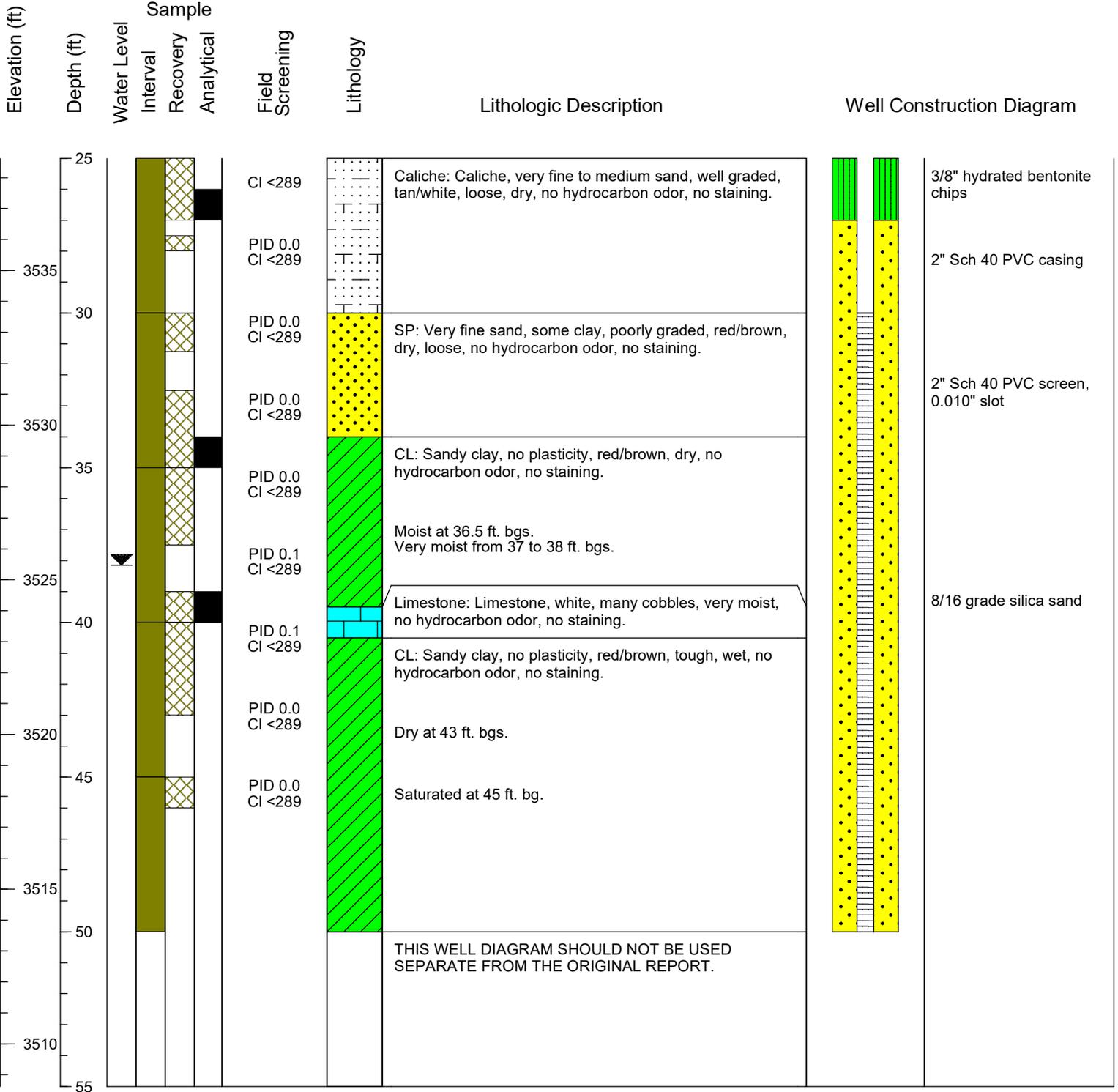
Client: Holly Energy Partners		TRC Project #: 426140
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release		Start Date: 5/26/2021
Address: Klein Ranch, Monument, NM		Finish Date: 5/28/2021
Project: Site Assessment		Permit #: NA
Drilling Company: Talon LPE	Drilling Crew: Ronnie Rodriguez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow-Stem Auger		TRC Reviewer: R. Varnell
Boring Diameter (in): 7.875	Boring Depth (ft bgs): 50.0	Coord. System: NAD 83
Sampling Method: Continuous 5-ft Core Sampler		Latitude: 32.584131
Blow Count Method: NA		Longitude: -103.317565
Field Screening Parameter: Volatile Organic Compounds / Chlorine		Elevation Datum: NAVD 88
Meter: MiniRAE Lite / Chlorine QuanTab Test Strips	Units: ppm / ppm	Ground Elevation (ft): 3536.62
Well Depth (ft bgs): 50.0	Well Depth (ft toc): 49.72	Well Elevation (ft): 3563.40
Casing Length (ft): 30.0	Screen Length (ft): 20.0	Well Measuring Point: Top of casing
Surface Completion: Flush mount concrete pad		Depth to Water (ft toc): 38.15
Well Development: Purged 7 liters		Date/Time: 5/28/2021 17:15



TRC BORING LOG and WELL CONSTRUCTION

MW-05 (SB-25)

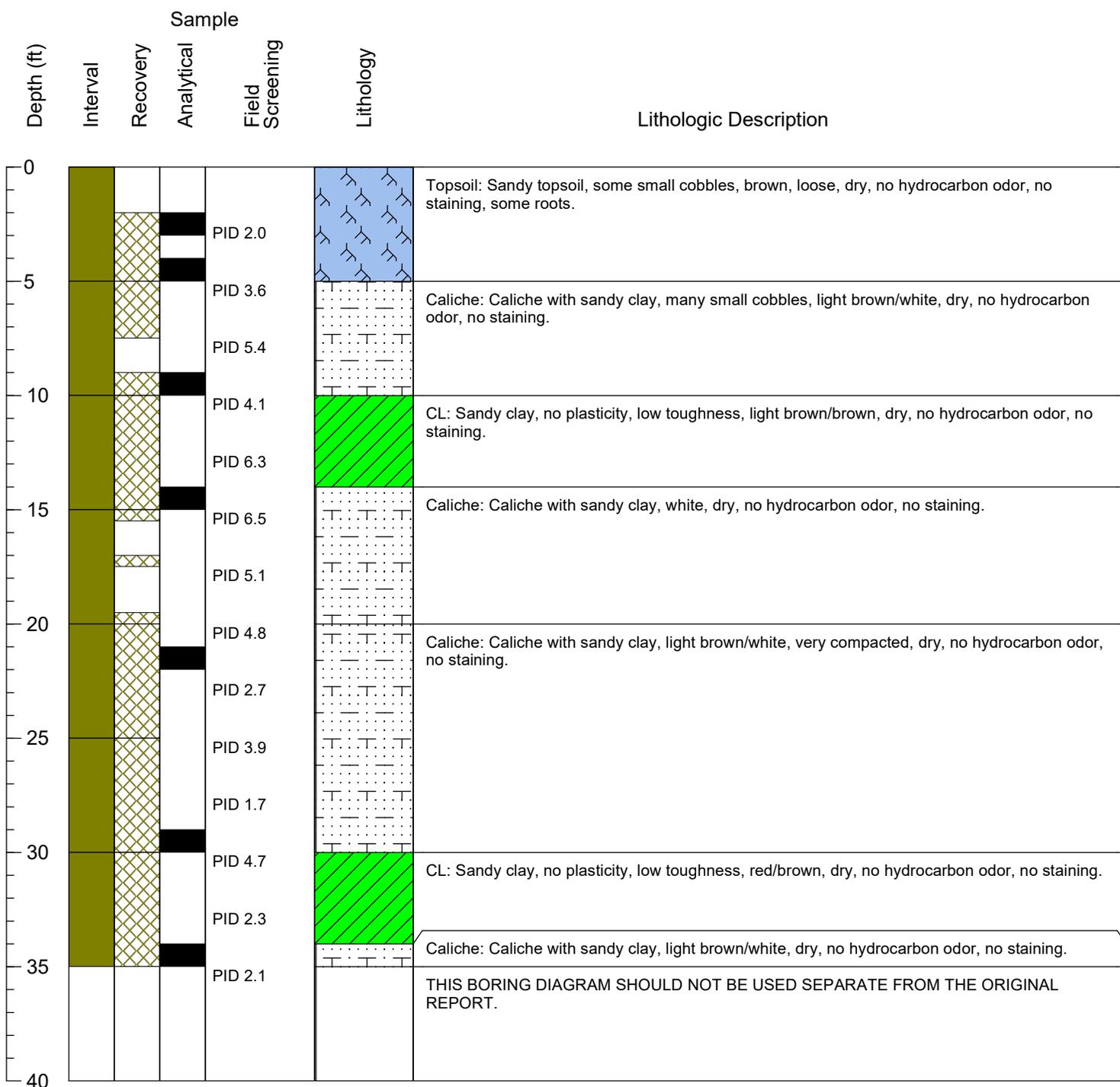
Client: Holly Energy Partners | Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release | Project #: 426140 | Page 2 of 2



THIS WELL DIAGRAM SHOULD NOT BE USED SEPARATE FROM THE ORIGINAL REPORT.

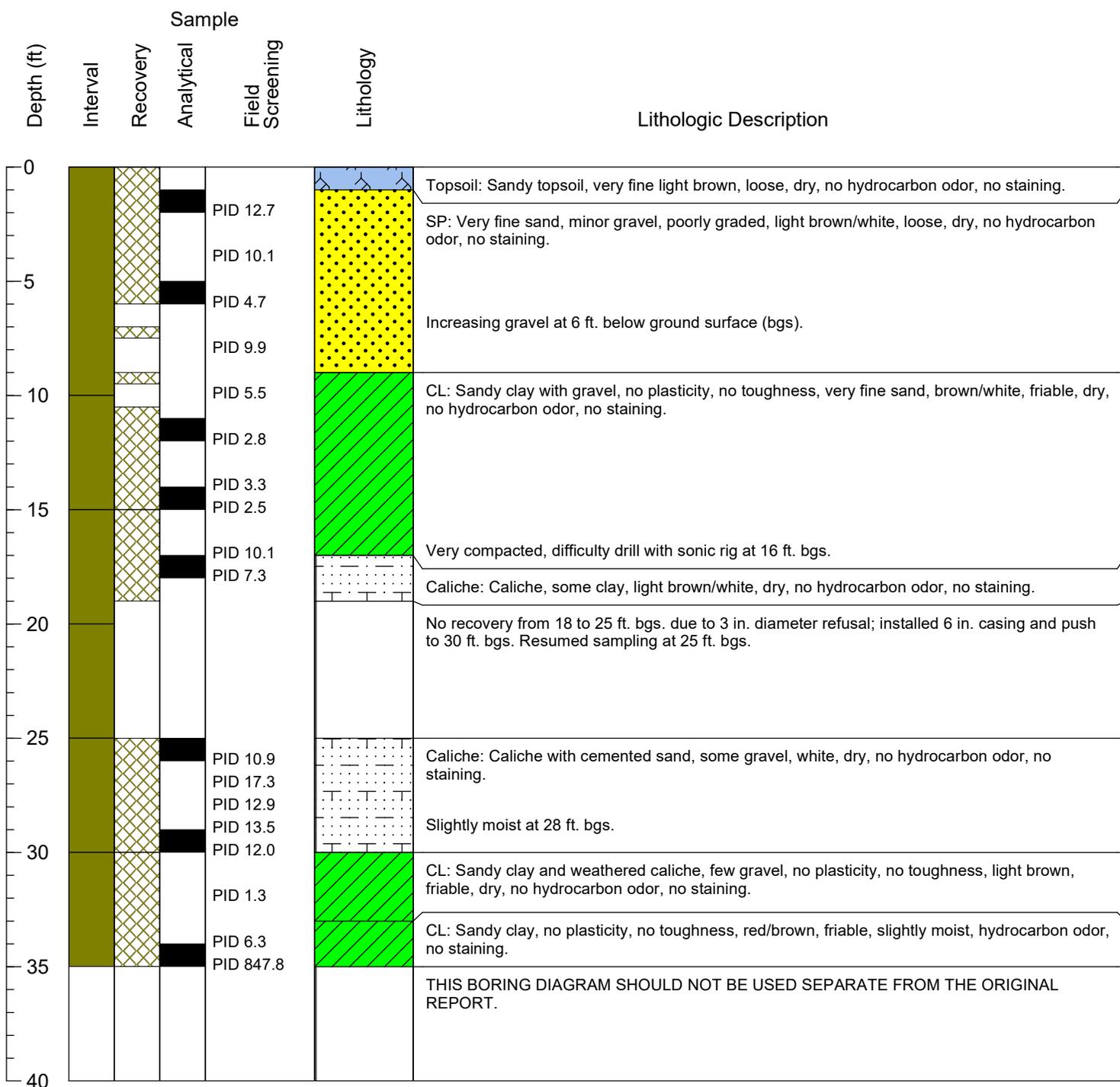
TRC BORING LOG SB-26

Client: Holly Energy Partners		TRC Project #: 426140
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release		Start Date: 5/28/2021
Address: Klein Ranch, Monument, NM		Finish Date: 5/28/2021
Project: Site Assessment		Permit #: N/A
Drilling Company: Talon LPE	Drilling Crew: Ronnie Rodriguez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Hollow-Stem Auger		TRC Reviewer: R. Varnell
Boring Diameter (in): 7.875	Boring Depth (ft bgs): 35.0	Coord. Sys.: WGS 84
Sampling Method: Continuous 5-ft Core Sampler		Latitude: 32.5838388
Blow Count Method: N/A	Grout: 3/8" Hydrated Bentonite Chips	Longitude: -103.3174806
Field Screening Parameter: Volatile Organic Compounds		Elevation Datum: N/A
Meter: MiniRAE 3000	Units: ppm	Ground Elevation (ft): NM



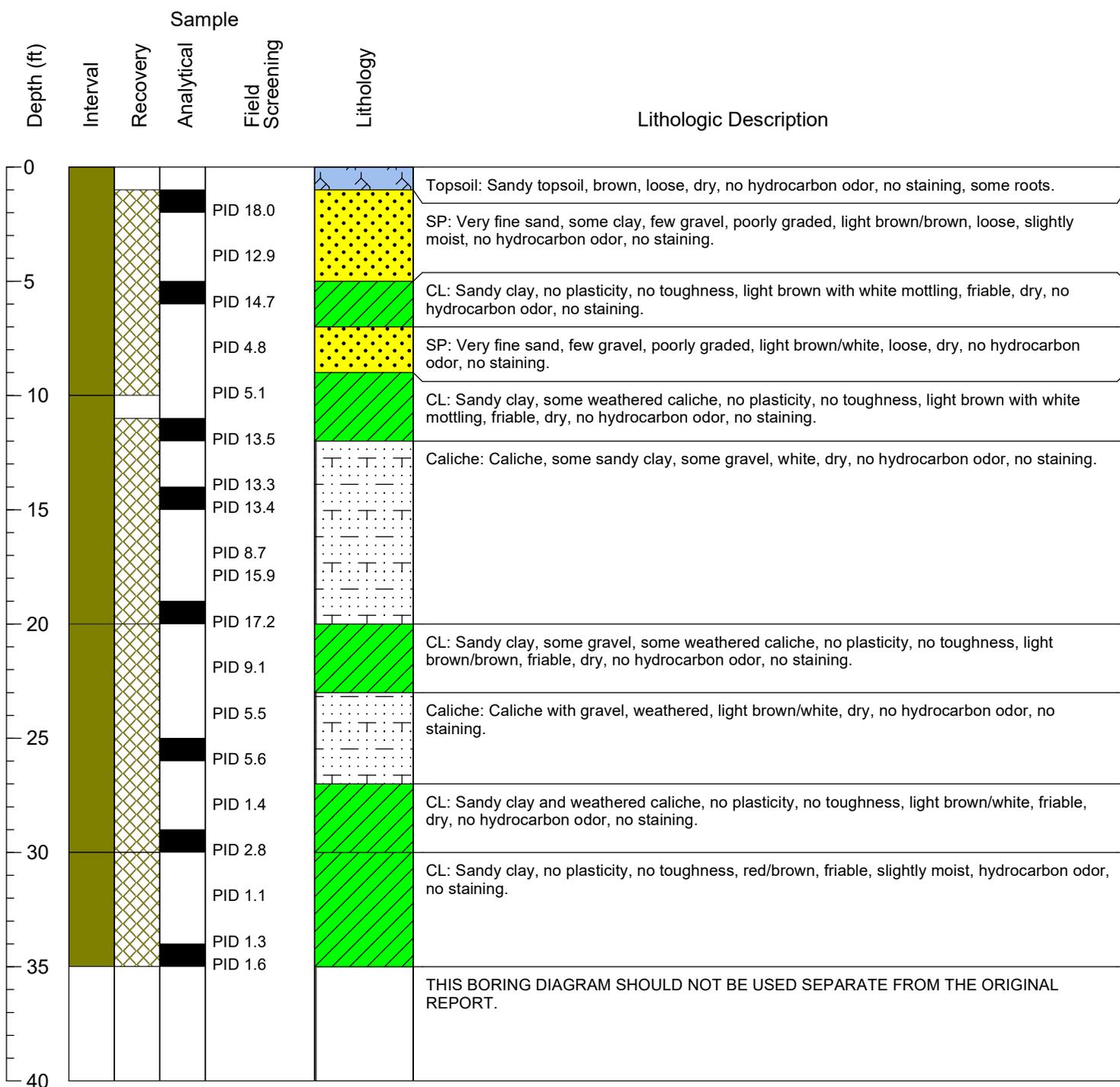
TRC BORING LOG SB-29

Client: Holly Energy Partners		TRC Project #: 426140
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release		Start Date: 10/05/2021
Address: Klein Ranch, Monument, NM		Finish Date: 10/05/2021
Project: Site Assessment		Permit #: N/A
Drilling Company: Talon LPE	Drilling Crew: Daniel Martinez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Sonic Drilling		TRC Reviewer: R. Varnell
Boring Diameter (in): 6" outer; 3" inner	Boring Depth (ft bgs): 35.0	Coord. Sys.: WGS 84
Sampling Method: 10-ft Core Sampler; Continuous 5-ft Core Sampler		Latitude: 32.5838942
Blow Count Method: N/A	Grout: 3/8" Hydrated Bentonite Chips	Longitude: -103.3171446
Field Screening Parameter: Volatile Organic Compounds		Elevation Datum: N/A
Meter: MiniRAE 3000	Units: ppm	Ground Elevation (ft): NM



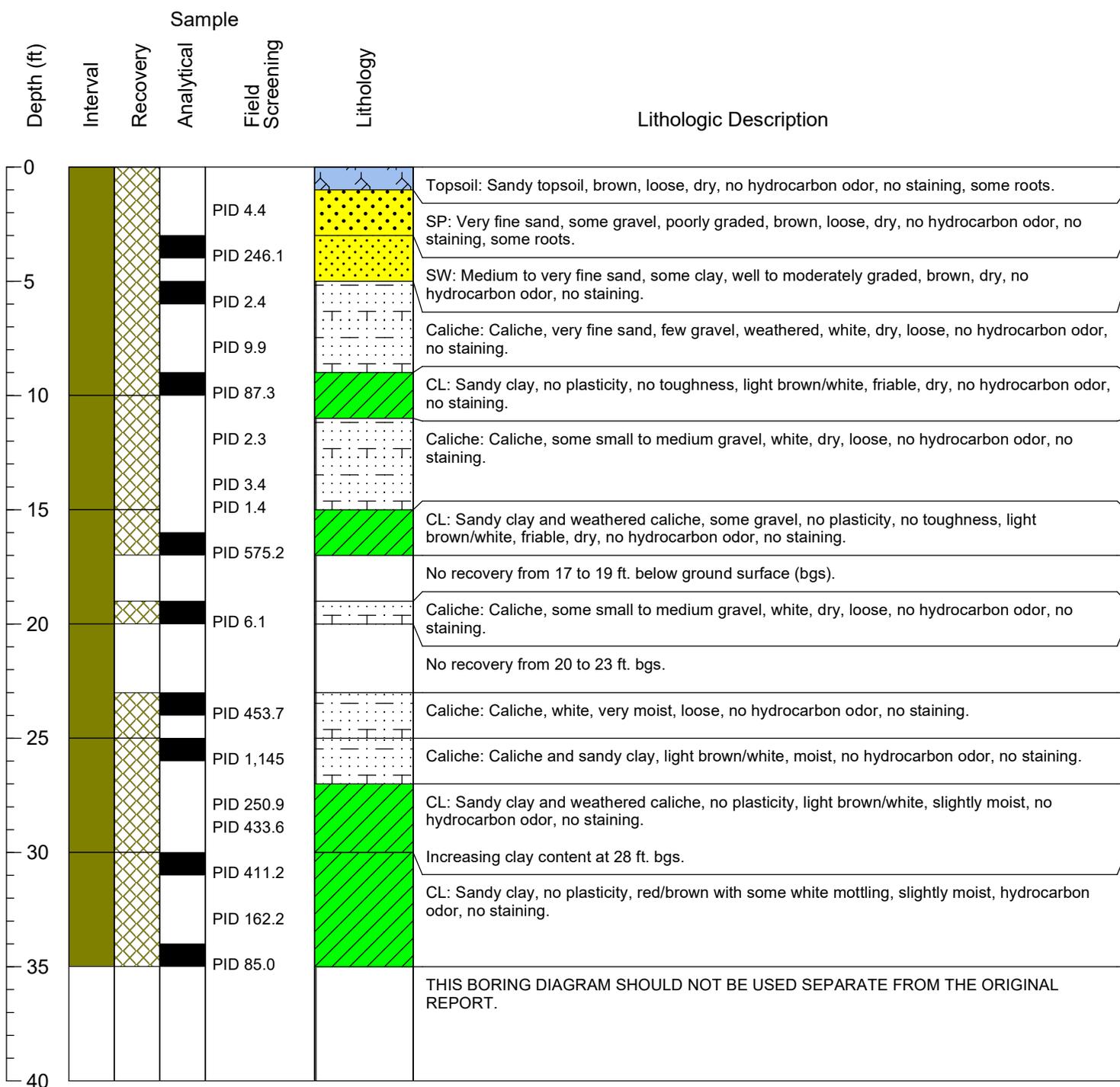
TRC BORING LOG SB-30

Client: Holly Energy Partners		TRC Project #: 426140
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release		Start Date: 10/06/2021
Address: Klein Ranch, Monument, NM		Finish Date: 10/06/2021
Project: Site Assessment		Permit #: N/A
Drilling Company: Talon LPE	Drilling Crew: Daniel Martinez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Sonic Drilling		TRC Reviewer: R. Varnell
Boring Diameter (in): 6" outer; 3" inner	Boring Depth (ft bgs): 35.0	Coord. Sys.: N/A
Sampling Method: Continuous 10-ft Core Sampler		Latitude: NM
Blow Count Method: N/A	Grout: 3/8" Hydrated Bentonite Chips	Longitude: NM
Field Screening Parameter: Volatile Organic Compounds		Elevation Datum: N/A
Meter: MiniRAE 3000	Units: ppm	Ground Elevation (ft): NM



TRC BORING LOG SB-31

Client: Holly Energy Partners		TRC Project #: 426140
Site: WTX to EMSU Battery to Byrd Pump Segment Crude Oil Release		Start Date: 10/07/2021
Address: Klein Ranch, Monument, NM		Finish Date: 10/07/2021
Project: Site Assessment		Permit #: N/A
Drilling Company: Talon LPE	Drilling Crew: Daniel Martinez & crew	TRC Site Rep.: C. Gaston
Drilling Method: Sonic Drilling		TRC Reviewer: R. Varnell
Boring Diameter (in): 6" outer; 3" inner	Boring Depth (ft bgs): 35.0	Coord. Sys.: WGS 84
Sampling Method: 10-ft Core Sampler; Continuous 5-ft Core Sampler		Latitude: 32.5839733
Blow Count Method: N/A	Grout: 3/8" Hydrated Bentonite Chips	Longitude: -103.3169022
Field Screening Parameter: Volatile Organic Compounds		Elevation Datum: N/A
Meter: MiniRAE 3000	Units: ppm	Ground Elevation (ft): NM





Appendix C: Email Correspondence

From: [Eads, Cristina, EMNRD](#)
To: [Varnell, Richard](#)
Cc: [Sahba, Arsin M.](#); [mark.shemaria](#); [melanie.nolan](#); [Coupland, Lori](#); [Gilbert, Bryan](#); [Hoover, Shannon](#)
Subject: [EXTERNAL] RE: WTX to EMSU Battery to Byrd Pump Crude Oil Release Site (NOY1822242858)
Date: Friday, July 16, 2021 3:37:49 PM
Attachments: [image001.png](#)

This is an **EXTERNAL** email. Do not click links or open attachments unless you validate the sender and know the content is safe.

Richard,

HEP's extension request is approved to perform the work as described below. Please contact the division if anything changes with this scope of work.

Thanks,

Cristina Eads • Environmental Specialist - A
Environmental Bureau
EMNRD - Oil Conservation Division
5200 Oakland Ave, Suite100 | Albuquerque, NM 87113
505.670.5601 | Cristina.Eads@state.nm.us
<http://www.emnrd.state.nm.us/OCD/>

From: Varnell, Richard <RVarnell@trccompanies.com>
Sent: Friday, July 16, 2021 2:04 PM
To: Eads, Cristina, EMNRD <Cristina.Eads@state.nm.us>
Cc: Sahba, Arsin M. <arsin.sahba@hollyfrontier.com>; mark.shemaria <mark.shemaria@hollyenergy.com>; melanie.nolan <melanie.nolan@hollyenergy.com>; Coupland, Lori <Lori.Coupland@hollyenergy.com>; Gilbert, Bryan <BGilbert@trccompanies.com>; Hoover, Shannon <SHoover@trccompanies.com>
Subject: WTX to EMSU Battery to Byrd Pump Crude Oil Release Site (NOY1822242858)

Hi Cristina,

Per our recent discussion we've prepared this email to request an extension, propose additional investigation scope, and summarize the May 2021 Site investigation at the WTX to EMSU Battery to Byrd Pump Crude Oil Release Site (NOY1822242858). The investigation was generally performed as described in the December 2020 Site Characterization Report (SCR) – eleven borings were installed (eight were proposed in the SCR), and one boring was converted to upgradient monitoring well MW-5. Groundwater samples were obtained from all five monitoring wells.

Based on the soil sample analytical results (Table 1 and Figure 1), the Total Petroleum Hydrocarbon (TPH) affected soil to the east of the release at soil borings SB-19 and SB-21 has not been laterally delineated. To complete the lateral soil delineation, Holly Energy Partners – Operating, L.P. (HEP) proposes installing two more borings: one boring east of SB-21 and one boring north-northeast of SB-19 and SB-21 (i.e., east and northeast of the release point). These borings will be installed to a maximum depth of 35 feet bgs and

sampled for TPH using EPA Method 8015. The proposed boring locations are shown on Figure 1. The analytical results of the groundwater samples are provided in Table 2 and Figure 2. To further assess groundwater conditions at the Site, HEP proposes collecting one additional round of groundwater samples from wells MW-1 through MW-5 for analysis of TPH; chloride; and benzene, toluene, ethylbenzene, and total xylenes (BTEX) using appropriate analytical methods. The November 2020 groundwater potentiometric surface map is provided as Figure 3. The lab reports from the May 2021 investigation are also attached.

HEP requests a 90-day extension from the current due date of August 14, 2021, to perform the additional investigation proposed for the Site (completion of two borings for lateral soil delineation and additional groundwater sample collection); evaluate the data; and prepare an updated SCR for submittal to NMOCD. A 90-day extension would result in a new due date of November 12, 2021. Please contact us with questions or comments, and please let us know if/when this extension is approved.

Thanks!

-RD

Richard (RD) Varnell, P.G., P.E.
Senior Project Manager



505 E. Huntland Drive, Suite 250, Austin, TX 78752

T 512.626.3990 | F 512.684.3136 | C 512.297.3019

[LinkedIn](#) | [Twitter](#) | [Blog](#) | [TRCcompanies.com](#)

Please note that my office number has changed.



Appendix D: Photograph Log

Appendix D Photograph Log



Photo 1: View facing north of Talon LPE subsurface soil boring advancement at SB-18. The yellow flags inside the fenced area mark the location of the WTX to EMSU Battery to Byrd Pump Segment gathering line.



Photo 2: View looking northwest of the downhole grouting activities of MW-05 by Talon LPE. The monitoring well was advanced approximately 85 feet northwest of the release point.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
426140	Mr. Cody Gaston 05/24/2021 to 10/08/2021	1 of 4	Holly Energy Partners – Operating, L.P.	WTX to EMSU Battery Gathering Line Crude Oil Release, Lea County, NM	

Appendix D Photograph Log



Photo 3: View facing northwest of SB-21 location, approximately 30 feet east of the release point and north of the underground gathering line.



Photo 4: View facing south of Talon LPE subsurface soil boring advancement at SB-26. The yellow flags inside the fenced area mark the location of the WTX to EMSU Battery to Byrd Pump Segment gathering line.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
426140	Mr. Cody Gaston 05/24/2021 to 10/08/2021	2 of 4	Holly Energy Partners – Operating, L.P.	WTX to EMSU Battery Gathering Line Crude Oil Release, Lea County, NM	

Appendix D Photograph Log



Photo 5: View facing southeast of hydro-excavation activities of underground gathering line by Talon LPE in order to confirm location of line prior to nearby drilling activities at SB-29.



Photo 6: View facing northeast of Talon LPE subsurface soil boring advancement at SB-29. Soil boring is located approximately 90 feet east of release point and 6 feet north of underground gathering line.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
426140	Mr. Cody Gaston 05/24/2021 to 10/08/2021	3 of 4	Holly Energy Partners – Operating, L.P.	WTX to EMSU Battery Gathering Line Crude Oil Release, Lea County, NM	

Appendix D Photograph Log



Photo 6: View facing northeast of containerized investigation derived soil, purge water, and trash waste inside seven (7) 55-gallon steel drums. Drums are located within fenced area surrounding release point.

TRC Job No.	Photographs Taken By:	Page No.	Client:	Site Name & Address:	
426140	Mr. Cody Gaston 05/24/2021 to 10/08/2021	4 of 4	Holly Energy Partners – Operating, L.P.	WTX to EMSU Battery Gathering Line Crude Oil Release, Lea County, NM	



Appendix E: Survey Information



BENCHMARK
 1/2" REBAR W/
 JWSC ALUM. CAP
 ELEV=3562.14
 N=577441.3
 E=854300.2

COORDINATE TABLE

COORDINATES VALUES SHOWN ARE RELATIVE TO THE NORTH AMERICAN DATUM 1983, "NEW MEXICO EAST ZONE".
 ELEVATIONS ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM 1988

WELL	COORDINATES		ELEVATIONS
MW #1	577650.4 N 854239.6 E	LAT.=32.583908° N LONG.=103.317464° W	NATURAL GROUND - 3561.71' TOP OF CONCRETE - 3561.91' TOP OF 2 1/2" PVC - 3561.53'
MW #2	577700.6 N 854249.6 E	LAT.=32.584046° N LONG.=103.317430° W	NATURAL GROUND - 3563.09' TOP OF CONCRETE - 3563.33' TOP OF 2 1/2" PVC - 3562.94'
MW #3	577606.2 N 854200.1 E	LAT.=32.583788° N LONG.=103.317594° W	NATURAL GROUND - 3562.91' TOP OF CONCRETE - 3563.11' TOP OF 2 1/2" PVC - 3562.81'
MW #4	577595.3 N 854273.9 E	LAT.=32.583756° N LONG.=103.317355° W	NATURAL GROUND - 3563.26' TOP OF CONCRETE - 3563.53' TOP OF 2 1/2" PVC - 3563.12'
MW #5	577731.4 N 854208.0 E	LAT.=32.584131° N LONG.=103.317565° W	NATURAL GROUND - 3563.62' TOP OF CONCRETE - 3563.69' TOP OF 2 1/2" PVC - 3563.40'



SURVEYOR'S CERTIFICATE:

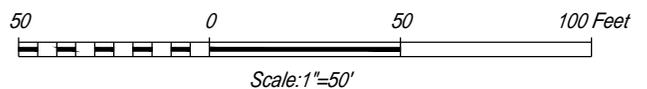
I, RONALD J. EIDSON, NEW MEXICO PROFESSIONAL SURVEYOR No. 3239, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO; AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

Ronald J. Eidson

DATE: 07/27/2021

LEGEND:

- DENOTES EXISTING MONITOR WELL
- DENOTES NEW MONITOR WELL
- DENOTES BENCHMARK 5/8" STL. ROD W/2" A.C.



TRC

**MONITOR WELL LOCATION
 IN SECTION 11, TOWNSHIP 20 SOUTH,
 RANGE 36 EAST, N.M.P.M.
 LEA COUNTY, NEW MEXICO**



PROVIDING SURVEYING SERVICES
 SINCE 1946
JOHN WEST SURVEYING COMPANY
 412 N. DAL PASO HOBBS, N.M. 88240
 (575) 393-3117 www.jwsc.biz
 TBPLS# 10021000

Survey Date: 7/16/2021	CAD Date: 7/26/2021	Drawn By: ACK
W.O. No.: 21110264	Rev:	Rel. W.O.: 20110545
		Sheet 1 of 1



Appendix F: Laboratory Analytical Reports



Analytical Data Review Checklist

Site: WTX to EMSU Battery (Klein Ranch) Pipeline Release Site Location: Lea County, New Mexico Client Name: HEP Project #: 426140	Laboratory: ALS (Houston, Tx) Lab Report #: HS21051478	QA Reviewer: A. Eljuri Peer Reviewer: L. Burris Date: June 21, 2021
Analytical Method(s): BTEX by 8260C, TPH-GRO and TPH-DRO/ORO by SW8015C, Chloride by E300.0	Matrices Sampled: Soil, groundwater, aqueous sample	Sample Collection Date(s): May 24 through 26, 2021
Sampling Objective(s): Analyze soil and groundwater to characterize and possibly delineate impacts from a potential crude oil release.		
Sample IDs: Refer to data package sample summary.		

Review Item or Question		Y	N	NA	Comments
Sample Traceability / Chain of Custody					
1	Were COC forms appropriately completed?		X		The samples were preserved with ice, but it was not noted on the COC.
2	Did the laboratory report correct sample IDs?	X			
3	Do the laboratory reported sample collection dates and times agree with the COC forms?	X			
Sample Preservation and Integrity					
4	Did samples arrive at the laboratory appropriately preserved?			X	New Mexico regulations do not require TPH-GRO analysis for soil to be preserved in the field.
	Was the cooler temperature between 0-6°C?	X			
	Was acid used for preservation when required (e.g., aqueous VOC and metals samples)?			X	
	Were soil/sediment VOC samples preserved in the field or collected in EnCore® samplers?			X	
5	Were samples received by the laboratory in an acceptable condition (i.e., no breakages, leaks, etc.)?	X			
6	Were any issues noted by the laboratory upon receipt?	X			The laboratory noted in the sample receipt checklist the bottle's label did not match the field ID in the COC for sample SB-22-4'-4.5'. The laboratory reported the field ID as written in the COC.
7	Were sample preparation and analysis holding time requirements met?	X			
8	<u>AIR ONLY:</u> Were canisters received with an acceptable vacuum? Were the RPDs between the initial and final canister flow controller calibrations <20?			X	
Data Completeness					
9	Are results reported for all analytical methods requested?	X			The laboratory reported TPH-ORO for method 8015C, which is not offered for accreditation.
10	Are results reported for all samples submitted for analysis?	X			
11	Were the requested analytical methods used?	X			
12	Are results reported for all target analytes, but no additional analytes?	X			



Analytical Data Review Checklist

Review Item or Question		Y	N	NA	Comments
13	Were soil/sediment results reported on a dry weight basis?		X		The site is regulated under the New Mexico Oil Conservation District and results reported on a dry weight basis is not a project requirement.
14	If requested, were detected results below the reporting limit (i.e., "J" values) reported?			X	
15	Did we receive the required deliverables (e.g., EDD, Level 4 data, laboratory certification, etc.) in the correct formats?	X			
Sensitivity					
16	Do the reporting limits meet the project specifications (e.g., QAPP or Work Plan)?	X			All non-detect results had reporting limits below project criteria.
17	Were dilutions performed? If so, note sample(s) and parameter(s) affected and the dilution factor(s).	X			In samples MW-02, MW-03, and MW-04, chloride was diluted 100-fold.
18	Did the laboratory provide an adequate explanation as to why dilutions were performed?		X		No explanation was provided. The diluted results were detected above the reporting limit (RL).
QC Results					
19	Were any target analytes detected in the method blanks? If yes, list contaminants, concentrations detected and associated samples.		X		
20	Does each analytical or preparation batch have its own method blank?	X			
21	Were any target analytes detected in the field blank(s) (e.g., trip blanks, equipment blanks)? If yes, list contaminants, concentrations detected and associated samples (or attach field blank results).		X		TB-05-26-21-1 reported as not-detected for BTEX.
22	Are there any potential false positive results based on questions 19 and/or 21?		X		
23	Are LCS/LCSD recoveries within QC limits? If no, list analytes affected, the LCS/LCSD recoveries and the affected samples.	X			
24	Does each analytical or preparation batch have its own LCS?	X			
25	Are LCS/LCSD RPDs within QC limits? If no, list analytes affected, the RPDs and the affected samples.	X			
26	Are MS/MSD recoveries within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the MS/MSD recoveries and the sample that was spiked.		X		MS/MSD performed on sample SB-24-2' for TPH-GRO and TPH-DRO/ORO. Additional MS/MSDs were performed on non-project samples and were not evaluated during this review. The MS %R of TPH-ORO (176%) for the MS/MSD pair performed on sample SB-24-2' in batch 166422 was detected above the laboratory-defined recovery limits (70-130%). The detected TPH-ORO result in sample SB-24-2' may be biased high. Chloride batch R384951, BTEX batch R384800, and TPH-GRO batch R384695 MS/MSDs were analyzed on samples not associated with the project site and were not evaluated.
27	Are MS/MSD RPDs within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the RPDs and the sample that was spiked.		X		The RPD (33.8%) in MS/MSD pair performed on sample SB-24-2' in batch 166422 was above the laboratory-defined limit (30%). The detected TPH-ORO result in sample SB-24-2' may also be considered estimated.



Analytical Data Review Checklist

Review Item or Question		Y	N	NA	Comments
28	Are laboratory duplicate RPDs within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the RPDs and the sample that was prepared/analyzed in duplicate.			X	
29	Are field duplicate RPDs within QC limits? If no, list analytes affected, the RPDs and the associated samples.			X	
30	<u>ORGANIC ANALYSES ONLY:</u> Are surrogate recoveries within QC limits? If no, list samples, surrogate recoveries and analytes affected.	X			
Laboratory Comments					
31	Did the case narrative describe any analytical anomalies (i.e., problems or unique occurrences)?		X		
32	Were any other potential data quality issues identified? If yes, describe issues.		X		
Do the Data Make Sense?					
33	Do any results look questionable?		X		
34	Has the EDD been compared with the lab report?	X			

Reference: United States Environmental Protection Agency (USEPA) - *National Functional Guidelines for Organic Superfund Methods Data Review* (USEPA, November 2020); United States Environmental Protection Agency (USEPA) - *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA, November 2020)

COC = Chain-of-Custody
 BTEX = Benzene, Toluene, ethylbenzene, total xylenes
 DRO = Diesel Range Organics
 EDD = Electronic Data Deliverable
 GRO = Gasoline Range Organics
 LCS/LCSD = Laboratory Control Sample / Laboratory Control Sample Duplicate
 ORO = Motor Oil Range Organics
 MS/MSD = Matrix Spike / Matrix Spike Duplicate
 NELAP = National Environmental Laboratory Accreditation Program
 QAPP = Quality Assurance Project Plan
 QC = Quality Control
 %R = Percent Recovery
 RPD = Relative Percent Difference = $|((A-B)/((A+B)/2))|$
 TPH = Total Petroleum Hydrocarbon

Additional Comments: None.



10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
F: +1 281 530 5887

June 04, 2021

Cody Gaston
TRC San Antonio
5811 University Heights
Suite 106
San Antonio, TX 78249

Work Order: **HS21051478**

Laboratory Results for: **WTX to EMSU Project**

Dear Cody Gaston,

ALS Environmental received 7 sample(s) on May 27, 2021 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ragen Giga'.

Generated By: JUMOKE.LAWAL

Ragen Giga
Project Manager

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
Work Order: HS21051478

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS21051478-01	SB-22-4'-4.5'	Soil		24-May-2021 13:15	27-May-2021 09:40	<input type="checkbox"/>
HS21051478-02	SB-24-2'	Soil		24-May-2021 14:00	27-May-2021 09:40	<input type="checkbox"/>
HS21051478-03	SB-24-4'	Soil		24-May-2021 14:15	27-May-2021 09:40	<input type="checkbox"/>
HS21051478-04	MW-04	Water		25-May-2021 12:20	27-May-2021 09:40	<input type="checkbox"/>
HS21051478-05	MW-03	Water		25-May-2021 14:30	27-May-2021 09:40	<input type="checkbox"/>
HS21051478-06	MW-02	Water		25-May-2021 16:40	27-May-2021 09:40	<input type="checkbox"/>
HS21051478-07	TB-05-26-21-1	Water	CG-051121 -138	26-May-2021 16:00	27-May-2021 09:40	<input type="checkbox"/>

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
Work Order: HS21051478

CASE NARRATIVE

GC Semivolatiles by Method SW8015C

Batch ID: 166422

Sample ID: SB-24-2' (HS21051478-02MS)

- The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS may be due to sample matrix interference.

Sample ID: SB-24-2' (HS21051478-02MSD)

- The RPD between the MS and MSD was outside of the control limit.

GC Semivolatiles by Method SW8015M

Batch ID: 166382

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GC Volatiles by Method SW8015

Batch ID: R384695

Sample ID: HS21051140-01MS

- MS and MSD are for an unrelated sample

Batch ID: R384696,R384749

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GCMS Volatiles by Method SW8260

Batch ID: R384800

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method E300

Batch ID: R384951

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-22-4'-4.5'
 Collection Date: 24-May-2021 13:15

ANALYTICAL REPORT

WorkOrder:HS21051478
 Lab ID:HS21051478-01
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.044		0.044	mg/Kg	1	28-May-2021 20:39
Surr: 4-Bromofluorobenzene	108		70-123	%REC	1	28-May-2021 20:39
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 01-Jun-2021	Analyst: PPM
TPH (Diesel Range)	< 1.7		1.7	mg/Kg	1	01-Jun-2021 19:27
TPH (Motor Oil Range)	4.4	n	3.4	mg/Kg	1	01-Jun-2021 19:27
Surr: 2-Fluorobiphenyl	65.1		60-129	%REC	1	01-Jun-2021 19:27

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-24-2'
 Collection Date: 24-May-2021 14:00

ANALYTICAL REPORT

WorkOrder:HS21051478
 Lab ID:HS21051478-02
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.052		0.052	mg/Kg	1	28-May-2021 20:55
Surr: 4-Bromofluorobenzene	105		70-123	%REC	1	28-May-2021 20:55
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 01-Jun-2021	Analyst: PPM
TPH (Diesel Range)	6.2		1.7	mg/Kg	1	01-Jun-2021 18:14
TPH (Motor Oil Range)	33	n	3.4	mg/Kg	1	01-Jun-2021 18:14
Surr: 2-Fluorobiphenyl	61.3		60-129	%REC	1	01-Jun-2021 18:14

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-24-4'
 Collection Date: 24-May-2021 14:15

ANALYTICAL REPORT

WorkOrder:HS21051478
 Lab ID:HS21051478-03
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.050		0.050	mg/Kg	1	28-May-2021 22:00
Surr: 4-Bromofluorobenzene	112		70-123	%REC	1	28-May-2021 22:00
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 01-Jun-2021	Analyst: PPM
TPH (Diesel Range)	< 1.7		1.7	mg/Kg	1	01-Jun-2021 19:52
TPH (Motor Oil Range)	3.6	n	3.4	mg/Kg	1	01-Jun-2021 19:52
Surr: 2-Fluorobiphenyl	67.6		60-129	%REC	1	01-Jun-2021 19:52

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: MW-04
 Collection Date: 25-May-2021 12:20

ANALYTICAL REPORT

WorkOrder:HS21051478
 Lab ID:HS21051478-04
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES - SW8260C		Method:SW8260		Analyst: PC		
Benzene	< 5.0		5.0	ug/L	1	02-Jun-2021 00:40
Ethylbenzene	< 5.0		5.0	ug/L	1	02-Jun-2021 00:40
m,p-Xylene	< 10		10	ug/L	1	02-Jun-2021 00:40
o-Xylene	< 5.0		5.0	ug/L	1	02-Jun-2021 00:40
Toluene	< 5.0		5.0	ug/L	1	02-Jun-2021 00:40
Xylenes, Total	< 5.0		5.0	ug/L	1	02-Jun-2021 00:40
Surr: 1,2-Dichloroethane-d4	108		70-126	%REC	1	02-Jun-2021 00:40
Surr: 4-Bromofluorobenzene	98.7		82-124	%REC	1	02-Jun-2021 00:40
Surr: Dibromofluoromethane	98.8		77-123	%REC	1	02-Jun-2021 00:40
Surr: Toluene-d8	100		82-127	%REC	1	02-Jun-2021 00:40
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: QX		
Gasoline Range Organics	< 0.0500		0.0500	mg/L	1	01-Jun-2021 18:52
Surr: 4-Bromofluorobenzene	115		70-123	%REC	1	01-Jun-2021 18:52
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3510C / 01-Jun-2021		Analyst: PPM
TPH (Diesel Range)	0.064		0.050	mg/L	1	03-Jun-2021 13:48
TPH (Motor Oil Range)	< 0.10	n	0.10	mg/L	1	03-Jun-2021 13:48
Surr: 2-Fluorobiphenyl	61.0		60-135	%REC	1	03-Jun-2021 13:48
ANIONS BY E300.0		Method:E300		Analyst: YP		
Chloride	1,310		50.0	mg/L	100	03-Jun-2021 23:15

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: MW-03
 Collection Date: 25-May-2021 14:30

ANALYTICAL REPORT

WorkOrder:HS21051478
 Lab ID:HS21051478-05
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES - SW8260C		Method:SW8260		Analyst: PC		
Benzene	< 5.0		5.0	ug/L	1	02-Jun-2021 01:01
Ethylbenzene	< 5.0		5.0	ug/L	1	02-Jun-2021 01:01
m,p-Xylene	< 10		10	ug/L	1	02-Jun-2021 01:01
o-Xylene	< 5.0		5.0	ug/L	1	02-Jun-2021 01:01
Toluene	< 5.0		5.0	ug/L	1	02-Jun-2021 01:01
Xylenes, Total	< 5.0		5.0	ug/L	1	02-Jun-2021 01:01
Surr: 1,2-Dichloroethane-d4	108		70-126	%REC	1	02-Jun-2021 01:01
Surr: 4-Bromofluorobenzene	98.1		82-124	%REC	1	02-Jun-2021 01:01
Surr: Dibromofluoromethane	99.8		77-123	%REC	1	02-Jun-2021 01:01
Surr: Toluene-d8	96.9		82-127	%REC	1	02-Jun-2021 01:01
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: QX		
Gasoline Range Organics	< 0.0500		0.0500	mg/L	1	01-Jun-2021 19:08
Surr: 4-Bromofluorobenzene	116		70-123	%REC	1	01-Jun-2021 19:08
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3510C / 01-Jun-2021 Analyst: PPM		
TPH (Diesel Range)	0.11		0.050	mg/L	1	01-Jun-2021 19:03
TPH (Motor Oil Range)	< 0.10	n	0.10	mg/L	1	01-Jun-2021 19:03
Surr: 2-Fluorobiphenyl	62.5		60-135	%REC	1	01-Jun-2021 19:03
ANIONS BY E300.0		Method:E300		Analyst: YP		
Chloride	849		50.0	mg/L	100	03-Jun-2021 23:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: MW-02
 Collection Date: 25-May-2021 16:40

ANALYTICAL REPORT

WorkOrder:HS21051478
 Lab ID:HS21051478-06
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES - SW8260C		Method:SW8260				Analyst: PC
Benzene	< 5.0		5.0	ug/L	1	02-Jun-2021 01:22
Ethylbenzene	< 5.0		5.0	ug/L	1	02-Jun-2021 01:22
m,p-Xylene	< 10		10	ug/L	1	02-Jun-2021 01:22
o-Xylene	< 5.0		5.0	ug/L	1	02-Jun-2021 01:22
Toluene	< 5.0		5.0	ug/L	1	02-Jun-2021 01:22
Xylenes, Total	< 5.0		5.0	ug/L	1	02-Jun-2021 01:22
Surr: 1,2-Dichloroethane-d4	106		70-126	%REC	1	02-Jun-2021 01:22
Surr: 4-Bromofluorobenzene	100		82-124	%REC	1	02-Jun-2021 01:22
Surr: Dibromofluoromethane	98.4		77-123	%REC	1	02-Jun-2021 01:22
Surr: Toluene-d8	98.7		82-127	%REC	1	02-Jun-2021 01:22
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.0500		0.0500	mg/L	1	01-Jun-2021 19:24
Surr: 4-Bromofluorobenzene	114		70-123	%REC	1	01-Jun-2021 19:24
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3510C / 01-Jun-2021	Analyst: PPM
TPH (Diesel Range)	0.12		0.050	mg/L	1	01-Jun-2021 19:27
TPH (Motor Oil Range)	< 0.10	n	0.10	mg/L	1	01-Jun-2021 19:27
Surr: 2-Fluorobiphenyl	60.1		60-135	%REC	1	01-Jun-2021 19:27
ANIONS BY E300.0		Method:E300				Analyst: YP
Chloride	1,250		50.0	mg/L	100	03-Jun-2021 23:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: TB-05-26-21-1
 Collection Date: 26-May-2021 16:00

ANALYTICAL REPORT

WorkOrder:HS21051478
 Lab ID:HS21051478-07
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES - SW8260C		Method:SW8260				Analyst: PC
Benzene	< 5.0		5.0	ug/L	1	02-Jun-2021 00:19
Ethylbenzene	< 5.0		5.0	ug/L	1	02-Jun-2021 00:19
m,p-Xylene	< 10		10	ug/L	1	02-Jun-2021 00:19
o-Xylene	< 5.0		5.0	ug/L	1	02-Jun-2021 00:19
Toluene	< 5.0		5.0	ug/L	1	02-Jun-2021 00:19
Xylenes, Total	< 5.0		5.0	ug/L	1	02-Jun-2021 00:19
Surr: 1,2-Dichloroethane-d4	105		70-126	%REC	1	02-Jun-2021 00:19
Surr: 4-Bromofluorobenzene	99.5		82-124	%REC	1	02-Jun-2021 00:19
Surr: Dibromofluoromethane	97.9		77-123	%REC	1	02-Jun-2021 00:19
Surr: Toluene-d8	99.1		82-127	%REC	1	02-Jun-2021 00:19

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 04-Jun-21

Weight / Prep Log

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21051478

Batch ID: 4299 **Start Date:** 28 May 2021 15:40 **End Date:** 28 May 2021 15:40
Method: GASOLINE RANGE ORGANICS BY SW8015C **Prep Code:**

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21051478-01	1	5.77 (g)	5 (mL)	0.87	Bulk (5030B)
HS21051478-02	1	4.824 (g)	5 (mL)	1.04	Bulk (5030B)
HS21051478-03	1	4.959 (g)	5 (mL)	1.01	Bulk (5030B)

Batch ID: 166382 **Start Date:** 01 Jun 2021 09:39 **End Date:** 01 Jun 2021 14:00
Method: AQPREP: 3510C TPH **Prep Code:** 8015WPR_LL

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21051478-04	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS21051478-05	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS21051478-06	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat

Batch ID: 166422 **Start Date:** 01 Jun 2021 12:00 **End Date:** 01 Jun 2021 15:30
Method: SOPREP: 3541 TPH **Prep Code:** 8015SPR_LL

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21051478-01		30.42 (g)	1 (mL)	0.03287	4-oz glass, Neat
HS21051478-02		30.3 (g)	1 (mL)	0.033	4-oz glass, Neat
HS21051478-03		30.03 (g)	1 (mL)	0.0333	4-oz glass, Neat

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21051478

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 166382 (0)		Test Name : TPH DRO/ORO BY SW8015C			Matrix: Water	
HS21051478-04	MW-04	25 May 2021 12:20		01 Jun 2021 09:39	03 Jun 2021 13:48	1
HS21051478-05	MW-03	25 May 2021 14:30		01 Jun 2021 09:39	01 Jun 2021 19:03	1
HS21051478-06	MW-02	25 May 2021 16:40		01 Jun 2021 09:39	01 Jun 2021 19:27	1
Batch ID: 166422 (1)		Test Name : TPH DRO/ORO BY SW8015C			Matrix: Soil	
HS21051478-01	SB-22-4'-4.5'	24 May 2021 13:15		01 Jun 2021 12:00	01 Jun 2021 19:27	1
HS21051478-02	SB-24-2'	24 May 2021 14:00		01 Jun 2021 12:00	01 Jun 2021 18:14	1
HS21051478-03	SB-24-4'	24 May 2021 14:15		01 Jun 2021 12:00	01 Jun 2021 19:52	1
Batch ID: R384695 (0)		Test Name : GASOLINE RANGE ORGANICS BY SW8015C			Matrix: Soil	
HS21051478-01	SB-22-4'-4.5'	24 May 2021 13:15			28 May 2021 20:39	1
HS21051478-02	SB-24-2'	24 May 2021 14:00			28 May 2021 20:55	1
Batch ID: R384696 (0)		Test Name : GASOLINE RANGE ORGANICS BY SW8015C			Matrix: Soil	
HS21051478-03	SB-24-4'	24 May 2021 14:15			28 May 2021 22:00	1
Batch ID: R384749 (0)		Test Name : GASOLINE RANGE ORGANICS BY SW8015C			Matrix: Water	
HS21051478-04	MW-04	25 May 2021 12:20			01 Jun 2021 18:52	1
HS21051478-05	MW-03	25 May 2021 14:30			01 Jun 2021 19:08	1
HS21051478-06	MW-02	25 May 2021 16:40			01 Jun 2021 19:24	1
Batch ID: R384800 (0)		Test Name : VOLATILES - SW8260C			Matrix: Water	
HS21051478-04	MW-04	25 May 2021 12:20			02 Jun 2021 00:40	1
HS21051478-05	MW-03	25 May 2021 14:30			02 Jun 2021 01:01	1
HS21051478-06	MW-02	25 May 2021 16:40			02 Jun 2021 01:22	1
HS21051478-07	TB-05-26-21-1	26 May 2021 16:00			02 Jun 2021 00:19	1
Batch ID: R384951 (0)		Test Name : ANIONS BY E300.0			Matrix: Water	
HS21051478-04	MW-04	25 May 2021 12:20			03 Jun 2021 23:15	100
HS21051478-05	MW-03	25 May 2021 14:30			03 Jun 2021 23:22	100
HS21051478-06	MW-02	25 May 2021 16:40			03 Jun 2021 23:30	100

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21051478

QC BATCH REPORT

Batch ID: 166382 (0)	Instrument: FID-8	Method: TPH DRO/ORO BY SW8015C
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MBLK	Sample ID: MBLK-166382	Units: mg/L	Analysis Date: 02-Jun-2021 12:38						
Client ID:	Run ID: FID-8_384826	SeqNo: 6119643	PrepDate: 01-Jun-2021	DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
TPH (Diesel Range)	< 0.050	0.050							
TPH (Motor Oil Range)	< 0.10	0.10							
Surr: 2-Fluorobiphenyl	0.06044	0.0050	0.1	0	60.4	60 - 135			

LCS	Sample ID: LCS-166382	Units: mg/L	Analysis Date: 02-Jun-2021 13:03						
Client ID:	Run ID: FID-8_384826	SeqNo: 6119644	PrepDate: 01-Jun-2021	DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
TPH (Diesel Range)	0.7433	0.050	1	0	74.3	70 - 130			
TPH (Motor Oil Range)	0.9802	0.10	1	0	98.0	70 - 130			
Surr: 2-Fluorobiphenyl	0.06324	0.0050	0.1	0	63.2	60 - 135			

LCSD	Sample ID: LCSD-166382	Units: mg/L	Analysis Date: 02-Jun-2021 13:27						
Client ID:	Run ID: FID-8_384826	SeqNo: 6119645	PrepDate: 01-Jun-2021	DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
TPH (Diesel Range)	0.7527	0.050	1	0	75.3	70 - 122	0.7433	1.26	20
TPH (Motor Oil Range)	1.04	0.10	1	0	104	70 - 130	0.9802	5.94	20
Surr: 2-Fluorobiphenyl	0.06292	0.0050	0.1	0	62.9	60 - 135	0.06324	0.5	20

The following samples were analyzed in this batch: HS21051478-04 HS21051478-05 HS21051478-06

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21051478

QC BATCH REPORT

Batch ID: 166422 (1)	Instrument: FID-8	Method: TPH DRO/ORO BY SW8015C
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MBLK	Sample ID: MBLK-166422	Units: mg/Kg	Analysis Date: 02-Jun-2021 14:41							
Client ID:	Run ID: FID-8_384814	SeqNo: 6119437	PrepDate: 01-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

TPH (Diesel Range)	< 1.7	1.7								
TPH (Motor Oil Range)	< 3.4	3.4								
Surr: 2-Fluorobiphenyl	2.701	0.10	3.33	0	81.1	70 - 130				

LCS	Sample ID: LCS-166422	Units: mg/Kg	Analysis Date: 01-Jun-2021 17:49							
Client ID:	Run ID: FID-8_384814	SeqNo: 6119227	PrepDate: 01-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

TPH (Diesel Range)	26.22	1.7	33.33	0	78.7	70 - 130				
TPH (Motor Oil Range)	33.99	3.4	33.33	0	102	70 - 130				
Surr: 2-Fluorobiphenyl	2.717	0.10	3.33	0	81.6	70 - 130				

MS	Sample ID: HS21051478-02MS	Units: mg/Kg	Analysis Date: 01-Jun-2021 18:38							
Client ID: SB-24-2'	Run ID: FID-8_384814	SeqNo: 6119229	PrepDate: 01-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

TPH (Diesel Range)	36.13	1.7	33.1	6.233	90.3	70 - 130				
TPH (Motor Oil Range)	91.16	3.4	33.1	33.04	176	70 - 130				SE
Surr: 2-Fluorobiphenyl	2.046	0.099	3.307	0	61.9	60 - 129				

MSD	Sample ID: HS21051478-02MSD	Units: mg/Kg	Analysis Date: 01-Jun-2021 19:03							
Client ID: SB-24-2'	Run ID: FID-8_384814	SeqNo: 6119230	PrepDate: 01-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

TPH (Diesel Range)	30.21	1.7	33.18	6.233	72.3	70 - 130	36.13	17.8	30	
TPH (Motor Oil Range)	64.8	3.4	33.18	33.04	95.8	70 - 130	91.16	33.8	30	R
Surr: 2-Fluorobiphenyl	2.281	0.10	3.315	0	68.8	60 - 129	2.046	10.9	30	

The following samples were analyzed in this batch: HS21051478-01 HS21051478-02 HS21051478-03

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21051478

QC BATCH REPORT

Batch ID: R384695 (0)	Instrument: FID-14	Method: GASOLINE RANGE ORGANICS BY SW8015C
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MBLK	Sample ID: MBLK-210528	Units: mg/Kg	Analysis Date: 28-May-2021 12:58							
Client ID:	Run ID: FID-14_384695	SeqNo: 6117105	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	< 0.050	0.050								
Surr: 4-Bromofluorobenzene	0.1071	0.0050	0.1	0	107	75 - 121				

LCS	Sample ID: LCS-210528	Units: mg/Kg	Analysis Date: 28-May-2021 12:42							
Client ID:	Run ID: FID-14_384695	SeqNo: 6117075	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	1.007	0.050	1	0	101	72 - 121				
Surr: 4-Bromofluorobenzene	0.1048	0.0050	0.1	0	105	75 - 121				

MS	Sample ID: HS21051140-01MS	Units: mg/Kg	Analysis Date: 28-May-2021 14:35							
Client ID:	Run ID: FID-14_384695	SeqNo: 6117077	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	0.786	0.050	0.99	0.08912	70.4	70 - 130				
Surr: 4-Bromofluorobenzene	0.05933	0.0050	0.099	0	59.9	70 - 123				S

MSD	Sample ID: HS21051140-01MSD	Units: mg/Kg	Analysis Date: 28-May-2021 14:51							
Client ID:	Run ID: FID-14_384695	SeqNo: 6117078	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	0.82	0.050	1.01	0.08912	72.4	70 - 130	0.786	4.23	30	
Surr: 4-Bromofluorobenzene	0.06129	0.0050	0.101	0	60.7	70 - 123	0.05933	3.24	30	S

The following samples were analyzed in this batch:

HS21051478-01	HS21051478-02
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ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21051478

QC BATCH REPORT

Batch ID: R384696 (0)	Instrument: FID-14	Method: GASOLINE RANGE ORGANICS BY SW8015C
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MBLK	Sample ID: MBLK-210529	Units: mg/Kg	Analysis Date: 28-May-2021 21:43							
Client ID:	Run ID: FID-14_384696	SeqNo: 6117050	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	< 0.050	0.050								
Surr: 4-Bromofluorobenzene	0.1035	0.0050	0.1	0	103	75 - 121				

LCS	Sample ID: LCS-210529	Units: mg/Kg	Analysis Date: 28-May-2021 21:27							
Client ID:	Run ID: FID-14_384696	SeqNo: 6117049	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	0.8988	0.050	1	0	89.9	72 - 121				
Surr: 4-Bromofluorobenzene	0.09412	0.0050	0.1	0	94.1	75 - 121				

MS	Sample ID: HS21051478-03MS	Units: mg/Kg	Analysis Date: 28-May-2021 22:16							
Client ID: SB-24-4'	Run ID: FID-14_384696	SeqNo: 6117052	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	0.8223	0.049	0.98	0	83.9	70 - 130				
Surr: 4-Bromofluorobenzene	0.07729	0.0049	0.098	0	78.9	70 - 123				

MSD	Sample ID: HS21051478-03MSD	Units: mg/Kg	Analysis Date: 28-May-2021 22:32							
Client ID: SB-24-4'	Run ID: FID-14_384696	SeqNo: 6117053	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	0.8461	0.052	1.05	0	80.6	70 - 130	0.8223	2.84	30	
Surr: 4-Bromofluorobenzene	0.08379	0.0052	0.105	0	79.8	70 - 123	0.07729	8.07	30	

The following samples were analyzed in this batch: HS21051478-03

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21051478

QC BATCH REPORT

Batch ID: R384749 (0)	Instrument: FID-14	Method: GASOLINE RANGE ORGANICS BY SW8015C
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MBLK	Sample ID: MBLK-210601	Units: mg/L	Analysis Date: 01-Jun-2021 16:10							
Client ID:	Run ID: FID-14_384749	SeqNo: 6118062	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Gasoline Range Organics	< 0.0500	0.0500								
Surr: 4-Bromofluorobenzene	0.114	0.00500	0.1	0	114	70 - 121				

LCS	Sample ID: LCS-210601	Units: mg/L	Analysis Date: 01-Jun-2021 15:38							
Client ID:	Run ID: FID-14_384749	SeqNo: 6118060	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Gasoline Range Organics	0.9249	0.0500	1	0	92.5	76 - 124				
Surr: 4-Bromofluorobenzene	0.1134	0.00500	0.1	0	113	52 - 138				

LCSD	Sample ID: LCSD-210601	Units: mg/L	Analysis Date: 01-Jun-2021 15:54							
Client ID:	Run ID: FID-14_384749	SeqNo: 6118061	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Gasoline Range Organics	0.9409	0.0500	1	0	94.1	76 - 124	0.9249	1.71	20	
Surr: 4-Bromofluorobenzene	0.1197	0.00500	0.1	0	120	52 - 138	0.1134	5.39	20	

The following samples were analyzed in this batch: HS21051478-04 HS21051478-05 HS21051478-06

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21051478

QC BATCH REPORT

Batch ID: R384800 (0)	Instrument: VOA9	Method: VOLATILES - SW8260C
--------------------------------	-------------------------	------------------------------------

MBLK		Sample ID: VBLKW-210601		Units: ug/L		Analysis Date: 01-Jun-2021 23:37			
Client ID:		Run ID: VOA9_384800		SeqNo: 6118992		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	< 5.0	5.0							
Ethylbenzene	< 5.0	5.0							
m,p-Xylene	< 10	10							
o-Xylene	< 5.0	5.0							
Toluene	< 5.0	5.0							
Xylenes, Total	< 5.0	5.0							
<i>Surr: 1,2-Dichloroethane-d4</i>	53.45	0	50	0	107	70 - 130			
<i>Surr: 4-Bromofluorobenzene</i>	48.99	0	50	0	98.0	82 - 115			
<i>Surr: Dibromofluoromethane</i>	49.96	0	50	0	99.9	73 - 126			
<i>Surr: Toluene-d8</i>	48.04	0	50	0	96.1	81 - 120			

LCS		Sample ID: VLCSW-210601		Units: ug/L		Analysis Date: 01-Jun-2021 22:55			
Client ID:		Run ID: VOA9_384800		SeqNo: 6118991		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	19.78	5.0	20	0	98.9	74 - 120			
Ethylbenzene	20.58	5.0	20	0	103	77 - 117			
m,p-Xylene	41.77	10	40	0	104	77 - 122			
o-Xylene	20.51	5.0	20	0	103	75 - 119			
Toluene	19.41	5.0	20	0	97.1	77 - 118			
Xylenes, Total	62.28	5.0	60	0	104	75 - 122			
<i>Surr: 1,2-Dichloroethane-d4</i>	52.11	0	50	0	104	70 - 130			
<i>Surr: 4-Bromofluorobenzene</i>	50.62	0	50	0	101	82 - 115			
<i>Surr: Dibromofluoromethane</i>	49.35	0	50	0	98.7	73 - 126			
<i>Surr: Toluene-d8</i>	49.37	0	50	0	98.7	81 - 120			

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21051478

QC BATCH REPORT

Batch ID: R384800 (0) **Instrument:** VOA9 **Method:** VOLATILES - SW8260C

MS		Sample ID: HS21051445-01MS			Units: ug/L		Analysis Date: 02-Jun-2021 01:43			
Client ID:		Run ID: VOA9_384800			SeqNo: 6118998		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.29	5.0	20	0	106	70 - 127				
Ethylbenzene	22.04	5.0	20	0	110	70 - 124				
m,p-Xylene	45.19	10	40	0	113	70 - 130				
o-Xylene	22.37	5.0	20	0	112	70 - 124				
Toluene	21.43	5.0	20	0	107	70 - 123				
Xylenes, Total	67.57	5.0	60	0	113	70 - 130				
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>53.84</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>108</i>	<i>70 - 126</i>				
<i>Surr: 4-Bromofluorobenzene</i>	<i>50.92</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>102</i>	<i>82 - 124</i>				
<i>Surr: Dibromofluoromethane</i>	<i>50.85</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>102</i>	<i>77 - 123</i>				
<i>Surr: Toluene-d8</i>	<i>49.73</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>99.5</i>	<i>82 - 127</i>				

MSD		Sample ID: HS21051445-01MSD			Units: ug/L		Analysis Date: 02-Jun-2021 02:04			
Client ID:		Run ID: VOA9_384800			SeqNo: 6118999		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.37	5.0	20	0	102	70 - 127	21.29	4.43	20	
Ethylbenzene	21.52	5.0	20	0	108	70 - 124	22.04	2.39	20	
m,p-Xylene	43.37	10	40	0	108	70 - 130	45.19	4.11	20	
o-Xylene	21.31	5.0	20	0	107	70 - 124	22.37	4.87	20	
Toluene	20.48	5.0	20	0	102	70 - 123	21.43	4.5	20	
Xylenes, Total	64.68	5.0	60	0	108	70 - 130	67.57	4.36	20	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>53.4</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>107</i>	<i>70 - 126</i>	<i>53.84</i>	<i>0.821</i>	<i>20</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>50.12</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>100</i>	<i>82 - 124</i>	<i>50.92</i>	<i>1.6</i>	<i>20</i>	
<i>Surr: Dibromofluoromethane</i>	<i>50.16</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>100</i>	<i>77 - 123</i>	<i>50.85</i>	<i>1.38</i>	<i>20</i>	
<i>Surr: Toluene-d8</i>	<i>49.77</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>99.5</i>	<i>82 - 127</i>	<i>49.73</i>	<i>0.0892</i>	<i>20</i>	

The following samples were analyzed in this batch: HS21051478-04 HS21051478-05 HS21051478-06 HS21051478-07

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21051478

QC BATCH REPORT

Batch ID: R384951 (0)	Instrument: ICS-Integrion	Method: ANIONS BY E300.0
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MBLK	Sample ID: MBLK	Units: mg/L	Analysis Date: 03-Jun-2021 22:31							
Client ID:	Run ID: ICS-Integrion_384951	SeqNo: 6122531	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride < 0.500 0.500

LCS	Sample ID: LCS	Units: mg/L	Analysis Date: 03-Jun-2021 22:38							
Client ID:	Run ID: ICS-Integrion_384951	SeqNo: 6122532	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride 19.46 0.500 20 0 97.3 90 - 110

MS	Sample ID: HS21051391-01MS	Units: mg/L	Analysis Date: 03-Jun-2021 22:53							
Client ID:	Run ID: ICS-Integrion_384951	SeqNo: 6122534	PrepDate: DF: 10							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride 238.5 5.00 100 144.9 93.6 80 - 120

MSD	Sample ID: HS21051391-01MSD	Units: mg/L	Analysis Date: 03-Jun-2021 23:00							
Client ID:	Run ID: ICS-Integrion_384951	SeqNo: 6122535	PrepDate: DF: 10							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride 242.4 5.00 100 144.9 97.4 80 - 120 238.5 1.61 20

The following samples were analyzed in this batch: HS21051478-04 HS21051478-05 HS21051478-06

ALS Houston, US

Date: 04-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21051478

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

ALS Houston, US

Date: 04-Jun-21

CERTIFICATIONS, ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	21-022-0	26-Mar-2022
Dept of Defense	PJLA L20-507-R2	22-Dec-2021
Florida	E87611-30-07/01/2020	30-Jun-2021
Kansas	E-10352 2020-2021	31-Jul-2021
Kentucky	123043, 2021-2022	30-Apr-2022
Louisiana	03087, 2020-2021	30-Jun-2021
North Carolina	624-2021	31-Dec-2021
Oklahoma	2020-165	31-Aug-2021
Texas	T104704231-21-27	30-Apr-2022
Utah	TX026932021-10	31-Jul-2021

ALS Houston, US

Date: 04-Jun-21

Sample Receipt Checklist

Work Order ID: HS21051478

Date/Time Received: 27-May-2021 09:40

Client Name: TRC - San Antonio

Received by: Jared R. Makan

Completed By: /S/ Paresh M. Giga	28-May-2021 14:40	Reviewed by: /S/ Corey Grandits	31-May-2021 13:22
eSignature	Date/Time	eSignature	Date/Time

Matrices: **Soil/Water** Carrier name: **FedEx Priority Overnight**

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Present
- VOA/TX1005/TX1006 Solids in hermetically sealed vials? Yes No Not Present
- Chain of custody present? Yes No 1 Page(s)
- Chain of custody signed when relinquished and received? Yes No COC IDs:247312
- Samplers name present on COC? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Container/Temp Blank temperature in compliance? Yes No

Temperature(s)/Thermometer(s):	1.2C U/C	IR31
Cooler(s)/Kit(s):	47026	
Date/Time sample(s) sent to storage:	5/27/2021 19:00	

- Water - VOA vials have zero headspace? Yes No No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No N/A
- pH adjusted? Yes No N/A

pH adjusted by:

Login Notes: IDs differ :
COC - SB-22-4'-4.5'
Labels - SB-22-4.5'

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:



Cincinnati, OH
+1 513 733 5336

Fort Collins, CO
+1 970 490 1511

Everett, WA
+1 425 356 2600

Holland, MI
+1 616 399 6070

Chain of Custody Form

HS21051478

TRC San Antonio
WTX to EMSU Project

Page 1 of 1

COC ID: 247312



ALS Project Manager:

Customer Information		Project Information		ALS Project Manager:											
Purchase Order	166809	Project Name	WTX to EMSU Project	A	VOC 8260 BTEX										
Work Order		Project Number		B	8015 DRO/OFO										
Company Name	TRC San Antonio	Bill To Company	TRC San Antonio	C	GRO 8015										
Send Report To	Cody Gaston	Invoice Attn	Cody Gaston	D	300 CI										
Address	5811 University Heights Suite 106	Address	5811 University Heights Suite 106	E	TDS										
City/State/Zip	San Antonio, TX 78249	City/State/Zip	San Antonio TX 78249	F	MOIST										
Phone	(817)-75-2-36	Phone	(817)-75-2-36	G	RCI										
Fax	(817)-52-2-10	Fax	(817)-52-2-10	H	TCLP VOC										
e-Mail Address	cgaston@trccompanies.com	e-Mail Address	cgaston@trccompanies.com	I	TCLP Metals										
				J	TCLP SVOC										

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SB-22-4'-4.5'	5-24-21	13:15	S	-	2		X	X								
2	SB-24-2'	5-24-21	14:00	S	-	2		X	X								
3	SB-24-4'	5-24-21	14:15	S	-	2		X	X								
4	MW-04	5-25-21	12:20	W	HCl	9	X	X	X	X							
5	MW-03	5-25-21	14:30	W	HCl	9	X	X	X	X							
6	MW-02	5-25-21	16:40	W	HCl	9	X	X	X	X							
7	TB-05-26-21-1	5-26-21	16:00	W	HCl	2	X										
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Cody Gaston

Shipment Method: Fedex

Required Turnaround Time: (Check Box) 1-3 Wk Days 5 Wk Days 7-10 Wk Days 24 Hour

Results Due Date: _____

Relinquished by: Cody Gaston Date: 5/26/21 Time: 16:00

Received by: Fedex Date: 5/27/21 Time: 17:40

Notes: WTX to EMSU Project

Logged by (Laboratory): _____ Date: _____ Time: _____

Checked by (Laboratory): _____

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C 9-5035

Cooler ID: 47026 Cooler Temp: 1.2°C

QC Package: (Check One Box Below) Level 1 Std/COC Level 2 Std/COC Level 3 Std/COC Level 4 Std/COC Level 5 Std/COC Level 6 Std/COC Level 7 Std/COC Level 8 Std/COC Level 9 Std/COC Level 10 Std/COC Level 11 Std/COC Level 12 Std/COC Level 13 Std/COC Level 14 Std/COC Level 15 Std/COC Level 16 Std/COC Level 17 Std/COC Level 18 Std/COC Level 19 Std/COC Level 20 Std/COC Level 21 Std/COC Level 22 Std/COC Level 23 Std/COC Level 24 Std/COC Level 25 Std/COC Level 26 Std/COC Level 27 Std/COC Level 28 Std/COC Level 29 Std/COC Level 30 Std/COC Level 31 Std/COC Level 32 Std/COC Level 33 Std/COC Level 34 Std/COC Level 35 Std/COC Level 36 Std/COC Level 37 Std/COC Level 38 Std/COC Level 39 Std/COC Level 40 Std/COC Level 41 Std/COC Level 42 Std/COC Level 43 Std/COC Level 44 Std/COC Level 45 Std/COC Level 46 Std/COC Level 47 Std/COC Level 48 Std/COC Level 49 Std/COC Level 50 Std/COC Level 51 Std/COC Level 52 Std/COC Level 53 Std/COC Level 54 Std/COC Level 55 Std/COC Level 56 Std/COC Level 57 Std/COC Level 58 Std/COC Level 59 Std/COC Level 60 Std/COC Level 61 Std/COC Level 62 Std/COC Level 63 Std/COC Level 64 Std/COC Level 65 Std/COC Level 66 Std/COC Level 67 Std/COC Level 68 Std/COC Level 69 Std/COC Level 70 Std/COC Level 71 Std/COC Level 72 Std/COC Level 73 Std/COC Level 74 Std/COC Level 75 Std/COC Level 76 Std/COC Level 77 Std/COC Level 78 Std/COC Level 79 Std/COC Level 80 Std/COC Level 81 Std/COC Level 82 Std/COC Level 83 Std/COC Level 84 Std/COC Level 85 Std/COC Level 86 Std/COC Level 87 Std/COC Level 88 Std/COC Level 89 Std/COC Level 90 Std/COC Level 91 Std/COC Level 92 Std/COC Level 93 Std/COC Level 94 Std/COC Level 95 Std/COC Level 96 Std/COC Level 97 Std/COC Level 98 Std/COC Level 99 Std/COC Level 100 Std/COC

ote: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.

47026 MAY 27 2021



47026

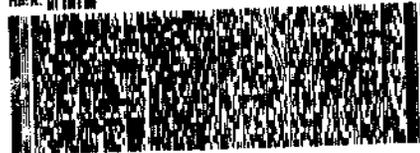
ORIGIN ID:SGRA (917) 752-3693
COEYGASTON
TRC SAN ANTONIO
14231 RED MAPLE WOOD SUI E 106
SAN ANTONIO, TX 78248
UNITED STATES US

SHIP DATE: 15MAY21
ACTWT: 1.00 LB TAN
CRD: 0221247/CMFE940B
DIMS: 28x14x14 IN

TO SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD
SUITE 210
HOUSTON TX 77099

(281) 630-6060
REF: WTX TO EMSU - BO 78492 - PG

AREA: 01 01 01 01



FedEx
Express

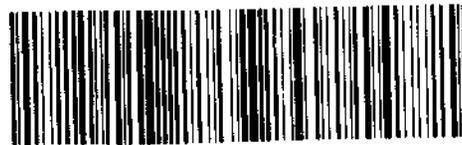


FedEx
YR# 0221 9473 0843 8110

THU - 27 MAY 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US IAH





Analytical Data Review Checklist

Site: WTX to EMSU Battery (Klein Ranch) Pipeline Release Site Location: Lea County, New Mexico Client Name: HEP Project #: 426140	Laboratory: ALS (Houston, Tx) Lab Report #: HS21060126	QA Reviewer: A. Eljuri Peer Reviewer: L. Burris Date: June 23, 2021
Analytical Method(s): BTEX by 8260C, TPH-GRO and TPH-DRO/ORO by SW8015C, Chloride by E300.0, Total Dissolved Solids by SM2540C	Matrices Sampled: Soil, groundwater, aqueous trip blank sample	Sample Collection Date(s): May 26 through 28, 2021
Sampling Objective(s): Analyze soil and groundwater to characterize and possibly delineate impacts from a potential crude oil release.		
Sample IDs: Refer to data package sample summary.		

Review Item or Question		Y	N	NA	Comments
Sample Traceability / Chain of Custody					
1	Were COC forms appropriately completed?		X		The samples were preserved with ice, but it was not noted on the COC.
2	Did the laboratory report correct sample IDs?	X			
3	Do the laboratory reported sample collection dates and times agree with the COC forms?		X		No sample date for the trip blanks or duplicate samples were listed on the COC. The laboratory added a sample date for these samples since it is required to include a sample date in the data packages.
Sample Preservation and Integrity					
4	Did samples arrive at the laboratory appropriately preserved?			X	New Mexico regulations do not require TPH-GRO analysis for soil to be preserved in the field.
	Was the cooler temperature between 0-6°C?	X			
	Was acid used for preservation when required (e.g., aqueous VOC and metals samples)?			X	
	Were soil/sediment VOC samples preserved in the field or collected in EnCore® samplers?			X	
5	Were samples received by the laboratory in an acceptable condition (i.e., no breakages, leaks, etc.)?	X			
6	Were any issues noted by the laboratory upon receipt?		X		
7	Were sample preparation and analysis holding time requirements met?	X			Duplicate-04 (MW-01) was noted as being extracted outside of hold time for the TPH-DRO/ORO analysis since the sample date in the data package was inputted by the laboratory as May 26, 2021. However, the sample collection date for Duplicate-04 is May 28, 2021, which is within hold time, so no qualification is necessary.
8	<u>AIR ONLY:</u> Were canisters received with an acceptable vacuum? Were the RPDs between the initial and final canister flow controller calibrations <20?			X	
Data Completeness					
9	Are results reported for all analytical methods requested?	X			The laboratory reported TPH-ORO for method 8015C, which is not offered for accreditation.
10	Are results reported for all samples submitted for analysis?	X			



Analytical Data Review Checklist

Review Item or Question		Y	N	NA	Comments
11	Were the requested analytical methods used?	X			
12	Are results reported for all target analytes, but no additional analytes?	X			
13	Were soil/sediment results reported on a dry weight basis?		X		The site is regulated under the New Mexico Oil Conservation District and results reported on a dry weight basis is not a project requirement.
14	If requested, were detected results below the reporting limit (i.e., "J" values) reported?			X	
15	Did we receive the required deliverables (e.g., EDD, Level 4 data, laboratory certification, etc.) in the correct formats?	X			
Sensitivity					
16	Do the reporting limits meet the project specifications (e.g., QAPP or Work Plan)?	X			All non-detect results had reporting limits below project criteria.
17	Were dilutions performed? If so, note sample(s) and parameter(s) affected and the dilution factor(s).	X			<p>In samples SB-18-4'-5', SB-18-14'-15', SB-18-19'-20', SB-18-24'-25', SB-18-26'-27', SB-18-29'-30', SB-19-4'-5', SB-19-11'-12', SB-19-24'-25', SB-19-29'-30', SB-19-34'-35', Duplicate-01 (SB-18-14'-15'), and Duplicate-02 (SB-19-34'-35'), TPH-DRO/ORO were diluted 100-fold.</p> <p>In samples SB-18-9'-10' and SB-21-34'-35', TPH-DRO/ORO were diluted 50-fold.</p> <p>In sample SB-19-19'-20', TPH-DRO/ORO were diluted 5-fold.</p> <p>In sample SB-25/MW-05-16'-17', TPH-DRO was diluted 2-fold.</p> <p>In sample SB-25/MW-05-39'-40', TPH-DRO was diluted 5-fold.</p> <p>In sample MW-01, MW-05, and Duplicate-04 (MW-01), chloride was diluted 100-fold.</p>
18	Did the laboratory provide an adequate explanation as to why dilutions were performed?		X		No explanation was provided. All the diluted results were detected above the reporting limit (RL).
QC Results					
19	Were any target analytes detected in the method blanks? If yes, list contaminants, concentrations detected and associated samples.		X		
20	Does each analytical or preparation batch have its own method blank?	X			
21	Were any target analytes detected in the field blank(s) (e.g., trip blanks, equipment blanks)? If yes, list contaminants, concentrations detected and associated samples (or attach field blank results).		X		
22	Are there any potential false positive results based on questions 19 and/or 21?		X		
23	Are LCS/LCSD recoveries within QC limits? If no, list analytes affected, the LCS/LCSD recoveries and the affected samples.	X			
24	Does each analytical or preparation batch have its own LCS?	X			



Analytical Data Review Checklist

Review Item or Question		Y	N	NA	Comments
25	Are LCS/LCSD RPDs within QC limits? If no, list analytes affected, the RPDs and the affected samples.	X			
26	Are MS/MSD recoveries within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the MS/MSD recoveries and the sample that was spiked.		X		MS/MSD performed on sample SB-19-34'-35', SB-20-29'-30', and SB-26-29'-30' for TPH-DRO/ORO, SB-18-2'-3', SB-21-24'-25', and SB-26-21'-22' for TPH-GRO, and MW-01 for BTEX. The MS/MSD %Rs of TPH-DRO (-1620%/-154%) and TPH-ORO (-80%/393%) performed on sample SB-19-34'-35' were outside the laboratory-defined recovery limits (70-130%). However, the concentration of TPH-DRO and TPH-ORO in the parent sample was >4x the spike value, which may not represent the matrix effect; therefore, the MS/MSD %Rs for TPH-DRO and TPH-ORO are not used to evaluate sample results and do not impact data usability. TPH batch 166695, BTEX batch R384960, and chloride batches 166543 and R385235 MS/MSDs were analyzed on samples not associated with the project site and were not evaluated.
27	Are MS/MSD RPDs within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the RPDs and the sample that was spiked.	X			
28	Are laboratory duplicate RPDs within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the RPDs and the sample that was prepared/analyzed in duplicate.	X			Laboratory duplicates for total dissolved solids were within laboratory-defined limits, but were not analyzed on samples associated with the project site.
29	Are field duplicate RPDs within QC limits? If no, list analytes affected, the RPDs and the associated samples.		X		RPDs were calculated for duplicate pairs SB-18-14'-15' and Duplicate-01, SB-19-34'-35' and Duplicate-02, SB-25/MW-05-39'-40' and Duplicate-03, and MW-01 and Duplicate-04. The RPD for TPH-DRO (187%) in duplicate pair SB-25/MW-05-39'-40' and Duplicate-03 recovered greater than project specifications for soils (50%). Therefore, TPH-DRO in samples SB-25/MW-05-39'-40' and Duplicate-03 may be estimated. The RPD for TPH-DRO (34%) in duplicate pair MW-01 and Duplicate-04 recovered greater than project specifications for water (30%). Therefore, TPH-DRO in samples MW-01 and Duplicate-04 may be estimated.



Analytical Data Review Checklist

Review Item or Question		Y	N	NA	Comments
30	<p><u>ORGANIC ANALYSES ONLY:</u></p> <p>Are surrogate recoveries within QC limits? If no, list samples, surrogate recoveries and analytes affected.</p>		X		<p>Surrogate 2-fluorophenol recovered at 0% in the diluted 100-fold TPH DRO/ORO analyses of samples SB-18-4'-5', SB-18-14'-15', SB-18-19'-20', SB-18-24'-25', SB-18-26'-27', SB-18-29'-30', SB-19-4'-5', SB-19-11'-12', SB-19-24'-25', SB-19-29'-30', SB-19-34'-35', Duplicate-01 (SB-18-14'-15'), and Duplicate-02 (SB-19-34'-35') and the diluted 50-fold TPH-DRO/ORO analyses of sample SB-21-34'-35'. The samples were diluted ≥ 10-fold for the TPH-DRO/ORO analysis; therefore, no qualification is necessary.</p> <p>Surrogate 2-fluorophenol recovered below laboratory-defined limits (60-129%) in the undiluted TPH-DRO/ORO analysis of samples SB-19-2'-3' (41.5%) and SB-25/MW-05-34'-35' (50.2%). Therefore, the detected TPH-DRO/ORO results in samples SB-19-2'-3' and SB-25/MW-05-34'-35' may be biased low.</p> <p>Surrogate 2-fluorophenol recovered below laboratory-defined limits (60-129%) in the diluted 5-fold TPH-DRO analysis of sample SB-25/MW-05-39'-40' (55.8%) and the diluted 2-fold TPH-DRO analysis of sample SB-25/MW-05-16'-17' (57.9%). Therefore, the detected TPH-DRO result may be biased low in samples SB-25/MW-05-16'-17' and SB-25/MW-05-39'-40'.</p>
Laboratory Comments					
31	Did the case narrative describe any analytical anomalies (i.e., problems or unique occurrences)?		X		
32	Were any other potential data quality issues identified? If yes, describe issues.		X		
Do the Data Make Sense?					
33	Do any results look questionable?		X		
34	Has the EDD been compared with the lab report?	X			

Reference: United States Environmental Protection Agency (USEPA) - *National Functional Guidelines for Organic Superfund Methods Data Review* (USEPA, November 2020); United States Environmental Protection Agency (USEPA) - *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA, November 2020)

COC = Chain-of-Custody
 BTEX = Benzene, Toluene, Ethylbenzene, Total Xylenes
 DRO = Diesel Range Organics
 EDD = Electronic Data Deliverable
 GRO = Gasoline Range Organics
 LCS/LCSD = Laboratory Control Sample / Laboratory Control Sample Duplicate
 ORO = Motor Oil Range Organics
 MS/MSD = Matrix Spike / Matrix Spike Duplicate
 NELAP = National Environmental Laboratory Accreditation Program
 QAPP = Quality Assurance Project Plan
 QC = Quality Control
 %R = Percent Recovery
 RPD = Relative Percent Difference = $| (A-B) / ((A+B)/2) |$
 TPH = Total Petroleum Hydrocarbon

Additional Comments: None.



10450 Stancliff Rd. Suite 210
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June 10, 2021

Cody Gaston
TRC San Antonio
5811 University Heights
Suite 106
San Antonio, TX 78249

Work Order: **HS21060126**

Laboratory Results for: **WTX to EMSU Project**

Dear Cody Gaston,

ALS Environmental received 56 sample(s) on Jun 02, 2021 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ragen Giga'.

Generated By: JUMOKE.LAWAL

Ragen Giga
Project Manager

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
Work Order: HS21060126

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS21060126-01	SB-18-2'-3'	Soil		26-May-2021 17:10	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-02	SB-18-4'-5'	Soil		26-May-2021 17:12	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-03	SB-18-9'-10'	Soil		26-May-2021 17:22	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-04	SB-18-14'-15'	Soil		26-May-2021 17:33	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-05	SB-18-19'-20'	Soil		26-May-2021 17:47	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-06	SB-18-24'-25'	Soil		27-May-2021 08:38	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-07	SB-18-26'-27'	Soil		27-May-2021 08:53	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-08	SB-18-29'-30'	Soil		27-May-2021 08:54	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-09	SB-19-2'-3'	Soil		27-May-2021 10:40	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-10	SB-19-4'-5'	Soil		27-May-2021 10:42	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-11	SB-19-11'-12'	Soil		27-May-2021 11:00	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-12	SB-19-19'-20'	Soil		27-May-2021 11:13	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-13	SB-19-24'-25'	Soil		27-May-2021 11:35	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-14	SB-19-29'-30'	Soil		27-May-2021 11:47	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-15	SB-19-34'-35'	Soil		27-May-2021 12:07	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-16	SB-20-2'-3'	Soil		27-May-2021 14:02	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-17	SB-20-4'-5'	Soil		27-May-2021 14:04	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-18	SB-20-9'-10'	Soil		27-May-2021 14:10	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-19	SB-20-14'-15'	Soil		27-May-2021 14:27	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-20	SB-20-19'-20'	Soil		27-May-2021 14:40	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-21	SB-20-24'-25'	Soil		27-May-2021 14:58	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-22	SB-20-29'-30'	Soil		27-May-2021 15:16	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-23	SB-20-34'-35'	Soil		27-May-2021 15:30	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-24	SB-21-2'-3'	Soil		27-May-2021 17:17	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-25	SB-21-4'-5'	Soil		27-May-2021 17:19	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-26	SB-21-11'-12'	Soil		27-May-2021 17:35	02-Jun-2021 09:20	<input type="checkbox"/>

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
Work Order: HS21060126

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS21060126-27	SB-21-19'-20'	Soil		27-May-2021 17:47	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-28	SB-21-24'-25'	Soil		27-May-2021 18:00	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-29	SB-21-29'-30'	Soil		28-May-2021 08:30	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-30	SB-21-34'-35'	Soil		28-May-2021 09:04	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-31	SB-25/MW-05-2'-3'	Soil		26-May-2021 10:45	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-32	SB-25/MW-05-11'-12'	Soil		26-May-2021 11:07	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-33	SB-25/MW-05-16'-17'	Soil		26-May-2021 11:17	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-34	SB-25/MW-05-26'-27'	Soil		26-May-2021 11:44	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-35	SB-25/MW-05-34'-35'	Soil		26-May-2021 11:58	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-36	SB-25/MW-05-39'-40'	Soil		26-May-2021 13:15	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-37	SB-26-2'-3'	Soil		28-May-2021 10:12	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-38	SB-26-4'-5'	Soil		28-May-2021 10:13	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-39	SB-26-9'-10'	Soil		28-May-2021 10:22	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-40	SB-26-14'-15'	Soil		28-May-2021 10:35	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-41	SB-26-21'-22'	Soil		28-May-2021 10:58	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-42	SB-26-29'-30'	Soil		28-May-2021 11:14	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-43	SB-26-34'-35'	Soil		28-May-2021 11:30	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-44	Duplicate-01	Soil		26-May-2021 00:00	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-45	Duplicate-02	Soil		26-May-2021 00:00	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-46	Duplicate-03	Soil		26-May-2021 00:00	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-47	TB-06-01-21-1	Water	CG 051121 -137	01-Jun-2021 13:00	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-48	TB-06-01-21-2	Water	CG 051121 -141	01-Jun-2021 13:00	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-49	MW-01	Water		28-May-2021 19:20	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-50	MW-05	Water		28-May-2021 18:05	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-51	Duplicate-04	Water		26-May-2021 00:00	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-52	TB-06-01-21-3	Water	CG 051121 -142	01-Jun-2021 13:00	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-53	SB-27-2'	Soil		28-May-2021 13:00	02-Jun-2021 09:20	<input type="checkbox"/>

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
Work Order: HS21060126

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS21060126-54	SB-27-3.5'	Soil		28-May-2021 13:06	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-55	SB-28-2'	Soil		28-May-2021 19:04	02-Jun-2021 09:20	<input type="checkbox"/>
HS21060126-56	SB-28-3.5'	Soil		28-May-2021 19:04	02-Jun-2021 09:20	<input type="checkbox"/>

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
Work Order: HS21060126

CASE NARRATIVE

GC Semivolatiles by Method SW8015M

Batch ID: 166566

Sample ID: SB-21-34'-35' (HS21060126-30)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: SB-25/MW-05-16'-17' (HS21060126-33)

- Surrogate recoveries were outside of the control limits due to matrix interference.

Sample ID: SB-25/MW-05-39'-40' (HS21060126-36)

- Surrogate recoveries were outside of the control limits due to matrix interference.

Batch ID: 166634

Sample ID: Duplicate-01 (HS21060126-44)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: Duplicate-02 (HS21060126-45)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Batch ID: 166695

Sample ID: SB-25/MW-05-34'-35' (HS21060126-35)

- Surrogate recovery was below acceptance limits. Re-extraction and/or reanalysis confirm low recovery caused by matrix interferences.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
Work Order: HS21060126

CASE NARRATIVE**GC Semivolatiles by Method SW8015M****Batch ID: 166511****Sample ID: SB-18-14'-15' (HS21060126-04)**

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: SB-18-19'-20' (HS21060126-05)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: SB-18-24'-25' (HS21060126-06)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: SB-18-26'-27' (HS21060126-07)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: SB-18-29'-30' (HS21060126-08)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: SB-18-4'-5' (HS21060126-02)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: SB-19-11'-12' (HS21060126-11)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: SB-19-2'-3' (HS21060126-09)

- Surrogate recovery was below acceptance limits. Re-extraction and/or reanalysis confirm low recovery caused by matrix interferences.

Sample ID: SB-19-24'-25' (HS21060126-13)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: SB-19-29'-30' (HS21060126-14)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: SB-19-34'-35' (HS21060126-15)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: SB-19-34'-35' (HS21060126-15MS)

- The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS may be due to sample matrix interference.

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: SB-19-34'-35' (HS21060126-15MSD)

- The recovery of the Matrix Spike Duplicate (MSD) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MSD may be due to sample matrix interference.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
Work Order: HS21060126

CASE NARRATIVE

GC Semivolatiles by Method SW8015M

Batch ID: 166511

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: SB-19-4'-5' (HS21060126-10)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Batch ID: 166525

Sample ID: Duplicate-04 (HS21060126-51)

- Sample extracted or prepared outside of hold time.

Batch ID: 166565,166695

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GC Volatiles by Method SW8015

Batch ID: R384942

Sample ID: SB-18-2'-3' (HS21060126-01MSD)

- MS/MSD RPD exceeded the laboratory acceptance limit. Recovery met acceptance criteria.

Batch ID: R384943,R384946,R385028

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GCMS Volatiles by Method SW8260

Batch ID: R384960,R385035

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method M2540C

Batch ID: R384986

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method E300

Batch ID: 166543,R385235

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-18-2'-3'
 Collection Date: 26-May-2021 17:10

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-01
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	0.064		0.046	mg/Kg	1	03-Jun-2021 10:57
Surr: 4-Bromofluorobenzene	107		70-123	%REC	1	03-Jun-2021 10:57
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 03-Jun-2021	Analyst: PPM
TPH (Diesel Range)	12		1.7	mg/Kg	1	04-Jun-2021 12:26
TPH (Motor Oil Range)	49	n	3.4	mg/Kg	1	04-Jun-2021 12:26
Surr: 2-Fluorobiphenyl	61.6		60-129	%REC	1	04-Jun-2021 12:26

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-18-4'-5'
 Collection Date: 26-May-2021 17:12

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-02
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	0.087		0.050	mg/Kg	1	03-Jun-2021 11:13
Surr: 4-Bromofluorobenzene	105		70-123	%REC	1	03-Jun-2021 11:13
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 03-Jun-2021		Analyst: PPM
TPH (Diesel Range)	240		170	mg/Kg	100	03-Jun-2021 21:43
TPH (Motor Oil Range)	1,400	n	340	mg/Kg	100	03-Jun-2021 21:43
Surr: 2-Fluorobiphenyl	0	JS	60-129	%REC	100	03-Jun-2021 21:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-18-9'-10'
 Collection Date: 26-May-2021 17:22

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-03
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	0.080		0.048	mg/Kg	1	03-Jun-2021 11:29
Surr: 4-Bromofluorobenzene	113		70-123	%REC	1	03-Jun-2021 11:29
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 03-Jun-2021	Analyst: PPM
TPH (Diesel Range)	170		85	mg/Kg	50	08-Jun-2021 12:00
TPH (Motor Oil Range)	670	n	170	mg/Kg	50	08-Jun-2021 12:00
Surr: 2-Fluorobiphenyl	63.9	J	60-129	%REC	50	08-Jun-2021 12:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-18-14'-15'
 Collection Date: 26-May-2021 17:33

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-04
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	34		0.46	mg/Kg	1	03-Jun-2021 12:02
Surr: 4-Bromofluorobenzene	115		70-123	%REC	1	03-Jun-2021 12:02
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 03-Jun-2021	Analyst: PPM
TPH (Diesel Range)	6,600		170	mg/Kg	100	03-Jun-2021 22:32
TPH (Motor Oil Range)	5,500	n	340	mg/Kg	100	03-Jun-2021 22:32
Surr: 2-Fluorobiphenyl	0	JS	60-129	%REC	100	03-Jun-2021 22:32

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-18-19'-20'
 Collection Date: 26-May-2021 17:47

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-05
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	130		0.47	mg/Kg	1	03-Jun-2021 12:18
Surr: 4-Bromofluorobenzene	111		70-123	%REC	1	03-Jun-2021 12:18
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 03-Jun-2021	Analyst: PPM
TPH (Diesel Range)	2,300		170	mg/Kg	100	03-Jun-2021 22:56
TPH (Motor Oil Range)	2,700	n	340	mg/Kg	100	03-Jun-2021 22:56
Surr: 2-Fluorobiphenyl	0	JS	60-129	%REC	100	03-Jun-2021 22:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-18-24'-25'
 Collection Date: 27-May-2021 08:38

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-06
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: QX		
Gasoline Range Organics	29		0.23	mg/Kg	1	03-Jun-2021 15:20
Surr: 4-Bromofluorobenzene	102		70-123	%REC	1	03-Jun-2021 15:20
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 03-Jun-2021		Analyst: PPM
TPH (Diesel Range)	2,600		170	mg/Kg	100	04-Jun-2021 00:10
TPH (Motor Oil Range)	2,400	n	340	mg/Kg	100	04-Jun-2021 00:10
Surr: 2-Fluorobiphenyl	0	JS	60-129	%REC	100	04-Jun-2021 00:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-18-26'-27'
 Collection Date: 27-May-2021 08:53

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-07
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	14		0.12	mg/Kg	1	03-Jun-2021 15:53
Surr: 4-Bromofluorobenzene	115		70-123	%REC	1	03-Jun-2021 15:53
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 03-Jun-2021		Analyst: PPM
TPH (Diesel Range)	4,000		170	mg/Kg	100	04-Jun-2021 00:35
TPH (Motor Oil Range)	4,100	n	340	mg/Kg	100	04-Jun-2021 00:35
Surr: 2-Fluorobiphenyl	0	JS	60-129	%REC	100	04-Jun-2021 00:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-18-29'-30'
 Collection Date: 27-May-2021 08:54

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-08
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: QX		
Gasoline Range Organics	18		0.11	mg/Kg	1	03-Jun-2021 16:09
Surr: 4-Bromofluorobenzene	119		70-123	%REC	1	03-Jun-2021 16:09
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 03-Jun-2021		Analyst: PPM
TPH (Diesel Range)	5,400		170	mg/Kg	100	04-Jun-2021 00:59
TPH (Motor Oil Range)	5,100	n	340	mg/Kg	100	04-Jun-2021 00:59
Surr: 2-Fluorobiphenyl	0	JS	60-129	%REC	100	04-Jun-2021 00:59

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-19-2'-3'
 Collection Date: 27-May-2021 10:40

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-09
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.052		0.052	mg/Kg	1	03-Jun-2021 18:18
Surr: 4-Bromofluorobenzene	110		70-123	%REC	1	03-Jun-2021 18:18
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 03-Jun-2021		Analyst: PPM
TPH (Diesel Range)	5.6		1.7	mg/Kg	1	04-Jun-2021 12:51
TPH (Motor Oil Range)	16	n	3.4	mg/Kg	1	04-Jun-2021 12:51
Surr: 2-Fluorobiphenyl	41.5	S	60-129	%REC	1	04-Jun-2021 12:51

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-19-4'-5'
 Collection Date: 27-May-2021 10:42

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-10
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	1.9		0.055	mg/Kg	1	03-Jun-2021 16:41
Surr: 4-Bromofluorobenzene	105		70-123	%REC	1	03-Jun-2021 16:41
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 03-Jun-2021	Analyst: PPM
TPH (Diesel Range)	910		170	mg/Kg	100	03-Jun-2021 20:30
TPH (Motor Oil Range)	1,200	n	330	mg/Kg	100	03-Jun-2021 20:30
Surr: 2-Fluorobiphenyl	0	JS	60-129	%REC	100	03-Jun-2021 20:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-19-11'-12'
 Collection Date: 27-May-2021 11:00

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-11
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	5.5		0.11	mg/Kg	1	04-Jun-2021 09:45
Surr: 4-Bromofluorobenzene	95.8		70-123	%REC	1	04-Jun-2021 09:45
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 03-Jun-2021	Analyst: PPM
TPH (Diesel Range)	5,700		170	mg/Kg	100	03-Jun-2021 20:54
TPH (Motor Oil Range)	5,600	n	340	mg/Kg	100	03-Jun-2021 20:54
Surr: 2-Fluorobiphenyl	0	JS	60-129	%REC	100	03-Jun-2021 20:54

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-19-19'-20'
 Collection Date: 27-May-2021 11:13

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-12
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	7.3		0.26	mg/Kg	1	03-Jun-2021 11:45
Surr: 4-Bromofluorobenzene	105		70-123	%REC	1	03-Jun-2021 11:45
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 03-Jun-2021	Analyst: PPM
TPH (Diesel Range)	79		8.4	mg/Kg	5	04-Jun-2021 12:26
TPH (Motor Oil Range)	78	n	17	mg/Kg	5	04-Jun-2021 12:26
Surr: 2-Fluorobiphenyl	86.8		60-129	%REC	5	04-Jun-2021 12:26

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-19-24'-25'
 Collection Date: 27-May-2021 11:35

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-13
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	32		0.32	mg/Kg	1	03-Jun-2021 15:37
Surr: 4-Bromofluorobenzene	120		70-123	%REC	1	03-Jun-2021 15:37
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 03-Jun-2021	Analyst: PPM
TPH (Diesel Range)	4,900		170	mg/Kg	100	03-Jun-2021 21:43
TPH (Motor Oil Range)	4,400	n	340	mg/Kg	100	03-Jun-2021 21:43
Surr: 2-Fluorobiphenyl	0	JS	60-129	%REC	100	03-Jun-2021 21:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-19-29'-30'
 Collection Date: 27-May-2021 11:47

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-14
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: QX		
Gasoline Range Organics	24		0.26	mg/Kg	1	03-Jun-2021 14:48
Surr: 4-Bromofluorobenzene	118		70-123	%REC	1	03-Jun-2021 14:48
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 03-Jun-2021		Analyst: PPM
TPH (Diesel Range)	6,100		170	mg/Kg	100	03-Jun-2021 22:56
TPH (Motor Oil Range)	5,100	n	340	mg/Kg	100	03-Jun-2021 22:56
Surr: 2-Fluorobiphenyl	0	JS	60-129	%REC	100	03-Jun-2021 22:56

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-19-34'-35'
 Collection Date: 27-May-2021 12:07

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-15
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	56		0.43	mg/Kg	1	03-Jun-2021 15:04
Surr: 4-Bromofluorobenzene	116		70-123	%REC	1	03-Jun-2021 15:04
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 03-Jun-2021	Analyst: PPM
TPH (Diesel Range)	3,100		170	mg/Kg	100	03-Jun-2021 20:05
TPH (Motor Oil Range)	2,800	n	340	mg/Kg	100	03-Jun-2021 20:05
Surr: 2-Fluorobiphenyl	0	JS	60-129	%REC	100	03-Jun-2021 20:05

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-20-2'-3'
 Collection Date: 27-May-2021 14:02

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-16
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.051		0.051	mg/Kg	1	03-Jun-2021 18:34
Surr: 4-Bromofluorobenzene	114		70-123	%REC	1	03-Jun-2021 18:34
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 04-Jun-2021	Analyst: PPM
TPH (Diesel Range)	15		1.7	mg/Kg	1	04-Jun-2021 20:33
TPH (Motor Oil Range)	11	n	3.4	mg/Kg	1	04-Jun-2021 20:33
Surr: 2-Fluorobiphenyl	67.0		60-129	%REC	1	04-Jun-2021 20:33

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-20-4'-5'
 Collection Date: 27-May-2021 14:04

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-17
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.056		0.056	mg/Kg	1	03-Jun-2021 18:51
Surr: 4-Bromofluorobenzene	110		70-123	%REC	1	03-Jun-2021 18:51
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 03-Jun-2021		Analyst: PPM
TPH (Diesel Range)	17		1.7	mg/Kg	1	03-Jun-2021 23:45
TPH (Motor Oil Range)	4.5	n	3.4	mg/Kg	1	03-Jun-2021 23:45
Surr: 2-Fluorobiphenyl	60.1		60-129	%REC	1	03-Jun-2021 23:45

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-20-9'-10'
 Collection Date: 27-May-2021 14:10

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-18
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.052		0.052	mg/Kg	1	03-Jun-2021 19:07
Surr: 4-Bromofluorobenzene	112		70-123	%REC	1	03-Jun-2021 19:07
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 03-Jun-2021		Analyst: PPM
TPH (Diesel Range)	9.7		1.7	mg/Kg	1	04-Jun-2021 00:10
TPH (Motor Oil Range)	5.5	n	3.4	mg/Kg	1	04-Jun-2021 00:10
Surr: 2-Fluorobiphenyl	63.7		60-129	%REC	1	04-Jun-2021 00:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-20-14'-15'
 Collection Date: 27-May-2021 14:27

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-19
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.052		0.052	mg/Kg	1	03-Jun-2021 20:11
Surr: 4-Bromofluorobenzene	107		70-123	%REC	1	03-Jun-2021 20:11
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 03-Jun-2021		Analyst: PPM
TPH (Diesel Range)	12		1.7	mg/Kg	1	04-Jun-2021 00:35
TPH (Motor Oil Range)	< 3.4	n	3.4	mg/Kg	1	04-Jun-2021 00:35
Surr: 2-Fluorobiphenyl	66.1		60-129	%REC	1	04-Jun-2021 00:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-20-19'-20'
 Collection Date: 27-May-2021 14:40

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-20
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.058		0.058	mg/Kg	1	03-Jun-2021 22:04
Surr: 4-Bromofluorobenzene	107		70-123	%REC	1	03-Jun-2021 22:04
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 03-Jun-2021		Analyst: PPM
TPH (Diesel Range)	7.7		1.7	mg/Kg	1	04-Jun-2021 00:59
TPH (Motor Oil Range)	7.0	n	3.4	mg/Kg	1	04-Jun-2021 00:59
Surr: 2-Fluorobiphenyl	67.0		60-129	%REC	1	04-Jun-2021 00:59

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-20-24'-25'
 Collection Date: 27-May-2021 14:58

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-21
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.055		0.055	mg/Kg	1	03-Jun-2021 22:20
Surr: 4-Bromofluorobenzene	106		70-123	%REC	1	03-Jun-2021 22:20
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 04-Jun-2021		Analyst: PPM
TPH (Diesel Range)	5.3		1.7	mg/Kg	1	07-Jun-2021 13:39
TPH (Motor Oil Range)	13	n	3.4	mg/Kg	1	07-Jun-2021 13:39
Surr: 2-Fluorobiphenyl	60.5		60-129	%REC	1	07-Jun-2021 13:39

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-20-29'-30'
 Collection Date: 27-May-2021 15:16

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-22
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.049		0.049	mg/Kg	1	03-Jun-2021 22:36
Surr: 4-Bromofluorobenzene	109		70-123	%REC	1	03-Jun-2021 22:36
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 04-Jun-2021		Analyst: PPM
TPH (Diesel Range)	< 1.7		1.7	mg/Kg	1	07-Jun-2021 14:04
TPH (Motor Oil Range)	< 3.4	n	3.4	mg/Kg	1	07-Jun-2021 14:04
Surr: 2-Fluorobiphenyl	61.8		60-129	%REC	1	07-Jun-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-20-34'-35'
 Collection Date: 27-May-2021 15:30

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-23
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.054		0.054	mg/Kg	1	03-Jun-2021 22:53
Surr: 4-Bromofluorobenzene	108		70-123	%REC	1	03-Jun-2021 22:53
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 04-Jun-2021		Analyst: PPM
TPH (Diesel Range)	2.7		1.7	mg/Kg	1	07-Jun-2021 15:17
TPH (Motor Oil Range)	5.0	n	3.3	mg/Kg	1	07-Jun-2021 15:17
Surr: 2-Fluorobiphenyl	60.1		60-129	%REC	1	07-Jun-2021 15:17

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-21-2'-3'
 Collection Date: 27-May-2021 17:17

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-24
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.054		0.054	mg/Kg	1	03-Jun-2021 23:09
Surr: 4-Bromofluorobenzene	107		70-123	%REC	1	03-Jun-2021 23:09
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 04-Jun-2021		Analyst: PPM
TPH (Diesel Range)	7.8		1.7	mg/Kg	1	07-Jun-2021 15:41
TPH (Motor Oil Range)	< 3.4	n	3.4	mg/Kg	1	07-Jun-2021 15:41
Surr: 2-Fluorobiphenyl	65.4		60-129	%REC	1	07-Jun-2021 15:41

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-21-4'-5'
 Collection Date: 27-May-2021 17:19

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-25
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.049		0.049	mg/Kg	1	03-Jun-2021 23:25
Surr: 4-Bromofluorobenzene	106		70-123	%REC	1	03-Jun-2021 23:25
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 04-Jun-2021		Analyst: PPM
TPH (Diesel Range)	< 1.7		1.7	mg/Kg	1	07-Jun-2021 16:06
TPH (Motor Oil Range)	3.8	n	3.4	mg/Kg	1	07-Jun-2021 16:06
Surr: 2-Fluorobiphenyl	70.4		60-129	%REC	1	07-Jun-2021 16:06

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-21-11'-12'
 Collection Date: 27-May-2021 17:35

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-26
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.056		0.056	mg/Kg	1	03-Jun-2021 23:42
Surr: 4-Bromofluorobenzene	104		70-123	%REC	1	03-Jun-2021 23:42
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 04-Jun-2021		Analyst: PPM
TPH (Diesel Range)	3.2		1.7	mg/Kg	1	07-Jun-2021 16:30
TPH (Motor Oil Range)	5.0	n	3.4	mg/Kg	1	07-Jun-2021 16:30
Surr: 2-Fluorobiphenyl	63.1		60-129	%REC	1	07-Jun-2021 16:30

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-21-19'-20'
 Collection Date: 27-May-2021 17:47

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-27
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.050		0.050	mg/Kg	1	03-Jun-2021 23:58
Surr: 4-Bromofluorobenzene	107		70-123	%REC	1	03-Jun-2021 23:58
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 09-Jun-2021		Analyst: PPM
TPH (Diesel Range)	5.2		1.7	mg/Kg	1	09-Jun-2021 16:11
TPH (Motor Oil Range)	11	n	3.4	mg/Kg	1	09-Jun-2021 16:11
Surr: 2-Fluorobiphenyl	63.7		60-129	%REC	1	09-Jun-2021 16:11

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-21-24'-25'
 Collection Date: 27-May-2021 18:00

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-28
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.054		0.054	mg/Kg	1	03-Jun-2021 20:28
Surr: 4-Bromofluorobenzene	105		70-123	%REC	1	03-Jun-2021 20:28
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 09-Jun-2021		Analyst: PPM
TPH (Diesel Range)	7.9		1.7	mg/Kg	1	09-Jun-2021 16:35
TPH (Motor Oil Range)	6.7	n	3.3	mg/Kg	1	09-Jun-2021 16:35
Surr: 2-Fluorobiphenyl	60.2		60-129	%REC	1	09-Jun-2021 16:35

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-21-29'-30'
 Collection Date: 28-May-2021 08:30

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-29
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.054		0.054	mg/Kg	1	04-Jun-2021 00:14
Surr: 4-Bromofluorobenzene	102		70-123	%REC	1	04-Jun-2021 00:14
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 04-Jun-2021		Analyst: PPM
TPH (Diesel Range)	6.8		1.7	mg/Kg	1	08-Jun-2021 13:52
TPH (Motor Oil Range)	9.3	n	3.4	mg/Kg	1	08-Jun-2021 13:52
Surr: 2-Fluorobiphenyl	60.4		60-129	%REC	1	08-Jun-2021 13:52

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-21-34'-35'
 Collection Date: 28-May-2021 09:04

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-30
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: QX		
Gasoline Range Organics	0.13		0.055	mg/Kg	1	04-Jun-2021 00:30
Surr: 4-Bromofluorobenzene	99.8		70-123	%REC	1	04-Jun-2021 00:30
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 04-Jun-2021		Analyst: PPM
TPH (Diesel Range)	1,400		84	mg/Kg	50	07-Jun-2021 14:04
TPH (Motor Oil Range)	2,200	n	170	mg/Kg	50	07-Jun-2021 14:04
Surr: 2-Fluorobiphenyl	0	JS	60-129	%REC	50	07-Jun-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-25/MW-05-2'-3'
 Collection Date: 26-May-2021 10:45

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-31
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.052		0.052	mg/Kg	1	04-Jun-2021 01:52
Surr: 4-Bromofluorobenzene	105		70-123	%REC	1	04-Jun-2021 01:52
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 04-Jun-2021		Analyst: PPM
TPH (Diesel Range)	< 1.7		1.7	mg/Kg	1	07-Jun-2021 14:28
TPH (Motor Oil Range)	4.0	n	3.4	mg/Kg	1	07-Jun-2021 14:28
Surr: 2-Fluorobiphenyl	61.3		60-129	%REC	1	07-Jun-2021 14:28
ANIONS BY E300.0		Method:E300		Prep:E300 / 04-Jun-2021		Analyst: YP
Chloride	< 4.96		4.96	mg/Kg	1	07-Jun-2021 12:33

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-25/MW-05-11'-12'
 Collection Date: 26-May-2021 11:07

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-32
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.046		0.046	mg/Kg	1	04-Jun-2021 02:08
Surr: 4-Bromofluorobenzene	105		70-123	%REC	1	04-Jun-2021 02:08
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 04-Jun-2021		Analyst: PPM
TPH (Diesel Range)	< 1.7		1.7	mg/Kg	1	07-Jun-2021 14:53
TPH (Motor Oil Range)	7.7	n	3.4	mg/Kg	1	07-Jun-2021 14:53
Surr: 2-Fluorobiphenyl	60.2		60-129	%REC	1	07-Jun-2021 14:53
ANIONS BY E300.0		Method:E300		Prep:E300 / 04-Jun-2021		Analyst: YP
Chloride	89.7		4.99	mg/Kg	1	07-Jun-2021 12:41

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-25/MW-05-16'-17'
 Collection Date: 26-May-2021 11:17

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-33
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.052		0.052	mg/Kg	1	04-Jun-2021 02:24
Surr: 4-Bromofluorobenzene	101		70-123	%REC	1	04-Jun-2021 02:24
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 04-Jun-2021	Analyst: PPM
TPH (Diesel Range)	76		3.4	mg/Kg	2	08-Jun-2021 17:04
TPH (Motor Oil Range)	11	n	3.4	mg/Kg	1	08-Jun-2021 14:16
Surr: 2-Fluorobiphenyl	60.9		60-129	%REC	1	08-Jun-2021 14:16
Surr: 2-Fluorobiphenyl	57.9	S	60-129	%REC	2	08-Jun-2021 17:04
ANIONS BY E300.0		Method:E300			Prep:E300 / 04-Jun-2021	Analyst: YP
Chloride	194		4.95	mg/Kg	1	07-Jun-2021 12:48

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-25/MW-05-26'-27'
 Collection Date: 26-May-2021 11:44

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-34
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.048		0.048	mg/Kg	1	04-Jun-2021 02:41
Surr: 4-Bromofluorobenzene	105		70-123	%REC	1	04-Jun-2021 02:41
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 04-Jun-2021		Analyst: PPM
TPH (Diesel Range)	13		1.7	mg/Kg	1	08-Jun-2021 14:40
TPH (Motor Oil Range)	7.1	n	3.4	mg/Kg	1	08-Jun-2021 14:40
Surr: 2-Fluorobiphenyl	60.5		60-129	%REC	1	08-Jun-2021 14:40
ANIONS BY E300.0		Method:E300		Prep:E300 / 04-Jun-2021		Analyst: YP
Chloride	301		4.92	mg/Kg	1	07-Jun-2021 12:55

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-25/MW-05-34'-35'
 Collection Date: 26-May-2021 11:58

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-35
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.046		0.046	mg/Kg	1	04-Jun-2021 02:57
Surr: 4-Bromofluorobenzene	107		70-123	%REC	1	04-Jun-2021 02:57
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 09-Jun-2021		Analyst: PPM
TPH (Diesel Range)	5.2		1.7	mg/Kg	1	09-Jun-2021 17:02
TPH (Motor Oil Range)	11	n	3.4	mg/Kg	1	09-Jun-2021 17:02
Surr: 2-Fluorobiphenyl	50.2	S	60-129	%REC	1	09-Jun-2021 17:02
ANIONS BY E300.0		Method:E300		Prep:E300 / 04-Jun-2021		Analyst: YP
Chloride	63.9		4.99	mg/Kg	1	07-Jun-2021 13:03

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-25/MW-05-39'-40'
 Collection Date: 26-May-2021 13:15

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-36
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.058		0.058	mg/Kg	1	04-Jun-2021 03:14
Surr: 4-Bromofluorobenzene	105		70-123	%REC	1	04-Jun-2021 03:14
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 04-Jun-2021	Analyst: PPM
TPH (Diesel Range)	88		8.4	mg/Kg	5	08-Jun-2021 17:28
TPH (Motor Oil Range)	5.1	n	3.4	mg/Kg	1	08-Jun-2021 16:06
Surr: 2-Fluorobiphenyl	66.4		60-129	%REC	1	08-Jun-2021 16:06
Surr: 2-Fluorobiphenyl	55.8	S	60-129	%REC	5	08-Jun-2021 17:28
ANIONS BY E300.0		Method:E300			Prep:E300 / 04-Jun-2021	Analyst: YP
Chloride	151		4.96	mg/Kg	1	07-Jun-2021 13:10

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-26-2'-3'
 Collection Date: 28-May-2021 10:12

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-37
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.052		0.052	mg/Kg	1	04-Jun-2021 03:30
Surr: 4-Bromofluorobenzene	101		70-123	%REC	1	04-Jun-2021 03:30
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 04-Jun-2021	Analyst: PPM
TPH (Diesel Range)	19		1.7	mg/Kg	1	08-Jun-2021 18:41
TPH (Motor Oil Range)	15	n	3.4	mg/Kg	1	08-Jun-2021 18:41
Surr: 2-Fluorobiphenyl	67.8		60-129	%REC	1	08-Jun-2021 18:41

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-26-4'-5'
 Collection Date: 28-May-2021 10:13

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-38
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.052		0.052	mg/Kg	1	04-Jun-2021 03:46
Surr: 4-Bromofluorobenzene	104		70-123	%REC	1	04-Jun-2021 03:46
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 04-Jun-2021		Analyst: PPM
TPH (Diesel Range)	< 1.7		1.7	mg/Kg	1	07-Jun-2021 18:07
TPH (Motor Oil Range)	9.3	n	3.4	mg/Kg	1	07-Jun-2021 18:07
Surr: 2-Fluorobiphenyl	60.6		60-129	%REC	1	07-Jun-2021 18:07

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-26-9'-10'
 Collection Date: 28-May-2021 10:22

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-39
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.053		0.053	mg/Kg	1	04-Jun-2021 06:30
Surr: 4-Bromofluorobenzene	96.4		70-123	%REC	1	04-Jun-2021 06:30
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 04-Jun-2021		Analyst: PPM
TPH (Diesel Range)	2.4		1.7	mg/Kg	1	07-Jun-2021 17:43
TPH (Motor Oil Range)	5.1	n	3.4	mg/Kg	1	07-Jun-2021 17:43
Surr: 2-Fluorobiphenyl	66.0		60-129	%REC	1	07-Jun-2021 17:43

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-26-14'-15'
 Collection Date: 28-May-2021 10:35

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-40
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.052		0.052	mg/Kg	1	04-Jun-2021 06:46
Surr: 4-Bromofluorobenzene	102		70-123	%REC	1	04-Jun-2021 06:46
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 04-Jun-2021		Analyst: PPM
TPH (Diesel Range)	11		1.7	mg/Kg	1	07-Jun-2021 18:07
TPH (Motor Oil Range)	16	n	3.4	mg/Kg	1	07-Jun-2021 18:07
Surr: 2-Fluorobiphenyl	75.4		60-129	%REC	1	07-Jun-2021 18:07

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-26-21'-22'
 Collection Date: 28-May-2021 10:58

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-41
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.054		0.054	mg/Kg	1	04-Jun-2021 05:41
Surr: 4-Bromofluorobenzene	101		70-123	%REC	1	04-Jun-2021 05:41
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 08-Jun-2021		Analyst: PPM
TPH (Diesel Range)	< 1.7		1.7	mg/Kg	1	08-Jun-2021 22:19
TPH (Motor Oil Range)	< 3.4	n	3.4	mg/Kg	1	08-Jun-2021 22:19
Surr: 2-Fluorobiphenyl	66.6		60-129	%REC	1	08-Jun-2021 22:19

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-26-29'-30'
 Collection Date: 28-May-2021 11:14

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-42
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.047		0.047	mg/Kg	1	04-Jun-2021 07:03
Surr: 4-Bromofluorobenzene	98.1		70-123	%REC	1	04-Jun-2021 07:03
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 08-Jun-2021		Analyst: PPM
TPH (Diesel Range)	< 1.7		1.7	mg/Kg	1	08-Jun-2021 23:32
TPH (Motor Oil Range)	< 3.4	n	3.4	mg/Kg	1	08-Jun-2021 23:32
Surr: 2-Fluorobiphenyl	65.3		60-129	%REC	1	08-Jun-2021 23:32

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-26-34'-35'
 Collection Date: 28-May-2021 11:30

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-43
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: QX		
Gasoline Range Organics	< 0.054		0.054	mg/Kg	1	04-Jun-2021 07:19
Surr: 4-Bromofluorobenzene	107		70-123	%REC	1	04-Jun-2021 07:19
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 08-Jun-2021		Analyst: PPM
TPH (Diesel Range)	< 1.7		1.7	mg/Kg	1	09-Jun-2021 00:45
TPH (Motor Oil Range)	< 3.4	n	3.4	mg/Kg	1	09-Jun-2021 00:45
Surr: 2-Fluorobiphenyl	68.5		60-129	%REC	1	09-Jun-2021 00:45

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: Duplicate-01
 Collection Date: 26-May-2021 00:00

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-44
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	26		0.48	mg/Kg	1	03-Jun-2021 14:15
Surr: 4-Bromofluorobenzene	104		70-123	%REC	1	03-Jun-2021 14:15
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 08-Jun-2021	Analyst: PPM
TPH (Diesel Range)	5,700		170	mg/Kg	100	09-Jun-2021 01:09
TPH (Motor Oil Range)	4,500	n	340	mg/Kg	100	09-Jun-2021 01:09
Surr: 2-Fluorobiphenyl	0	JS	60-129	%REC	100	09-Jun-2021 01:09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: Duplicate-02
 Collection Date: 26-May-2021 00:00

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-45
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: QX		
Gasoline Range Organics	36		0.43	mg/Kg	1	03-Jun-2021 14:32
Surr: 4-Bromofluorobenzene	94.8		70-123	%REC	1	03-Jun-2021 14:32
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 08-Jun-2021		Analyst: PPM
TPH (Diesel Range)	4,400		170	mg/Kg	100	09-Jun-2021 01:33
TPH (Motor Oil Range)	3,800	n	340	mg/Kg	100	09-Jun-2021 01:33
Surr: 2-Fluorobiphenyl	0	JS	60-129	%REC	100	09-Jun-2021 01:33

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: Duplicate-03
 Collection Date: 26-May-2021 00:00

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-46
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.050		0.050	mg/Kg	1	04-Jun-2021 07:35
Surr: 4-Bromofluorobenzene	108		70-123	%REC	1	04-Jun-2021 07:35
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 08-Jun-2021		Analyst: PPM
TPH (Diesel Range)	2.8		1.7	mg/Kg	1	09-Jun-2021 11:43
TPH (Motor Oil Range)	4.4	n	3.4	mg/Kg	1	09-Jun-2021 11:43
Surr: 2-Fluorobiphenyl	60.6		60-129	%REC	1	09-Jun-2021 11:43
ANIONS BY E300.0		Method:E300		Prep:E300 / 04-Jun-2021		Analyst: YP
Chloride	190		4.91	mg/Kg	1	07-Jun-2021 13:18

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: TB-06-01-21-1
 Collection Date: 01-Jun-2021 13:00

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-47
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES - SW8260C		Method:SW8260				Analyst: PC
Benzene	< 5.0		5.0	ug/L	1	04-Jun-2021 08:05
Ethylbenzene	< 5.0		5.0	ug/L	1	04-Jun-2021 08:05
m,p-Xylene	< 10		10	ug/L	1	04-Jun-2021 08:05
o-Xylene	< 5.0		5.0	ug/L	1	04-Jun-2021 08:05
Toluene	< 5.0		5.0	ug/L	1	04-Jun-2021 08:05
Xylenes, Total	< 5.0		5.0	ug/L	1	04-Jun-2021 08:05
Surr: 1,2-Dichloroethane-d4	87.9		70-126	%REC	1	04-Jun-2021 08:05
Surr: 4-Bromofluorobenzene	96.5		82-124	%REC	1	04-Jun-2021 08:05
Surr: Dibromofluoromethane	90.3		77-123	%REC	1	04-Jun-2021 08:05
Surr: Toluene-d8	103		82-127	%REC	1	04-Jun-2021 08:05

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: TB-06-01-21-2
 Collection Date: 01-Jun-2021 13:00

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-48
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES - SW8260C		Method:SW8260				Analyst: PC
Benzene	< 5.0		5.0	ug/L	1	04-Jun-2021 08:26
Ethylbenzene	< 5.0		5.0	ug/L	1	04-Jun-2021 08:26
m,p-Xylene	< 10		10	ug/L	1	04-Jun-2021 08:26
o-Xylene	< 5.0		5.0	ug/L	1	04-Jun-2021 08:26
Toluene	< 5.0		5.0	ug/L	1	04-Jun-2021 08:26
Xylenes, Total	< 5.0		5.0	ug/L	1	04-Jun-2021 08:26
Surr: 1,2-Dichloroethane-d4	87.8		70-126	%REC	1	04-Jun-2021 08:26
Surr: 4-Bromofluorobenzene	93.7		82-124	%REC	1	04-Jun-2021 08:26
Surr: Dibromofluoromethane	90.2		77-123	%REC	1	04-Jun-2021 08:26
Surr: Toluene-d8	102		82-127	%REC	1	04-Jun-2021 08:26

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: MW-01
 Collection Date: 28-May-2021 19:20

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-49
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES - SW8260C		Method:SW8260				Analyst: PC
Benzene	< 5.0		5.0	ug/L	1	06-Jun-2021 13:46
Ethylbenzene	< 5.0		5.0	ug/L	1	06-Jun-2021 13:46
m,p-Xylene	< 10		10	ug/L	1	06-Jun-2021 13:46
o-Xylene	< 5.0		5.0	ug/L	1	06-Jun-2021 13:46
Toluene	< 5.0		5.0	ug/L	1	06-Jun-2021 13:46
Xylenes, Total	< 5.0		5.0	ug/L	1	06-Jun-2021 13:46
Surr: 1,2-Dichloroethane-d4	108		70-126	%REC	1	06-Jun-2021 13:46
Surr: 4-Bromofluorobenzene	98.7		82-124	%REC	1	06-Jun-2021 13:46
Surr: Dibromofluoromethane	99.2		77-123	%REC	1	06-Jun-2021 13:46
Surr: Toluene-d8	98.0		82-127	%REC	1	06-Jun-2021 13:46
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.0500		0.0500	mg/L	1	04-Jun-2021 15:22
Surr: 4-Bromofluorobenzene	120		70-123	%REC	1	04-Jun-2021 15:22
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3510C / 04-Jun-2021	Analyst: PPM
TPH (Diesel Range)	0.24		0.050	mg/L	1	09-Jun-2021 10:54
TPH (Motor Oil Range)	< 0.10	n	0.10	mg/L	1	09-Jun-2021 10:54
Surr: 2-Fluorobiphenyl	62.2		60-135	%REC	1	09-Jun-2021 10:54
ANIONS BY E300.0		Method:E300				Analyst: YP
Chloride	1,270		50.0	mg/L	100	08-Jun-2021 23:55

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: MW-05
 Collection Date: 28-May-2021 18:05

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-50
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES - SW8260C		Method:SW8260		Analyst: PC		
Benzene	< 5.0		5.0	ug/L	1	06-Jun-2021 16:14
Ethylbenzene	< 5.0		5.0	ug/L	1	06-Jun-2021 16:14
m,p-Xylene	< 10		10	ug/L	1	06-Jun-2021 16:14
o-Xylene	< 5.0		5.0	ug/L	1	06-Jun-2021 16:14
Toluene	< 5.0		5.0	ug/L	1	06-Jun-2021 16:14
Xylenes, Total	< 5.0		5.0	ug/L	1	06-Jun-2021 16:14
Surr: 1,2-Dichloroethane-d4	109		70-126	%REC	1	06-Jun-2021 16:14
Surr: 4-Bromofluorobenzene	101		82-124	%REC	1	06-Jun-2021 16:14
Surr: Dibromofluoromethane	100		77-123	%REC	1	06-Jun-2021 16:14
Surr: Toluene-d8	97.9		82-127	%REC	1	06-Jun-2021 16:14
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: QX		
Gasoline Range Organics	< 0.0500		0.0500	mg/L	1	04-Jun-2021 15:38
Surr: 4-Bromofluorobenzene	117		70-123	%REC	1	04-Jun-2021 15:38
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3510C / 04-Jun-2021		Analyst: PPM
TPH (Diesel Range)	0.22		0.050	mg/L	1	09-Jun-2021 11:18
TPH (Motor Oil Range)	< 0.10	n	0.10	mg/L	1	09-Jun-2021 11:18
Surr: 2-Fluorobiphenyl	60.5		60-135	%REC	1	09-Jun-2021 11:18
ANIONS BY E300.0		Method:E300		Analyst: YP		
Chloride	1,170		50.0	mg/L	100	09-Jun-2021 00:02
TOTAL DISSOLVED SOLIDS BY SM2540C		Method:M2540C		Analyst: SH		
Total Dissolved Solids (Residue, Filterable)	3,690		10.0	mg/L	1	03-Jun-2021 18:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: Duplicate-04
 Collection Date: 26-May-2021 00:00

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-51
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES - SW8260C		Method:SW8260		Analyst: PC		
Benzene	< 5.0		5.0	ug/L	1	06-Jun-2021 16:57
Ethylbenzene	< 5.0		5.0	ug/L	1	06-Jun-2021 16:57
m,p-Xylene	< 10		10	ug/L	1	06-Jun-2021 16:57
o-Xylene	< 5.0		5.0	ug/L	1	06-Jun-2021 16:57
Toluene	< 5.0		5.0	ug/L	1	06-Jun-2021 16:57
Xylenes, Total	< 5.0		5.0	ug/L	1	06-Jun-2021 16:57
Surr: 1,2-Dichloroethane-d4	109		70-126	%REC	1	06-Jun-2021 16:57
Surr: 4-Bromofluorobenzene	102		82-124	%REC	1	06-Jun-2021 16:57
Surr: Dibromofluoromethane	100		77-123	%REC	1	06-Jun-2021 16:57
Surr: Toluene-d8	99.8		82-127	%REC	1	06-Jun-2021 16:57
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: QX		
Gasoline Range Organics	< 0.0500		0.0500	mg/L	1	04-Jun-2021 15:54
Surr: 4-Bromofluorobenzene	116		70-123	%REC	1	04-Jun-2021 15:54
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3510C / 04-Jun-2021		Analyst: PPM
TPH (Diesel Range)	0.17	H	0.050	mg/L	1	08-Jun-2021 21:55
TPH (Motor Oil Range)	< 0.10	Hn	0.10	mg/L	1	08-Jun-2021 21:55
Surr: 2-Fluorobiphenyl	60.1		60-135	%REC	1	08-Jun-2021 21:55
ANIONS BY E300.0		Method:E300		Analyst: YP		
Chloride	1,250		50.0	mg/L	100	09-Jun-2021 00:09

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: TB-06-01-21-3
 Collection Date: 01-Jun-2021 13:00

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-52
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES - SW8260C		Method:SW8260				Analyst: PC
Benzene	< 5.0		5.0	ug/L	1	04-Jun-2021 08:47
Ethylbenzene	< 5.0		5.0	ug/L	1	04-Jun-2021 08:47
m,p-Xylene	< 10		10	ug/L	1	04-Jun-2021 08:47
o-Xylene	< 5.0		5.0	ug/L	1	04-Jun-2021 08:47
Toluene	< 5.0		5.0	ug/L	1	04-Jun-2021 08:47
Xylenes, Total	< 5.0		5.0	ug/L	1	04-Jun-2021 08:47
Surr: 1,2-Dichloroethane-d4	88.7		70-126	%REC	1	04-Jun-2021 08:47
Surr: 4-Bromofluorobenzene	95.8		82-124	%REC	1	04-Jun-2021 08:47
Surr: Dibromofluoromethane	90.1		77-123	%REC	1	04-Jun-2021 08:47
Surr: Toluene-d8	105		82-127	%REC	1	04-Jun-2021 08:47

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-27-2'
 Collection Date: 28-May-2021 13:00

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-53
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.051		0.051	mg/Kg	1	04-Jun-2021 07:52
Surr: 4-Bromofluorobenzene	105		70-123	%REC	1	04-Jun-2021 07:52
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 08-Jun-2021	Analyst: PPM
TPH (Diesel Range)	2.2		1.7	mg/Kg	1	09-Jun-2021 02:22
TPH (Motor Oil Range)	3.4	n	3.4	mg/Kg	1	09-Jun-2021 02:22
Surr: 2-Fluorobiphenyl	60.1		60-129	%REC	1	09-Jun-2021 02:22

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-27-3.5'
 Collection Date: 28-May-2021 13:06

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-54
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.054		0.054	mg/Kg	1	04-Jun-2021 08:08
Surr: 4-Bromofluorobenzene	115		70-123	%REC	1	04-Jun-2021 08:08
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 08-Jun-2021		Analyst: PPM
TPH (Diesel Range)	1.8		1.7	mg/Kg	1	09-Jun-2021 12:07
TPH (Motor Oil Range)	< 3.4	n	3.4	mg/Kg	1	09-Jun-2021 12:07
Surr: 2-Fluorobiphenyl	68.9		60-129	%REC	1	09-Jun-2021 12:07

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-28-2'
 Collection Date: 28-May-2021 19:04

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-55
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.050		0.050	mg/Kg	1	04-Jun-2021 09:12
Surr: 4-Bromofluorobenzene	108		70-123	%REC	1	04-Jun-2021 09:12
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 08-Jun-2021		Analyst: PPM
TPH (Diesel Range)	2.4		1.7	mg/Kg	1	09-Jun-2021 12:31
TPH (Motor Oil Range)	4.4	n	3.4	mg/Kg	1	09-Jun-2021 12:31
Surr: 2-Fluorobiphenyl	60.1		60-129	%REC	1	09-Jun-2021 12:31

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
 Project: WTX to EMSU Project
 Sample ID: SB-28-3.5'
 Collection Date: 28-May-2021 19:04

ANALYTICAL REPORT

WorkOrder:HS21060126
 Lab ID:HS21060126-56
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	< 0.050		0.050	mg/Kg	1	04-Jun-2021 09:29
Surr: 4-Bromofluorobenzene	109		70-123	%REC	1	04-Jun-2021 09:29
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 08-Jun-2021		Analyst: PPM
TPH (Diesel Range)	< 1.7		1.7	mg/Kg	1	09-Jun-2021 04:24
TPH (Motor Oil Range)	6.6	n	3.4	mg/Kg	1	09-Jun-2021 04:24
Surr: 2-Fluorobiphenyl	60.1		60-129	%REC	1	09-Jun-2021 04:24

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 10-Jun-21

Weight / Prep Log

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

Batch ID: 4308 **Start Date:** 03 Jun 2021 09:36 **End Date:** 03 Jun 2021 09:36
Method: GASOLINE RANGE ORGANICS BY SW8015C **Prep Code:**

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21060126-01	1	5.354 (g)	5 (mL)	0.93	Bulk (5030B)
HS21060126-02	1	4.964 (g)	5 (mL)	1.01	Bulk (5030B)
HS21060126-03	1	5.141 (g)	5 (mL)	0.97	Bulk (5030B)
HS21060126-04	1	0.547 (g)	5 (mL)	9.14	Bulk (5030B)
HS21060126-05	1	0.529 (g)	5 (mL)	9.45	Bulk (5030B)
HS21060126-06	1	1.104 (g)	5 (mL)	4.53	Bulk (5030B)
HS21060126-07	1	2.001 (g)	5 (mL)	2.5	Bulk (5030B)
HS21060126-08	1	2.202 (g)	5 (mL)	2.27	Bulk (5030B)
HS21060126-09	1	4.836 (g)	5 (mL)	1.03	Bulk (5030B)
HS21060126-10	1	4.559 (g)	5 (mL)	1.1	Bulk (5030B)
HS21060126-11	1	2.202 (g)	5 (mL)	2.27	Bulk (5030B)
HS21060126-12	1	0.971 (g)	5 (mL)	5.15	Bulk (5030B)
HS21060126-13	1	0.778 (g)	5 (mL)	6.43	Bulk (5030B)
HS21060126-14	1	0.964 (g)	5 (mL)	5.19	Bulk (5030B)
HS21060126-15	1	0.582 (g)	5 (mL)	8.59	Bulk (5030B)
HS21060126-16	1	4.902 (g)	5 (mL)	1.02	Bulk (5030B)
HS21060126-17	1	4.493 (g)	5 (mL)	1.11	Bulk (5030B)
HS21060126-18	1	4.788 (g)	5 (mL)	1.04	Bulk (5030B)
HS21060126-19	1	4.837 (g)	5 (mL)	1.03	Bulk (5030B)
HS21060126-20	1	4.329 (g)	5 (mL)	1.16	Bulk (5030B)
HS21060126-21	1	4.553 (g)	5 (mL)	1.1	Bulk (5030B)
HS21060126-22	1	5.097 (g)	5 (mL)	0.98	Bulk (5030B)
HS21060126-23	1	4.654 (g)	5 (mL)	1.07	Bulk (5030B)
HS21060126-24	1	4.625 (g)	5 (mL)	1.08	Bulk (5030B)
HS21060126-25	1	5.12 (g)	5 (mL)	0.98	Bulk (5030B)
HS21060126-26	1	4.462 (g)	5 (mL)	1.12	Bulk (5030B)
HS21060126-27	1	4.992 (g)	5 (mL)	1	Bulk (5030B)
HS21060126-28	1	4.62 (g)	5 (mL)	1.08	Bulk (5030B)
HS21060126-29	1	4.571 (g)	5 (mL)	1.09	Bulk (5030B)
HS21060126-30	1	4.564 (g)	5 (mL)	1.1	Bulk (5030B)
HS21060126-31	1	4.828 (g)	5 (mL)	1.04	Bulk (5030B)
HS21060126-32	1	5.439 (g)	5 (mL)	0.92	Bulk (5030B)
HS21060126-33	1	4.876 (g)	5 (mL)	1.03	Bulk (5030B)
HS21060126-34	1	5.144 (g)	5 (mL)	0.97	Bulk (5030B)
HS21060126-35	1	5.387 (g)	5 (mL)	0.93	Bulk (5030B)
HS21060126-36	1	4.31 (g)	5 (mL)	1.16	Bulk (5030B)
HS21060126-37	1	4.768 (g)	5 (mL)	1.05	Bulk (5030B)
HS21060126-38	1	4.796 (g)	5 (mL)	1.04	Bulk (5030B)
HS21060126-39	1	4.725 (g)	5 (mL)	1.06	Bulk (5030B)
HS21060126-40	1	4.807 (g)	5 (mL)	1.04	Bulk (5030B)
HS21060126-41	1	4.632 (g)	5 (mL)	1.08	Bulk (5030B)
HS21060126-42	1	5.302 (g)	5 (mL)	0.94	Bulk (5030B)
HS21060126-43	1	4.62 (g)	5 (mL)	1.08	Bulk (5030B)
HS21060126-44	1	0.522 (g)	5 (mL)	9.58	Bulk (5030B)
HS21060126-45	1	0.582 (g)	5 (mL)	8.59	Bulk (5030B)
HS21060126-46	1	4.931 (g)	5 (mL)	1.01	Bulk (5030B)
HS21060126-53	1	4.897 (g)	5 (mL)	1.02	Bulk (5030B)
HS21060126-54	1	4.661 (g)	5 (mL)	1.07	Bulk (5030B)
HS21060126-55	1	4.97 (g)	5 (mL)	1.01	Bulk (5030B)
HS21060126-56	1	5.004 (g)	5 (mL)	1	Bulk (5030B)

ALS Houston, US

Date: 10-Jun-21

Weight / Prep Log

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

Batch ID: 166511 **Start Date:** 03 Jun 2021 12:00 **End Date:** 03 Jun 2021 16:30
Method: SOPREP: 3541 TPH **Prep Code:** 8015SPR_LL

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21060126-01		30.26 (g)	1 (mL)	0.03305	4-oz glass, Neat
HS21060126-02		30.14 (g)	1 (mL)	0.03318	4-oz glass, Neat
HS21060126-03		30.09 (g)	1 (mL)	0.03323	4-oz glass, Neat
HS21060126-04		30.24 (g)	1 (mL)	0.03307	4-oz glass, Neat
HS21060126-05		30.2 (g)	1 (mL)	0.03311	4-oz glass, Neat
HS21060126-06		30.16 (g)	1 (mL)	0.03316	4-oz glass, Neat
HS21060126-07		30.03 (g)	1 (mL)	0.0333	4-oz glass, Neat
HS21060126-08		30.09 (g)	1 (mL)	0.03323	4-oz glass, Neat
HS21060126-09		30.02 (g)	1 (mL)	0.03331	4-oz glass, Neat
HS21060126-10		30.45 (g)	1 (mL)	0.03284	4-oz glass, Neat
HS21060126-11		30.24 (g)	1 (mL)	0.03307	4-oz glass, Neat
HS21060126-12		30.38 (g)	1 (mL)	0.03292	4-oz glass, Neat
HS21060126-13		30.01 (g)	1 (mL)	0.03332	4-oz glass, Neat
HS21060126-14		30.27 (g)	1 (mL)	0.03304	4-oz glass, Neat
HS21060126-15		30.26 (g)	1 (mL)	0.03305	4-oz glass, Neat
HS21060126-16		30.21 (g)	1 (mL)	0.0331	4-oz glass, Neat
HS21060126-17		30.3 (g)	1 (mL)	0.033	4-oz glass, Neat
HS21060126-18		30.29 (g)	1 (mL)	0.03301	4-oz glass, Neat
HS21060126-19		30.29 (g)	1 (mL)	0.03301	4-oz glass, Neat
HS21060126-20		30.32 (g)	1 (mL)	0.03298	4-oz glass, Neat

Batch ID: 166525 **Start Date:** 04 Jun 2021 07:22 **End Date:** 04 Jun 2021 11:00
Method: AQPREP: 3510C TPH **Prep Code:** 8015WPR_LL

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21060126-49	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS21060126-50	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS21060126-51	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat

Batch ID: 166543 **Start Date:** 04 Jun 2021 10:47 **End Date:** 04 Jun 2021 13:00
Method: 300 ANIONS SOIL PREP **Prep Code:** 300_S_PR

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21060126-31		5.0398 (g)	50 (mL)	9.921	4-oz glass, Neat
HS21060126-32		5.0134 (g)	50 (mL)	9.973	4-oz glass, Neat
HS21060126-33		5.0492 (g)	50 (mL)	9.903	4-oz glass, Neat
HS21060126-34		5.0836 (g)	50 (mL)	9.836	4-oz glass, Neat
HS21060126-35		5.0146 (g)	50 (mL)	9.971	4-oz glass, Neat
HS21060126-36		5.0421 (g)	50 (mL)	9.917	4-oz glass, Neat
HS21060126-46		5.0875 (g)	50 (mL)	9.828	4-oz glass, Neat

Batch ID: 166565 **Start Date:** 04 Jun 2021 11:30 **End Date:** 04 Jun 2021 16:30
Method: SOPREP: 3541 TPH **Prep Code:** 8015SPR_LL

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21060126-09		30.27 (g)	1 (mL)	0.03304	4-oz glass, Neat
HS21060126-16		30.03 (g)	1 (mL)	0.0333	4-oz glass, Neat

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Date: 10-Jun-21

Weight / Prep Log

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

Batch ID: 166566 **Start Date:** 04 Jun 2021 08:00 **End Date:** 04 Jun 2021 19:30
Method: SOPREP: 3541 TPH **Prep Code:** 8015SPR_LL

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21060126-21		30.23 (g)	1 (mL)	0.03308	4-oz glass, Neat
HS21060126-22		30.14 (g)	1 (mL)	0.03318	4-oz glass, Neat
HS21060126-23		30.45 (g)	1 (mL)	0.03284	4-oz glass, Neat
HS21060126-24		30.32 (g)	1 (mL)	0.03298	4-oz glass, Neat
HS21060126-25		30.39 (g)	1 (mL)	0.03291	4-oz glass, Neat
HS21060126-26		30.24 (g)	1 (mL)	0.03307	4-oz glass, Neat
HS21060126-27		30.21 (g)	1 (mL)	0.0331	4-oz glass, Neat
HS21060126-28		30.26 (g)	1 (mL)	0.03305	4-oz glass, Neat
HS21060126-29		30.03 (g)	1 (mL)	0.0333	4-oz glass, Neat
HS21060126-30		30.19 (g)	1 (mL)	0.03312	4-oz glass, Neat
HS21060126-31		30.11 (g)	1 (mL)	0.03321	4-oz glass, Neat
HS21060126-32		30.14 (g)	1 (mL)	0.03318	4-oz glass, Neat
HS21060126-33		30.27 (g)	1 (mL)	0.03304	4-oz glass, Neat
HS21060126-34		30.16 (g)	1 (mL)	0.03316	4-oz glass, Neat
HS21060126-35		30.03 (g)	1 (mL)	0.0333	4-oz glass, Neat
HS21060126-36		30.21 (g)	1 (mL)	0.0331	4-oz glass, Neat
HS21060126-37		30.36 (g)	1 (mL)	0.03294	4-oz glass, Neat
HS21060126-38		30.33 (g)	1 (mL)	0.03297	4-oz glass, Neat
HS21060126-39		30.09 (g)	1 (mL)	0.03323	4-oz glass, Neat
HS21060126-40		30.19 (g)	1 (mL)	0.03312	4-oz glass, Neat

Batch ID: 166634 **Start Date:** 08 Jun 2021 11:49 **End Date:** 08 Jun 2021 15:30
Method: SOPREP: 3541 TPH **Prep Code:** 8015SPR_LL

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21060126-41		30.24 (g)	1 (mL)	0.03307	4-oz glass, Neat
HS21060126-42		30.19 (g)	1 (mL)	0.03312	4-oz glass, Neat
HS21060126-43		30.03 (g)	1 (mL)	0.0333	4-oz glass, Neat
HS21060126-44		30.14 (g)	1 (mL)	0.03318	4-oz glass, Neat
HS21060126-45		30.07 (g)	1 (mL)	0.03326	4-oz glass, Neat
HS21060126-46		30.09 (g)	1 (mL)	0.03323	4-oz glass, Neat
HS21060126-53		30.2 (g)	1 (mL)	0.03311	4-oz glass, Neat
HS21060126-54		30.14 (g)	1 (mL)	0.03318	4-oz glass, Neat
HS21060126-55		30.3 (g)	1 (mL)	0.033	4-oz glass, Neat
HS21060126-56		30.16 (g)	1 (mL)	0.03316	4-oz glass, Neat

Batch ID: 166695 **Start Date:** 09 Jun 2021 09:30 **End Date:** 09 Jun 2021 13:00
Method: SOPREP: 3541 TPH **Prep Code:** 8015SPR_LL

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21060126-27		30.13 (g)	1 (mL)	0.03319	4-oz glass, Neat
HS21060126-28		30.45 (g)	1 (mL)	0.03284	4-oz glass, Neat
HS21060126-35		30.09 (g)	1 (mL)	0.03323	4-oz glass, Neat

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Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

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Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 166511 (0)		Test Name : TPH DRO/ORO BY SW8015C			Matrix: Soil	
HS21060126-01	SB-18-2'-3'	26 May 2021 17:10		03 Jun 2021 12:00	04 Jun 2021 12:26	1
HS21060126-02	SB-18-4'-5'	26 May 2021 17:12		03 Jun 2021 12:00	03 Jun 2021 21:43	100
HS21060126-03	SB-18-9'-10'	26 May 2021 17:22		03 Jun 2021 12:00	08 Jun 2021 12:00	50
HS21060126-04	SB-18-14'-15'	26 May 2021 17:33		03 Jun 2021 12:00	03 Jun 2021 22:32	100
HS21060126-05	SB-18-19'-20'	26 May 2021 17:47		03 Jun 2021 12:00	03 Jun 2021 22:56	100
HS21060126-06	SB-18-24'-25'	27 May 2021 08:38		03 Jun 2021 12:00	04 Jun 2021 00:10	100
HS21060126-07	SB-18-26'-27'	27 May 2021 08:53		03 Jun 2021 12:00	04 Jun 2021 00:35	100
HS21060126-08	SB-18-29'-30'	27 May 2021 08:54		03 Jun 2021 12:00	04 Jun 2021 00:59	100
HS21060126-09	SB-19-2'-3'	27 May 2021 10:40		03 Jun 2021 12:00	04 Jun 2021 12:51	1
HS21060126-10	SB-19-4'-5'	27 May 2021 10:42		03 Jun 2021 12:00	03 Jun 2021 20:30	100
HS21060126-11	SB-19-11'-12'	27 May 2021 11:00		03 Jun 2021 12:00	03 Jun 2021 20:54	100
HS21060126-12	SB-19-19'-20'	27 May 2021 11:13		03 Jun 2021 12:00	04 Jun 2021 12:26	5
HS21060126-13	SB-19-24'-25'	27 May 2021 11:35		03 Jun 2021 12:00	03 Jun 2021 21:43	100
HS21060126-14	SB-19-29'-30'	27 May 2021 11:47		03 Jun 2021 12:00	03 Jun 2021 22:56	100
HS21060126-15	SB-19-34'-35'	27 May 2021 12:07		03 Jun 2021 12:00	03 Jun 2021 20:05	100
HS21060126-17	SB-20-4'-5'	27 May 2021 14:04		03 Jun 2021 12:00	03 Jun 2021 23:45	1
HS21060126-18	SB-20-9'-10'	27 May 2021 14:10		03 Jun 2021 12:00	04 Jun 2021 00:10	1
HS21060126-19	SB-20-14'-15'	27 May 2021 14:27		03 Jun 2021 12:00	04 Jun 2021 00:35	1
HS21060126-20	SB-20-19'-20'	27 May 2021 14:40		03 Jun 2021 12:00	04 Jun 2021 00:59	1
Batch ID: 166525 (0)		Test Name : TPH DRO/ORO BY SW8015C			Matrix: Water	
HS21060126-49	MW-01	28 May 2021 19:20		04 Jun 2021 07:22	09 Jun 2021 10:54	1
HS21060126-50	MW-05	28 May 2021 18:05		04 Jun 2021 07:22	09 Jun 2021 11:18	1
HS21060126-51	Duplicate-04	26 May 2021 00:00		04 Jun 2021 07:22	08 Jun 2021 21:55	1
Batch ID: 166543 (0)		Test Name : ANIONS BY E300.0			Matrix: Soil	
HS21060126-31	SB-25/MW-05-2'-3'	26 May 2021 10:45		04 Jun 2021 10:47	07 Jun 2021 12:33	1
HS21060126-32	SB-25/MW-05-11'-12'	26 May 2021 11:07		04 Jun 2021 10:47	07 Jun 2021 12:41	1
HS21060126-33	SB-25/MW-05-16'-17'	26 May 2021 11:17		04 Jun 2021 10:47	07 Jun 2021 12:48	1
HS21060126-34	SB-25/MW-05-26'-27'	26 May 2021 11:44		04 Jun 2021 10:47	07 Jun 2021 12:55	1
HS21060126-35	SB-25/MW-05-34'-35'	26 May 2021 11:58		04 Jun 2021 10:47	07 Jun 2021 13:03	1
HS21060126-36	SB-25/MW-05-39'-40'	26 May 2021 13:15		04 Jun 2021 10:47	07 Jun 2021 13:10	1
HS21060126-46	Duplicate-03	26 May 2021 00:00		04 Jun 2021 10:47	07 Jun 2021 13:18	1
Batch ID: 166565 (0)		Test Name : TPH DRO/ORO BY SW8015C			Matrix: Soil	
HS21060126-16	SB-20-2'-3'	27 May 2021 14:02		04 Jun 2021 11:30	04 Jun 2021 20:33	1

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Client: TRC San Antonio
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Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 166566 (0)		Test Name : TPH DRO/ORO BY SW8015C			Matrix: Soil	
HS21060126-21	SB-20-24'-25'	27 May 2021 14:58		04 Jun 2021 08:00	07 Jun 2021 13:39	1
HS21060126-22	SB-20-29'-30'	27 May 2021 15:16		04 Jun 2021 08:00	07 Jun 2021 14:04	1
HS21060126-23	SB-20-34'-35'	27 May 2021 15:30		04 Jun 2021 08:00	07 Jun 2021 15:17	1
HS21060126-24	SB-21-2'-3'	27 May 2021 17:17		04 Jun 2021 08:00	07 Jun 2021 15:41	1
HS21060126-25	SB-21-4'-5'	27 May 2021 17:19		04 Jun 2021 08:00	07 Jun 2021 16:06	1
HS21060126-26	SB-21-11'-12'	27 May 2021 17:35		04 Jun 2021 08:00	07 Jun 2021 16:30	1
HS21060126-29	SB-21-29'-30'	28 May 2021 08:30		04 Jun 2021 08:00	08 Jun 2021 13:52	1
HS21060126-30	SB-21-34'-35'	28 May 2021 09:04		04 Jun 2021 08:00	07 Jun 2021 14:04	50
HS21060126-31	SB-25/MW-05-2'-3'	26 May 2021 10:45		04 Jun 2021 08:00	07 Jun 2021 14:28	1
HS21060126-32	SB-25/MW-05-11'-12'	26 May 2021 11:07		04 Jun 2021 08:00	07 Jun 2021 14:53	1
HS21060126-33	SB-25/MW-05-16'-17'	26 May 2021 11:17		04 Jun 2021 08:00	08 Jun 2021 17:04	2
HS21060126-33	SB-25/MW-05-16'-17'	26 May 2021 11:17		04 Jun 2021 08:00	08 Jun 2021 14:16	1
HS21060126-34	SB-25/MW-05-26'-27'	26 May 2021 11:44		04 Jun 2021 08:00	08 Jun 2021 14:40	1
HS21060126-36	SB-25/MW-05-39'-40'	26 May 2021 13:15		04 Jun 2021 08:00	08 Jun 2021 17:28	5
HS21060126-36	SB-25/MW-05-39'-40'	26 May 2021 13:15		04 Jun 2021 08:00	08 Jun 2021 16:06	1
HS21060126-37	SB-26-2'-3'	28 May 2021 10:12		04 Jun 2021 08:00	08 Jun 2021 18:41	1
HS21060126-38	SB-26-4'-5'	28 May 2021 10:13		04 Jun 2021 08:00	07 Jun 2021 18:07	1
HS21060126-39	SB-26-9'-10'	28 May 2021 10:22		04 Jun 2021 08:00	07 Jun 2021 17:43	1
HS21060126-40	SB-26-14'-15'	28 May 2021 10:35		04 Jun 2021 08:00	07 Jun 2021 18:07	1
Batch ID: 166634 (0)		Test Name : TPH DRO/ORO BY SW8015C			Matrix: Soil	
HS21060126-41	SB-26-21'-22'	28 May 2021 10:58		08 Jun 2021 11:49	08 Jun 2021 22:19	1
HS21060126-42	SB-26-29'-30'	28 May 2021 11:14		08 Jun 2021 11:49	08 Jun 2021 23:32	1
HS21060126-43	SB-26-34'-35'	28 May 2021 11:30		08 Jun 2021 11:49	09 Jun 2021 00:45	1
HS21060126-44	Duplicate-01	26 May 2021 00:00		08 Jun 2021 11:49	09 Jun 2021 01:09	100
HS21060126-45	Duplicate-02	26 May 2021 00:00		08 Jun 2021 11:49	09 Jun 2021 01:33	100
HS21060126-46	Duplicate-03	26 May 2021 00:00		08 Jun 2021 11:49	09 Jun 2021 11:43	1
HS21060126-53	SB-27-2'	28 May 2021 13:00		08 Jun 2021 11:49	09 Jun 2021 02:22	1
HS21060126-54	SB-27-3.5'	28 May 2021 13:06		08 Jun 2021 11:49	09 Jun 2021 12:07	1
HS21060126-55	SB-28-2'	28 May 2021 19:04		08 Jun 2021 11:49	09 Jun 2021 12:31	1
HS21060126-56	SB-28-3.5'	28 May 2021 19:04		08 Jun 2021 11:49	09 Jun 2021 04:24	1
Batch ID: 166695 (0)		Test Name : TPH DRO/ORO BY SW8015C			Matrix: Soil	
HS21060126-27	SB-21-19'-20'	27 May 2021 17:47		09 Jun 2021 09:30	09 Jun 2021 16:11	1
HS21060126-28	SB-21-24'-25'	27 May 2021 18:00		09 Jun 2021 09:30	09 Jun 2021 16:35	1
HS21060126-35	SB-25/MW-05-34'-35'	26 May 2021 11:58		09 Jun 2021 09:30	09 Jun 2021 17:02	1

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Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R384942 (0)		Test Name : GASOLINE RANGE ORGANICS BY SW8015C			Matrix: Soil	
HS21060126-01	SB-18-2'-3'	26 May 2021 17:10			03 Jun 2021 10:57	1
HS21060126-02	SB-18-4'-5'	26 May 2021 17:12			03 Jun 2021 11:13	1
HS21060126-03	SB-18-9'-10'	26 May 2021 17:22			03 Jun 2021 11:29	1
HS21060126-04	SB-18-14'-15'	26 May 2021 17:33			03 Jun 2021 12:02	1
HS21060126-05	SB-18-19'-20'	26 May 2021 17:47			03 Jun 2021 12:18	1
HS21060126-06	SB-18-24'-25'	27 May 2021 08:38			03 Jun 2021 15:20	1
HS21060126-07	SB-18-26'-27'	27 May 2021 08:53			03 Jun 2021 15:53	1
HS21060126-08	SB-18-29'-30'	27 May 2021 08:54			03 Jun 2021 16:09	1
HS21060126-09	SB-19-2'-3'	27 May 2021 10:40			03 Jun 2021 18:18	1
HS21060126-10	SB-19-4'-5'	27 May 2021 10:42			03 Jun 2021 16:41	1
HS21060126-12	SB-19-19'-20'	27 May 2021 11:13			03 Jun 2021 11:45	1
HS21060126-13	SB-19-24'-25'	27 May 2021 11:35			03 Jun 2021 15:37	1
HS21060126-14	SB-19-29'-30'	27 May 2021 11:47			03 Jun 2021 14:48	1
HS21060126-15	SB-19-34'-35'	27 May 2021 12:07			03 Jun 2021 15:04	1
HS21060126-16	SB-20-2'-3'	27 May 2021 14:02			03 Jun 2021 18:34	1
HS21060126-17	SB-20-4'-5'	27 May 2021 14:04			03 Jun 2021 18:51	1
HS21060126-18	SB-20-9'-10'	27 May 2021 14:10			03 Jun 2021 19:07	1
HS21060126-44	Duplicate-01	26 May 2021 00:00			03 Jun 2021 14:15	1
HS21060126-45	Duplicate-02	26 May 2021 00:00			03 Jun 2021 14:32	1

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Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R384943 (0)		Test Name : GASOLINE RANGE ORGANICS BY SW8015C			Matrix: Soil	
HS21060126-19	SB-20-14'-15'	27 May 2021 14:27			03 Jun 2021 20:11	1
HS21060126-20	SB-20-19'-20'	27 May 2021 14:40			03 Jun 2021 22:04	1
HS21060126-21	SB-20-24'-25'	27 May 2021 14:58			03 Jun 2021 22:20	1
HS21060126-22	SB-20-29'-30'	27 May 2021 15:16			03 Jun 2021 22:36	1
HS21060126-23	SB-20-34'-35'	27 May 2021 15:30			03 Jun 2021 22:53	1
HS21060126-24	SB-21-2'-3'	27 May 2021 17:17			03 Jun 2021 23:09	1
HS21060126-25	SB-21-4'-5'	27 May 2021 17:19			03 Jun 2021 23:25	1
HS21060126-26	SB-21-11'-12'	27 May 2021 17:35			03 Jun 2021 23:42	1
HS21060126-27	SB-21-19'-20'	27 May 2021 17:47			03 Jun 2021 23:58	1
HS21060126-28	SB-21-24'-25'	27 May 2021 18:00			03 Jun 2021 20:28	1
HS21060126-29	SB-21-29'-30'	28 May 2021 08:30			04 Jun 2021 00:14	1
HS21060126-30	SB-21-34'-35'	28 May 2021 09:04			04 Jun 2021 00:30	1
HS21060126-31	SB-25/MW-05-2'-3'	26 May 2021 10:45			04 Jun 2021 01:52	1
HS21060126-32	SB-25/MW-05-11'-12'	26 May 2021 11:07			04 Jun 2021 02:08	1
HS21060126-33	SB-25/MW-05-16'-17'	26 May 2021 11:17			04 Jun 2021 02:24	1
HS21060126-34	SB-25/MW-05-26'-27'	26 May 2021 11:44			04 Jun 2021 02:41	1
HS21060126-35	SB-25/MW-05-34'-35'	26 May 2021 11:58			04 Jun 2021 02:57	1
HS21060126-36	SB-25/MW-05-39'-40'	26 May 2021 13:15			04 Jun 2021 03:14	1
HS21060126-37	SB-26-2'-3'	28 May 2021 10:12			04 Jun 2021 03:30	1
HS21060126-38	SB-26-4'-5'	28 May 2021 10:13			04 Jun 2021 03:46	1
Batch ID: R384946 (0)		Test Name : GASOLINE RANGE ORGANICS BY SW8015C			Matrix: Soil	
HS21060126-11	SB-19-11'-12'	27 May 2021 11:00			04 Jun 2021 09:45	1
HS21060126-39	SB-26-9'-10'	28 May 2021 10:22			04 Jun 2021 06:30	1
HS21060126-40	SB-26-14'-15'	28 May 2021 10:35			04 Jun 2021 06:46	1
HS21060126-41	SB-26-21'-22'	28 May 2021 10:58			04 Jun 2021 05:41	1
HS21060126-42	SB-26-29'-30'	28 May 2021 11:14			04 Jun 2021 07:03	1
HS21060126-43	SB-26-34'-35'	28 May 2021 11:30			04 Jun 2021 07:19	1
HS21060126-46	Duplicate-03	26 May 2021 00:00			04 Jun 2021 07:35	1
HS21060126-53	SB-27-2'	28 May 2021 13:00			04 Jun 2021 07:52	1
HS21060126-54	SB-27-3.5'	28 May 2021 13:06			04 Jun 2021 08:08	1
HS21060126-55	SB-28-2'	28 May 2021 19:04			04 Jun 2021 09:12	1
HS21060126-56	SB-28-3.5'	28 May 2021 19:04			04 Jun 2021 09:29	1
Batch ID: R384960 (0)		Test Name : VOLATILES - SW8260C			Matrix: Water	
HS21060126-47	TB-06-01-21-1	01 Jun 2021 13:00			04 Jun 2021 08:05	1
HS21060126-48	TB-06-01-21-2	01 Jun 2021 13:00			04 Jun 2021 08:26	1
HS21060126-52	TB-06-01-21-3	01 Jun 2021 13:00			04 Jun 2021 08:47	1
Batch ID: R384986 (0)		Test Name : TOTAL DISSOLVED SOLIDS BY SM2540C			Matrix: Water	
HS21060126-50	MW-05	28 May 2021 18:05			03 Jun 2021 18:00	1

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Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
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Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R385028 (0)		Test Name : GASOLINE RANGE ORGANICS BY SW8015C			Matrix: Water	
HS21060126-49	MW-01	28 May 2021 19:20			04 Jun 2021 15:22	1
HS21060126-50	MW-05	28 May 2021 18:05			04 Jun 2021 15:38	1
HS21060126-51	Duplicate-04	26 May 2021 00:00			04 Jun 2021 15:54	1
Batch ID: R385035 (0)		Test Name : VOLATILES - SW8260C			Matrix: Water	
HS21060126-49	MW-01	28 May 2021 19:20			06 Jun 2021 13:46	1
HS21060126-50	MW-05	28 May 2021 18:05			06 Jun 2021 16:14	1
HS21060126-51	Duplicate-04	26 May 2021 00:00			06 Jun 2021 16:57	1
Batch ID: R385235 (0)		Test Name : ANIONS BY E300.0			Matrix: Water	
HS21060126-49	MW-01	28 May 2021 19:20			08 Jun 2021 23:55	100
HS21060126-50	MW-05	28 May 2021 18:05			09 Jun 2021 00:02	100
HS21060126-51	Duplicate-04	26 May 2021 00:00			09 Jun 2021 00:09	100

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

QC BATCH REPORT

Batch ID: 166511 (0)	Instrument: FID-8	Method: TPH DRO/ORO BY SW8015C
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MBLK	Sample ID: MBLK-166511	Units: mg/Kg	Analysis Date: 03-Jun-2021 19:17							
Client ID:	Run ID: FID-8_385069	SeqNo: 6124969	PrepDate: 03-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
TPH (Diesel Range)	< 1.7	1.7								
TPH (Motor Oil Range)	< 3.4	3.4								
Surr: 2-Fluorobiphenyl	2.357	0.10	3.33	0	70.8	70 - 130				

LCS	Sample ID: LCS-166511	Units: mg/Kg	Analysis Date: 03-Jun-2021 19:41							
Client ID:	Run ID: FID-8_385069	SeqNo: 6124970	PrepDate: 03-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
TPH (Diesel Range)	27.34	1.7	33.33	0	82.0	70 - 130				
TPH (Motor Oil Range)	31.14	3.4	33.33	0	93.4	70 - 130				
Surr: 2-Fluorobiphenyl	2.337	0.10	3.33	0	70.2	70 - 130				

MS	Sample ID: HS21060126-15MS	Units: mg/Kg	Analysis Date: 03-Jun-2021 20:30							
Client ID: SB-19-34'-35'	Run ID: FID-8_385069	SeqNo: 6124972	PrepDate: 03-Jun-2021 DF: 100							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
TPH (Diesel Range)	2526	170	33.16	3064	-1620	70 - 130				SO
TPH (Motor Oil Range)	2482	340	33.16	2754	-820	70 - 130				SO
Surr: 2-Fluorobiphenyl	< 10	10	3.313	0	0	60 - 129				JS

MSD	Sample ID: HS21060126-15MSD	Units: mg/Kg	Analysis Date: 03-Jun-2021 20:54							
Client ID: SB-19-34'-35'	Run ID: FID-8_385069	SeqNo: 6124973	PrepDate: 03-Jun-2021 DF: 100							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
TPH (Diesel Range)	3013	170	33.24	3064	-154	70 - 130	2526	17.6	30	SO
TPH (Motor Oil Range)	2885	340	33.24	2754	393	70 - 130	2482	15	30	SO
Surr: 2-Fluorobiphenyl	< 10	10	3.321	0	0	60 - 129	0	0	30	JS

The following samples were analyzed in this batch:

HS21060126-01	HS21060126-02	HS21060126-03	HS21060126-04
HS21060126-05	HS21060126-06	HS21060126-07	HS21060126-08
HS21060126-09	HS21060126-10	HS21060126-11	HS21060126-12
HS21060126-13	HS21060126-14	HS21060126-15	HS21060126-17
HS21060126-18	HS21060126-19	HS21060126-20	

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

QC BATCH REPORT

Batch ID: 166525 (0)	Instrument: FID-7	Method: TPH DRO/ORO BY SW8015C
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MBLK	Sample ID: MBLK-166525	Units: mg/L	Analysis Date: 09-Jun-2021 10:05						
Client ID:	Run ID: FID-7_385234	SeqNo: 6129322	PrepDate: 04-Jun-2021	DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
TPH (Diesel Range)	< 0.050	0.050							
TPH (Motor Oil Range)	< 0.10	0.10							
Surr: 2-Fluorobiphenyl	0.06874	0.0050	0.1	0	68.7	60 - 135			

LCS	Sample ID: LCS-166525	Units: mg/L	Analysis Date: 08-Jun-2021 19:29						
Client ID:	Run ID: FID-7_385234	SeqNo: 6129327	PrepDate: 04-Jun-2021	DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
TPH (Diesel Range)	0.911	0.050	1	0	91.1	70 - 130			
TPH (Motor Oil Range)	1.135	0.10	1	0	113	70 - 130			
Surr: 2-Fluorobiphenyl	0.07303	0.0050	0.1	0	73.0	60 - 135			

LCSD	Sample ID: LCSD-166525	Units: mg/L	Analysis Date: 09-Jun-2021 10:30						
Client ID:	Run ID: FID-7_385234	SeqNo: 6129323	PrepDate: 04-Jun-2021	DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
TPH (Diesel Range)	0.9704	0.050	1	0	97.0	70 - 122	0.911	6.31	20
TPH (Motor Oil Range)	1.163	0.10	1	0	116	70 - 130	1.135	2.45	20
Surr: 2-Fluorobiphenyl	0.07021	0.0050	0.1	0	70.2	60 - 135	0.07303	3.93	20

The following samples were analyzed in this batch: HS21060126-49 HS21060126-50 HS21060126-51

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

QC BATCH REPORT

Batch ID: 166565 (0)	Instrument: FID-8	Method: TPH DRO/ORO BY SW8015C
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MBLK	Sample ID: MBLK-166565	Units: mg/Kg	Analysis Date: 04-Jun-2021 18:56							
Client ID:	Run ID: FID-8_385031	SeqNo: 6124207	PrepDate: 04-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
TPH (Diesel Range)	< 1.7	1.7								
TPH (Motor Oil Range)	< 3.4	3.4								
Surr: 2-Fluorobiphenyl	2.999	0.10	3.33	0	90.1	70 - 130				

LCS	Sample ID: LCS-166565	Units: mg/Kg	Analysis Date: 04-Jun-2021 18:07							
Client ID:	Run ID: FID-8_385031	SeqNo: 6124205	PrepDate: 04-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
TPH (Diesel Range)	28.68	1.7	33.33	0	86.0	70 - 130				
TPH (Motor Oil Range)	36	3.4	33.33	0	108	70 - 130				
Surr: 2-Fluorobiphenyl	2.339	0.10	3.33	0	70.2	70 - 130				

LCSD	Sample ID: LCSD-166565	Units: mg/Kg	Analysis Date: 04-Jun-2021 18:31							
Client ID:	Run ID: FID-8_385031	SeqNo: 6124206	PrepDate: 04-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
TPH (Diesel Range)	31.63	1.7	33.33	0	94.9	70 - 130	28.68	9.81	30	
TPH (Motor Oil Range)	39.6	3.4	33.33	0	119	70 - 130	36	9.53	30	
Surr: 2-Fluorobiphenyl	2.836	0.10	3.33	0	85.2	70 - 130	2.339	19.2	30	

The following samples were analyzed in this batch: HS21060126-16

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

QC BATCH REPORT

Batch ID: 166566 (0) **Instrument:** FID-7 **Method:** TPH DRO/ORO BY SW8015C

MBLK		Sample ID: MBLK-166566		Units: mg/Kg		Analysis Date: 08-Jun-2021 11:09			
Client ID:		Run ID: FID-7_385182		SeqNo: 6127729		PrepDate: 04-Jun-2021		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
TPH (Diesel Range)	< 1.7	1.7							
TPH (Motor Oil Range)	< 3.4	3.4							
Surr: 2-Fluorobiphenyl	2.418	0.10	3.33	0	72.6	70 - 130			

LCS		Sample ID: LCS-166566		Units: mg/Kg		Analysis Date: 07-Jun-2021 13:15			
Client ID:		Run ID: FID-7_385182		SeqNo: 6127715		PrepDate: 04-Jun-2021		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
TPH (Diesel Range)	27.84	1.7	33.33	0	83.5	70 - 130			
TPH (Motor Oil Range)	29.96	3.4	33.33	0	89.9	70 - 130			
Surr: 2-Fluorobiphenyl	2.503	0.10	3.33	0	75.2	70 - 130			

MS		Sample ID: HS21060126-22MS		Units: mg/Kg		Analysis Date: 07-Jun-2021 14:28			
Client ID: SB-20-29'-30'		Run ID: FID-7_385182		SeqNo: 6127718		PrepDate: 04-Jun-2021		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
TPH (Diesel Range)	32.98	1.7	33.3	0.9389	96.2	70 - 130			
TPH (Motor Oil Range)	35.3	3.4	33.3	2.376	98.9	70 - 130			
Surr: 2-Fluorobiphenyl	2.292	0.10	3.327	0	68.9	60 - 129			

MSD		Sample ID: HS21060126-22MSD		Units: mg/Kg		Analysis Date: 07-Jun-2021 14:53			
Client ID: SB-20-29'-30'		Run ID: FID-7_385182		SeqNo: 6127719		PrepDate: 04-Jun-2021		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
TPH (Diesel Range)	27.48	1.7	33.15	0.9389	80.0	70 - 130	32.98	18.2	30
TPH (Motor Oil Range)	32.53	3.4	33.15	2.376	90.9	70 - 130	35.3	8.17	30
Surr: 2-Fluorobiphenyl	2.356	0.099	3.312	0	71.1	60 - 129	2.292	2.78	30

The following samples were analyzed in this batch:

HS21060126-21	HS21060126-22	HS21060126-23	HS21060126-24
HS21060126-25	HS21060126-26	HS21060126-29	HS21060126-30
HS21060126-31	HS21060126-32	HS21060126-33	HS21060126-34
HS21060126-36	HS21060126-37	HS21060126-38	HS21060126-39
HS21060126-40			

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

QC BATCH REPORT

Batch ID: 166634 (0)	Instrument: FID-7	Method: TPH DRO/ORO BY SW8015C
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MBLK	Sample ID: MBLK-166634	Units: mg/Kg	Analysis Date: 08-Jun-2021 20:18							
Client ID:	Run ID: FID-7_385240	SeqNo: 6129444	PrepDate: 08-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

TPH (Diesel Range)	< 1.7	1.7								
TPH (Motor Oil Range)	< 3.4	3.4								
Surr: 2-Fluorobiphenyl	2.69	0.10	3.33	0	80.8	70 - 130				

LCS	Sample ID: LCS-166634	Units: mg/Kg	Analysis Date: 08-Jun-2021 20:42							
Client ID:	Run ID: FID-7_385240	SeqNo: 6129445	PrepDate: 08-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

TPH (Diesel Range)	30.27	1.7	33.33	0	90.8	70 - 130				
TPH (Motor Oil Range)	30.96	3.4	33.33	0	92.9	70 - 130				
Surr: 2-Fluorobiphenyl	2.764	0.10	3.33	0	83.0	70 - 130				

MS	Sample ID: HS21060126-42MS	Units: mg/Kg	Analysis Date: 08-Jun-2021 23:56							
Client ID: SB-26-29'-30'	Run ID: FID-7_385240	SeqNo: 6129449	PrepDate: 08-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

TPH (Diesel Range)	27.68	1.7	33.16	1.181	79.9	70 - 130				
TPH (Motor Oil Range)	28.4	3.4	33.16	2.306	78.7	70 - 130				
Surr: 2-Fluorobiphenyl	2.396	0.10	3.313	0	72.3	60 - 129				

MSD	Sample ID: HS21060126-42MSD	Units: mg/Kg	Analysis Date: 09-Jun-2021 00:20							
Client ID: SB-26-29'-30'	Run ID: FID-7_385240	SeqNo: 6129450	PrepDate: 08-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

TPH (Diesel Range)	32.62	1.7	33.13	1.181	94.9	70 - 130	27.68	16.4	30	
TPH (Motor Oil Range)	37.37	3.4	33.13	2.306	106	70 - 130	28.4	27.3	30	
Surr: 2-Fluorobiphenyl	2.526	0.099	3.31	0	76.3	60 - 129	2.396	5.28	30	

The following samples were analyzed in this batch:	HS21060126-41	HS21060126-42	HS21060126-43	HS21060126-44
	HS21060126-45	HS21060126-46	HS21060126-53	HS21060126-54
	HS21060126-55	HS21060126-56		

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

QC BATCH REPORT

Batch ID: 166695 (0)	Instrument: FID-7	Method: TPH DRO/ORO BY SW8015C
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MBLK	Sample ID: MBLK-166695	Units: mg/Kg	Analysis Date: 09-Jun-2021 14:09							
Client ID:	Run ID: FID-7_385357	SeqNo: 6132094	PrepDate: 09-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
TPH (Diesel Range)	< 1.7	1.7								
TPH (Motor Oil Range)	< 3.4	3.4								
Surr: 2-Fluorobiphenyl	2.444	0.10	3.33	0	73.4	70 - 130				

LCS	Sample ID: LCS-166695	Units: mg/Kg	Analysis Date: 09-Jun-2021 14:33							
Client ID:	Run ID: FID-7_385357	SeqNo: 6132095	PrepDate: 09-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
TPH (Diesel Range)	30.09	1.7	33.33	0	90.3	70 - 130				
TPH (Motor Oil Range)	30.22	3.4	33.33	0	90.7	70 - 130				
Surr: 2-Fluorobiphenyl	2.613	0.10	3.33	0	78.5	70 - 130				

MS	Sample ID: HS21060237-37MS	Units: mg/Kg	Analysis Date: 09-Jun-2021 15:22							
Client ID:	Run ID: FID-7_385357	SeqNo: 6132092	PrepDate: 09-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
TPH (Diesel Range)	40.38	1.7	33.25	8.48	95.9	70 - 130				
TPH (Motor Oil Range)	42.18	3.4	33.25	14.71	82.6	70 - 130				
Surr: 2-Fluorobiphenyl	2.72	0.10	3.322	0	81.9	60 - 129				

MSD	Sample ID: HS21060237-37MSD	Units: mg/Kg	Analysis Date: 09-Jun-2021 15:47							
Client ID:	Run ID: FID-7_385357	SeqNo: 6132093	PrepDate: 09-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
TPH (Diesel Range)	41.91	1.7	33.09	8.48	101	70 - 130	40.38	3.71	30	
TPH (Motor Oil Range)	56.48	3.4	33.09	14.71	126	70 - 130	42.18	29	30	
Surr: 2-Fluorobiphenyl	2.242	0.099	3.306	0	67.8	60 - 129	2.72	19.2	30	

The following samples were analyzed in this batch: HS21060126-27 HS21060126-28 HS21060126-35

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

QC BATCH REPORT

Batch ID: R384942 (0)	Instrument: FID-14	Method: GASOLINE RANGE ORGANICS BY SW8015C
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MBLK	Sample ID: MBLK-210603	Units: mg/Kg	Analysis Date: 03-Jun-2021 10:41							
Client ID:	Run ID: FID-14_384942	SeqNo: 6122366	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	< 0.050	0.050								
Surr: 4-Bromofluorobenzene	0.1055	0.0050	0.1	0	106	75 - 121				

LCS	Sample ID: LCS-210603	Units: mg/Kg	Analysis Date: 03-Jun-2021 10:25							
Client ID:	Run ID: FID-14_384942	SeqNo: 6122365	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	0.9507	0.050	1	0	95.1	72 - 121				
Surr: 4-Bromofluorobenzene	0.09813	0.0050	0.1	0	98.1	75 - 121				

MS	Sample ID: HS21060126-01MS	Units: mg/Kg	Analysis Date: 03-Jun-2021 13:01							
Client ID: SB-18-2'-3'	Run ID: FID-14_384942	SeqNo: 6122373	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	1.12	0.053	1.06	0.06392	99.6	70 - 130				
Surr: 4-Bromofluorobenzene	0.105	0.0053	0.106	0	99.0	70 - 123				

MSD	Sample ID: HS21060126-01MSD	Units: mg/Kg	Analysis Date: 03-Jun-2021 13:17							
Client ID: SB-18-2'-3'	Run ID: FID-14_384942	SeqNo: 6122374	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	0.8548	0.047	0.94	0.06392	84.1	70 - 130	1.12	26.9	30	
Surr: 4-Bromofluorobenzene	0.07457	0.0047	0.094	0	79.3	70 - 123	0.105	33.8	30	R

The following samples were analyzed in this batch:

HS21060126-01	HS21060126-02	HS21060126-03	HS21060126-04
HS21060126-05	HS21060126-06	HS21060126-07	HS21060126-08
HS21060126-09	HS21060126-10	HS21060126-12	HS21060126-13
HS21060126-14	HS21060126-15	HS21060126-16	HS21060126-17
HS21060126-18	HS21060126-44	HS21060126-45	

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

QC BATCH REPORT

Batch ID: R384943 (0)	Instrument: FID-14	Method: GASOLINE RANGE ORGANICS BY SW8015C
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MBLK	Sample ID: MBLK-2106031	Units: mg/Kg	Analysis Date: 03-Jun-2021 19:55							
Client ID:	Run ID: FID-14_384943	SeqNo: 6122399	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	< 0.050	0.050								
Surr: 4-Bromofluorobenzene	0.1057	0.0050	0.1	0	106	75 - 121				

LCS	Sample ID: LCS-2106031	Units: mg/Kg	Analysis Date: 03-Jun-2021 19:39							
Client ID:	Run ID: FID-14_384943	SeqNo: 6122398	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	0.8869	0.050	1	0	88.7	72 - 121				
Surr: 4-Bromofluorobenzene	0.08978	0.0050	0.1	0	89.8	75 - 121				

MS	Sample ID: HS21060126-28MS	Units: mg/Kg	Analysis Date: 03-Jun-2021 20:44							
Client ID: SB-21-24'-25'	Run ID: FID-14_384943	SeqNo: 6122402	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	0.9671	0.055	1.1	0	87.9	70 - 130				
Surr: 4-Bromofluorobenzene	0.09466	0.0055	0.11	0	86.1	70 - 123				

MSD	Sample ID: HS21060126-28MSD	Units: mg/Kg	Analysis Date: 03-Jun-2021 21:00							
Client ID: SB-21-24'-25'	Run ID: FID-14_384943	SeqNo: 6122403	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	0.8849	0.052	1.05	0	84.3	70 - 130	0.9671	8.88	30	
Surr: 4-Bromofluorobenzene	0.08815	0.0052	0.105	0	84.0	70 - 123	0.09466	7.12	30	

The following samples were analyzed in this batch:

HS21060126-19	HS21060126-20	HS21060126-21	HS21060126-22
HS21060126-23	HS21060126-24	HS21060126-25	HS21060126-26
HS21060126-27	HS21060126-28	HS21060126-29	HS21060126-30
HS21060126-31	HS21060126-32	HS21060126-33	HS21060126-34
HS21060126-35	HS21060126-36	HS21060126-37	HS21060126-38

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

QC BATCH REPORT

Batch ID: R384946 (0)	Instrument: FID-14	Method: GASOLINE RANGE ORGANICS BY SW8015C
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MBLK	Sample ID: MBLK-210604	Units: mg/Kg	Analysis Date: 04-Jun-2021 04:35							
Client ID:	Run ID: FID-14_384946	SeqNo: 6122462	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	< 0.050	0.050								
Surr: 4-Bromofluorobenzene	0.09706	0.0050	0.1	0	97.1	75 - 121				

LCS	Sample ID: LCS-210604	Units: mg/Kg	Analysis Date: 04-Jun-2021 04:19							
Client ID:	Run ID: FID-14_384946	SeqNo: 6122461	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	0.8617	0.050	1	0	86.2	72 - 121				
Surr: 4-Bromofluorobenzene	0.07831	0.0050	0.1	0	78.3	75 - 121				

MS	Sample ID: HS21060126-41MS	Units: mg/Kg	Analysis Date: 04-Jun-2021 05:57							
Client ID: SB-26-21'-22'	Run ID: FID-14_384946	SeqNo: 6122466	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	0.8963	0.050	1.01	0	88.7	70 - 130				
Surr: 4-Bromofluorobenzene	0.07994	0.0050	0.101	0	79.1	70 - 123				

MSD	Sample ID: HS21060126-41MSD	Units: mg/Kg	Analysis Date: 04-Jun-2021 06:13							
Client ID: SB-26-21'-22'	Run ID: FID-14_384946	SeqNo: 6122467	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	0.9049	0.054	1.09	0	83.0	70 - 130	0.8963	0.957	30	
Surr: 4-Bromofluorobenzene	0.07663	0.0054	0.109	0	70.3	70 - 123	0.07994	4.23	30	

The following samples were analyzed in this batch:

HS21060126-11	HS21060126-39	HS21060126-40	HS21060126-41
HS21060126-42	HS21060126-43	HS21060126-46	HS21060126-53
HS21060126-54	HS21060126-55	HS21060126-56	

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

QC BATCH REPORT

Batch ID: R385028 (0)	Instrument: FID-14	Method: GASOLINE RANGE ORGANICS BY SW8015C
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MBLK	Sample ID: MBLK-210604	Units: mg/L	Analysis Date: 04-Jun-2021 12:27							
Client ID:	Run ID: FID-14_385028	SeqNo: 6124055	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Gasoline Range Organics	< 0.0500	0.0500								
Surr: 4-Bromofluorobenzene	0.1193	0.00500	0.1	0	119	70 - 121				

LCS	Sample ID: LCS-210604	Units: mg/L	Analysis Date: 04-Jun-2021 11:55							
Client ID:	Run ID: FID-14_385028	SeqNo: 6124053	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Gasoline Range Organics	1.073	0.0500	1	0	107	76 - 124				
Surr: 4-Bromofluorobenzene	0.1153	0.00500	0.1	0	115	52 - 138				

LCSD	Sample ID: LCSD-210604	Units: mg/L	Analysis Date: 04-Jun-2021 12:11							
Client ID:	Run ID: FID-14_385028	SeqNo: 6124054	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Gasoline Range Organics	0.9626	0.0500	1	0	96.3	76 - 124	1.073	10.8	20	
Surr: 4-Bromofluorobenzene	0.1142	0.00500	0.1	0	114	52 - 138	0.1153	0.933	20	

The following samples were analyzed in this batch: HS21060126-49 HS21060126-50 HS21060126-51

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

QC BATCH REPORT

Batch ID: R384960 (0)	Instrument: VOA6	Method: VOLATILES - SW8260C
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MBLK		Sample ID: VBLKW-210603		Units: ug/L		Analysis Date: 04-Jun-2021 00:43			
Client ID:		Run ID: VOA6_384960		SeqNo: 6122696		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	< 5.0	5.0							
Ethylbenzene	< 5.0	5.0							
m,p-Xylene	< 10	10							
o-Xylene	< 5.0	5.0							
Toluene	< 5.0	5.0							
Xylenes, Total	< 5.0	5.0							
<i>Surr: 1,2-Dichloroethane-d4</i>	44.75	0	50	0	89.5	70 - 130			
<i>Surr: 4-Bromofluorobenzene</i>	47	0	50	0	94.0	82 - 115			
<i>Surr: Dibromofluoromethane</i>	45.34	0	50	0	90.7	73 - 126			
<i>Surr: Toluene-d8</i>	51.61	0	50	0	103	81 - 120			

LCS		Sample ID: VLCSW-210603		Units: ug/L		Analysis Date: 04-Jun-2021 00:00			
Client ID:		Run ID: VOA6_384960		SeqNo: 6122695		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	20.15	5.0	20	0	101	74 - 120			
Ethylbenzene	20.42	5.0	20	0	102	77 - 117			
m,p-Xylene	39.24	10	40	0	98.1	77 - 122			
o-Xylene	20.05	5.0	20	0	100	75 - 119			
Toluene	19.5	5.0	20	0	97.5	77 - 118			
Xylenes, Total	59.29	5.0	60	0	98.8	75 - 122			
<i>Surr: 1,2-Dichloroethane-d4</i>	50.76	0	50	0	102	70 - 130			
<i>Surr: 4-Bromofluorobenzene</i>	50.17	0	50	0	100	82 - 115			
<i>Surr: Dibromofluoromethane</i>	51.71	0	50	0	103	73 - 126			
<i>Surr: Toluene-d8</i>	49.36	0	50	0	98.7	81 - 120			

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

QC BATCH REPORT

Batch ID: R384960 (0)	Instrument: VOA6	Method: VOLATILES - SW8260C
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MS		Sample ID: HS21051465-16MS			Units: ug/L		Analysis Date: 04-Jun-2021 04:34			
Client ID:		Run ID: VOA6_384960			SeqNo: 6122698		PrepDate:		DF: 250	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	36460	1200	5000	31000	109	70 - 127				O
Ethylbenzene	5304	1200	5000	0	106	70 - 124				
m,p-Xylene	10050	2500	10000	0	101	70 - 130				
o-Xylene	4885	1200	5000	0	97.7	70 - 124				
Toluene	4787	1200	5000	0	95.7	70 - 123				
Xylenes, Total	14940	1200	15000	0	99.6	70 - 130				
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>11030</i>	<i>0</i>	<i>12500</i>	<i>0</i>	<i>88.2</i>	<i>70 - 126</i>				
<i>Surr: 4-Bromofluorobenzene</i>	<i>12210</i>	<i>0</i>	<i>12500</i>	<i>0</i>	<i>97.7</i>	<i>82 - 124</i>				
<i>Surr: Dibromofluoromethane</i>	<i>11520</i>	<i>0</i>	<i>12500</i>	<i>0</i>	<i>92.2</i>	<i>77 - 123</i>				
<i>Surr: Toluene-d8</i>	<i>12450</i>	<i>0</i>	<i>12500</i>	<i>0</i>	<i>99.6</i>	<i>82 - 127</i>				

MSD		Sample ID: HS21051465-16MSD			Units: ug/L		Analysis Date: 04-Jun-2021 04:55			
Client ID:		Run ID: VOA6_384960			SeqNo: 6122699		PrepDate:		DF: 250	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	34810	1200	5000	31000	76.2	70 - 127	36460	4.63	20	O
Ethylbenzene	5004	1200	5000	0	100	70 - 124	5304	5.82	20	
m,p-Xylene	9509	2500	10000	0	95.1	70 - 130	10050	5.54	20	
o-Xylene	4679	1200	5000	0	93.6	70 - 124	4885	4.31	20	
Toluene	4566	1200	5000	0	91.3	70 - 123	4787	4.71	20	
Xylenes, Total	14190	1200	15000	0	94.6	70 - 130	14940	5.14	20	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>10850</i>	<i>0</i>	<i>12500</i>	<i>0</i>	<i>86.8</i>	<i>70 - 126</i>	<i>11030</i>	<i>1.64</i>	<i>20</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>12290</i>	<i>0</i>	<i>12500</i>	<i>0</i>	<i>98.4</i>	<i>82 - 124</i>	<i>12210</i>	<i>0.652</i>	<i>20</i>	
<i>Surr: Dibromofluoromethane</i>	<i>11380</i>	<i>0</i>	<i>12500</i>	<i>0</i>	<i>91.0</i>	<i>77 - 123</i>	<i>11520</i>	<i>1.25</i>	<i>20</i>	
<i>Surr: Toluene-d8</i>	<i>12520</i>	<i>0</i>	<i>12500</i>	<i>0</i>	<i>100</i>	<i>82 - 127</i>	<i>12450</i>	<i>0.554</i>	<i>20</i>	

The following samples were analyzed in this batch: HS21060126-47 HS21060126-48 HS21060126-52

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

QC BATCH REPORT

Batch ID: R385035 (0)	Instrument: VOA9	Method: VOLATILES - SW8260C
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MBLK		Sample ID: VBLKW-210606		Units: ug/L		Analysis Date: 06-Jun-2021 13:25			
Client ID:		Run ID: VOA9_385035		SeqNo: 6124282		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	< 5.0	5.0							
Ethylbenzene	< 5.0	5.0							
m,p-Xylene	< 10	10							
o-Xylene	< 5.0	5.0							
Toluene	< 5.0	5.0							
Xylenes, Total	< 5.0	5.0							
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>55.03</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>110</i>	<i>70 - 130</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>49.65</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>99.3</i>	<i>82 - 115</i>			
<i>Surr: Dibromofluoromethane</i>	<i>50.08</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>100</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>49.09</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>98.2</i>	<i>81 - 120</i>			

LCS		Sample ID: VLCSW-210606		Units: ug/L		Analysis Date: 06-Jun-2021 12:42			
Client ID:		Run ID: VOA9_385035		SeqNo: 6124281		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	20.32	5.0	20	0	102	74 - 120			
Ethylbenzene	19.6	5.0	20	0	98.0	77 - 117			
m,p-Xylene	42.25	10	40	0	106	77 - 122			
o-Xylene	20.86	5.0	20	0	104	75 - 119			
Toluene	19.68	5.0	20	0	98.4	77 - 118			
Xylenes, Total	63.11	5.0	60	0	105	75 - 122			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>53.29</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>107</i>	<i>70 - 130</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>50.58</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>101</i>	<i>82 - 115</i>			
<i>Surr: Dibromofluoromethane</i>	<i>50.61</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>101</i>	<i>73 - 126</i>			
<i>Surr: Toluene-d8</i>	<i>48.86</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>97.7</i>	<i>81 - 120</i>			

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

QC BATCH REPORT

Batch ID: R385035 (0) **Instrument:** VOA9 **Method:** VOLATILES - SW8260C

MS		Sample ID: HS21060126-49MS			Units: ug/L		Analysis Date: 06-Jun-2021 14:50			
Client ID: MW-01		Run ID: VOA9_385035			SeqNo: 6124284		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.18	5.0	20	0	106	70 - 127				
Ethylbenzene	23.31	5.0	20	0.8873	112	70 - 124				
m,p-Xylene	47.37	10	40	0	118	70 - 130				
o-Xylene	22.62	5.0	20	0	113	70 - 124				
Toluene	21.57	5.0	20	0	108	70 - 123				
Xylenes, Total	70	5.0	60	0	117	70 - 130				
Surr: 1,2-Dichloroethane-d4	53.76	0	50	0	108	70 - 126				
Surr: 4-Bromofluorobenzene	50.52	0	50	0	101	82 - 124				
Surr: Dibromofluoromethane	50.27	0	50	0	101	77 - 123				
Surr: Toluene-d8	49.89	0	50	0	99.8	82 - 127				

MSD		Sample ID: HS21060126-49MSD			Units: ug/L		Analysis Date: 06-Jun-2021 15:11			
Client ID: MW-01		Run ID: VOA9_385035			SeqNo: 6124285		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.68	5.0	20	0	103	70 - 127	21.18	2.39	20	
Ethylbenzene	22.7	5.0	20	0.8873	109	70 - 124	23.31	2.68	20	
m,p-Xylene	46.73	10	40	0	117	70 - 130	47.37	1.36	20	
o-Xylene	22.26	5.0	20	0	111	70 - 124	22.62	1.63	20	
Toluene	20.93	5.0	20	0	105	70 - 123	21.57	3.03	20	
Xylenes, Total	68.99	5.0	60	0	115	70 - 130	70	1.45	20	
Surr: 1,2-Dichloroethane-d4	53.46	0	50	0	107	70 - 126	53.76	0.564	20	
Surr: 4-Bromofluorobenzene	50.84	0	50	0	102	82 - 124	50.52	0.637	20	
Surr: Dibromofluoromethane	50.61	0	50	0	101	77 - 123	50.27	0.667	20	
Surr: Toluene-d8	49.58	0	50	0	99.2	82 - 127	49.89	0.616	20	

The following samples were analyzed in this batch: HS21060126-49 HS21060126-50 HS21060126-51

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

QC BATCH REPORT

Batch ID: 166543 (0)	Instrument: ICS-Integrion	Method: ANIONS BY E300.0
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MBLK	Sample ID: MBLK-166543	Units: mg/Kg	Analysis Date: 05-Jun-2021 06:14							
Client ID:	Run ID: ICS-Integrion_385042	SeqNo: 6124438	PrepDate: 04-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride < 5.00 5.00

LCS	Sample ID: LCS-166543	Units: mg/Kg	Analysis Date: 05-Jun-2021 06:22							
Client ID:	Run ID: ICS-Integrion_385042	SeqNo: 6124439	PrepDate: 04-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride 197.4 5.00 200 0 98.7 90 - 110

MS	Sample ID: HS21051490-03MS	Units: mg/Kg	Analysis Date: 05-Jun-2021 04:31							
Client ID:	Run ID: ICS-Integrion_385042	SeqNo: 6124434	PrepDate: 04-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride 96.81 4.95 99.05 0.5237 97.2 75 - 125

MSD	Sample ID: HS21051490-03MSD	Units: mg/Kg	Analysis Date: 05-Jun-2021 04:38							
Client ID:	Run ID: ICS-Integrion_385042	SeqNo: 6124435	PrepDate: 04-Jun-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride 99.9 4.99 99.83 0.5237 99.5 75 - 125 96.81 3.14 20

The following samples were analyzed in this batch:	HS21060126-31	HS21060126-32	HS21060126-33	HS21060126-34
	HS21060126-35	HS21060126-36	HS21060126-46	

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

QC BATCH REPORT

Batch ID: R384986 (0)	Instrument: Balance1	Method: TOTAL DISSOLVED SOLIDS BY SM2540C
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MBLK	Sample ID: WBLK-060321	Units: mg/L	Analysis Date: 03-Jun-2021 18:00							
Client ID:	Run ID: Balance1_384986	SeqNo: 6123306	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids (Residue, Filterable) < 10.0 10.0

LCS	Sample ID: WLCS-060321	Units: mg/L	Analysis Date: 03-Jun-2021 18:00							
Client ID:	Run ID: Balance1_384986	SeqNo: 6123307	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids (Residue, Filterable) 942 10.0 1000 0 94.2 85 - 115

DUP	Sample ID: HS21051436-01DUP	Units: mg/L	Analysis Date: 03-Jun-2021 18:00							
Client ID:	Run ID: Balance1_384986	SeqNo: 6123290	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids (Residue, Filterable) 1436 10.0 1434 0.139 5

DUP	Sample ID: HS21051394-01DUP	Units: mg/L	Analysis Date: 03-Jun-2021 18:00							
Client ID:	Run ID: Balance1_384986	SeqNo: 6123285	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids (Residue, Filterable) 922 10.0 920 0.217 5

The following samples were analyzed in this batch: HS21060126-50

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

QC BATCH REPORT

Batch ID: R385235 (0)	Instrument: ICS-Integrion	Method: ANIONS BY E300.0
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MBLK	Sample ID: MBLK	Units: mg/L	Analysis Date: 08-Jun-2021 19:06							
Client ID:	Run ID: ICS-Integrion_385235	SeqNo: 6129332	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride < 0.500 0.500

LCS	Sample ID: LCS	Units: mg/L	Analysis Date: 08-Jun-2021 19:13							
Client ID:	Run ID: ICS-Integrion_385235	SeqNo: 6129333	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride 19.81 0.500 20 0 99.1 90 - 110

MS	Sample ID: HS21060084-06MS	Units: mg/L	Analysis Date: 08-Jun-2021 23:18							
Client ID:	Run ID: ICS-Integrion_385235	SeqNo: 6129353	PrepDate: DF: 20							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride 613.3 10.0 200 438.2 87.5 80 - 120

MS	Sample ID: HS21051521-07MS	Units: mg/L	Analysis Date: 08-Jun-2021 21:49							
Client ID:	Run ID: ICS-Integrion_385235	SeqNo: 6129341	PrepDate: DF: 100							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride 2694 50.0 1000 1728 96.6 80 - 120

MSD	Sample ID: HS21060084-06MSD	Units: mg/L	Analysis Date: 08-Jun-2021 23:25							
Client ID:	Run ID: ICS-Integrion_385235	SeqNo: 6129354	PrepDate: DF: 20							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride 622.3 10.0 200 438.2 92.0 80 - 120 613.3 1.46 20

MSD	Sample ID: HS21051521-07MSD	Units: mg/L	Analysis Date: 08-Jun-2021 21:56							
Client ID:	Run ID: ICS-Integrion_385235	SeqNo: 6129342	PrepDate: DF: 100							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride 2737 50.0 1000 1728 101 80 - 120 2694 1.59 20

The following samples were analyzed in this batch: HS21060126-49 HS21060126-50 HS21060126-51

ALS Houston, US

Date: 10-Jun-21

Client: TRC San Antonio
Project: WTX to EMSU Project
WorkOrder: HS21060126

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

ALS Houston, US

Date: 10-Jun-21

CERTIFICATIONS, ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	21-022-0	26-Mar-2022
Dept of Defense	PJLA L20-507-R2	22-Dec-2021
Florida	E87611-30-07/01/2020	30-Jun-2021
Illinois	2000322021-7	09-May-2022
Kansas	E-10352 2020-2021	31-Jul-2021
Kentucky	123043, 2021-2022	30-Apr-2022
Louisiana	03087, 2020-2021	30-Jun-2021
Louisiana	03087, 2021-2022	30-Jun-2022
North Carolina	624-2021	31-Dec-2021
Oklahoma	2020-165	31-Aug-2021
Texas	T104704231-21-27	30-Apr-2022
Utah	TX026932021-10	31-Jul-2021

ALS Houston, US

Date: 10-Jun-21

Sample Receipt Checklist

Work Order ID: HS21060126

Date/Time Received: 02-Jun-2021 09:20

Client Name: TRC - San Antonio

Received by: Jared R. Makan

Completed By: /S/ Jared R. Makan 02-Jun-2021 20:34 Reviewed by: /S/ Corey Grandits 03-Jun-2021 12:50
 eSignature Date/Time eSignature Date/Time

Matrices: **Water**

Carrier name: **FedEx Priority Overnight**

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Present
- VOA/TX1005/TX1006 Solids in hermetically sealed vials? Yes No Not Present
- Chain of custody present? Yes No 6 Page(s)
- Chain of custody signed when relinquished and received? Yes No COC IDs:247310, 247309, 247313, 247314, 247311, 123456

- Samplers name present on COC? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Container/Temp Blank temperature in compliance? Yes No

Temperature(s)/Thermometer(s): 1.4°C, 1.1°C, 1.3°C UC/C IR31
 Cooler(s)/Kit(s): 46498, 47163, 45447
 Date/Time sample(s) sent to storage: 06/02/2021 20:40

- Water - VOA vials have zero headspace? Yes No No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No N/A
- pH adjusted? Yes No N/A

pH adjusted by:

Login Notes: Sample depth differs for sample #3 on COC 247314:
 COC = SB-25/MW-05-16'-17'
 COC = SB-25/MW-05-26'-27'
 Sample identified by matching collection time - 05/26/21 11:17.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:



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Chain of Custody Form

Page 1 of 5

COC ID: 247310

HS21060126

TRC San Antonio
WTX to EMSU Project



ALS Project Manager:

Customer Information		Project Information		ALS Project Manager:												
Purchase Order	165009	Project Name	WTX to EMSU Project	A	VOC 8260 BTEX											
Work Order		Project Number	426140.0300.0030	B	8015 LRO/ORO											
Company Name	TRC San Antonio	Bill To Company	TRC San Antonio	C	GRO 8015											
Send Report To	Cody Gaston	Invoice Attn	Cody Gaston	D	300 CI											
Address	5811 University Heights	Address	5811 University Heights	E	TDS											
	Suite 106		Suite 106	F	MIDIST											
City/State/Zip	San Antonio, TX 78249	City/State/Zip	San Antonio TX 78249	G	RCI											
Phone	(817)-75-2-36	Phone	(817)-75-2-36	H	TCLP VOC											
Fax	(817)-52-2-10	Fax	(817)-52-2-10	I	TCLP Metals											
e-Mail Address	cgaston@trccompanies.com	e-Mail Address	cgaston@trccompanies.com	J	TCLP SVOC											

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SB-18-2'-3'	5-26-21	1710	S	-	1		X	X								
2	SB-18-4'-5'	5-26-21	1712	S	-	1		X	X								
3	SB-18-9'-10'	5-26-21	1722	S	-	1		X	X								
4	SB-18-14'-15'	5-26-21	1733	S	-	1		X	X								
5	SB-18-19'-20'	5-26-21	1747	S	-	1		X	X								
6	SB-18-24'-25'	5-26-21	8:38	S	-	1		X	X								
7	SB-18-26'-27'	5-27-21	8:53	S	-	1		X	X								
8	SB-18-29'-30'	5-27-21	8:54	S	-	1		X	X								
9	SB-19-2'-3'	5-27-21	10:40	S	-	2		X	X								
10	SB-19-4'-5'	5-27-21	10:42	S	-	2		X	X								

Sampler(s) Please Print & Sign <i>Cody Gaston</i>		Shipment Method Fedex		Required Turnaround Time: (Check Box) <input type="checkbox"/> STD. W. Days <input checked="" type="checkbox"/> 5 Wk. Expt. <input type="checkbox"/> Other			Results Due Date:	
Relinquished by: <i>Cody Gaston</i>	Date: 6-1-21	Time: 1300	Received by: <i>Fedex</i>	Notes: WTX to EMSU Project				
Relinquished by:	Date: 6/2/21	Time: 09:20	Received by (Laboratory): <i>J. Morrison</i>	Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)		
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	46498	UC	<input checked="" type="checkbox"/> Level 1: Std. CC	<input type="checkbox"/> TRAP Checklist	
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035				47163	1.9°C	<input type="checkbox"/> Level 2: Std. CC/Faw. Data	<input type="checkbox"/> TRAP Log Only	
				45447	1.3°C	<input type="checkbox"/> Level 3: Std. CC/Faw. Data	<input type="checkbox"/> Other	

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Chain of Custody Form

Page 2 of 6

HS21060126

TRC San Antonio
WTX to EMSU Project

COC ID: 247309



ALS Project Manager:

Customer Information		Project Information		ALS Project Manager:											
Purchase Order	156809	Project Name	WTX to EMSU Project	A	VOC 8263 BTEX										
Work Order		Project Number	426140.0000.0000	B	8015 DRO/ORO										
Company Name	TRC San Antonio	Bill To Company	TRC San Antonio	C	GRC 8015										
Send Report To	Cody Gaston	Invoice Attn	Cody Gaston	D	300 CI										
Address	5811 University Heights Suite 106	Address	5811 University Heights Suite 106	E	TDS										
City/State/Zip	San Antonio, TX 78249	City/State/Zip	San Antonio TX 78249	F	MOIST										
Phone	(817)-75-2-36	Phone	(817)-75-2-36	G	RCI										
Fax	(817)-52-2-10	Fax	(817)-52-2-10	H	TCLP VOC										
e-Mail Address	cgaston@trccompanies.com	e-Mail Address	cgaston@trccompanies.com	I	TCLP Metals										
				J	TCLP SVOC										

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SB-19-11'-12'	5-27-21	11:00	S	-	2		X	X								
2	SB-19-19'-20'	5-27-21	11:13	S	-	2		X	X								
3	SB-19-24'-25'	5-27-21	11:35	S	-	2		X	X								
4	SB-19-24'-30'	5-27-21	11:47	S	-	2		X	X								
5	SB-19-34'-35'	5-27-21	12:07	S	-	2		X	X								
6	SB-20-2'-3'	5-27-21	14:02	S	-	2		X	X								
7	SB-20-4'-5'	5-27-21	14:04	S	-	2		X	X								
8	SB-20-9'-10'	5-27-21	14:10	S	-	2		X	X								
9	SB-20-14'-15'	5-27-21	14:27	S	-	2		X	X								
10	SB-20-19'-20'	5-27-21	14:40	S	-	2		X	X								

Sampler(s) Please Print & Sign
 Cody Gaston
 Relinquished by: *Cody Gaston* Date: 6/2/21 Time: 1300
 Shipment Method: FedEx
 Required Turnaround Time: (Check Box)
 STD 10 Wk Days 5 Wk Days 2 Wk Days 24 Hour
 Results Due Date: _____
 Received by: *FedEx*
 Received by (Laboratory): _____
 Checked by (Laboratory): _____
 Notes: WTX to EMSU Project
 Cooler ID: _____ Cooler Temp.: _____
 QC Package: (Check One Box Below)
 10-15% EMSU TRRP Checklist
 10-15% EMSU Data TRRP Level IV
 Level IV EMSU BCLP
 Other

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C 9-5035

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Chain of Custody Form

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COC ID: 247313

HS21060126

TRC San Antonio
WTX to EMSU Project



ALS Project Manager:

Customer Information		Project Information		ALS Project Manager:																			
Purchase Order	169E09	Project Name	WTX to EMSU Project	A	VOC: 8262.DTEX																		
Work Order		Project Number		B	8015.DBO/DEC																		
Company Name	TRC San Antonio	Bill To Company	TRC San Antonio	C	GRO: 8015																		
Send Report To	Cody Gaston	Invoice Attn	Cody Gaston	D	300.01																		
Address	5811 University Heights Suite 106	Address	5811 University Heights Suite 106	E	TDS																		
City/State/Zip	San Antonio, TX 78249	City/State/Zip	San Antonio TX 78249	F	MDIST																		
Phone	(817)-75-2-36	Phone	(817)-75-2-36	G	RCI																		
Fax	(817)-52-2-10	Fax	(817)-52-2-10	H	TCLP VOC																		
e-Mail Address	cgaston@trccompanies.com	e-Mail Address	cgaston@trccompanies.com	I	TCLP Metals																		
				J	TCLP SVOC																		

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SB-20-24'-25'	5-27-21	14:58	S	-	2		X	X								
2	SB-20-29'-30'	5-27-21	15:16	S	-	2		X	X								
3	SB-20-34'-35'	5-27-21	15:30	S	-	2		X	X								
4	SB-21-2'-3'	5-27-21	17:17	S	-	2		X	X								
5	SB-21-4'-5'	5-27-21	17:19	S	-	2		X	X								
6	SB-21-11'-12'	5-27-21	17:35	S	-	2		X	X								
7	SB-21-19'-20'	5-27-21	17:47	S	-	2		X	X								
8	SB-21-24'-25'	5-27-21	18:00	S	-	2		X	X								
9	SB-21-29'-30'	5-28-21	8:30	S	-	2		X	X								
10	SB-21-34'-35'	5-28-21	9:04	S	-	2		X	X								

Sampler(s) Please Print & Sign <i>Cody Gaston</i>		Shipment Method <i>FEDEX</i>		Required Turnaround Time: (Check Box) <input type="checkbox"/> Other <input type="checkbox"/> 5-7 Business Days <input checked="" type="checkbox"/> 1-3 Business Days <input type="checkbox"/> 1-2 Business Days <input type="checkbox"/> 24 Hour				Results Due Date:							
Relinquished by: <i>Cody Gaston</i>		Date: <i>5/27/21</i>	Time: <i>1300</i>	Received by: <i>Dedix</i>		Notes: WTX to EMSU Project									
Relinquished by: <i>Cody Gaston</i>		Date: <i>6/2/21</i>	Time: <i>09:20</i>	Received by (Laboratory): <i>SI</i>		Cooler ID		Cooler Temp.		QC Package: (Check One Box Below)					
Logged by (Laboratory):		Date:	Time:	Checked by (Laboratory):		<input checked="" type="checkbox"/> Level 1: Str. COC		<input type="checkbox"/> TRAP Checklist		<input type="checkbox"/> TRAP Test Kit					
Preservative Key:		1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035										<input type="checkbox"/> Level 2: Str. COC		<input type="checkbox"/> TRAP Test Kit	
												<input type="checkbox"/> Level 3: Str. COC		<input type="checkbox"/> TRAP Test Kit	
												<input type="checkbox"/> Level 4: Str. COC		<input type="checkbox"/> TRAP Test Kit	
												<input type="checkbox"/> Other			

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Chain of Custody Form

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COC ID: 247314

HS21060126

TRC San Antonio
WTX to EMSU Project



ALS Project Manager:

Customer Information		Project Information		ALS Project Manager:											
Purchase Order	165209	Project Name	WTX to EMSU Project	A	VOC 8260 BTEX										
Work Order		Project Number		B	8015 DRO/ORO										
Company Name	TRC San Antonio	Bill To Company	TRC San Antonio	C	GRO 8015										
Send Report To	Cody Gaston	Invoice Attn	Cody Gaston	D	300 CI										
Address	5811 University Heights Suite 106	Address	5811 University Heights Suite 106	E	TDS										
City/State/Zip	San Antonio, TX 78249	City/State/Zip	San Antonio TX 78249	F	MOIST										
Phone	(817)-75-2-36	Phone	(817)-75-2-36	G	RCI										
Fax	(817)-52-2-10	Fax	(817)-52-2-10	H	TCLP VOC										
e-Mail Address	cgaston@trccompanies.com	e-Mail Address	cgaston@trccompanies.com	I	TCLP Metals										
				J	TCLP SVOC										

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SB-25/mw-05-2'-3'	5-26-21	10:45	S	-	2		X	X	X							
2	SB-25/mw-05-11'-12'	5-26-21	11:07	S	-	2		X	X	X							
3	SB-25/mw-05-16'-17'	5-26-21	11:17	S	-	2		X	X	X							
4	SB-25/mw-05-26'-27'	5-26-21	11:44	S	-	2		X	X	X							
5	SB-25/mw-05-34'-35'	5-26-21	11:59	S	-	2		X	X	X							
6	SB-25/mw-05-39'-40'	5-26-21	12:15	S	-	2		X	X	X							
7	SB-26-2'-3'	5-23-21	10:12	S	-	2		X	X								
8	SB-26-4'-5'	5-23-21	10:13	S	-	2		X	X								
9	SB-26-9'-10'	5-23-21	10:22	S	-	2		X	X								
10	SB-26-14'-15'	5-23-21	10:35	S	-	2		X	X								

Sampler(s) Please Print & Sign <i>Cody Gaston</i> <i>Cody Gaston</i>		Shipment Method <i>FedEx</i>		Required Turnaround Time: (Check Box) <input type="checkbox"/> STD 10 Wk Days <input checked="" type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour				Results Due Date:	
Relinquished by: <i>Cody Gaston</i> Date: <i>6/2/21</i> Time: <i>1300</i>		Received by: <i>FedEx</i>		Notes: <i>WTX to EMSU Project</i>					
Relinquished by: <i>Cody Gaston</i> Date: <i>6/2/21</i> Time: <i>09:20</i>		Received by (Laboratory): <i>J. [unclear]</i>		Cooler ID		Cooler Temp.		QC Package: (Check One Box Below)	
Logged by (Laboratory):		Checked by (Laboratory):		<input checked="" type="checkbox"/> Level 1 - SMOG		<input type="checkbox"/> TRAP Checklist		<input type="checkbox"/> TRAP Level 1	
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035				<input type="checkbox"/> Level 1 - BTEX COC/PAH Data		<input type="checkbox"/> TRAP Checklist		<input type="checkbox"/> TRAP Level 1	
				<input type="checkbox"/> Level 1 - SWD - BCLP		<input type="checkbox"/> TRAP Checklist		<input type="checkbox"/> TRAP Level 1	
				<input type="checkbox"/> Other					

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Chain of Custody Form

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COC ID: 247311

HS21060126

TRC San Antonio
WTX to EMSU Project



ALS Project Manager:

Customer Information		Project Information		ALS Project Manager:	
Purchase Order	106809	Project Name	WTX to EMSU Project	A	VOC 8260 BTEX
Work Order		Project Number		B	3015 DRO/DRO
Company Name	TRC San Antonio	Bill To Company	TRC San Antonio	C	GRO 8016
Send Report To	Cody Gaston	Invoice Attn	Cody Gaston	D	300 CI
Address	5811 University Heights	Address	5811 University Heights	E	TDS
	Suite 106		Suite 106	F	MOIST
City/State/Zip	San Antonio, TX 78249	City/State/Zip	San Antonio TX 78249	G	RCI
Phone	(817)-75-2-36	Phone	(817)-75-2-36	H	TCLP VOC
Fax	(817)-52-2-10	Fax	(817)-52-2-10	I	TCLP Metals
e-Mail Address	cgaston@trccompanies.com	e-Mail Address	cgaston@trccompanies.com	J	TCLP SVOC

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold	
1	SB-26-21'-22'	5-23-21	10:58	S	-	2		X	X									
2	SB-26-24'-30'	5-23-21	11:14	S	-	2		X	X									
3	SB-26-34'-35'	5-23-21	11:30	S	-	2		X	X									
4	Duplicate - 01	-	-	S	-	2		X	X									
5	Duplicate - 02	-	-	S	-	2		X	X									
6	Duplicate - 03	-	-	S	-	2		X	X	X								
7	TB-06-01-21-1	6-01-21	13:00	w	HU	2	X											
8	TB-06-01-21-2	6-01-21	13:00	w	HU	2	X											
9																		
10																		

Sampler(s) Please Print & Sign <i>Cody Gaston</i> <i>Cody Gaston</i>		Shipment Method <i>Fedex</i>	Required Turnaround Time: (Check Box) <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> 96 Hr <input checked="" type="checkbox"/> 120 Wk Days <input checked="" type="checkbox"/> 5 Wk Excl <input type="checkbox"/> 1 Wk Excl <input type="checkbox"/> 24 Hr				Results Due Date:
Relinquished by <i>Cody Gaston</i>	Date <i>6-01-21</i>	Time <i>1300</i>	Received by <i>Fedex</i>	Notes: <i>WTX to EMSU Project</i>			
Relinquished by:	Date:	Time:	Received by (Laboratory):	Cooler ID	Cooler Temp.	QC Package: (Check One Box Below)	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):			<input checked="" type="checkbox"/> Level I Str OC	<input type="checkbox"/> TRRP Checklist
						<input type="checkbox"/> Level II Str CORaw Data	<input type="checkbox"/> TRRP Level IV
						<input type="checkbox"/> Level I / Str-5KLP	
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₃ 7-Other 8-4°C 9-5035							

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Chain of Custody Form

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COC ID: 123456

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HS21060126

TRC San Antonio
WTX to EMSU Project



Customer Information			ALS Project Manager:				work order #:											
Project Information			Parameter/Method Request for Analysis															
Purchase Order	166809		Project Name	WTX to EMSU Project			A	VOC 8260 BTEX										
Work Order			Project Number				B	8015 DR0/ORD										
Company Name	TRC San Antonio		Bill To Company	TRC San Antonio			C	GR0 8015										
Send Report To	Corey Gaston		Invoice Attn.				D	300 CL										
Address			Address				E	TDS										
City/State/Zip			City/State/Zip				F											
Phone			Phone				G											
Fax			Fax				H											
e-Mail Address	Cgaston@trccompanies.com		e-Mail Address				I											
J																		
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold	
1	MW-01	5-23-21	19:20	W	HCL	9	X	X	X	X								
2	MW-05		18:05	W	HCL	12	X	X	X	X	X							
3	Duplicate -04			W	HCL	9	X	X	X	X								
4	TB-06-01-21-3	6-01-21	13:00	W	HCL	2	X											
5	SB-27-2'	5-23-21	13:00	S	-	1		X	X									
6	SB-27-3.5'		13:06	S	-	1		X	X									
7	SB-28-2'		19:04	S	-	1		X	X									
8	SB-28-3.5'		19:04	S	-	1		X	X									
9																		
10																		

Sampler(s): Please Print & Sign <i>Corey Gaston</i> <i>Corey Gaston</i>		Shipment Method: Fedex		Required Turnaround Time: <input type="checkbox"/> STD 10 Wk Days <input checked="" type="checkbox"/> 5 Wk Days <input type="checkbox"/> Other <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour			Results Due Date:	
Relinquished by: <i>Corey Gaston</i>	Date: 6-21-21	Time: 1300	Received by: <i>Fedex</i>	Notes:				Cooler Temp.:
Relinquished by: <i>[Signature]</i>	Date: 6/21/21	Time: 09:20	Received by (Laboratory): <i>J. Mancini</i>	QC Package: (Check Box Below)				
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	<input type="checkbox"/> Level II: Standard QC <input type="checkbox"/> Level III: Std QC + Raw Data <input type="checkbox"/> Level IV: SW846 CLP-Like Other:				
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-6035								

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

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46498 JUN 02 2021



46498

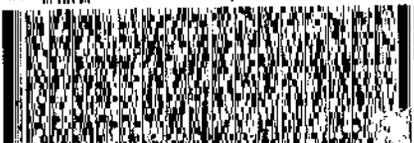
ORIGIN ID: SGRA (817) 752-3683
CODYBASTON
TRC SAN ANTONIO
14231 RED MAPLE WOOD SUITE 106
SAN ANTONIO, TX 78248
UNITED STATES US

SHIP DATE: 13MAY21
ACTWT: 1.00 LB HAN
CNO: 028124/CAFE3409
DIMS: 26x14x14 IN

TO SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD
SUITE 210
HOUSTON TX 77099

(281) 630-6666
REF: WTX TO EMSU - BO 78402 - RG

RMA: ||| ||| |||



FedEx
Express



FedEx
TRK# 9473 0843 8132
10221

WED - 02 JUN 10:30A
PRIORITY OVERNIGHT

43 SGRA

77099
TX-US IAH



*2630293 05/01 60713/0587/FE48

47163 JUN 02 2021
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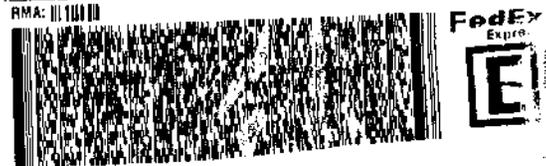


47163

ORIGIN ID:SGRA (817) 752-3683 CODYGASTON TRC SAN ANTONIO 14231 RED MAPLE WOOD SUITE 106 SAN ANTONIO, TX 78249 UNITED STATES US	SHIP DATE: 19MAY21 ACTWG: 1.00 LB PFM DAD: 02E1497CAFES408 DIMS: 26x14x14 IN
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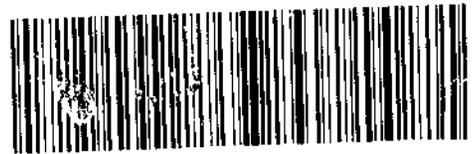
TO SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD
SUITE 210
HOUSTON TX 77099

(281) 550-5856
REF: WTX TO EMSU - BO 78402 - RG



FedEx
TRM 9473 0843 8100
WED - 02 JUN 10:30A
PRIORITY OVERNIGHT

43 SGRA 77099
TX-US IAH



42630293 06/01 56019/83877/264R



Analytical Data Review Checklist

Site: WTX to EMSU Battery (Klein Ranch) Pipeline Release Site Location: Lea County, New Mexico Client Name: HEP Project #: 426140	Laboratory: ALS (Houston, Tx) Lab Report #: HS21100478	QA Reviewer: A. Eljuri Peer Reviewer: Lori Burris Date: October 19, 2021
Analytical Method(s): TPH-GRO and TPH-DRO/ORO by SW8015C, Percent Moisture by SW3550	Matrices Sampled: Soil	Sample Collection Date(s): October 5 through 7, 2021
Sampling Objective(s): Analyze soil to characterize and possibly delineate impacts from a potential crude oil release.		
Sample IDs: Refer to data package sample summary.		

Review Item or Question		Y	N	NA	Comments
Sample Traceability / Chain of Custody					
1	Were COC forms appropriately completed?	X			
2	Did the laboratory report correct sample IDs?		X		Laboratory sample HS21100478-01 is written in the COC as SB-29 (1-2') and in the data package as SB-29 (1-2).
3	Do the laboratory reported sample collection dates and times agree with the COC forms?	X			
Sample Preservation and Integrity					
4	Did samples arrive at the laboratory appropriately preserved?			X	New Mexico regulations do not require TPH-GRO analysis for soil to be preserved in the field.
	Was the cooler temperature between 0-6°C?	X			
	Was acid used for preservation when required (e.g., aqueous VOC and metals samples)?			X	
	Were soil/sediment VOC samples preserved in the field or collected in EnCore® samplers?			X	
5	Were samples received by the laboratory in an acceptable condition (i.e., no breakages, leaks, etc.)?	X			
6	Were any issues noted by the laboratory upon receipt?	X			The sample label on the TPH-GRO container for SB-30 (16-17') had the incorrect time. The correct time is reported in the data package.
7	Were sample preparation and analysis holding time requirements met?	X			
8	<u>AIR ONLY:</u> Were canisters received with an acceptable vacuum? Were the RPDs between the initial and final canister flow controller calibrations <20?			X	
Data Completeness					
9	Are results reported for all analytical methods requested?	X			The laboratory reported TPH-ORO for method 8015C, which is not offered for accreditation.
10	Are results reported for all samples submitted for analysis?	X			
11	Were the requested analytical methods used?	X			
12	Are results reported for all target analytes, but no additional analytes?	X			



Analytical Data Review Checklist

Review Item or Question		Y	N	NA	Comments
13	Were soil/sediment results reported on a dry weight basis?	X			
14	If requested, were detected results below the reporting limit (i.e., "J" values) reported?			X	
15	Did we receive the required deliverables (e.g., EDD, Level 4 data, laboratory certification, etc.) in the correct formats?	X			
Sensitivity					
16	Do the reporting limits meet the project specifications (e.g., QAPP or Work Plan)?	X			All non-detect results had reporting limits below project criteria.
17	Were dilutions performed? If so, note sample(s) and parameter(s) affected and the dilution factor(s).	X			In samples SB-29 (34-35') and DUP-02 (SB-29 [34-35']) were diluted 100-fold.
18	Did the laboratory provide an adequate explanation as to why dilutions were performed?		X		No explanation was provided. All the diluted results were detected above the reporting limit (RL).
QC Results					
19	Were any target analytes detected in the method blanks? If yes, list contaminants, concentrations detected and associated samples.		X		
20	Does each analytical or preparation batch have its own method blank?	X			
21	Were any target analytes detected in the field blank(s) (e.g., trip blanks, equipment blanks)? If yes, list contaminants, concentrations detected and associated samples (or attach field blank results).			X	
22	Are there any potential false positive results based on questions 19 and/or 21?		X		
23	Are LCS/LCSD recoveries within QC limits? If no, list analytes affected, the LCS/LCSD recoveries and the affected samples.	X			
24	Does each analytical or preparation batch have its own LCS?	X			
25	Are LCS/LCSD RPDs within QC limits? If no, list analytes affected, the RPDs and the affected samples.			X	
26	Are MS/MSD recoveries within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the MS/MSD recoveries and the sample that was spiked.		X		MS/MSD performed on sample SB-29 (34-35') for TPH-DRO/ORO and on sample SB-29 (5-6') for TPH-GRO. The MS/MSD %Rs of TPH-DRO (730%/3450%) and TPH-ORO (817%/4730%) performed on sample SB-29 (34-35') in batch 171192 were outside the laboratory-defined recovery limits (70-130%). However, the concentration of TPH-DRO and TPH-ORO in the parent sample was >4x the spike value, which may not represent the matrix effect; therefore, the MS/MSD %Rs for TPH-DRO and TPH-ORO are not used to evaluate sample results and do not impact data usability.
27	Are MS/MSD RPDs within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the RPDs and the sample that was spiked.		X		The RPD in the MS/MSD performed on sample SB-29 (34-35') in batch 171192 was above QC limits (30%) for TPH-DRO (45.4%) and TPH-ORO (43.2%). However, the concentration of TPH-DRO and TPH-ORO in the parent sample was >4x the spike value, which may not represent the matrix effect; therefore, the MS/MSD RPDs for TPH-DRO and TPH-ORO are not used to evaluate sample results and do not impact data usability.



Analytical Data Review Checklist

Review Item or Question		Y	N	NA	Comments
28	Are laboratory duplicate RPDs within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the RPDs and the sample that was prepared/analyzed in duplicate.	X			The laboratory duplicate performed on sample DUP-02 (SB-29 [34-35']) for percent moisture was within laboratory-defined limits.
29	Are field duplicate RPDs within QC limits? If no, list analytes affected, the RPDs and the associated samples. Field duplicate criteria for soils: RPDs <50% when both results >5x the reporting limit (RL). If one of both results < the RL, absolute difference must be < 2x RL.		X		RPDs were calculated for duplicate pair SB-29 (34-35') and DUP-02. The RPD for TPH-GRO (100%), TPH-DRO (51%), and TPH-ORO (55%) in the duplicate pair recovered greater than project specifications for soils (50%). Therefore, TPH-GRO, TPH-DRO, and TPH-ORO in samples SB-29 (34-35') and DUP-02 may be estimated.
30	<u>ORGANIC ANALYSES ONLY:</u> Are surrogate recoveries within QC limits? If no, list samples, surrogate recoveries and analytes affected.		X		Surrogate 2-fluorophenol recovered at 0% in the diluted 100-fold TPH DRO/ORO analyses for samples SB-29 (34-35') and DUP-02. The samples were diluted ≥10-fold for the TPH DRO/ORO analysis; therefore, no qualification is necessary. Surrogate 4-bromofluorobenzene recovered above laboratory-defined limits (70-123%) in the undiluted TPH GRO analysis for sample DUP-02. Therefore, the detected TPH GRO result in sample DUP-02 may be biased high.
Laboratory Comments					
31	Did the case narrative describe any analytical anomalies (i.e., problems or unique occurrences)?		X		
32	Were any other potential data quality issues identified? If yes, describe issues.		X		
Do the Data Make Sense?					
33	Do any results look questionable?		X		
34	Has the EDD been compared with the lab report?	X			

Reference: United States Environmental Protection Agency (USEPA) - *National Functional Guidelines for Organic Superfund Methods Data Review* (USEPA, November 2020); United States Environmental Protection Agency (USEPA) - *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA, November 2020)

COC = Chain-of-Custody
DRO = Diesel Range Organics
EDD = Electronic Data Deliverable
GRO = Gasoline Range Organics
LCS/LCSD = Laboratory Control Sample / Laboratory Control Sample Duplicate
ORO = Motor Oil Range Organics
MS/MSD = Matrix Spike / Matrix Spike Duplicate
NELAP = National Environmental Laboratory Accreditation Program
QAPP = Quality Assurance Project Plan
QC = Quality Control
%R = Percent Recovery
RPD = Relative Percent Difference = $|((A-B)/((A+B)/2))|$
TPH = Total Petroleum Hydrocarbon

Additional Comments: None.



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October 13, 2021

Cody Gaston
TRC San Antonio
5811 University Heights
Suite 106
San Antonio, TX 78249

Work Order: **HS21100478**

Laboratory Results for: **HEP Klein Ranch**

Dear Cody Gaston,

ALS Environmental received 17 sample(s) on Oct 08, 2021 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ragen Giga'.

Generated By: JUMOKE.LAWAL

Ragen Giga
Project Manager

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
Work Order: HS21100478

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS21100478-01	SB-29 (1-2)	Soil		05-Oct-2021 13:24	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100478-02	SB-29 (5-6')	Soil		05-Oct-2021 13:27	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100478-03	SB-29 (11-12')	Soil		05-Oct-2021 14:23	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100478-04	SB-29 (14-15')	Soil		05-Oct-2021 14:25	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100478-05	SB-29 (17-18')	Soil		05-Oct-2021 15:09	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100478-06	SB-29 (25-26')	Soil		05-Oct-2021 17:49	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100478-07	SB-29 (29-30')	Soil		05-Oct-2021 17:54	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100478-08	SB-29 (34-35')	Soil		07-Oct-2021 09:14	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100478-09	SB-30 (1-2')	Soil		06-Oct-2021 10:30	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100478-10	SB-30 (5-6')	Soil		06-Oct-2021 10:35	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100478-11	SB-30 (11-12')	Soil		06-Oct-2021 10:53	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100478-12	SB-30 (14-15')	Soil		06-Oct-2021 10:56	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100478-13	SB-30 (19-20')	Soil		06-Oct-2021 11:29	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100478-14	SB-30 (25-26')	Soil		06-Oct-2021 12:42	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100478-15	SB-30 (29-30')	Soil		06-Oct-2021 13:36	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100478-16	SB-30 (34-35')	Soil		06-Oct-2021 14:27	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100478-17	DUP-02	Soil		05-Oct-2021 00:00	08-Oct-2021 10:00	<input type="checkbox"/>

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
Work Order: HS21100478

CASE NARRATIVE**Work Order Comments**

- Sample ID differ, 8015 GRO 2oz Container COC= SB-30(14-15') Labels = SB-30(16-17) Matched by sample collection Times 10:56

GC Semivolatiles by Method SW8015M**Batch ID: 171192****Sample ID: DUP-02 (HS21100478-17)**

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: SB-29 (34-35') (HS21100478-08)

- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: SB-29 (34-35') (HS21100478-08MS)

- The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS may be due to sample matrix interference.
- The surrogate recoveries could not be determined due to dilution below the calibration range.

Sample ID: SB-29 (34-35') (HS21100478-08MSD)

- The recovery of the Matrix Spike Duplicate (MSD) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MSD may be due to sample matrix interference.
- The RPD between the MS and MSD was outside of the control limit.
- The surrogate recoveries could not be determined due to dilution below the calibration range.

GC Volatiles by Method SW8015**Batch ID: R393205****Sample ID: DUP-02 (HS21100478-17)**

- Surrogate recoveries were outside of the control limits due to matrix interference.

WetChemistry by Method SW3550**Batch ID: R393169**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-29 (1-2)
 Collection Date: 05-Oct-2021 13:24

ANALYTICAL REPORT

WorkOrder:HS21100478
 Lab ID:HS21100478-01
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: JLJ		
Gasoline Range Organics	ND		0.048	mg/Kg	1	11-Oct-2021 14:28
Surr: 4-Bromofluorobenzene	112		70-123	%REC	1	11-Oct-2021 14:28
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 12-Oct-2021		Analyst: PPM
TPH (Diesel Range)	20		1.7	mg/Kg	1	12-Oct-2021 17:16
TPH (Motor Oil Range)	56	n	3.4	mg/Kg	1	12-Oct-2021 17:16
Surr: 2-Fluorobiphenyl	70.7		60-129	%REC	1	12-Oct-2021 17:16
MOISTURE		Method:SW3550		Analyst: JAC		
Percent Moisture	10.8		0.0100	wt%	1	11-Oct-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-29 (5-6')
 Collection Date: 05-Oct-2021 13:27

ANALYTICAL REPORT

WorkOrder:HS21100478
 Lab ID:HS21100478-02
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: JLJ
Gasoline Range Organics	ND		0.050	mg/Kg	1	11-Oct-2021 14:44
Surr: 4-Bromofluorobenzene	105		70-123	%REC	1	11-Oct-2021 14:44
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 12-Oct-2021	Analyst: PPM
TPH (Diesel Range)	9.1		1.7	mg/Kg	1	13-Oct-2021 13:28
TPH (Motor Oil Range)	10	n	3.4	mg/Kg	1	13-Oct-2021 13:28
Surr: 2-Fluorobiphenyl	74.5		60-129	%REC	1	13-Oct-2021 13:28
MOISTURE		Method:SW3550				Analyst: JAC
Percent Moisture	17.4		0.0100	wt%	1	11-Oct-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-29 (11-12')
 Collection Date: 05-Oct-2021 14:23

ANALYTICAL REPORT

WorkOrder:HS21100478
 Lab ID:HS21100478-03
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: JLJ		
Gasoline Range Organics	ND		0.054	mg/Kg	1	11-Oct-2021 15:01
Surr: 4-Bromofluorobenzene	116		70-123	%REC	1	11-Oct-2021 15:01
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 12-Oct-2021		Analyst: PPM
TPH (Diesel Range)	32		1.7	mg/Kg	1	12-Oct-2021 18:05
TPH (Motor Oil Range)	17	n	3.4	mg/Kg	1	12-Oct-2021 18:05
Surr: 2-Fluorobiphenyl	74.5		60-129	%REC	1	12-Oct-2021 18:05
MOISTURE		Method:SW3550		Analyst: JAC		
Percent Moisture	9.46		0.0100	wt%	1	11-Oct-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-29 (14-15')
 Collection Date: 05-Oct-2021 14:25

ANALYTICAL REPORT

WorkOrder:HS21100478
 Lab ID:HS21100478-04
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: JLJ
Gasoline Range Organics	ND		0.050	mg/Kg	1	11-Oct-2021 15:17
Surr: 4-Bromofluorobenzene	109		70-123	%REC	1	11-Oct-2021 15:17
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 12-Oct-2021	Analyst: PPM
TPH (Diesel Range)	12		1.7	mg/Kg	1	13-Oct-2021 13:52
TPH (Motor Oil Range)	31	n	3.4	mg/Kg	1	13-Oct-2021 13:52
Surr: 2-Fluorobiphenyl	71.4		60-129	%REC	1	13-Oct-2021 13:52
MOISTURE		Method:SW3550				Analyst: JAC
Percent Moisture	11.1		0.0100	wt%	1	11-Oct-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-29 (17-18')
 Collection Date: 05-Oct-2021 15:09

ANALYTICAL REPORT

WorkOrder:HS21100478
 Lab ID:HS21100478-05
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: JLJ		
Gasoline Range Organics	ND		0.050	mg/Kg	1	11-Oct-2021 15:33
Surr: 4-Bromofluorobenzene	107		70-123	%REC	1	11-Oct-2021 15:33
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 12-Oct-2021		Analyst: PPM
TPH (Diesel Range)	7.7		1.7	mg/Kg	1	12-Oct-2021 19:42
TPH (Motor Oil Range)	6.9	n	3.4	mg/Kg	1	12-Oct-2021 19:42
Surr: 2-Fluorobiphenyl	70.2		60-129	%REC	1	12-Oct-2021 19:42
MOISTURE		Method:SW3550		Analyst: JAC		
Percent Moisture	17.4		0.0100	wt%	1	11-Oct-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-29 (25-26')
 Collection Date: 05-Oct-2021 17:49

ANALYTICAL REPORT

WorkOrder:HS21100478
 Lab ID:HS21100478-06
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: JLJ		
Gasoline Range Organics	ND		0.048	mg/Kg	1	11-Oct-2021 15:49
Surr: 4-Bromofluorobenzene	109		70-123	%REC	1	11-Oct-2021 15:49
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 12-Oct-2021		Analyst: PPM
TPH (Diesel Range)	6.7		1.7	mg/Kg	1	12-Oct-2021 20:06
TPH (Motor Oil Range)	6.5	n	3.4	mg/Kg	1	12-Oct-2021 20:06
Surr: 2-Fluorobiphenyl	68.9		60-129	%REC	1	12-Oct-2021 20:06
MOISTURE		Method:SW3550		Analyst: JAC		
Percent Moisture	20.9		0.0100	wt%	1	11-Oct-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-29 (29-30')
 Collection Date: 05-Oct-2021 17:54

ANALYTICAL REPORT

WorkOrder:HS21100478
 Lab ID:HS21100478-07
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: JLJ		
Gasoline Range Organics	ND		0.052	mg/Kg	1	11-Oct-2021 17:47
Surr: 4-Bromofluorobenzene	116		70-123	%REC	1	11-Oct-2021 17:47
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 12-Oct-2021		Analyst: PPM
TPH (Diesel Range)	35		1.7	mg/Kg	1	12-Oct-2021 20:31
TPH (Motor Oil Range)	63	n	3.4	mg/Kg	1	12-Oct-2021 20:31
Surr: 2-Fluorobiphenyl	75.2		60-129	%REC	1	12-Oct-2021 20:31
MOISTURE		Method:SW3550		Analyst: JAC		
Percent Moisture	14.5		0.0100	wt%	1	11-Oct-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-29 (34-35')
 Collection Date: 07-Oct-2021 09:14

ANALYTICAL REPORT

WorkOrder:HS21100478
 Lab ID:HS21100478-08
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: JLJ		
Gasoline Range Organics	0.83		0.054	mg/Kg	1	11-Oct-2021 18:03
Surr: 4-Bromofluorobenzene	112		70-123	%REC	1	11-Oct-2021 18:03
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 12-Oct-2021		Analyst: PPM
TPH (Diesel Range)	1,300		170	mg/Kg	100	12-Oct-2021 15:38
TPH (Motor Oil Range)	2,100	n	340	mg/Kg	100	12-Oct-2021 15:38
Surr: 2-Fluorobiphenyl	0	JS	60-129	%REC	100	12-Oct-2021 15:38
MOISTURE		Method:SW3550		Analyst: JAC		
Percent Moisture	11.7		0.0100	wt%	1	11-Oct-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-30 (1-2')
 Collection Date: 06-Oct-2021 10:30

ANALYTICAL REPORT

WorkOrder:HS21100478
 Lab ID:HS21100478-09
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: JLJ
Gasoline Range Organics	ND		0.052	mg/Kg	1	11-Oct-2021 18:19
Surr: 4-Bromofluorobenzene	108		70-123	%REC	1	11-Oct-2021 18:19
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 12-Oct-2021	Analyst: PPM
TPH (Diesel Range)	4.5		1.7	mg/Kg	1	12-Oct-2021 20:55
TPH (Motor Oil Range)	9.4	n	3.4	mg/Kg	1	12-Oct-2021 20:55
Surr: 2-Fluorobiphenyl	71.9		60-129	%REC	1	12-Oct-2021 20:55
MOISTURE		Method:SW3550				Analyst: JAC
Percent Moisture	12.1		0.0100	wt%	1	11-Oct-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-30 (5-6')
 Collection Date: 06-Oct-2021 10:35

ANALYTICAL REPORT

WorkOrder:HS21100478
 Lab ID:HS21100478-10
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: JLJ
Gasoline Range Organics	ND		0.049	mg/Kg	1	11-Oct-2021 18:35
Surr: 4-Bromofluorobenzene	110		70-123	%REC	1	11-Oct-2021 18:35
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 12-Oct-2021	Analyst: PPM
TPH (Diesel Range)	7.9		1.7	mg/Kg	1	12-Oct-2021 16:51
TPH (Motor Oil Range)	14	n	3.4	mg/Kg	1	12-Oct-2021 16:51
Surr: 2-Fluorobiphenyl	74.8		60-129	%REC	1	12-Oct-2021 16:51
MOISTURE		Method:SW3550				Analyst: JAC
Percent Moisture	7.41		0.0100	wt%	1	11-Oct-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-30 (11-12')
 Collection Date: 06-Oct-2021 10:53

ANALYTICAL REPORT

WorkOrder:HS21100478
 Lab ID:HS21100478-11
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: JLJ
Gasoline Range Organics	ND		0.048	mg/Kg	1	11-Oct-2021 18:51
Surr: 4-Bromofluorobenzene	106		70-123	%REC	1	11-Oct-2021 18:51
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 12-Oct-2021	Analyst: PPM
TPH (Diesel Range)	41		1.7	mg/Kg	1	12-Oct-2021 17:16
TPH (Motor Oil Range)	12	n	3.4	mg/Kg	1	12-Oct-2021 17:16
Surr: 2-Fluorobiphenyl	69.3		60-129	%REC	1	12-Oct-2021 17:16
MOISTURE		Method:SW3550				Analyst: JAC
Percent Moisture	11.4		0.0100	wt%	1	11-Oct-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-30 (14-15')
 Collection Date: 06-Oct-2021 10:56

ANALYTICAL REPORT

WorkOrder:HS21100478
 Lab ID:HS21100478-12
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: JLJ
Gasoline Range Organics	ND		0.050	mg/Kg	1	11-Oct-2021 19:07
Surr: 4-Bromofluorobenzene	114		70-123	%REC	1	11-Oct-2021 19:07
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 12-Oct-2021	Analyst: PPM
TPH (Diesel Range)	17		1.7	mg/Kg	1	12-Oct-2021 17:40
TPH (Motor Oil Range)	60	n	3.4	mg/Kg	1	12-Oct-2021 17:40
Surr: 2-Fluorobiphenyl	77.8		60-129	%REC	1	12-Oct-2021 17:40
MOISTURE		Method:SW3550				Analyst: JAC
Percent Moisture	8.33		0.0100	wt%	1	11-Oct-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-30 (19-20')
 Collection Date: 06-Oct-2021 11:29

ANALYTICAL REPORT

WorkOrder:HS21100478
 Lab ID:HS21100478-13
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: JLJ		
Gasoline Range Organics	ND		0.048	mg/Kg	1	11-Oct-2021 19:24
Surr: 4-Bromofluorobenzene	105		70-123	%REC	1	11-Oct-2021 19:24
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 12-Oct-2021		Analyst: PPM
TPH (Diesel Range)	29		1.7	mg/Kg	1	12-Oct-2021 18:05
TPH (Motor Oil Range)	7.4	n	3.4	mg/Kg	1	12-Oct-2021 18:05
Surr: 2-Fluorobiphenyl	83.2		60-129	%REC	1	12-Oct-2021 18:05
MOISTURE		Method:SW3550		Analyst: JAC		
Percent Moisture	16.2		0.0100	wt%	1	11-Oct-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-30 (25-26')
 Collection Date: 06-Oct-2021 12:42

ANALYTICAL REPORT

WorkOrder:HS21100478
 Lab ID:HS21100478-14
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: JLJ		
Gasoline Range Organics	ND		0.054	mg/Kg	1	11-Oct-2021 19:40
Surr: 4-Bromofluorobenzene	109		70-123	%REC	1	11-Oct-2021 19:40
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 12-Oct-2021		Analyst: PPM
TPH (Diesel Range)	14		1.7	mg/Kg	1	12-Oct-2021 18:29
TPH (Motor Oil Range)	6.4	n	3.4	mg/Kg	1	12-Oct-2021 18:29
Surr: 2-Fluorobiphenyl	84.5		60-129	%REC	1	12-Oct-2021 18:29
MOISTURE		Method:SW3550		Analyst: JAC		
Percent Moisture	14.7		0.0100	wt%	1	11-Oct-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-30 (29-30')
 Collection Date: 06-Oct-2021 13:36

ANALYTICAL REPORT

WorkOrder:HS21100478
 Lab ID:HS21100478-15
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: JLJ		
Gasoline Range Organics	ND		0.050	mg/Kg	1	11-Oct-2021 19:56
Surr: 4-Bromofluorobenzene	106		70-123	%REC	1	11-Oct-2021 19:56
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 12-Oct-2021		Analyst: PPM
TPH (Diesel Range)	6.6		1.7	mg/Kg	1	12-Oct-2021 19:42
TPH (Motor Oil Range)	8.7	n	3.3	mg/Kg	1	12-Oct-2021 19:42
Surr: 2-Fluorobiphenyl	92.2		60-129	%REC	1	12-Oct-2021 19:42
MOISTURE		Method:SW3550		Analyst: JAC		
Percent Moisture	11.7		0.0100	wt%	1	11-Oct-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-30 (34-35')
 Collection Date: 06-Oct-2021 14:27

ANALYTICAL REPORT

WorkOrder:HS21100478
 Lab ID:HS21100478-16
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: JLJ		
Gasoline Range Organics	ND		0.051	mg/Kg	1	11-Oct-2021 20:12
Surr: 4-Bromofluorobenzene	110		70-123	%REC	1	11-Oct-2021 20:12
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 12-Oct-2021		Analyst: PPM
TPH (Diesel Range)	6.9		1.7	mg/Kg	1	12-Oct-2021 20:06
TPH (Motor Oil Range)	23	n	3.4	mg/Kg	1	12-Oct-2021 20:06
Surr: 2-Fluorobiphenyl	92.0		60-129	%REC	1	12-Oct-2021 20:06
MOISTURE		Method:SW3550		Analyst: JAC		
Percent Moisture	13.5		0.0100	wt%	1	11-Oct-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: DUP-02
 Collection Date: 05-Oct-2021 00:00

ANALYTICAL REPORT

WorkOrder:HS21100478
 Lab ID:HS21100478-17
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: JLJ		
Gasoline Range Organics	2.5		0.052	mg/Kg	1	11-Oct-2021 21:16
Surr: 4-Bromofluorobenzene	133	S	70-123	%REC	1	11-Oct-2021 21:16
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 12-Oct-2021		Analyst: PPM
TPH (Diesel Range)	2,200		170	mg/Kg	100	12-Oct-2021 20:31
TPH (Motor Oil Range)	3,700	n	340	mg/Kg	100	12-Oct-2021 20:31
Surr: 2-Fluorobiphenyl	0	JS	60-129	%REC	100	12-Oct-2021 20:31
MOISTURE		Method:SW3550		Analyst: JAC		
Percent Moisture	11.8		0.0100	wt%	1	11-Oct-2021 14:04

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 13-Oct-21

Weight / Prep Log

Client: TRC San Antonio

Project: HEP Klein Ranch

WorkOrder: HS21100478

Batch ID: 4573 **Start Date:** 11 Oct 2021 09:25 **End Date:** 11 Oct 2021 09:25
Method: GASOLINE RANGE ORGANICS BY SW8015C **Prep Code:**

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21100478-01	1	5.2 (g)	5 (mL)	0.96	Bulk (5030B)
HS21100478-02	1	5 (g)	5 (mL)		Bulk (5030B)
HS21100478-03	1	4.61 (g)	5 (mL)	1.08	Bulk (5030B)
HS21100478-04	1	5.02 (g)	5 (mL)	1	Bulk (5030B)
HS21100478-05	1	5.06 (g)	5 (mL)	0.99	Bulk (5030B)
HS21100478-06	1	5.2 (g)	5 (mL)	0.96	Bulk (5030B)
HS21100478-07	1	4.83 (g)	5 (mL)	1.04	Bulk (5030B)
HS21100478-08	1	4.68 (g)	5 (mL)	1.07	Bulk (5030B)
HS21100478-09	1	4.78 (g)	5 (mL)	1.05	Bulk (5030B)
HS21100478-10	1	5.09 (g)	5 (mL)	0.98	Bulk (5030B)
HS21100478-11	1	5.2 (g)	5 (mL)	0.96	Bulk (5030B)
HS21100478-12	1	4.98 (g)	5 (mL)	1	Bulk (5030B)
HS21100478-13	1	5.21 (g)	5 (mL)	0.96	Bulk (5030B)
HS21100478-14	1	4.66 (g)	5 (mL)	1.07	Bulk (5030B)
HS21100478-15	1	5.04 (g)	5 (mL)	0.99	Bulk (5030B)
HS21100478-16	1	4.92 (g)	5 (mL)	1.02	Bulk (5030B)
HS21100478-17	1	4.87 (g)	5 (mL)	1.03	Bulk (5030B)

Batch ID: 171127 **Start Date:** 11 Oct 2021 10:30 **End Date:** 11 Oct 2021 15:30
Method: SOPREP: 3541 TPH **Prep Code:** 8015SPR_LL

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21100478-01		30.17 (g)	1 (mL)	0.03315	4-oz glass, Neat
HS21100478-02		30.49 (g)	1 (mL)	0.0328	4-oz glass, Neat
HS21100478-03		30.22 (g)	1 (mL)	0.03309	4-oz glass, Neat
HS21100478-04		30.38 (g)	1 (mL)	0.03292	4-oz glass, Neat
HS21100478-05		30.3 (g)	1 (mL)	0.033	4-oz glass, Neat
HS21100478-06		30.16 (g)	1 (mL)	0.03316	4-oz glass, Neat
HS21100478-07		30.2 (g)	1 (mL)	0.03311	4-oz glass, Neat
HS21100478-08		30.07 (g)	1 (mL)	0.03326	4-oz glass, Neat
HS21100478-09		30.44 (g)	1 (mL)	0.03285	4-oz glass, Neat
HS21100478-10		30.08 (g)	1 (mL)	0.03324	4-oz glass, Neat
HS21100478-11		30.19 (g)	1 (mL)	0.03312	4-oz glass, Neat
HS21100478-12		30.26 (g)	1 (mL)	0.03305	4-oz glass, Neat
HS21100478-13		30.13 (g)	1 (mL)	0.03319	4-oz glass, Neat
HS21100478-14		30.11 (g)	1 (mL)	0.03321	4-oz glass, Neat
HS21100478-15		30.41 (g)	1 (mL)	0.03288	4-oz glass, Neat
HS21100478-16		30.07 (g)	1 (mL)	0.03326	4-oz glass, Neat
HS21100478-17		30.02 (g)	1 (mL)	0.03331	4-oz glass, Neat

ALS Houston, US

Date: 13-Oct-21

Weight / Prep Log

Client: TRC San Antonio

Project: HEP Klein Ranch

WorkOrder: HS21100478

Batch ID: 171192

Start Date: 12 Oct 2021 10:30

End Date: 12 Oct 2021 15:30

Method: SOPREP: 3541 TPH

Prep Code: 8015SPR_LL

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21100478-01		30.25 (g)	1 (mL)	0.03306	4-oz glass, Neat
HS21100478-02		30.22 (g)	1 (mL)	0.03309	4-oz glass, Neat
HS21100478-03		30.07 (g)	1 (mL)	0.03326	4-oz glass, Neat
HS21100478-04		30.15 (g)	1 (mL)	0.03317	4-oz glass, Neat
HS21100478-05		30.41 (g)	1 (mL)	0.03288	4-oz glass, Neat
HS21100478-06		30.29 (g)	1 (mL)	0.03301	4-oz glass, Neat
HS21100478-07		30.36 (g)	1 (mL)	0.03294	4-oz glass, Neat
HS21100478-08		30.18 (g)	1 (mL)	0.03313	4-oz glass, Neat
HS21100478-09		30.41 (g)	1 (mL)	0.03288	4-oz glass, Neat
HS21100478-10		30.22 (g)	1 (mL)	0.03309	4-oz glass, Neat
HS21100478-11		30.16 (g)	1 (mL)	0.03316	4-oz glass, Neat
HS21100478-12		30.03 (g)	1 (mL)	0.0333	4-oz glass, Neat
HS21100478-13		30.08 (g)	1 (mL)	0.03324	4-oz glass, Neat
HS21100478-14		30.24 (g)	1 (mL)	0.03307	4-oz glass, Neat
HS21100478-15		30.49 (g)	1 (mL)	0.0328	4-oz glass, Neat
HS21100478-16		30.37 (g)	1 (mL)	0.03293	4-oz glass, Neat
HS21100478-17		30.2 (g)	1 (mL)	0.03311	4-oz glass, Neat

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100478

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 171192 (0)		Test Name : TPH DRO/ORO BY SW8015C			Matrix: Soil	
HS21100478-01	SB-29 (1-2)	05 Oct 2021 13:24		12 Oct 2021 10:30	12 Oct 2021 17:16	1
HS21100478-02	SB-29 (5-6')	05 Oct 2021 13:27		12 Oct 2021 10:30	13 Oct 2021 13:28	1
HS21100478-03	SB-29 (11-12')	05 Oct 2021 14:23		12 Oct 2021 10:30	12 Oct 2021 18:05	1
HS21100478-04	SB-29 (14-15')	05 Oct 2021 14:25		12 Oct 2021 10:30	13 Oct 2021 13:52	1
HS21100478-05	SB-29 (17-18')	05 Oct 2021 15:09		12 Oct 2021 10:30	12 Oct 2021 19:42	1
HS21100478-06	SB-29 (25-26')	05 Oct 2021 17:49		12 Oct 2021 10:30	12 Oct 2021 20:06	1
HS21100478-07	SB-29 (29-30')	05 Oct 2021 17:54		12 Oct 2021 10:30	12 Oct 2021 20:31	1
HS21100478-08	SB-29 (34-35')	07 Oct 2021 09:14		12 Oct 2021 10:30	12 Oct 2021 15:38	100
HS21100478-09	SB-30 (1-2')	06 Oct 2021 10:30		12 Oct 2021 10:30	12 Oct 2021 20:55	1
HS21100478-10	SB-30 (5-6')	06 Oct 2021 10:35		12 Oct 2021 10:30	12 Oct 2021 16:51	1
HS21100478-11	SB-30 (11-12')	06 Oct 2021 10:53		12 Oct 2021 10:30	12 Oct 2021 17:16	1
HS21100478-12	SB-30 (14-15')	06 Oct 2021 10:56		12 Oct 2021 10:30	12 Oct 2021 17:40	1
HS21100478-13	SB-30 (19-20')	06 Oct 2021 11:29		12 Oct 2021 10:30	12 Oct 2021 18:05	1
HS21100478-14	SB-30 (25-26')	06 Oct 2021 12:42		12 Oct 2021 10:30	12 Oct 2021 18:29	1
HS21100478-15	SB-30 (29-30')	06 Oct 2021 13:36		12 Oct 2021 10:30	12 Oct 2021 19:42	1
HS21100478-16	SB-30 (34-35')	06 Oct 2021 14:27		12 Oct 2021 10:30	12 Oct 2021 20:06	1
HS21100478-17	DUP-02	05 Oct 2021 00:00		12 Oct 2021 10:30	12 Oct 2021 20:31	100
Batch ID: R393169 (0)		Test Name : MOISTURE			Matrix: Soil	
HS21100478-01	SB-29 (1-2)	05 Oct 2021 13:24			11 Oct 2021 14:04	1
HS21100478-02	SB-29 (5-6')	05 Oct 2021 13:27			11 Oct 2021 14:04	1
HS21100478-03	SB-29 (11-12')	05 Oct 2021 14:23			11 Oct 2021 14:04	1
HS21100478-04	SB-29 (14-15')	05 Oct 2021 14:25			11 Oct 2021 14:04	1
HS21100478-05	SB-29 (17-18')	05 Oct 2021 15:09			11 Oct 2021 14:04	1
HS21100478-06	SB-29 (25-26')	05 Oct 2021 17:49			11 Oct 2021 14:04	1
HS21100478-07	SB-29 (29-30')	05 Oct 2021 17:54			11 Oct 2021 14:04	1
HS21100478-08	SB-29 (34-35')	07 Oct 2021 09:14			11 Oct 2021 14:04	1
HS21100478-09	SB-30 (1-2')	06 Oct 2021 10:30			11 Oct 2021 14:04	1
HS21100478-10	SB-30 (5-6')	06 Oct 2021 10:35			11 Oct 2021 14:04	1
HS21100478-11	SB-30 (11-12')	06 Oct 2021 10:53			11 Oct 2021 14:04	1
HS21100478-12	SB-30 (14-15')	06 Oct 2021 10:56			11 Oct 2021 14:04	1
HS21100478-13	SB-30 (19-20')	06 Oct 2021 11:29			11 Oct 2021 14:04	1
HS21100478-14	SB-30 (25-26')	06 Oct 2021 12:42			11 Oct 2021 14:04	1
HS21100478-15	SB-30 (29-30')	06 Oct 2021 13:36			11 Oct 2021 14:04	1
HS21100478-16	SB-30 (34-35')	06 Oct 2021 14:27			11 Oct 2021 14:04	1
HS21100478-17	DUP-02	05 Oct 2021 00:00			11 Oct 2021 14:04	1

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100478

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: R393205 (0)		Test Name : GASOLINE RANGE ORGANICS BY SW8015C			Matrix: Soil	
HS21100478-01	SB-29 (1-2)	05 Oct 2021 13:24			11 Oct 2021 14:28	1
HS21100478-02	SB-29 (5-6')	05 Oct 2021 13:27			11 Oct 2021 14:44	1
HS21100478-03	SB-29 (11-12')	05 Oct 2021 14:23			11 Oct 2021 15:01	1
HS21100478-04	SB-29 (14-15')	05 Oct 2021 14:25			11 Oct 2021 15:17	1
HS21100478-05	SB-29 (17-18')	05 Oct 2021 15:09			11 Oct 2021 15:33	1
HS21100478-06	SB-29 (25-26')	05 Oct 2021 17:49			11 Oct 2021 15:49	1
HS21100478-07	SB-29 (29-30')	05 Oct 2021 17:54			11 Oct 2021 17:47	1
HS21100478-08	SB-29 (34-35')	07 Oct 2021 09:14			11 Oct 2021 18:03	1
HS21100478-09	SB-30 (1-2')	06 Oct 2021 10:30			11 Oct 2021 18:19	1
HS21100478-10	SB-30 (5-6')	06 Oct 2021 10:35			11 Oct 2021 18:35	1
HS21100478-11	SB-30 (11-12')	06 Oct 2021 10:53			11 Oct 2021 18:51	1
HS21100478-12	SB-30 (14-15')	06 Oct 2021 10:56			11 Oct 2021 19:07	1
HS21100478-13	SB-30 (19-20')	06 Oct 2021 11:29			11 Oct 2021 19:24	1
HS21100478-14	SB-30 (25-26')	06 Oct 2021 12:42			11 Oct 2021 19:40	1
HS21100478-15	SB-30 (29-30')	06 Oct 2021 13:36			11 Oct 2021 19:56	1
HS21100478-16	SB-30 (34-35')	06 Oct 2021 14:27			11 Oct 2021 20:12	1
HS21100478-17	DUP-02	05 Oct 2021 00:00			11 Oct 2021 21:16	1

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100478

QC BATCH REPORT

Batch ID: 171192 (0)	Instrument: FID-7	Method: TPH DRO/ORO BY SW8015C
-------------------------------	--------------------------	---------------------------------------

MBLK	Sample ID: MBLK-171192	Units: mg/Kg	Analysis Date: 12-Oct-2021 15:38							
Client ID:	Run ID: FID-7_393274	SeqNo: 6315588	PrepDate: 12-Oct-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
TPH (Diesel Range)	ND	1.7								
TPH (Motor Oil Range)	ND	3.4								
Surr: 2-Fluorobiphenyl	2.584	0.10	3.33	0	77.6	70 - 130				

LCS	Sample ID: LCS-171192	Units: mg/Kg	Analysis Date: 12-Oct-2021 16:51							
Client ID:	Run ID: FID-7_393274	SeqNo: 6315589	PrepDate: 12-Oct-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
TPH (Diesel Range)	26.73	1.7	33.33	0	80.2	70 - 130				
TPH (Motor Oil Range)	27.44	3.4	33.33	0	82.3	70 - 130				
Surr: 2-Fluorobiphenyl	3.353	0.10	3.33	0	101	70 - 130				

MS	Sample ID: HS21100478-08MS	Units: mg/Kg	Analysis Date: 12-Oct-2021 16:03							
Client ID:	Run ID: FID-7_393274	SeqNo: 6315621	PrepDate: 12-Oct-2021 DF: 100							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
TPH (Diesel Range)	1545	170	33.11	1304	730	70 - 130				SO
TPH (Motor Oil Range)	2363	340	33.11	2093	817	70 - 130				SO
Surr: 2-Fluorobiphenyl	ND	9.9	3.308	0	0	60 - 129				JS

MSD	Sample ID: HS21100478-08MSD	Units: mg/Kg	Analysis Date: 12-Oct-2021 16:27							
Client ID:	Run ID: FID-7_393274	SeqNo: 6315622	PrepDate: 12-Oct-2021 DF: 100							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
TPH (Diesel Range)	2452	170	33.26	1304	3450	70 - 130	1545	45.4	30	SRO
TPH (Motor Oil Range)	3666	340	33.26	2093	4730	70 - 130	2363	43.2	30	SRO
Surr: 2-Fluorobiphenyl	ND	10	3.323	0	0	60 - 129	0	0	30	JS

The following samples were analyzed in this batch:

HS21100478-01	HS21100478-02	HS21100478-03	HS21100478-04
HS21100478-05	HS21100478-06	HS21100478-07	HS21100478-08
HS21100478-09	HS21100478-10	HS21100478-11	HS21100478-12
HS21100478-13	HS21100478-14	HS21100478-15	HS21100478-16
HS21100478-17			

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100478

QC BATCH REPORT

Batch ID: R393205 (0)	Instrument: FID-14	Method: GASOLINE RANGE ORGANICS BY SW8015C
--------------------------------	---------------------------	---

MBLK	Sample ID: MBLK-211011	Units: mg/Kg	Analysis Date: 11-Oct-2021 14:12							
Client ID:	Run ID: FID-14_393205	SeqNo: 6314084	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Gasoline Range Organics	ND	0.050								
Surr: 4-Bromofluorobenzene	0.101	0.0050	0.1	0	101	75 - 121				

LCS	Sample ID: LCS-211011	Units: mg/Kg	Analysis Date: 11-Oct-2021 13:56							
Client ID:	Run ID: FID-14_393205	SeqNo: 6314083	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Gasoline Range Organics	0.9938	0.050	1	0	99.4	72 - 121				
Surr: 4-Bromofluorobenzene	0.1109	0.0050	0.1	0	111	75 - 121				

MS	Sample ID: HS21100478-02MS	Units: mg/Kg	Analysis Date: 11-Oct-2021 16:27							
Client ID: SB-29 (5-6')	Run ID: FID-14_393205	SeqNo: 6314091	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Gasoline Range Organics	0.923	0.052	1.04	0	88.7	70 - 130				
Surr: 4-Bromofluorobenzene	0.104	0.0052	0.104	0	100.0	70 - 123				

MSD	Sample ID: HS21100478-02MSD	Units: mg/Kg	Analysis Date: 11-Oct-2021 16:42							
Client ID: SB-29 (5-6')	Run ID: FID-14_393205	SeqNo: 6314092	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
Gasoline Range Organics	0.8002	0.048	0.95	0	84.2	70 - 130	0.923	14.2	30	
Surr: 4-Bromofluorobenzene	0.08698	0.0048	0.095	0	91.6	70 - 123	0.104	17.8	30	

The following samples were analyzed in this batch:

HS21100478-01	HS21100478-02	HS21100478-03	HS21100478-04
HS21100478-05	HS21100478-06	HS21100478-07	HS21100478-08
HS21100478-09	HS21100478-10	HS21100478-11	HS21100478-12
HS21100478-13	HS21100478-14	HS21100478-15	HS21100478-16
HS21100478-17			

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100478

QC BATCH REPORT

Batch ID: R393169 (0)		Instrument: Balance1	Method: MOISTURE		
DUP	Sample ID: HS21100478-17DUP	Units: wt%	Analysis Date: 11-Oct-2021 14:04		
Client ID: DUP-02	Run ID: Balance1_393169	SeqNo: 6313414	PrepDate:	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC Control Limit
				RPD Ref Value	RPD %RPD Limit Qual

Percent Moisture	11.1	0.0100		11.8	6.11	20
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The following samples were analyzed in this batch:

HS21100478-01	HS21100478-02	HS21100478-03	HS21100478-04
HS21100478-05	HS21100478-06	HS21100478-07	HS21100478-08
HS21100478-09	HS21100478-10	HS21100478-11	HS21100478-12
HS21100478-13	HS21100478-14	HS21100478-15	HS21100478-16
HS21100478-17			

ALS Houston, US

Date: 13-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100478

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

ALS Houston, US

Date: 13-Oct-21

CERTIFICATIONS, ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	21-022-0	26-Mar-2022
Dept of Defense	PJLA L20-507-R2	22-Dec-2021
Florida	E87611-33	30-Jun-2022
Illinois	2000322021-7	09-May-2022
Kansas	E-10352 2021-2022	31-Jul-2022
Kentucky	123043, 2021-2022	30-Apr-2022
Louisiana	03087, 2021-2022	30-Jun-2022
North Carolina	624-2021	31-Dec-2021
Texas	T104704231-21-28	30-Apr-2022



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Chain of Custody Form

Page 1 of 2

COC ID: 251109

HS21100478

TRC San Antonio
HEP Klein Ranch

AV



ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	HEP Klein Ranch	A	8260_W (VOC (8260) BTEX)
Work Order		Project Number		B	8015_GRO_W (GRO)
Company Name	TRC San Antonio	Bill To Company	TRC San Antonio	C	300_W (Chloride)
Send Report To	Cody Gaston	Invoice Attn	Cody Gaston	D	8015M_W_LL (DRO/ORO)
Address	5811 University Heights	Address	5811 University Heights	E	8015_GRO_S (GRO)
	Suite 106		Suite 106	F	8015M_S_LL (DRO/ORO)
City/State/Zip	San Antonio, TX 78249	City/State/Zip	San Antonio TX 78249	G	MOIST_SW3550 (Percent Moisture)
Phone	(817)-75-2-36	Phone	(817)-75-2-36	H	
Fax	(817)-52-2-10	Fax	(817)-52-2-10	I	
e-Mail Address	cgaston@trccompanies.com	e-Mail Address	cgaston@trccompanies.com	J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SB-29 (1-2')	10-5-21	1324	S	None	2					X	X	X				
2	SB-29 (5-6')		1327								X	X	X				
3	SB-29 (11-12')		1423								X	X	X				
4	SB-29 (14-15')		1425								X	X	X				
5	SB-29 (17-18')		1509								X	X	X				
6	SB-29 (25-26')		1749								X	X	X				
7	SB-29 (29-30')		1754								X	X	X				
8	SB-29 (34-35')	10-7-21	914								X	X	X				
9	SB-30 (1-2')	10-6-21	1030								X	X	X				
10	SB-30 (5-6')	10-6-21	1035								X	X	X				

*Rush

Sampler(s) Please Print & Sign: Cody Gaston Cody Gaston

Shipment Method: Fedex

Required Turnaround Time: (Check Box) Other STD 10 Wk Days 5 Wk Days 2 Wk Days 24 Hour

Results Due Date: SB-29

Retinquished by: Cody Gaston Date: 10-7-21 Time: 1400

Retinquished by: Cody Gaston Date: 10-8-21 Time: 10:00

Received by: Fedex

Received by (Laboratory): Valle

Checked by (Laboratory):

Notes: HEP Klein Ranch Rush SB-30 (34-35')

Cooler ID: RFD Cooler Temp.: 1CL

QC Package: (Check One Box Below) Level III Std COC TRRP Checklist Level III Std COC/Faw Date TRRP Level III Level II Std BCLP Other

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.



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Holland, MI +1 616 399 6070

Chain of Custody Form

Page 2 of 2

COC ID: 251108

HS21100478

TRC San Antonio
HEP Klein Ranch



Customer Information		Project Information		ALS Project Manager:	
Purchase Order		Project Name	HEP Klein Ranch	A	8260_W (VOC (8260) BTEX)
Work Order		Project Number		B	8015_GRO_W (GFO)
Company Name	TRC San Antonio	Bill To Company	TRC San Antonio	C	300_W (Chloride)
Send Report To	Cody Gaston	Invoice Attn	Cody Gaston	D	8015M_W_LL (DRO/ORO)
Address	5811 University Heights Suite 106	Address	5811 University Heights Suite 106	E	8015_GRO_S (GRO)
City/State/Zip	San Antonio, TX 78249	City/State/Zip	San Antonio TX 78249	F	8015M_S_LL (DRO/ORO)
Phone	(817)-75-2-36	Phone	(817)-75-2-36	G	MOIST_SW3550 (Percent Moisture)
Fax	(817)-52-2-10	Fax	(817)-52-2-10	H	
e-Mail Address	cgaston@trccompanies.com	e-Mail Address	cgaston@trccompanies.com	I	
				J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SB-30 (11-12')	10-6-21	1053	S	none	2					X	X	X				
2	SB-30 (14-15')		1056								X	X	X				
3	SB-30 (18-20')		1129								X	X	X				
4	SB-30 (25-26')		1242								X	X	X				
5	SB-30 (29-30')		1336								X	X	X				
6	SB-30 (34-35')		1427								X	X	X				
7	Dup-02	-	-	S	none						X	X	X				
8																	
9																	
10																	

Sample(s) Please Print & Sign <i>Cody Gaston</i>	Shipment Method Fedex	Required Turnaround Time: (Check Box) <input type="checkbox"/> STD: 10 Wk Days <input checked="" type="checkbox"/> 5 Wk Days <input type="checkbox"/> 1 Wk Days <input type="checkbox"/> 24 Hour	Results Due Date:
Relinquished by: <i>Cody Gaston</i> Date: 10-7-21 Time: 1400	Received by: Fedex Date: 10-27-21 Time: 10:00	Notes: HEP Klein Ranch	Cooler ID: RED Cooler Temp: LLC
Logged by (Laboratory):	Checked by (Laboratory):	GC Package: (Check One Box Below) <input checked="" type="checkbox"/> Level 11 S&G CO <input type="checkbox"/> Level 11 S&G CO/Row Date <input type="checkbox"/> Level 17 S&G-BK/CP <input type="checkbox"/> Other	<input type="checkbox"/> TRRP Checklist <input type="checkbox"/> TRRP Level IV

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.

FedEx
5300 5222 6580

FRI - 08 OCT 10:30A
PRIORITY OVERNIGHT

 **ALS**
10450 Stanciff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL		Seal Broken By:
Date:	10/22/2021 1400	Date:
Name:	TRC	Signature:
Company:		



Analytical Data Review Checklist

Site: WTX to EMSU Battery (Klein Ranch) Pipeline Release Site Location: Lea County, New Mexico Client Name: HEP Project #: 426140	Laboratory: ALS (Houston, Tx) Lab Report #: HS21100504	QA Reviewer: A. Eljuri Peer Reviewer: Lori Burris Date: October 19, 2021
Analytical Method(s): BTEX by 8260C, TPH-GRO and TPH-DRO/ORO by SW8015C, Chloride by E300.0	Matrices Sampled: Groundwater; aqueous sample	Sample Collection Date(s): October 6, 2021
Sampling Objective(s): Analyze groundwater samples to characterize and possibly delineate impacts from a potential crude oil release.		
Sample IDs: Refer to data package sample summary.		

Review Item or Question		Y	N	NA	Comments
Sample Traceability / Chain of Custody					
1	Were COC forms appropriately completed?	X			
2	Did the laboratory report correct sample IDs?	X			
3	Do the laboratory reported sample collection dates and times agree with the COC forms?	X			
Sample Preservation and Integrity					
4	Did samples arrive at the laboratory appropriately preserved?	X			
	Was the cooler temperature between 0-6°C?	X			
	Was acid used for preservation when required (e.g., aqueous VOC and metals samples)?	X			
	Were soil/sediment VOC samples preserved in the field or collected in EnCore® samplers?			X	
5	Were samples received by the laboratory in an acceptable condition (i.e., no breakages, leaks, etc.)?		X		One of three of the containers for the TPH-GRO analysis for sample MW-04 was broken. TPH-GRO was analyzed for MW-04 from the remaining intact containers.
6	Were any issues noted by the laboratory upon receipt?		X		
7	Were sample preparation and analysis holding time requirements met?	X			
8	<u>AIR ONLY:</u> Were canisters received with an acceptable vacuum?				X
	Were the RPDs between the initial and final canister flow controller calibrations <20?				
Data Completeness					
9	Are results reported for all analytical methods requested?	X			The laboratory reported TPH-ORO for method 8015C, which is not offered for accreditation.
10	Are results reported for all samples submitted for analysis?	X			
11	Were the requested analytical methods used?	X			
12	Are results reported for all target analytes, but no additional analytes?	X			
13	Were soil/sediment results reported on a dry weight basis?			X	



Analytical Data Review Checklist

Review Item or Question		Y	N	NA	Comments
14	If requested, were detected results below the reporting limit (i.e., "J" values) reported?			X	
15	Did we receive the required deliverables (e.g., EDD, Level 4 data, laboratory certification, etc.) in the correct formats?	X			
Sensitivity					
16	Do the reporting limits meet the project specifications (e.g., QAPP or Work Plan)?	X			All non-detect results had reporting limits below project criteria.
17	Were dilutions performed? If so, note sample(s) and parameter(s) affected and the dilution factor(s).	X			Samples MW-02, MW-04, and DUP-01 were diluted 50-fold for chlorides.
18	Did the laboratory provide an adequate explanation as to why dilutions were performed?		X		No explanation was provided. All the diluted chloride results were detected above the reporting limit (RL).
QC Results					
19	Were any target analytes detected in the method blanks? If yes, list contaminants, concentrations detected and associated samples.		X		
20	Does each analytical or preparation batch have its own method blank?	X			
21	Were any target analytes detected in the field blank(s) (e.g., trip blanks, equipment blanks)? If yes, list contaminants, concentrations detected and associated samples (or attach field blank results).		X		
22	Are there any potential false positive results based on questions 19 and/or 21?		X		
23	Are LCS/LCSD recoveries within QC limits? If no, list analytes affected, the LCS/LCSD recoveries and the affected samples.	X			
24	Does each analytical or preparation batch have its own LCS?	X			
25	Are LCS/LCSD RPDs within QC limits? If no, list analytes affected, the RPDs and the affected samples.	X			
26	Are MS/MSD recoveries within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the MS/MSD recoveries and the sample that was spiked.			X	MS/MSDs were performed on non-project samples; non-project sample MS/MSD results were not evaluated during this review.
27	Are MS/MSD RPDs within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the RPDs and the sample that was spiked.			X	
28	Are laboratory duplicate RPDs within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the RPDs and the sample that was prepared/analyzed in duplicate.			X	



Analytical Data Review Checklist

Review Item or Question		Y	N	NA	Comments
29	Are field duplicate RPDs within QC limits? If no, list analytes affected, the RPDs and the associated samples. Field duplicate criteria for water: RPDs <30% when both results >5x the reporting limit (RL). If one of both results < the RL, absolute difference must be < RL.	X			RPDs were calculated for duplicate pair MW-04 and DUP-01. The RPDs and absolute differences, where applicable, were within the acceptance limits.
30	<u>ORGANIC ANALYSES ONLY:</u> Are surrogate recoveries within QC limits? If no, list samples, surrogate recoveries and analytes affected.	X			
Laboratory Comments					
31	Did the case narrative describe any analytical anomalies (i.e., problems or unique occurrences)?		X		
32	Were any other potential data quality issues identified? If yes, describe issues.		X		
Do the Data Make Sense?					
33	Do any results look questionable?		X		
34	Has the EDD been compared with the lab report?	X			

Reference: United States Environmental Protection Agency (USEPA) - *National Functional Guidelines for Organic Superfund Methods Data Review* (USEPA, November 2020); United States Environmental Protection Agency (USEPA) - *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA, November 2020)

BTEX = Benzene, Toluene, Ethylbenzene, Total Xylenes
 COC = Chain-of-Custody
 DRO = Diesel Range Organics
 EDD = Electronic Data Deliverable
 GRO = Gasoline Range Organics
 LCS/LCSD = Laboratory Control Sample / Laboratory Control Sample Duplicate
 ORO = Motor Oil Range Organics
 MS/MSD = Matrix Spike / Matrix Spike Duplicate
 NELAP = National Environmental Laboratory Accreditation Program
 QAPP = Quality Assurance Project Plan
 QC = Quality Control
 %R = Percent Recovery
 RPD = Relative Percent Difference = $|((A-B)/((A+B)/2))|$
 TPH = Total Petroleum Hydrocarbon

Additional Comments: None.



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October 15, 2021

Cody Gaston
TRC San Antonio
5811 University Heights
Suite 106
San Antonio, TX 78249

Work Order: **HS21100504**

Laboratory Results for: **HEP Klein Ranch**

Dear Cody Gaston,

ALS Environmental received 4 sample(s) on Oct 08, 2021 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ragen Giga'.

Generated By: JUMOKE.LAWAL

Ragen Giga
Project Manager

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
Work Order: HS21100504

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS21100504-01	MW-02	Groundwater		06-Oct-2021 14:55	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100504-02	MW-04	Groundwater		06-Oct-2021 17:10	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100504-03	DUP-01	Groundwater		06-Oct-2021 00:00	08-Oct-2021 10:00	<input type="checkbox"/>
HS21100504-04	TB-10-7-21-01	Water	CG-082521 -546	07-Oct-2021 14:00	08-Oct-2021 10:00	<input type="checkbox"/>

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
Work Order: HS21100504

CASE NARRATIVE

Work Order Comments

- Sample MW-04 GRO vial 3 of 3 Received Broken

GC Semivolatiles by Method SW8015M

Batch ID: 171176

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GC Volatiles by Method SW8015

Batch ID: R393107

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GCMS Volatiles by Method SW8260

Batch ID: R393280,R393374

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method E300

Batch ID: R393428

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: MW-02
 Collection Date: 06-Oct-2021 14:55

ANALYTICAL REPORT

WorkOrder:HS21100504
 Lab ID:HS21100504-01
 Matrix:Groundwater

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES - SW8260C		Method:SW8260				Analyst: PC
Benzene	ND		5.0	ug/L	1	14-Oct-2021 05:54
Ethylbenzene	ND		5.0	ug/L	1	14-Oct-2021 05:54
m,p-Xylene	ND		10	ug/L	1	14-Oct-2021 05:54
o-Xylene	ND		5.0	ug/L	1	14-Oct-2021 05:54
Toluene	ND		5.0	ug/L	1	14-Oct-2021 05:54
Xylenes, Total	ND		5.0	ug/L	1	14-Oct-2021 05:54
Surr: 1,2-Dichloroethane-d4	95.5		70-126	%REC	1	14-Oct-2021 05:54
Surr: 4-Bromofluorobenzene	92.2		82-124	%REC	1	14-Oct-2021 05:54
Surr: Dibromofluoromethane	96.4		77-123	%REC	1	14-Oct-2021 05:54
Surr: Toluene-d8	99.8		82-127	%REC	1	14-Oct-2021 05:54
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	ND		0.0500	mg/L	1	11-Oct-2021 11:59
Surr: 4-Bromofluorobenzene	100		70-123	%REC	1	11-Oct-2021 11:59
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3510C / 12-Oct-2021	Analyst: PPM
TPH (Diesel Range)	ND		0.050	mg/L	1	12-Oct-2021 16:27
TPH (Motor Oil Range)	ND	n	0.10	mg/L	1	12-Oct-2021 16:27
Surr: 2-Fluorobiphenyl	76.3		60-135	%REC	1	12-Oct-2021 16:27
ANIONS BY E300.0, REV 2.1, 1993		Method:E300				Analyst: YP
Chloride	1,220		25.0	mg/L	50	14-Oct-2021 20:14

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: MW-04
 Collection Date: 06-Oct-2021 17:10

ANALYTICAL REPORT

WorkOrder:HS21100504
 Lab ID:HS21100504-02
 Matrix:Groundwater

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES - SW8260C		Method:SW8260				Analyst: PC
Benzene	ND		5.0	ug/L	1	14-Oct-2021 06:15
Ethylbenzene	ND		5.0	ug/L	1	14-Oct-2021 06:15
m,p-Xylene	ND		10	ug/L	1	14-Oct-2021 06:15
o-Xylene	ND		5.0	ug/L	1	14-Oct-2021 06:15
Toluene	ND		5.0	ug/L	1	14-Oct-2021 06:15
Xylenes, Total	ND		5.0	ug/L	1	14-Oct-2021 06:15
Surr: 1,2-Dichloroethane-d4	95.4		70-126	%REC	1	14-Oct-2021 06:15
Surr: 4-Bromofluorobenzene	93.3		82-124	%REC	1	14-Oct-2021 06:15
Surr: Dibromofluoromethane	94.6		77-123	%REC	1	14-Oct-2021 06:15
Surr: Toluene-d8	99.4		82-127	%REC	1	14-Oct-2021 06:15
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	ND		0.0500	mg/L	1	11-Oct-2021 11:16
Surr: 4-Bromofluorobenzene	101		70-123	%REC	1	11-Oct-2021 11:16
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3510C / 12-Oct-2021	Analyst: PPM
TPH (Diesel Range)	ND		0.050	mg/L	1	12-Oct-2021 14:50
TPH (Motor Oil Range)	ND	n	0.10	mg/L	1	12-Oct-2021 14:50
Surr: 2-Fluorobiphenyl	69.2		60-135	%REC	1	12-Oct-2021 14:50
ANIONS BY E300.0, REV 2.1, 1993		Method:E300				Analyst: YP
Chloride	1,230		25.0	mg/L	50	14-Oct-2021 20:37

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: DUP-01
 Collection Date: 06-Oct-2021 00:00

ANALYTICAL REPORT

WorkOrder:HS21100504
 Lab ID:HS21100504-03
 Matrix:Groundwater

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES - SW8260C		Method:SW8260				Analyst: PC
Benzene	ND		5.0	ug/L	1	14-Oct-2021 06:37
Ethylbenzene	ND		5.0	ug/L	1	14-Oct-2021 06:37
m,p-Xylene	ND		10	ug/L	1	14-Oct-2021 06:37
o-Xylene	ND		5.0	ug/L	1	14-Oct-2021 06:37
Toluene	ND		5.0	ug/L	1	14-Oct-2021 06:37
Xylenes, Total	ND		5.0	ug/L	1	14-Oct-2021 06:37
Surr: 1,2-Dichloroethane-d4	96.2		70-126	%REC	1	14-Oct-2021 06:37
Surr: 4-Bromofluorobenzene	92.2		82-124	%REC	1	14-Oct-2021 06:37
Surr: Dibromofluoromethane	95.7		77-123	%REC	1	14-Oct-2021 06:37
Surr: Toluene-d8	99.4		82-127	%REC	1	14-Oct-2021 06:37
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	ND		0.0500	mg/L	1	11-Oct-2021 11:32
Surr: 4-Bromofluorobenzene	104		70-123	%REC	1	11-Oct-2021 11:32
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3510C / 12-Oct-2021	Analyst: PPM
TPH (Diesel Range)	ND		0.050	mg/L	1	12-Oct-2021 15:14
TPH (Motor Oil Range)	ND	n	0.10	mg/L	1	12-Oct-2021 15:14
Surr: 2-Fluorobiphenyl	67.2		60-135	%REC	1	12-Oct-2021 15:14
ANIONS BY E300.0, REV 2.1, 1993		Method:E300				Analyst: YP
Chloride	1,280		25.0	mg/L	50	14-Oct-2021 20:44

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: TB-10-7-21-01
 Collection Date: 07-Oct-2021 14:00

ANALYTICAL REPORT

WorkOrder:HS21100504
 Lab ID:HS21100504-04
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES - SW8260C		Method:SW8260				Analyst: PC
Benzene	ND		5.0	ug/L	1	12-Oct-2021 20:26
Ethylbenzene	ND		5.0	ug/L	1	12-Oct-2021 20:26
m,p-Xylene	ND		10	ug/L	1	12-Oct-2021 20:26
o-Xylene	ND		5.0	ug/L	1	12-Oct-2021 20:26
Toluene	ND		5.0	ug/L	1	12-Oct-2021 20:26
Xylenes, Total	ND		5.0	ug/L	1	12-Oct-2021 20:26
Surr: 1,2-Dichloroethane-d4	98.9		70-126	%REC	1	12-Oct-2021 20:26
Surr: 4-Bromofluorobenzene	91.0		82-124	%REC	1	12-Oct-2021 20:26
Surr: Dibromofluoromethane	97.7		77-123	%REC	1	12-Oct-2021 20:26
Surr: Toluene-d8	102		82-127	%REC	1	12-Oct-2021 20:26

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 15-Oct-21

Weight / Prep Log

Client: TRC San Antonio

Project: HEP Klein Ranch

WorkOrder: HS21100504

Batch ID: 171176

Start Date: 12 Oct 2021 08:30

End Date: 12 Oct 2021 13:30

Method: AQPREP: 3510C TPH

Prep Code: 8015WPR_LL

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21100504-01	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS21100504-02	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS21100504-03	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100504

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 171176 (0)		Test Name : TPH DRO/ORO BY SW8015C			Matrix: Groundwater	
HS21100504-01	MW-02	06 Oct 2021 14:55		12 Oct 2021 12:31	12 Oct 2021 16:27	1
HS21100504-02	MW-04	06 Oct 2021 17:10		12 Oct 2021 12:31	12 Oct 2021 14:50	1
HS21100504-03	DUP-01	06 Oct 2021 00:00		12 Oct 2021 12:31	12 Oct 2021 15:14	1
Batch ID: R393107 (0)		Test Name : GASOLINE RANGE ORGANICS BY SW8015C			Matrix: Groundwater	
HS21100504-01	MW-02	06 Oct 2021 14:55			11 Oct 2021 11:59	1
HS21100504-02	MW-04	06 Oct 2021 17:10			11 Oct 2021 11:16	1
HS21100504-03	DUP-01	06 Oct 2021 00:00			11 Oct 2021 11:32	1
Batch ID: R393280 (0)		Test Name : VOLATILES - SW8260C			Matrix: Water	
HS21100504-04	TB-10-7-21-01	07 Oct 2021 14:00			12 Oct 2021 20:26	1
Batch ID: R393374 (0)		Test Name : VOLATILES - SW8260C			Matrix: Groundwater	
HS21100504-01	MW-02	06 Oct 2021 14:55			14 Oct 2021 05:54	1
HS21100504-02	MW-04	06 Oct 2021 17:10			14 Oct 2021 06:15	1
HS21100504-03	DUP-01	06 Oct 2021 00:00			14 Oct 2021 06:37	1
Batch ID: R393428 (0)		Test Name : ANIONS BY E300.0, REV 2.1, 1993			Matrix: Groundwater	
HS21100504-01	MW-02	06 Oct 2021 14:55			14 Oct 2021 20:14	50
HS21100504-02	MW-04	06 Oct 2021 17:10			14 Oct 2021 20:37	50
HS21100504-03	DUP-01	06 Oct 2021 00:00			14 Oct 2021 20:44	50

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100504

QC BATCH REPORT

Batch ID: 171176 (0)	Instrument: FID-7	Method: TPH DRO/ORO BY SW8015C
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MBLK	Sample ID: MBLK-171176	Units: mg/L	Analysis Date: 14-Oct-2021 10:28						
Client ID:	Run ID: FID-7_393378	SeqNo: 6318002	PrepDate: 12-Oct-2021	DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
TPH (Diesel Range)	ND	0.050							
TPH (Motor Oil Range)	ND	0.10							
Surr: 2-Fluorobiphenyl	0.07358	0.0050	0.1	0	73.6	60 - 135			

LCS	Sample ID: LCS-171176	Units: mg/L	Analysis Date: 14-Oct-2021 10:53						
Client ID:	Run ID: FID-7_393378	SeqNo: 6318003	PrepDate: 12-Oct-2021	DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
TPH (Diesel Range)	0.7107	0.050	1	0	71.1	70 - 130			
TPH (Motor Oil Range)	0.7218	0.10	1	0	72.2	70 - 130			
Surr: 2-Fluorobiphenyl	0.0834	0.0050	0.1	0	83.4	60 - 135			

LCSD	Sample ID: LCSD-171176	Units: mg/L	Analysis Date: 12-Oct-2021 16:03						
Client ID:	Run ID: FID-7_393378	SeqNo: 6318063	PrepDate: 12-Oct-2021	DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual
TPH (Diesel Range)	0.7141	0.050	1	0	71.4	70 - 122	0.7107	0.479	20
TPH (Motor Oil Range)	0.7563	0.10	1	0	75.6	70 - 130	0.7218	4.67	20
Surr: 2-Fluorobiphenyl	0.08425	0.0050	0.1	0	84.3	60 - 135	0.0834	1.02	20

The following samples were analyzed in this batch: HS21100504-01 HS21100504-02 HS21100504-03

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100504

QC BATCH REPORT

Batch ID: R393107 (0)	Instrument: FID-14	Method: GASOLINE RANGE ORGANICS BY SW8015C
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MBLK	Sample ID: MBLK-211011	Units: mg/L	Analysis Date: 11-Oct-2021 10:28							
Client ID:	Run ID: FID-14_393107	SeqNo: 6311944	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Gasoline Range Organics	ND	0.0500								
Surr: 4-Bromofluorobenzene	0.09559	0.00500	0.1	0	95.6	70 - 121				

LCS	Sample ID: LCS-211011	Units: mg/L	Analysis Date: 11-Oct-2021 09:56							
Client ID:	Run ID: FID-14_393107	SeqNo: 6311942	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Gasoline Range Organics	1.119	0.0500	1	0	112	76 - 124				
Surr: 4-Bromofluorobenzene	0.1065	0.00500	0.1	0	107	52 - 138				

LCSD	Sample ID: LCSD-211011	Units: mg/L	Analysis Date: 11-Oct-2021 10:12							
Client ID:	Run ID: FID-14_393107	SeqNo: 6311943	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Gasoline Range Organics	0.9655	0.0500	1	0	96.6	76 - 124	1.119	14.8	20	
Surr: 4-Bromofluorobenzene	0.1031	0.00500	0.1	0	103	52 - 138	0.1065	3.28	20	

The following samples were analyzed in this batch: HS21100504-01 HS21100504-02 HS21100504-03

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100504

QC BATCH REPORT

Batch ID: R393280 (0)	Instrument: VOA9	Method: VOLATILES - SW8260C
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MBLK		Sample ID: VBLKW-211012		Units: ug/L		Analysis Date: 12-Oct-2021 14:24			
Client ID:		Run ID: VOA9_393280		SeqNo: 6315689		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	ND	5.0							
Ethylbenzene	ND	5.0							
m,p-Xylene	ND	10							
o-Xylene	ND	5.0							
Toluene	ND	5.0							
Xylenes, Total	ND	5.0							
<i>Surr: 1,2-Dichloroethane-d4</i>	47.4	0	50	0	94.8	70 - 130			
<i>Surr: 4-Bromofluorobenzene</i>	45.23	0	50	0	90.5	82 - 115			
<i>Surr: Dibromofluoromethane</i>	48.21	0	50	0	96.4	73 - 126			
<i>Surr: Toluene-d8</i>	49.31	0	50	0	98.6	81 - 120			

LCS		Sample ID: VLCSW-211012		Units: ug/L		Analysis Date: 12-Oct-2021 13:20			
Client ID:		Run ID: VOA9_393280		SeqNo: 6315688		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	19.5	5.0	20	0	97.5	74 - 120			
Ethylbenzene	19.78	5.0	20	0	98.9	77 - 117			
m,p-Xylene	39.68	10	40	0	99.2	77 - 122			
o-Xylene	19.45	5.0	20	0	97.2	75 - 119			
Toluene	20.04	5.0	20	0	100	77 - 118			
Xylenes, Total	59.12	5.0	60	0	98.5	75 - 122			
<i>Surr: 1,2-Dichloroethane-d4</i>	46.93	0	50	0	93.9	70 - 130			
<i>Surr: 4-Bromofluorobenzene</i>	48.23	0	50	0	96.5	82 - 115			
<i>Surr: Dibromofluoromethane</i>	48.63	0	50	0	97.3	73 - 126			
<i>Surr: Toluene-d8</i>	50.31	0	50	0	101	81 - 120			

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100504

QC BATCH REPORT

Batch ID: R393280 (0) **Instrument:** VOA9 **Method:** VOLATILES - SW8260C

MS		Sample ID: HS21100229-01MS		Units: ug/L		Analysis Date: 12-Oct-2021 16:11				
Client ID:		Run ID: VOA9_393280		SeqNo: 6315691		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.61	5.0	20	0	108	70 - 127				
Ethylbenzene	21.78	5.0	20	0	109	70 - 124				
m,p-Xylene	43.35	10	40	0	108	70 - 130				
o-Xylene	20.94	5.0	20	0	105	70 - 124				
Toluene	21.33	5.0	20	0	107	70 - 123				
Xylenes, Total	64.29	5.0	60	0	107	70 - 130				
Surr: 1,2-Dichloroethane-d4	47.34	0	50	0	94.7	70 - 126				
Surr: 4-Bromofluorobenzene	47.35	0	50	0	94.7	82 - 124				
Surr: Dibromofluoromethane	47.41	0	50	0	94.8	77 - 123				
Surr: Toluene-d8	49.94	0	50	0	99.9	82 - 127				

MSD		Sample ID: HS21100229-01MSD		Units: ug/L		Analysis Date: 12-Oct-2021 16:32				
Client ID:		Run ID: VOA9_393280		SeqNo: 6315692		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.13	5.0	20	0	106	70 - 127	21.61	2.25	20	
Ethylbenzene	21.26	5.0	20	0	106	70 - 124	21.78	2.46	20	
m,p-Xylene	42.35	10	40	0	106	70 - 130	43.35	2.34	20	
o-Xylene	20.85	5.0	20	0	104	70 - 124	20.94	0.391	20	
Toluene	20.93	5.0	20	0	105	70 - 123	21.33	1.87	20	
Xylenes, Total	63.21	5.0	60	0	105	70 - 130	64.29	1.7	20	
Surr: 1,2-Dichloroethane-d4	46.81	0	50	0	93.6	70 - 126	47.34	1.12	20	
Surr: 4-Bromofluorobenzene	48.09	0	50	0	96.2	82 - 124	47.35	1.54	20	
Surr: Dibromofluoromethane	48.84	0	50	0	97.7	77 - 123	47.41	2.99	20	
Surr: Toluene-d8	50.39	0	50	0	101	82 - 127	49.94	0.905	20	

The following samples were analyzed in this batch: HS21100504-04

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100504

QC BATCH REPORT

Batch ID: R393374 (0)	Instrument: VOA9	Method: VOLATILES - SW8260C
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MBLK		Sample ID: VBLKW-211013			Units: ug/L		Analysis Date: 14-Oct-2021 02:00			
Client ID:		Run ID: VOA9_393374			SeqNo: 6317964		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	5.0								
Ethylbenzene	ND	5.0								
m,p-Xylene	ND	10								
o-Xylene	ND	5.0								
Toluene	ND	5.0								
Xylenes, Total	ND	5.0								
Surr: 1,2-Dichloroethane-d4	47.22	0	50	0	94.4	70 - 130				
Surr: 4-Bromofluorobenzene	46.41	0	50	0	92.8	82 - 115				
Surr: Dibromofluoromethane	47.8	0	50	0	95.6	73 - 126				
Surr: Toluene-d8	49.82	0	50	0	99.6	81 - 120				

LCS		Sample ID: VLCSW-211013			Units: ug/L		Analysis Date: 14-Oct-2021 01:18			
Client ID:		Run ID: VOA9_393374			SeqNo: 6317963		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	18.53	5.0	20	0	92.6	74 - 120				
Ethylbenzene	17.9	5.0	20	0	89.5	77 - 117				
m,p-Xylene	36.49	10	40	0	91.2	77 - 122				
o-Xylene	18	5.0	20	0	90.0	75 - 119				
Toluene	18.09	5.0	20	0	90.5	77 - 118				
Xylenes, Total	54.49	5.0	60	0	90.8	75 - 122				
Surr: 1,2-Dichloroethane-d4	47.19	0	50	0	94.4	70 - 130				
Surr: 4-Bromofluorobenzene	47.99	0	50	0	96.0	82 - 115				
Surr: Dibromofluoromethane	49.58	0	50	0	99.2	73 - 126				
Surr: Toluene-d8	50.24	0	50	0	100	81 - 120				

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100504

QC BATCH REPORT

Batch ID: R393374 (0) **Instrument:** VOA9 **Method:** VOLATILES - SW8260C

MS		Sample ID: HS21100672-12MS			Units: ug/L		Analysis Date: 14-Oct-2021 03:04			
Client ID:		Run ID: VOA9_393374			SeqNo: 6317966		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.78	5.0	20	0.6041	101	70 - 127				
Ethylbenzene	20.01	5.0	20	0	100	70 - 124				
m,p-Xylene	40.46	10	40	0	101	70 - 130				
o-Xylene	20.03	5.0	20	0	100	70 - 124				
Toluene	19.92	5.0	20	0	99.6	70 - 123				
Xylenes, Total	60.48	5.0	60	0	101	70 - 130				
Surr: 1,2-Dichloroethane-d4	46.57	0	50	0	93.1	70 - 126				
Surr: 4-Bromofluorobenzene	47.39	0	50	0	94.8	82 - 124				
Surr: Dibromofluoromethane	48.76	0	50	0	97.5	77 - 123				
Surr: Toluene-d8	49.68	0	50	0	99.4	82 - 127				

MSD		Sample ID: HS21100672-12MSD			Units: ug/L		Analysis Date: 14-Oct-2021 03:25			
Client ID:		Run ID: VOA9_393374			SeqNo: 6317967		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.45	5.0	20	0.6041	99.2	70 - 127	20.78	1.62	20	
Ethylbenzene	19.04	5.0	20	0	95.2	70 - 124	20.01	4.98	20	
m,p-Xylene	39.46	10	40	0	98.7	70 - 130	40.46	2.49	20	
o-Xylene	19.34	5.0	20	0	96.7	70 - 124	20.03	3.51	20	
Toluene	19.4	5.0	20	0	97.0	70 - 123	19.92	2.65	20	
Xylenes, Total	58.8	5.0	60	0	98.0	70 - 130	60.48	2.83	20	
Surr: 1,2-Dichloroethane-d4	47.33	0	50	0	94.7	70 - 126	46.57	1.62	20	
Surr: 4-Bromofluorobenzene	47.98	0	50	0	96.0	82 - 124	47.39	1.23	20	
Surr: Dibromofluoromethane	48.7	0	50	0	97.4	77 - 123	48.76	0.113	20	
Surr: Toluene-d8	49.53	0	50	0	99.1	82 - 127	49.68	0.296	20	

The following samples were analyzed in this batch: HS21100504-01 HS21100504-02 HS21100504-03

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100504

QC BATCH REPORT

Batch ID: R393428 (0)	Instrument: ICS-Integrion	Method: ANIONS BY E300.0, REV 2.1, 1993
--------------------------------	----------------------------------	--

MBLK	Sample ID: MBLK	Units: mg/L	Analysis Date: 14-Oct-2021 10:14							
Client ID:	Run ID: ICS-Integrion_393428	SeqNo: 6319256	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Chloride ND 0.500

LCS	Sample ID: LCS	Units: mg/L	Analysis Date: 14-Oct-2021 10:21							
Client ID:	Run ID: ICS-Integrion_393428	SeqNo: 6319257	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Chloride 19.13 0.500 20 0 95.6 90 - 110

MS	Sample ID: HS21100769-01MS	Units: mg/L	Analysis Date: 14-Oct-2021 11:50							
Client ID:	Run ID: ICS-Integrion_393428	SeqNo: 6320343	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Chloride 13.92 0.500 10 3.58 103 80 - 120

MS	Sample ID: HS21100417-01MS	Units: mg/L	Analysis Date: 14-Oct-2021 15:18							
Client ID:	Run ID: ICS-Integrion_393428	SeqNo: 6319263	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Chloride 25.34 0.500 10 15.22 101 80 - 120

MSD	Sample ID: HS21100769-01MSD	Units: mg/L	Analysis Date: 14-Oct-2021 11:58							
Client ID:	Run ID: ICS-Integrion_393428	SeqNo: 6320344	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Chloride 14.09 0.500 10 3.58 105 80 - 120 13.92 1.19 20

MSD	Sample ID: HS21100417-01MSD	Units: mg/L	Analysis Date: 14-Oct-2021 15:25							
Client ID:	Run ID: ICS-Integrion_393428	SeqNo: 6319264	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual

Chloride 24.9 0.500 10 15.22 96.8 80 - 120 25.34 1.74 20

The following samples were analyzed in this batch: HS21100504-01 HS21100504-02 HS21100504-03

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100504

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

ALS Houston, US

Date: 15-Oct-21

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	21-022-0	26-Mar-2022
Dept of Defense	PJLA L20-507-R2	22-Dec-2021
Florida	E87611-33	30-Jun-2022
Illinois	2000322021-7	09-May-2022
Kansas	E-10352 2021-2022	31-Jul-2022
Kentucky	123043, 2021-2022	30-Apr-2022
Louisiana	03087, 2021-2022	30-Jun-2022
North Carolina	624-2021	31-Dec-2021
Texas	T104704231-21-28	30-Apr-2022

Chain of Custody Form



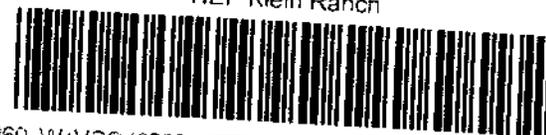
Page 1 of 1

COC ID: 251110

HS21100504

TRC San Antonio
HEP Klein Ranch

1, WV



Customer Information		ALS Project Manager:	
Purchase Order		Project Name	HEP Klein Ranch
Work Order		Project Number	
Company Name	TRC San Antonio	Bill To Company	TRC San Antonio
Send Report To	Cody Gaston	Invoice Attn	Cody Gaston
Address	5811 University Heights Suite 106	Address	5811 University Heights Suite 106
City/State/Zip	San Antonio, TX 78249	City/State/Zip	San Antonio TX 78249
Phone	(817)-75-2-36	Phone	(817)-75-2-36
Fax	(817)-52-2-10	Fax	(817)-52-2-10
e-Mail Address	cgaston@trccompanies.com	e-Mail Address	cgaston@trccompanies.com

- A 8260 W (VOC) (8260) BTEX)
- B 8015 GRO W (GRO)
- C 300 W (Chloride)
- D 8015M W LL (DRO/DRO)
- E 8015 GRO S (GRO)
- F 8015M S LL (DRO/DRO)
- G MOIST SW3F50 (Percent Moisture)
- H
- I
- J

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-02	10-6-21	1455	GW	HCl	9	X	X	X	X							
2	MW-04	10-6-21	1710	↓	↓	9	X	X	X	X							
3	Dup-01	-	-	↓	↓	9	X	X	X	X							
4	TB-10-7-2-01	10-7-21	1400	w	HCl	2	X										
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Cody Gaston Kash

Relinquished by: Cody Gaston Date: 10-7-21 Time: 1400

Relinquished by: Kash Date: 10-7-21 Time: 1040

Shipment Method: Fedex

Required Turnaround Time: (Check Box) STD 16 Wk Days 5 Wk Days 1 Wk Days 24 Hour

Results Due Date: _____

Notes: HEP Klein Ranch

QC Package: (Check One Box Below) Level II Std QC TRRP Checklist

Level III Std QC TRRP Checklist

Level IV Std QC TRRP Checklist

Other: _____

Reservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C 9-5035

Received by (Laboratory): Kash Checked by (Laboratory): Kash

1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.

Copyright 2011 by ALS Environmental.

Cliff Rd., Suite 210 Box 77099 530 5656 530 5687	CUSTODY SEAL		Seal Broken
	Date: <u>10-08-21</u>	Time: <u>1400</u>	Date: <u>10/8/21</u>
	Name: <u>JRC</u>	Company: <u>CPA</u>	



FedEx
TRK# 5300 5222 6569
10221

FRI - 08 OCT 10:30A
PRIORITY OVERNIGHT



Analytical Data Review Checklist

Site: WTX to EMSU Battery (Klein Ranch) Pipeline Release Site Location: Lea County, New Mexico Client Name: HEP Project #: 426140	Laboratory: ALS (Houston, Tx) Lab Report #: HS21100713	QA Reviewer: A. Eljuri Peer Reviewer: Lori Burris Date: October 19, 2021
Analytical Method(s): BTEX by 8260C, TPH-GRO and TPH-DRO/ORO by SW8015C, Chloride by E300.0	Matrices Sampled: Groundwater	Sample Collection Date(s): October 12, 2021
Sampling Objective(s): Analyze groundwater samples to characterize and possibly delineate impacts from a potential crude oil release.		
Sample IDs: Refer to data package sample summary.		

Review Item or Question		Y	N	NA	Comments
Sample Traceability / Chain of Custody					
1	Were COC forms appropriately completed?	X			
2	Did the laboratory report correct sample IDs?	X			
3	Do the laboratory reported sample collection dates and times agree with the COC forms?	X			
Sample Preservation and Integrity					
4	Did samples arrive at the laboratory appropriately preserved?	X			
	Was the cooler temperature between 0-6°C?	X			
	Was acid used for preservation when required (e.g., aqueous VOC and metals samples)?	X			
	Were soil/sediment VOC samples preserved in the field or collected in EnCore® samplers?			X	
5	Were samples received by the laboratory in an acceptable condition (i.e., no breakages, leaks, etc.)?	X			
6	Were any issues noted by the laboratory upon receipt?		X		A trip blank included with the cooler was not included in the COC. Per the client, the trip blank was placed on hold.
7	Were sample preparation and analysis holding time requirements met?	X			
8	<u>AIR ONLY:</u> Were canisters received with an acceptable vacuum?				X
	Were the RPDs between the initial and final canister flow controller calibrations <20?				
Data Completeness					
9	Are results reported for all analytical methods requested?	X			The laboratory reported TPH-ORO for method 8015C, which is not offered for accreditation.
10	Are results reported for all samples submitted for analysis?	X			
11	Were the requested analytical methods used?	X			
12	Are results reported for all target analytes, but no additional analytes?	X			
13	Were soil/sediment results reported on a dry weight basis?			X	



Analytical Data Review Checklist

Review Item or Question		Y	N	NA	Comments
14	If requested, were detected results below the reporting limit (i.e., "J" values) reported?			X	
15	Did we receive the required deliverables (e.g., EDD, Level 4 data, laboratory certification, etc.) in the correct formats?	X			
Sensitivity					
16	Do the reporting limits meet the project specifications (e.g., QAPP or Work Plan)?	X			All non-detect results had reporting limits below project criteria.
17	Were dilutions performed? If so, note sample(s) and parameter(s) affected and the dilution factor(s).	X			Chloride for samples MW-01, MW-03 and MW-05 were diluted 50-fold.
18	Did the laboratory provide an adequate explanation as to why dilutions were performed?		X		No explanation was provided. All the diluted chloride results were detected above the reporting limit (RL).
QC Results					
19	Were any target analytes detected in the method blanks? If yes, list contaminants, concentrations detected and associated samples.		X		
20	Does each analytical or preparation batch have its own method blank?	X			
21	Were any target analytes detected in the field blank(s) (e.g., trip blanks, equipment blanks)? If yes, list contaminants, concentrations detected and associated samples (or attach field blank results).			X	
22	Are there any potential false positive results based on questions 19 and/or 21?		X		
23	Are LCS/LCSD recoveries within QC limits? If no, list analytes affected, the LCS/LCSD recoveries and the affected samples.	X			
24	Does each analytical or preparation batch have its own LCS?	X			
25	Are LCS/LCSD RPDs within QC limits? If no, list analytes affected, the RPDs and the affected samples.	X			
26	Are MS/MSD recoveries within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the MS/MSD recoveries and the sample that was spiked.			X	MS/MSDs were performed on non-project samples; non-project sample MS/MSD results were not evaluated during this review.
27	Are MS/MSD RPDs within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the RPDs and the sample that was spiked.			X	
28	Are laboratory duplicate RPDs within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the RPDs and the sample that was prepared/analyzed in duplicate.			X	



Analytical Data Review Checklist

Review Item or Question		Y	N	NA	Comments
29	Are field duplicate RPDs within QC limits? If no, list analytes affected, the RPDs and the associated samples. Field duplicate criteria for water: RPDs <30% when both results >5x the reporting limit (RL). If one of both results < the RL, absolute difference must be < RL.			X	
30	<u>ORGANIC ANALYSES ONLY:</u> Are surrogate recoveries within QC limits? If no, list samples, surrogate recoveries and analytes affected.	X			
Laboratory Comments					
31	Did the case narrative describe any analytical anomalies (i.e., problems or unique occurrences)?		X		
32	Were any other potential data quality issues identified? If yes, describe issues.		X		
Do the Data Make Sense?					
33	Do any results look questionable?		X		
34	Has the EDD been compared with the lab report?	X			

Reference: United States Environmental Protection Agency (USEPA) - *National Functional Guidelines for Organic Superfund Methods Data Review* (USEPA, November 2020); United States Environmental Protection Agency (USEPA) - *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA, November 2020)

BTEX = Benzene, Toluene, Ethylbenzene, Total Xylenes
 COC = Chain-of-Custody
 DRO = Diesel Range Organics
 EDD = Electronic Data Deliverable
 GRO = Gasoline Range Organics
 LCS/LCSD = Laboratory Control Sample / Laboratory Control Sample Duplicate
 ORO = Motor Oil Range Organics
 MS/MSD = Matrix Spike / Matrix Spike Duplicate
 NELAP = National Environmental Laboratory Accreditation Program
 QAPP = Quality Assurance Project Plan
 QC = Quality Control
 %R = Percent Recovery
 RPD = Relative Percent Difference = $|((A-B)/((A+B)/2))|$
 TPH = Total Petroleum Hydrocarbon

Additional Comments: None.



10450 Stancliff Rd. Suite 210
Houston, TX 77099
T: +1 281 530 5656
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October 15, 2021

Cody Gaston
TRC San Antonio
5811 University Heights
Suite 106
San Antonio, TX 78249

Work Order: **HS21100713**

Laboratory Results for: **HEP Klein Ranch**

Dear Cody Gaston,

ALS Environmental received 4 sample(s) on Oct 13, 2021 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ragen Giga'.

Generated By: JUMOKE.LAWAL

Ragen Giga
Project Manager

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
Work Order: HS21100713

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS21100713-01	MW-01	Water		12-Oct-2021 12:25	13-Oct-2021 09:40	<input type="checkbox"/>
HS21100713-02	MW-03	Water		12-Oct-2021 08:50	13-Oct-2021 09:40	<input type="checkbox"/>
HS21100713-03	MW-05	Water		12-Oct-2021 10:45	13-Oct-2021 09:40	<input type="checkbox"/>
HS21100713-04	Trip Blank	Water	CG 100521 -34	12-Oct-2021 00:00	13-Oct-2021 09:40	<input checked="" type="checkbox"/>

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
Work Order: HS21100713

CASE NARRATIVE

Work Order Comments

- Trip Blank received, not listed on COC. Placed on hold. Logged in for 2 Day TAT per client request.

GC Semivolatiles by Method SW8015M

Batch ID: 171263

Sample ID: LCSD-171263

- The RPD between the LCS and LCSD was outside of the control limit.

GC Volatiles by Method SW8015

Batch ID: R393489

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

GCMS Volatiles by Method SW8260

Batch ID: R393479,R393493

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method E300

Batch ID: R393428

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: MW-01
 Collection Date: 12-Oct-2021 12:25

ANALYTICAL REPORT

WorkOrder:HS21100713
 Lab ID:HS21100713-01
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES - SW8260C		Method:SW8260				Analyst: PC
Benzene	ND		5.0	ug/L	1	14-Oct-2021 16:35
Ethylbenzene	ND		5.0	ug/L	1	14-Oct-2021 16:35
m,p-Xylene	ND		10	ug/L	1	14-Oct-2021 16:35
o-Xylene	ND		5.0	ug/L	1	14-Oct-2021 16:35
Toluene	ND		5.0	ug/L	1	14-Oct-2021 16:35
Xylenes, Total	ND		5.0	ug/L	1	14-Oct-2021 16:35
Surr: 1,2-Dichloroethane-d4	91.9		70-126	%REC	1	14-Oct-2021 16:35
Surr: 4-Bromofluorobenzene	92.4		82-124	%REC	1	14-Oct-2021 16:35
Surr: Dibromofluoromethane	94.5		77-123	%REC	1	14-Oct-2021 16:35
Surr: Toluene-d8	102		82-127	%REC	1	14-Oct-2021 16:35
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	ND		0.0500	mg/L	1	15-Oct-2021 09:33
Surr: 4-Bromofluorobenzene	110		70-123	%REC	1	15-Oct-2021 09:33
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3510C / 14-Oct-2021	Analyst: PPM
TPH (Diesel Range)	0.052		0.050	mg/L	1	14-Oct-2021 22:10
TPH (Motor Oil Range)	ND	n	0.10	mg/L	1	14-Oct-2021 22:10
Surr: 2-Fluorobiphenyl	66.8		60-135	%REC	1	14-Oct-2021 22:10
ANIONS BY E300.0, REV 2.1, 1993		Method:E300				Analyst: YP
Chloride	1,280		25.0	mg/L	50	14-Oct-2021 19:52

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: MW-03
 Collection Date: 12-Oct-2021 08:50

ANALYTICAL REPORT

WorkOrder:HS21100713
 Lab ID:HS21100713-02
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES - SW8260C		Method:SW8260				Analyst: PC
Benzene	ND		5.0	ug/L	1	14-Oct-2021 16:56
Ethylbenzene	ND		5.0	ug/L	1	14-Oct-2021 16:56
m,p-Xylene	ND		10	ug/L	1	14-Oct-2021 16:56
o-Xylene	ND		5.0	ug/L	1	14-Oct-2021 16:56
Toluene	ND		5.0	ug/L	1	14-Oct-2021 16:56
Xylenes, Total	ND		5.0	ug/L	1	14-Oct-2021 16:56
Surr: 1,2-Dichloroethane-d4	92.5		70-126	%REC	1	14-Oct-2021 16:56
Surr: 4-Bromofluorobenzene	91.6		82-124	%REC	1	14-Oct-2021 16:56
Surr: Dibromofluoromethane	92.3		77-123	%REC	1	14-Oct-2021 16:56
Surr: Toluene-d8	102		82-127	%REC	1	14-Oct-2021 16:56
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	ND		0.0500	mg/L	1	15-Oct-2021 09:51
Surr: 4-Bromofluorobenzene	110		70-123	%REC	1	15-Oct-2021 09:51
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3510C / 14-Oct-2021	Analyst: PPM
TPH (Diesel Range)	ND		0.050	mg/L	1	14-Oct-2021 22:35
TPH (Motor Oil Range)	ND	n	0.10	mg/L	1	14-Oct-2021 22:35
Surr: 2-Fluorobiphenyl	67.5		60-135	%REC	1	14-Oct-2021 22:35
ANIONS BY E300.0, REV 2.1, 1993		Method:E300				Analyst: YP
Chloride	862		25.0	mg/L	50	14-Oct-2021 20:00

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: MW-05
 Collection Date: 12-Oct-2021 10:45

ANALYTICAL REPORT

WorkOrder:HS21100713
 Lab ID:HS21100713-03
 Matrix:Water

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
VOLATILES - SW8260C		Method:SW8260				Analyst: PC
Benzene	ND		5.0	ug/L	1	15-Oct-2021 00:01
Ethylbenzene	ND		5.0	ug/L	1	15-Oct-2021 00:01
m,p-Xylene	ND		10	ug/L	1	15-Oct-2021 00:01
o-Xylene	ND		5.0	ug/L	1	15-Oct-2021 00:01
Toluene	ND		5.0	ug/L	1	15-Oct-2021 00:01
Xylenes, Total	ND		5.0	ug/L	1	15-Oct-2021 00:01
Surr: 1,2-Dichloroethane-d4	94.0		70-126	%REC	1	15-Oct-2021 00:01
Surr: 4-Bromofluorobenzene	89.5		82-124	%REC	1	15-Oct-2021 00:01
Surr: Dibromofluoromethane	90.8		77-123	%REC	1	15-Oct-2021 00:01
Surr: Toluene-d8	101		82-127	%REC	1	15-Oct-2021 00:01
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	ND		0.0500	mg/L	1	15-Oct-2021 10:07
Surr: 4-Bromofluorobenzene	106		70-123	%REC	1	15-Oct-2021 10:07
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3510C / 14-Oct-2021	Analyst: PPM
TPH (Diesel Range)	ND		0.050	mg/L	1	14-Oct-2021 22:59
TPH (Motor Oil Range)	ND	n	0.10	mg/L	1	14-Oct-2021 22:59
Surr: 2-Fluorobiphenyl	60.7		60-135	%REC	1	14-Oct-2021 22:59
ANIONS BY E300.0, REV 2.1, 1993		Method:E300				Analyst: YP
Chloride	1,230		25.0	mg/L	50	14-Oct-2021 20:07

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Houston, US

Date: 15-Oct-21

Weight / Prep Log

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100713

Batch ID: 171263 Start Date: 14 Oct 2021 07:00 End Date: 14 Oct 2021 11:00
Method: AQPREP: 3510C TPH Prep Code: 8015WPR_LL

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21100713-01	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS21100713-02	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat
HS21100713-03	1	1000 (mL)	1 (mL)	0.001	1-liter amber glass, Neat

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100713

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 171263 (0)		Test Name : TPH DRO/ORO BY SW8015C			Matrix: Water	
HS21100713-01	MW-01	12 Oct 2021 12:25		14 Oct 2021 07:51	14 Oct 2021 22:10	1
HS21100713-02	MW-03	12 Oct 2021 08:50		14 Oct 2021 07:51	14 Oct 2021 22:35	1
HS21100713-03	MW-05	12 Oct 2021 10:45		14 Oct 2021 07:51	14 Oct 2021 22:59	1
Batch ID: R393428 (0)		Test Name : ANIONS BY E300.0, REV 2.1, 1993			Matrix: Water	
HS21100713-01	MW-01	12 Oct 2021 12:25			14 Oct 2021 19:52	50
HS21100713-02	MW-03	12 Oct 2021 08:50			14 Oct 2021 20:00	50
HS21100713-03	MW-05	12 Oct 2021 10:45			14 Oct 2021 20:07	50
Batch ID: R393479 (0)		Test Name : VOLATILES - SW8260C			Matrix: Water	
HS21100713-01	MW-01	12 Oct 2021 12:25			14 Oct 2021 16:35	1
HS21100713-02	MW-03	12 Oct 2021 08:50			14 Oct 2021 16:56	1
Batch ID: R393489 (0)		Test Name : GASOLINE RANGE ORGANICS BY SW8015C			Matrix: Water	
HS21100713-01	MW-01	12 Oct 2021 12:25			15 Oct 2021 09:33	1
HS21100713-02	MW-03	12 Oct 2021 08:50			15 Oct 2021 09:51	1
HS21100713-03	MW-05	12 Oct 2021 10:45			15 Oct 2021 10:07	1
Batch ID: R393493 (0)		Test Name : VOLATILES - SW8260C			Matrix: Water	
HS21100713-03	MW-05	12 Oct 2021 10:45			15 Oct 2021 00:01	1

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100713

QC BATCH REPORT

Batch ID: 171263 (0)	Instrument: FID-7	Method: TPH DRO/ORO BY SW8015C
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MBLK	Sample ID: MBLK-171263	Units: mg/L	Analysis Date: 14-Oct-2021 20:57							
Client ID:	Run ID: FID-7_393492	SeqNo: 6320790	PrepDate: 14-Oct-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
TPH (Diesel Range)	ND	0.050								
TPH (Motor Oil Range)	ND	0.10								
Surr: 2-Fluorobiphenyl	0.07589	0.0050	0.1	0	75.9	60 - 135				

LCS	Sample ID: LCS-171263	Units: mg/L	Analysis Date: 14-Oct-2021 21:21							
Client ID:	Run ID: FID-7_393492	SeqNo: 6320791	PrepDate: 14-Oct-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
TPH (Diesel Range)	0.7771	0.050	1	0	77.7	70 - 130				
TPH (Motor Oil Range)	0.7537	0.10	1	0	75.4	70 - 130				
Surr: 2-Fluorobiphenyl	0.08498	0.0050	0.1	0	85.0	60 - 135				

LCSD	Sample ID: LCSD-171263	Units: mg/L	Analysis Date: 14-Oct-2021 21:46							
Client ID:	Run ID: FID-7_393492	SeqNo: 6320792	PrepDate: 14-Oct-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual
TPH (Diesel Range)	0.777	0.050	1	0	77.7	70 - 122	0.7771	0.0169	20	
TPH (Motor Oil Range)	0.7171	0.10	1	0	71.7	70 - 130	0.7537	4.97	20	
Surr: 2-Fluorobiphenyl	0.06735	0.0050	0.1	0	67.3	60 - 135	0.08498	23.1	20	R

The following samples were analyzed in this batch: HS21100713-01 HS21100713-02 HS21100713-03

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100713

QC BATCH REPORT

Batch ID: R393489 (0)	Instrument: FID-14	Method: GASOLINE RANGE ORGANICS BY SW8015C
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MBLK	Sample ID: MBLK-211015	Units: mg/L	Analysis Date: 15-Oct-2021 09:17							
Client ID:	Run ID: FID-14_393489	SeqNo: 6320736	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Gasoline Range Organics	ND	0.0500								
Surr: 4-Bromofluorobenzene	0.1076	0.00500	0.1	0	108	70 - 121				

LCS	Sample ID: LCS-211015	Units: mg/L	Analysis Date: 15-Oct-2021 08:45							
Client ID:	Run ID: FID-14_393489	SeqNo: 6320734	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Gasoline Range Organics	0.9609	0.0500	1	0	96.1	76 - 124				
Surr: 4-Bromofluorobenzene	0.1014	0.00500	0.1	0	101	52 - 138				

LCSD	Sample ID: LCSD-211015	Units: mg/L	Analysis Date: 15-Oct-2021 09:01							
Client ID:	Run ID: FID-14_393489	SeqNo: 6320735	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Gasoline Range Organics	0.9443	0.0500	1	0	94.4	76 - 124	0.9609	1.74	20	
Surr: 4-Bromofluorobenzene	0.09903	0.00500	0.1	0	99.0	52 - 138	0.1014	2.36	20	

The following samples were analyzed in this batch: HS21100713-01 HS21100713-02 HS21100713-03

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100713

QC BATCH REPORT

Batch ID: R393479 (0)	Instrument: VOA9	Method: VOLATILES - SW8260C
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MBLK		Sample ID: VBLKW-211014		Units: ug/L		Analysis Date: 14-Oct-2021 12:42			
Client ID:		Run ID: VOA9_393479		SeqNo: 6320412		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	ND	5.0							
Ethylbenzene	ND	5.0							
m,p-Xylene	ND	10							
o-Xylene	ND	5.0							
Toluene	ND	5.0							
Xylenes, Total	ND	5.0							
<i>Surr: 1,2-Dichloroethane-d4</i>	47.94	0	50	0	95.9	70 - 130			
<i>Surr: 4-Bromofluorobenzene</i>	46.93	0	50	0	93.9	82 - 115			
<i>Surr: Dibromofluoromethane</i>	48.13	0	50	0	96.3	73 - 126			
<i>Surr: Toluene-d8</i>	49.9	0	50	0	99.8	81 - 120			

LCS		Sample ID: VLCSW-211014		Units: ug/L		Analysis Date: 14-Oct-2021 12:00			
Client ID:		Run ID: VOA9_393479		SeqNo: 6320411		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	20.02	5.0	20	0	100	74 - 120			
Ethylbenzene	19.82	5.0	20	0	99.1	77 - 117			
m,p-Xylene	39.13	10	40	0	97.8	77 - 122			
o-Xylene	19.62	5.0	20	0	98.1	75 - 119			
Toluene	20.03	5.0	20	0	100	77 - 118			
Xylenes, Total	58.74	5.0	60	0	97.9	75 - 122			
<i>Surr: 1,2-Dichloroethane-d4</i>	47.51	0	50	0	95.0	70 - 130			
<i>Surr: 4-Bromofluorobenzene</i>	48.41	0	50	0	96.8	82 - 115			
<i>Surr: Dibromofluoromethane</i>	49.72	0	50	0	99.4	73 - 126			
<i>Surr: Toluene-d8</i>	50.56	0	50	0	101	81 - 120			

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100713

QC BATCH REPORT

Batch ID: R393479 (0) **Instrument:** VOA9 **Method:** VOLATILES - SW8260C

MS		Sample ID: HS21100569-01MS		Units: ug/L		Analysis Date: 14-Oct-2021 14:45			
Client ID:		Run ID: VOA9_393479		SeqNo: 6320416		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	20.2	5.0	20	0	101	70 - 127			
Ethylbenzene	18.32	5.0	20	0	91.6	70 - 124			
m,p-Xylene	36.66	10	40	0	91.7	70 - 130			
o-Xylene	18.14	5.0	20	0	90.7	70 - 124			
Toluene	19.52	5.0	20	0	97.6	70 - 123			
Xylenes, Total	54.8	5.0	60	0	91.3	70 - 130			
Surr: 1,2-Dichloroethane-d4	47.16	0	50	0	94.3	70 - 126			
Surr: 4-Bromofluorobenzene	49.04	0	50	0	98.1	82 - 124			
Surr: Dibromofluoromethane	48.01	0	50	0	96.0	77 - 123			
Surr: Toluene-d8	50.2	0	50	0	100	82 - 127			

MSD		Sample ID: HS21100569-01MSD		Units: ug/L		Analysis Date: 14-Oct-2021 15:06			
Client ID:		Run ID: VOA9_393479		SeqNo: 6320417		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	20.72	5.0	20	0	104	70 - 127	20.2	2.53	20
Ethylbenzene	18.35	5.0	20	0	91.7	70 - 124	18.32	0.173	20
m,p-Xylene	36.56	10	40	0	91.4	70 - 130	36.66	0.274	20
o-Xylene	18.45	5.0	20	0	92.3	70 - 124	18.14	1.73	20
Toluene	19.59	5.0	20	0	98.0	70 - 123	19.52	0.374	20
Xylenes, Total	55.02	5.0	60	0	91.7	70 - 130	54.8	0.394	20
Surr: 1,2-Dichloroethane-d4	46.89	0	50	0	93.8	70 - 126	47.16	0.584	20
Surr: 4-Bromofluorobenzene	48.18	0	50	0	96.4	82 - 124	49.04	1.78	20
Surr: Dibromofluoromethane	48.43	0	50	0	96.9	77 - 123	48.01	0.881	20
Surr: Toluene-d8	49.89	0	50	0	99.8	82 - 127	50.2	0.611	20

The following samples were analyzed in this batch: HS21100713-01 HS21100713-02

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100713

QC BATCH REPORT

Batch ID: R393493 (0)	Instrument: VOA9	Method: VOLATILES - SW8260C
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MBLK		Sample ID: VBLKW-211014		Units: ug/L		Analysis Date: 14-Oct-2021 23:18			
Client ID:		Run ID: VOA9_393493		SeqNo: 6320804		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	ND	5.0							
Ethylbenzene	ND	5.0							
m,p-Xylene	ND	10							
o-Xylene	ND	5.0							
Toluene	ND	5.0							
Xylenes, Total	ND	5.0							
Surr: 1,2-Dichloroethane-d4	47.61	0	50	0	95.2	70 - 130			
Surr: 4-Bromofluorobenzene	45.23	0	50	0	90.5	82 - 115			
Surr: Dibromofluoromethane	45.96	0	50	0	91.9	73 - 126			
Surr: Toluene-d8	51.02	0	50	0	102	81 - 120			

LCS		Sample ID: VLCSW-211014		Units: ug/L		Analysis Date: 14-Oct-2021 22:36			
Client ID:		Run ID: VOA9_393493		SeqNo: 6320803		PrepDate:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit Qual
Benzene	18.32	5.0	20	0	91.6	74 - 120			
Ethylbenzene	18.45	5.0	20	0	92.3	77 - 117			
m,p-Xylene	37.3	10	40	0	93.2	77 - 122			
o-Xylene	18.7	5.0	20	0	93.5	75 - 119			
Toluene	18.67	5.0	20	0	93.3	77 - 118			
Xylenes, Total	56	5.0	60	0	93.3	75 - 122			
Surr: 1,2-Dichloroethane-d4	45.31	0	50	0	90.6	70 - 130			
Surr: 4-Bromofluorobenzene	47.62	0	50	0	95.2	82 - 115			
Surr: Dibromofluoromethane	46.58	0	50	0	93.2	73 - 126			
Surr: Toluene-d8	50.34	0	50	0	101	81 - 120			

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100713

QC BATCH REPORT

Batch ID: R393493 (0) **Instrument:** VOA9 **Method:** VOLATILES - SW8260C

MS		Sample ID: HS21100791-03MS		Units: ug/L		Analysis Date: 15-Oct-2021 03:54				
Client ID:		Run ID: VOA9_393493		SeqNo: 6320817		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.77	5.0	20	0	104	70 - 127				
Ethylbenzene	19.6	5.0	20	0	98.0	70 - 124				
m,p-Xylene	41.44	10	40	1.971	98.7	70 - 130				
o-Xylene	20.18	5.0	20	0.7337	97.2	70 - 124				
Toluene	20.21	5.0	20	0	101	70 - 123				
Xylenes, Total	61.62	5.0	60	2.705	98.2	70 - 130				
Surr: 1,2-Dichloroethane-d4	46.37	0	50	0	92.7	70 - 126				
Surr: 4-Bromofluorobenzene	47.52	0	50	0	95.0	82 - 124				
Surr: Dibromofluoromethane	46.36	0	50	0	92.7	77 - 123				
Surr: Toluene-d8	50.13	0	50	0	100	82 - 127				

MSD		Sample ID: HS21100791-03MSD		Units: ug/L		Analysis Date: 15-Oct-2021 04:16				
Client ID:		Run ID: VOA9_393493		SeqNo: 6320818		PrepDate:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.22	5.0	20	0	101	70 - 127	20.77	2.68	20	
Ethylbenzene	18.99	5.0	20	0	94.9	70 - 124	19.6	3.18	20	
m,p-Xylene	40.6	10	40	1.971	96.6	70 - 130	41.44	2.07	20	
o-Xylene	20.58	5.0	20	0.7337	99.2	70 - 124	20.18	1.98	20	
Toluene	20.03	5.0	20	0	100	70 - 123	20.21	0.871	20	
Xylenes, Total	61.18	5.0	60	2.705	97.5	70 - 130	61.62	0.725	20	
Surr: 1,2-Dichloroethane-d4	45.47	0	50	0	90.9	70 - 126	46.37	1.96	20	
Surr: 4-Bromofluorobenzene	47.77	0	50	0	95.5	82 - 124	47.52	0.531	20	
Surr: Dibromofluoromethane	46.9	0	50	0	93.8	77 - 123	46.36	1.15	20	
Surr: Toluene-d8	50.93	0	50	0	102	82 - 127	50.13	1.58	20	

The following samples were analyzed in this batch: HS21100713-03

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100713

QC BATCH REPORT

Batch ID: R393428 (0)	Instrument: ICS-Integrion	Method: ANIONS BY E300.0, REV 2.1, 1993
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MBLK	Sample ID: MBLK	Units: mg/L	Analysis Date: 14-Oct-2021 10:14							
Client ID:	Run ID: ICS-Integrion_393428	SeqNo: 6319256	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride ND 0.500

LCS	Sample ID: LCS	Units: mg/L	Analysis Date: 14-Oct-2021 10:21							
Client ID:	Run ID: ICS-Integrion_393428	SeqNo: 6319257	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride 19.13 0.500 20 0 95.6 90 - 110

MS	Sample ID: HS21100769-01MS	Units: mg/L	Analysis Date: 14-Oct-2021 11:50							
Client ID:	Run ID: ICS-Integrion_393428	SeqNo: 6320343	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride 13.92 0.500 10 3.58 103 80 - 120

MS	Sample ID: HS21100417-01MS	Units: mg/L	Analysis Date: 14-Oct-2021 15:18							
Client ID:	Run ID: ICS-Integrion_393428	SeqNo: 6319263	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride 25.34 0.500 10 15.22 101 80 - 120

MSD	Sample ID: HS21100769-01MSD	Units: mg/L	Analysis Date: 14-Oct-2021 11:58							
Client ID:	Run ID: ICS-Integrion_393428	SeqNo: 6320344	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride 14.09 0.500 10 3.58 105 80 - 120 13.92 1.19 20

MSD	Sample ID: HS21100417-01MSD	Units: mg/L	Analysis Date: 14-Oct-2021 15:25							
Client ID:	Run ID: ICS-Integrion_393428	SeqNo: 6319264	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	Qual

Chloride 24.9 0.500 10 15.22 96.8 80 - 120 25.34 1.74 20

The following samples were analyzed in this batch: HS21100713-01 HS21100713-02 HS21100713-03

ALS Houston, US

Date: 15-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100713

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

ALS Houston, US

Date: 15-Oct-21

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	21-022-0	26-Mar-2022
Dept of Defense	PJLA L20-507-R2	22-Dec-2021
Florida	E87611-33	30-Jun-2022
Illinois	2000322021-7	09-May-2022
Kansas	E-10352 2021-2022	31-Jul-2022
Kentucky	123043, 2021-2022	30-Apr-2022
Louisiana	03087, 2021-2022	30-Jun-2022
North Carolina	624-2021	31-Dec-2021
Texas	T104704231-21-28	30-Apr-2022

ALS Houston, US

Date: 15-Oct-21

Sample Receipt Checklist

Work Order ID: HS21100713

Date/Time Received: 13-Oct-2021 09:40

Client Name: TRC - San Antonio

Received by: Paresh M. Giga

Completed By: /S/ Jared R. Makan	13-Oct-2021 14:26	Reviewed by: /S/ Ragen Giga	14-Oct-2021 12:40
eSignature	Date/Time	eSignature	Date/Time

Matrices: **Water**

Carrier name: **FedEx Priority Overnight**

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Present
- VOA/TX1005/TX1006 Solids in hermetically sealed vials? Yes No Not Present
- Chain of custody present? Yes No 1 Page(s)
- Chain of custody signed when relinquished and received? Yes No COC IDs:253385
- Samplers name present on COC? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Container/Temp Blank temperature in compliance? Yes No

Temperature(s)/Thermometer(s):	3.2°C UC/C	IR31
Cooler(s)/Kit(s):	47761	
Date/Time sample(s) sent to storage:	10/13/2021 14:20	

- Water - VOA vials have zero headspace? Yes No No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No N/A
- pH adjusted? Yes No N/A

pH adjusted by:

Login Notes: Trip Blank received, not listed on COC. Placed on hold. Logged in for 2 Day TAT per client request.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:



Cincinnati, OH
+1 513 733 5336
Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511
Holland, MI
+1 616 399 6070

Chain of Custody Form

Page 1 of 1

COC ID: 253385

HS21100713

TRC San Antonio
HEP Klein Ranch



Customer Information		ALS Project Manager:	
Purchase Order		Project Name	HEP Klein Ranch
Work Order		Project Number	A 8015 GRO S (ORO)
Company Name	TRC San Antonio	Bill To Company	B 8015M S LL (DRO/ORO)
Send Report To	Cody Gaston	Invoice Attn	C 8260 - w VOC BTEX
Address	5811 University Heights	Address	D 8015 GRO
	Suite 106		E 300 w Chlorides
City/State/Zip	San Antonio, TX 78249	City/State/Zip	F 8015 DRO/ORO
Phone	(817)-75-2-36	Phone	G
Fax	(817)-52-2-10	Fax	H
e-Mail Address	cgaston@trccompanies.com	e-Mail Address	I
			J

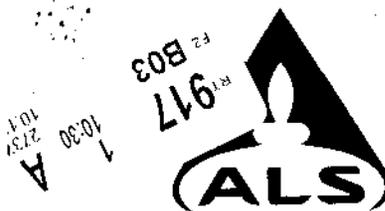
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	MW-01	10-12-21	1225	w	HCl	9											
2	MW-03	↓	850	w	↓	9			X	X	X	X					
3	MW-05	↓	1045	w	↓	9			X	X	X	X					
4									X	X	X	X					
5																	
6																	
7																	
8																	
9																	
10																	

Sample(s) Please Print & Sign Cody Gaston Relinquished by: <i>[Signature]</i> Date: 10-12-21 Time: 1400		Shipment Method Fedex	Required Turnaround Time: (Check Box) <input type="checkbox"/> STD 10 Wk Days <input checked="" type="checkbox"/> 5 Wk Days <input type="checkbox"/> Other <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour	Results Due Date:
Relinquished by: <i>[Signature]</i> Date: 10-12-21 Time: 1400		Received by: <i>[Signature]</i> Date: 10/13/2021 Time: 09:40	Notes: HEP Klein Ranch	
Logged by (Laboratory):		Checked by (Laboratory):	Cooler ID: 47761	Cooler Temp: 6°C 32°C 45°C 11:30
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035		QC Package: (Check One Box Below) <input checked="" type="checkbox"/> Level II Std OC <input type="checkbox"/> TRRP Checklist <input type="checkbox"/> Level III Std QC/Raw Date <input type="checkbox"/> TRRP Level IV <input type="checkbox"/> Level IV SW340/CLP		

- Notes:
- Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 - Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 - The Chain of Custody is a legal document. All information must be completed accurately.

Copyright 2011 by ALS Environmental.

47761 OCT 13 21%



10/12/21
10:30
A

ORIGIN ID:SGRA (797) 268-4829
CDDY GASTON (RESIDENCE)
TRC SAN ANTONIO
114 CORDOVA

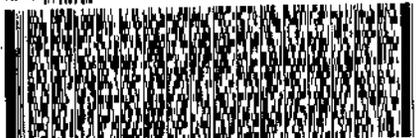
SHIP DATE: 07OCT21
ACTWT: 1.00 LB MAN
CRD: 0221247/CAFE3504
DIMS: 26x14x14 IN

BOERNE, TX 78006
UNITED STATES US

TO SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD
SUITE 210
HOUSTON TX 77099

REF: SUPPLIES DRO/GRO - BTC - BQ 81169 - RG

AMA: III III III



FedEx
Express

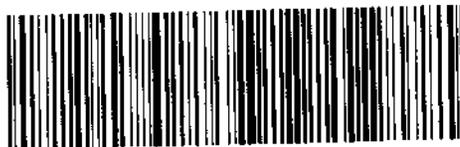


FedEx
TRK# 5300 5223 2737
0221

WED - 13 OCT 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US IAH



020265 10/12 56D12/07798/FE46



Analytical Data Review Checklist

Site: WTX to EMSU Battery (Klein Ranch) Pipeline Release Site Location: Lea County, New Mexico Client Name: HEP Project #: 426140	Laboratory: ALS (Houston, Tx) Lab Report #: HS21100714	QA Reviewer: A. Eljuri Peer Reviewer: Lori Burris Date: October 19, 2021
Analytical Method(s): TPH-GRO and TPH-DRO/ORO by SW8015C, Percent Moisture by SW3550	Matrices Sampled: Soil	Sample Collection Date(s): October 7 and 8, 2021
Sampling Objective(s): Analyze soil to characterize and possibly delineate impacts from a potential crude oil release.		
Sample IDs: Refer to data package sample summary.		

Review Item or Question		Y	N	NA	Comments
Sample Traceability / Chain of Custody					
1	Were COC forms appropriately completed?	X			
2	Did the laboratory report correct sample IDs?	X			
3	Do the laboratory reported sample collection dates and times agree with the COC forms?	X			
Sample Preservation and Integrity					
4	Did samples arrive at the laboratory appropriately preserved?			X	New Mexico regulations do not require TPH-GRO analysis for soil to be preserved in the field.
	Was the cooler temperature between 0-6°C?	X			
	Was acid used for preservation when required (e.g., aqueous VOC and metals samples)?			X	
	Were soil/sediment VOC samples preserved in the field or collected in EnCore® samplers?			X	
5	Were samples received by the laboratory in an acceptable condition (i.e., no breakages, leaks, etc.)?	X			
6	Were any issues noted by the laboratory upon receipt?	X			A trip blank was received, but was not listed on the COC. Per client request, the trip blank was placed on hold.
7	Were sample preparation and analysis holding time requirements met?	X			
8	<u>AIR ONLY:</u> Were canisters received with an acceptable vacuum?			X	
	Were the RPDs between the initial and final canister flow controller calibrations <20?				
Data Completeness					
9	Are results reported for all analytical methods requested?	X			The laboratory reported TPH-ORO for method 8015C, which is not offered for accreditation.
10	Are results reported for all samples submitted for analysis?	X			
11	Were the requested analytical methods used?	X			
12	Are results reported for all target analytes, but no additional analytes?	X			
13	Were soil/sediment results reported on a dry weight basis?	X			



Analytical Data Review Checklist

Review Item or Question		Y	N	NA	Comments
14	If requested, were detected results below the reporting limit (i.e., "J" values) reported?			X	
15	Did we receive the required deliverables (e.g., EDD, Level 4 data, laboratory certification, etc.) in the correct formats?	X			
Sensitivity					
16	Do the reporting limits meet the project specifications (e.g., QAPP or Work Plan)?	X			All non-detect results had reporting limits below project criteria.
17	Were dilutions performed? If so, note sample(s) and parameter(s) affected and the dilution factor(s).	X			Sample SB-31 (5-6') for TPH-DRO was diluted 2-fold.
18	Did the laboratory provide an adequate explanation as to why dilutions were performed?		X		No explanation was provided. The diluted result (TPH-DRO) was detected above the reporting limit (RL).
QC Results					
19	Were any target analytes detected in the method blanks? If yes, list contaminants, concentrations detected and associated samples.		X		
20	Does each analytical or preparation batch have its own method blank?	X			
21	Were any target analytes detected in the field blank(s) (e.g., trip blanks, equipment blanks)? If yes, list contaminants, concentrations detected and associated samples (or attach field blank results).			X	
22	Are there any potential false positive results based on questions 19 and/or 21?		X		
23	Are LCS/LCSD recoveries within QC limits? If no, list analytes affected, the LCS/LCSD recoveries and the affected samples.	X			
24	Does each analytical or preparation batch have its own LCS?	X			
25	Are LCS/LCSD RPDs within QC limits? If no, list analytes affected, the RPDs and the affected samples.			X	
26	Are MS/MSD recoveries within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the MS/MSD recoveries and the sample that was spiked.		X		MS/MSD performed on sample SB-31 (3-4') for TPH-DRO/ORO and on sample SB-31 (3-4') for TPH-GRO. The MSD %R of TPH-ORO (131%) performed on sample SB-31 (3-4') in batch 171262 was above the laboratory-defined recovery limits (70-130%). Therefore, the detected TPH-ORO result in sample SB-31 (3-4') may be biased high.
27	Are MS/MSD RPDs within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the RPDs and the sample that was spiked.	X			
28	Are laboratory duplicate RPDs within QC limits? NOTE: If not performed on a project sample, evaluation is not required. If no, list analytes affected, the RPDs and the sample that was prepared/analyzed in duplicate.	X			The laboratory duplicate performed on sample DUP-03 (SB-31 [3-4']) for percent moisture was within laboratory-defined limits.



Analytical Data Review Checklist

Review Item or Question		Y	N	NA	Comments
29	Are field duplicate RPDs within QC limits? If no, list analytes affected, the RPDs and the associated samples. Field duplicate criteria for soil: RPDs <50% when both results >5x the reporting limit (RL). If one of both results < the RL, absolute difference must be < 2x RL.		X		RPDs were calculated for duplicate pair SB-31 (3-4') and DUP-03. The RPD for TPH-DRO (83%) in the duplicate pair recovered greater than project specifications. Therefore, TPH-GRO in sample SB-31 (3-4') and DUP-03 may be estimated.
30	<u>ORGANIC ANALYSES ONLY:</u> Are surrogate recoveries within QC limits? If no, list samples, surrogate recoveries and analytes affected.	X			
Laboratory Comments					
31	Did the case narrative describe any analytical anomalies (i.e., problems or unique occurrences)?		X		
32	Were any other potential data quality issues identified? If yes, describe issues.		X		
Do the Data Make Sense?					
33	Do any results look questionable?		X		
34	Has the EDD been compared with the lab report?	X			

Reference: United States Environmental Protection Agency (USEPA) - *National Functional Guidelines for Organic Superfund Methods Data Review* (USEPA, November 2020); United States Environmental Protection Agency (USEPA) - *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA, November 2020)

COC = Chain-of-Custody
DRO = Diesel Range Organics
EDD = Electronic Data Deliverable
GRO = Gasoline Range Organics
LCS/LCSD = Laboratory Control Sample / Laboratory Control Sample Duplicate
ORO = Motor Oil Range Organics
MS/MSD = Matrix Spike / Matrix Spike Duplicate
NELAP = National Environmental Laboratory Accreditation Program
QAPP = Quality Assurance Project Plan
QC = Quality Control
%R = Percent Recovery
RPD = Relative Percent Difference = $|((A-B)/((A+B)/2))|$
TPH = Total Petroleum Hydrocarbon

Additional Comments: None.



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October 25, 2021

Cody Gaston
TRC San Antonio
5811 University Heights
Suite 106
San Antonio, TX 78249

Work Order: **HS21100714**

Laboratory Results for: **HEP Klein Ranch**

Dear Cody Gaston,

ALS Environmental received 11 sample(s) on Oct 13, 2021 for the analysis presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

Regards,

Generated By: JUMOKE.LAWAL
Ragen Giga
Project Manager

ALS Houston, US

Date: 25-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
Work Order: HS21100714

SAMPLE SUMMARY

Lab Samp ID	Client Sample ID	Matrix	TagNo	Collection Date	Date Received	Hold
HS21100714-01	SB-31 (3-4')	Soil		07-Oct-2021 15:44	13-Oct-2021 09:40	<input type="checkbox"/>
HS21100714-02	SB-31 (5-6')	Soil		07-Oct-2021 15:45	13-Oct-2021 09:40	<input type="checkbox"/>
HS21100714-03	SB-31 (9-10')	Soil		07-Oct-2021 15:47	13-Oct-2021 09:40	<input type="checkbox"/>
HS21100714-04	SB-31 (16-17')	Soil		07-Oct-2021 16:47	13-Oct-2021 09:40	<input type="checkbox"/>
HS21100714-05	SB-31 (19-20')	Soil		07-Oct-2021 16:50	13-Oct-2021 09:40	<input type="checkbox"/>
HS21100714-06	SB-31 (23-24')	Soil		08-Oct-2021 08:56	13-Oct-2021 09:40	<input type="checkbox"/>
HS21100714-07	SB-31 (25-26')	Soil		08-Oct-2021 08:57	13-Oct-2021 09:40	<input type="checkbox"/>
HS21100714-08	SB-31 (30-31')	Soil		08-Oct-2021 09:02	13-Oct-2021 09:40	<input type="checkbox"/>
HS21100714-09	SB-31 (34-35')	Soil		08-Oct-2021 09:05	13-Oct-2021 09:40	<input type="checkbox"/>
HS21100714-10	DUP-03	Soil		08-Oct-2021 00:00	13-Oct-2021 09:40	<input type="checkbox"/>
HS21100714-11	Trip Blank	Water	CG 082521 -545	07-Oct-2021 00:00	13-Oct-2021 09:40	<input checked="" type="checkbox"/>

Revision:1

ALS Houston, US

Date: 25-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
Work Order: HS21100714

CASE NARRATIVE

Work Order Comments

- Trip Blank received, not listed on COC. Placed on hold. Logged in for 2 Day TAT per client request.

Work Order Comments

- Report Revised on October 25,2021 to remove MS comment for Batch 171262. MS was within QC limits.

GC Semivolatiles by Method SW8015M

Batch ID: 171262

Sample ID: SB-31 (3-4') (HS21100714-01MSD)

- The recovery of the Matrix Spike Duplicate (MSD) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MSD may be due to sample matrix interference.

GC Volatiles by Method SW8015

Batch ID: R393443

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

WetChemistry by Method SW3550

Batch ID: R393459

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

ALS Houston, US

Date: 25-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-31 (3-4')
 Collection Date: 07-Oct-2021 15:44

ANALYTICAL REPORT

WorkOrder:HS21100714
 Lab ID:HS21100714-01
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	ND		0.051	mg/Kg	1	14-Oct-2021 12:48
Surr: 4-Bromofluorobenzene	115		70-123	%REC	1	14-Oct-2021 12:48
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 14-Oct-2021	Analyst: PPM
TPH (Diesel Range)	41		1.7	mg/Kg	1	14-Oct-2021 13:13
TPH (Motor Oil Range)	41	n	3.4	mg/Kg	1	14-Oct-2021 13:13
Surr: 2-Fluorobiphenyl	73.1		60-129	%REC	1	14-Oct-2021 13:13
MOISTURE		Method:SW3550				Analyst: JAC
Percent Moisture	2.00		0.0100	wt%	1	14-Oct-2021 16:01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US

Date: 25-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-31 (5-6')
 Collection Date: 07-Oct-2021 15:45

ANALYTICAL REPORT

WorkOrder:HS21100714
 Lab ID:HS21100714-02
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015		Analyst: QX		
Gasoline Range Organics	ND		0.056	mg/Kg	1	14-Oct-2021 13:04
Surr: 4-Bromofluorobenzene	117		70-123	%REC	1	14-Oct-2021 13:04
TPH DRO/ORO BY SW8015C		Method:SW8015M		Prep:SW3541 / 14-Oct-2021		Analyst: PPM
TPH (Diesel Range)	82		3.4	mg/Kg	2	14-Oct-2021 22:59
TPH (Motor Oil Range)	45	n	3.4	mg/Kg	1	14-Oct-2021 14:26
Surr: 2-Fluorobiphenyl	78.6		60-129	%REC	1	14-Oct-2021 14:26
Surr: 2-Fluorobiphenyl	88.1		60-129	%REC	2	14-Oct-2021 22:59
MOISTURE		Method:SW3550		Analyst: JAC		
Percent Moisture	2.87		0.0100	wt%	1	14-Oct-2021 16:01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US

Date: 25-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-31 (9-10')
 Collection Date: 07-Oct-2021 15:47

ANALYTICAL REPORT

WorkOrder:HS21100714
 Lab ID:HS21100714-03
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	ND		0.056	mg/Kg	1	14-Oct-2021 13:21
Surr: 4-Bromofluorobenzene	111		70-123	%REC	1	14-Oct-2021 13:21
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 14-Oct-2021	Analyst: PPM
TPH (Diesel Range)	6.8		1.7	mg/Kg	1	14-Oct-2021 15:39
TPH (Motor Oil Range)	13	n	3.4	mg/Kg	1	14-Oct-2021 15:39
Surr: 2-Fluorobiphenyl	76.5		60-129	%REC	1	14-Oct-2021 15:39
MOISTURE		Method:SW3550				Analyst: JAC
Percent Moisture	3.07		0.0100	wt%	1	14-Oct-2021 16:01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US

Date: 25-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-31 (16-17')
 Collection Date: 07-Oct-2021 16:47

ANALYTICAL REPORT

WorkOrder:HS21100714
 Lab ID:HS21100714-04
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	ND		0.048	mg/Kg	1	14-Oct-2021 13:37
Surr: 4-Bromofluorobenzene	114		70-123	%REC	1	14-Oct-2021 13:37
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 14-Oct-2021	Analyst: PPM
TPH (Diesel Range)	3.3		1.7	mg/Kg	1	14-Oct-2021 16:03
TPH (Motor Oil Range)	6.7	n	3.4	mg/Kg	1	14-Oct-2021 16:03
Surr: 2-Fluorobiphenyl	66.7		60-129	%REC	1	14-Oct-2021 16:03
MOISTURE		Method:SW3550				Analyst: JAC
Percent Moisture	9.13		0.0100	wt%	1	14-Oct-2021 16:01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US

Date: 25-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-31 (19-20')
 Collection Date: 07-Oct-2021 16:50

ANALYTICAL REPORT

WorkOrder:HS21100714
 Lab ID:HS21100714-05
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	ND		0.049	mg/Kg	1	14-Oct-2021 15:15
Surr: 4-Bromofluorobenzene	115		70-123	%REC	1	14-Oct-2021 15:15
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 14-Oct-2021	Analyst: PPM
TPH (Diesel Range)	12		1.7	mg/Kg	1	14-Oct-2021 16:28
TPH (Motor Oil Range)	29	n	3.4	mg/Kg	1	14-Oct-2021 16:28
Surr: 2-Fluorobiphenyl	81.8		60-129	%REC	1	14-Oct-2021 16:28
MOISTURE		Method:SW3550				Analyst: JAC
Percent Moisture	8.83		0.0100	wt%	1	14-Oct-2021 16:01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US

Date: 25-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-31 (23-24')
 Collection Date: 08-Oct-2021 08:56

ANALYTICAL REPORT

WorkOrder:HS21100714
 Lab ID:HS21100714-06
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	ND		0.052	mg/Kg	1	14-Oct-2021 15:31
Surr: 4-Bromofluorobenzene	109		70-123	%REC	1	14-Oct-2021 15:31
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 14-Oct-2021	Analyst: PPM
TPH (Diesel Range)	3.9		1.7	mg/Kg	1	14-Oct-2021 16:52
TPH (Motor Oil Range)	6.7	n	3.4	mg/Kg	1	14-Oct-2021 16:52
Surr: 2-Fluorobiphenyl	84.3		60-129	%REC	1	14-Oct-2021 16:52
MOISTURE		Method:SW3550				Analyst: JAC
Percent Moisture	27.2		0.0100	wt%	1	14-Oct-2021 16:01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US

Date: 25-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-31 (25-26')
 Collection Date: 08-Oct-2021 08:57

ANALYTICAL REPORT

WorkOrder:HS21100714
 Lab ID:HS21100714-07
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	ND		0.056	mg/Kg	1	14-Oct-2021 15:47
Surr: 4-Bromofluorobenzene	114		70-123	%REC	1	14-Oct-2021 15:47
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 14-Oct-2021	Analyst: PPM
TPH (Diesel Range)	35		1.7	mg/Kg	1	14-Oct-2021 17:17
TPH (Motor Oil Range)	13	n	3.4	mg/Kg	1	14-Oct-2021 17:17
Surr: 2-Fluorobiphenyl	73.6		60-129	%REC	1	14-Oct-2021 17:17
MOISTURE		Method:SW3550				Analyst: JAC
Percent Moisture	15.9		0.0100	wt%	1	14-Oct-2021 16:01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US

Date: 25-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-31 (30-31')
 Collection Date: 08-Oct-2021 09:02

ANALYTICAL REPORT

WorkOrder:HS21100714
 Lab ID:HS21100714-08
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	ND		0.052	mg/Kg	1	14-Oct-2021 16:03
Surr: 4-Bromofluorobenzene	112		70-123	%REC	1	14-Oct-2021 16:03
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 14-Oct-2021	Analyst: PPM
TPH (Diesel Range)	7.1		1.7	mg/Kg	1	14-Oct-2021 17:41
TPH (Motor Oil Range)	6.2	n	3.4	mg/Kg	1	14-Oct-2021 17:41
Surr: 2-Fluorobiphenyl	68.4		60-129	%REC	1	14-Oct-2021 17:41
MOISTURE		Method:SW3550				Analyst: JAC
Percent Moisture	13.1		0.0100	wt%	1	14-Oct-2021 16:01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US

Date: 25-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: SB-31 (34-35')
 Collection Date: 08-Oct-2021 09:05

ANALYTICAL REPORT

WorkOrder:HS21100714
 Lab ID:HS21100714-09
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	ND		0.052	mg/Kg	1	14-Oct-2021 16:19
Surr: 4-Bromofluorobenzene	111		70-123	%REC	1	14-Oct-2021 16:19
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 14-Oct-2021	Analyst: PPM
TPH (Diesel Range)	21		1.7	mg/Kg	1	14-Oct-2021 18:05
TPH (Motor Oil Range)	6.7	n	3.4	mg/Kg	1	14-Oct-2021 18:05
Surr: 2-Fluorobiphenyl	71.0		60-129	%REC	1	14-Oct-2021 18:05
MOISTURE		Method:SW3550				Analyst: JAC
Percent Moisture	12.3		0.0100	wt%	1	14-Oct-2021 16:01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US

Date: 25-Oct-21

Client: TRC San Antonio
 Project: HEP Klein Ranch
 Sample ID: DUP-03
 Collection Date: 08-Oct-2021 00:00

ANALYTICAL REPORT

WorkOrder:HS21100714
 Lab ID:HS21100714-10
 Matrix:Soil

ANALYSES	RESULT	QUAL	REPORT LIMIT	UNITS	DILUTION FACTOR	DATE ANALYZED
GASOLINE RANGE ORGANICS BY SW8015C		Method:SW8015				Analyst: QX
Gasoline Range Organics	ND		0.051	mg/Kg	1	14-Oct-2021 16:35
Surr: 4-Bromofluorobenzene	114		70-123	%REC	1	14-Oct-2021 16:35
TPH DRO/ORO BY SW8015C		Method:SW8015M			Prep:SW3541 / 14-Oct-2021	Analyst: PPM
TPH (Diesel Range)	17		1.7	mg/Kg	1	14-Oct-2021 18:30
TPH (Motor Oil Range)	40	n	3.4	mg/Kg	1	14-Oct-2021 18:30
Surr: 2-Fluorobiphenyl	66.2		60-129	%REC	1	14-Oct-2021 18:30
MOISTURE		Method:SW3550				Analyst: JAC
Percent Moisture	1.95		0.0100	wt%	1	14-Oct-2021 16:01

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Revision: 1

ALS Houston, US

Date: 25-Oct-21

Weight / Prep Log

Client: TRC San Antonio

Project: HEP Klein Ranch

WorkOrder: HS21100714

Batch ID: 4583	Start Date: 14 Oct 2021 11:45	End Date: 14 Oct 2021 11:45
Method: GASOLINE RANGE ORGANICS BY SW8015C	Prep Code:	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21100714-01	1	4.885 (g)	5 (mL)	1.02	Bulk (5030B)
HS21100714-02	1	4.51 (g)	5 (mL)	1.11	Bulk (5030B)
HS21100714-03	1	4.52 (g)	5 (mL)	1.11	Bulk (5030B)
HS21100714-04	1	5.167 (g)	5 (mL)	0.97	Bulk (5030B)
HS21100714-05	1	5.084 (g)	5 (mL)	0.98	Bulk (5030B)
HS21100714-06	1	4.762 (g)	5 (mL)	1.05	Bulk (5030B)
HS21100714-07	1	4.461 (g)	5 (mL)	1.12	Bulk (5030B)
HS21100714-08	1	4.781 (g)	5 (mL)	1.05	Bulk (5030B)
HS21100714-09	1	4.807 (g)	5 (mL)	1.04	Bulk (5030B)
HS21100714-10	1	4.899 (g)	5 (mL)	1.02	Bulk (5030B)

Batch ID: 171262	Start Date: 14 Oct 2021 06:30	End Date: 14 Oct 2021 10:30
Method: SOPREP: 3541 TPH	Prep Code: 8015SPR_LL	

Sample ID	Container	Sample Wt/Vol	Final Volume	Prep Factor	
HS21100714-01		30.28 (g)	1 (mL)	0.03303	4-oz glass, Neat
HS21100714-02		30.32 (g)	1 (mL)	0.03298	4-oz glass, Neat
HS21100714-03		30.26 (g)	1 (mL)	0.03305	4-oz glass, Neat
HS21100714-04		30.15 (g)	1 (mL)	0.03317	4-oz glass, Neat
HS21100714-05		30.29 (g)	1 (mL)	0.03301	4-oz glass, Neat
HS21100714-06		30.17 (g)	1 (mL)	0.03315	4-oz glass, Neat
HS21100714-07		30.05 (g)	1 (mL)	0.03328	4-oz glass, Neat
HS21100714-08		30.14 (g)	1 (mL)	0.03318	4-oz glass, Neat
HS21100714-09		30.37 (g)	1 (mL)	0.03293	4-oz glass, Neat
HS21100714-10		30.24 (g)	1 (mL)	0.03307	4-oz glass, Neat

ALS Houston, US

Date: 25-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100714

DATES REPORT

Sample ID	Client Samp ID	Collection Date	Leachate Date	Prep Date	Analysis Date	DF
Batch ID: 171262 (0)		Test Name : TPH DRO/ORO BY SW8015C			Matrix: Soil	
HS21100714-01	SB-31 (3-4')	07 Oct 2021 15:44		14 Oct 2021 06:30	14 Oct 2021 13:13	1
HS21100714-02	SB-31 (5-6')	07 Oct 2021 15:45		14 Oct 2021 06:30	14 Oct 2021 22:59	2
HS21100714-02	SB-31 (5-6')	07 Oct 2021 15:45		14 Oct 2021 06:30	14 Oct 2021 14:26	1
HS21100714-03	SB-31 (9-10')	07 Oct 2021 15:47		14 Oct 2021 06:30	14 Oct 2021 15:39	1
HS21100714-04	SB-31 (16-17')	07 Oct 2021 16:47		14 Oct 2021 06:30	14 Oct 2021 16:03	1
HS21100714-05	SB-31 (19-20')	07 Oct 2021 16:50		14 Oct 2021 06:30	14 Oct 2021 16:28	1
HS21100714-06	SB-31 (23-24')	08 Oct 2021 08:56		14 Oct 2021 06:30	14 Oct 2021 16:52	1
HS21100714-07	SB-31 (25-26')	08 Oct 2021 08:57		14 Oct 2021 06:30	14 Oct 2021 17:17	1
HS21100714-08	SB-31 (30-31')	08 Oct 2021 09:02		14 Oct 2021 06:30	14 Oct 2021 17:41	1
HS21100714-09	SB-31 (34-35')	08 Oct 2021 09:05		14 Oct 2021 06:30	14 Oct 2021 18:05	1
HS21100714-10	DUP-03	08 Oct 2021 00:00		14 Oct 2021 06:30	14 Oct 2021 18:30	1
Batch ID: R393443 (0)		Test Name : GASOLINE RANGE ORGANICS BY SW8015C			Matrix: Soil	
HS21100714-01	SB-31 (3-4')	07 Oct 2021 15:44			14 Oct 2021 12:48	1
HS21100714-02	SB-31 (5-6')	07 Oct 2021 15:45			14 Oct 2021 13:04	1
HS21100714-03	SB-31 (9-10')	07 Oct 2021 15:47			14 Oct 2021 13:21	1
HS21100714-04	SB-31 (16-17')	07 Oct 2021 16:47			14 Oct 2021 13:37	1
HS21100714-05	SB-31 (19-20')	07 Oct 2021 16:50			14 Oct 2021 15:15	1
HS21100714-06	SB-31 (23-24')	08 Oct 2021 08:56			14 Oct 2021 15:31	1
HS21100714-07	SB-31 (25-26')	08 Oct 2021 08:57			14 Oct 2021 15:47	1
HS21100714-08	SB-31 (30-31')	08 Oct 2021 09:02			14 Oct 2021 16:03	1
HS21100714-09	SB-31 (34-35')	08 Oct 2021 09:05			14 Oct 2021 16:19	1
HS21100714-10	DUP-03	08 Oct 2021 00:00			14 Oct 2021 16:35	1
Batch ID: R393459 (0)		Test Name : MOISTURE			Matrix: Soil	
HS21100714-01	SB-31 (3-4')	07 Oct 2021 15:44			14 Oct 2021 16:01	1
HS21100714-02	SB-31 (5-6')	07 Oct 2021 15:45			14 Oct 2021 16:01	1
HS21100714-03	SB-31 (9-10')	07 Oct 2021 15:47			14 Oct 2021 16:01	1
HS21100714-04	SB-31 (16-17')	07 Oct 2021 16:47			14 Oct 2021 16:01	1
HS21100714-05	SB-31 (19-20')	07 Oct 2021 16:50			14 Oct 2021 16:01	1
HS21100714-06	SB-31 (23-24')	08 Oct 2021 08:56			14 Oct 2021 16:01	1
HS21100714-07	SB-31 (25-26')	08 Oct 2021 08:57			14 Oct 2021 16:01	1
HS21100714-08	SB-31 (30-31')	08 Oct 2021 09:02			14 Oct 2021 16:01	1
HS21100714-09	SB-31 (34-35')	08 Oct 2021 09:05			14 Oct 2021 16:01	1
HS21100714-10	DUP-03	08 Oct 2021 00:00			14 Oct 2021 16:01	1

Revision: 1

ALS Houston, US

Date: 25-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100714

QC BATCH REPORT

Batch ID: 171262 (0)	Instrument: FID-7	Method: TPH DRO/ORO BY SW8015C
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MBLK	Sample ID: MBLK-171262	Units: mg/Kg	Analysis Date: 14-Oct-2021 20:32							
Client ID:	Run ID: FID-7_393470	SeqNo: 6320229	PrepDate: 14-Oct-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
TPH (Diesel Range)	ND	1.7								
TPH (Motor Oil Range)	ND	3.4								
Surr: 2-Fluorobiphenyl	2.36	0.10	3.33	0	70.9	70 - 130				

LCS	Sample ID: LCS-171262	Units: mg/Kg	Analysis Date: 14-Oct-2021 11:41							
Client ID:	Run ID: FID-7_393470	SeqNo: 6320212	PrepDate: 14-Oct-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
TPH (Diesel Range)	27.26	1.7	33.33	0	81.8	70 - 130				
TPH (Motor Oil Range)	24.22	3.4	33.33	0	72.7	70 - 130				
Surr: 2-Fluorobiphenyl	2.569	0.10	3.33	0	77.2	70 - 130				

MS	Sample ID: HS21100714-01MS	Units: mg/Kg	Analysis Date: 14-Oct-2021 13:37							
Client ID: SB-31 (3-4')	Run ID: FID-7_393470	SeqNo: 6320216	PrepDate: 14-Oct-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
TPH (Diesel Range)	82.2	1.7	33.15	41.17	124	70 - 130				E
TPH (Motor Oil Range)	73.09	3.4	33.15	40.58	98.1	70 - 130				E
Surr: 2-Fluorobiphenyl	3.51	0.099	3.312	0	106	60 - 129				

MSD	Sample ID: HS21100714-01MSD	Units: mg/Kg	Analysis Date: 14-Oct-2021 14:02							
Client ID: SB-31 (3-4')	Run ID: FID-7_393470	SeqNo: 6320217	PrepDate: 14-Oct-2021 DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
TPH (Diesel Range)	79.36	1.7	33.3	41.17	115	70 - 130	82.2	3.51	30	E
TPH (Motor Oil Range)	84.3	3.4	33.3	40.58	131	70 - 130	73.09	14.2	30	SE
Surr: 2-Fluorobiphenyl	3.314	0.10	3.327	0	99.6	60 - 129	3.51	5.75	30	

The following samples were analyzed in this batch:	HS21100714-01	HS21100714-02	HS21100714-03	HS21100714-04
	HS21100714-05	HS21100714-06	HS21100714-07	HS21100714-08
	HS21100714-09	HS21100714-10		

Revision: 1

ALS Houston, US

Date: 25-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100714

QC BATCH REPORT

Batch ID: R393443 (0)	Instrument: FID-14	Method: GASOLINE RANGE ORGANICS BY SW8015C
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MBLK	Sample ID: MBLK-211014	Units: mg/Kg	Analysis Date: 14-Oct-2021 12:00							
Client ID:	Run ID: FID-14_393443	SeqNo: 6319680	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	ND	0.050								
Surr: 4-Bromofluorobenzene	0.103	0.0050	0.1	0	103	75 - 121				

LCS	Sample ID: LCS-211014	Units: mg/Kg	Analysis Date: 14-Oct-2021 11:43							
Client ID:	Run ID: FID-14_393443	SeqNo: 6319679	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	1.009	0.050	1	0	101	72 - 121				
Surr: 4-Bromofluorobenzene	0.1039	0.0050	0.1	0	104	75 - 121				

MS	Sample ID: HS21100714-01MS	Units: mg/Kg	Analysis Date: 14-Oct-2021 13:53							
Client ID: SB-31 (3-4')	Run ID: FID-14_393443	SeqNo: 6319687	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	0.9058	0.054	1.07	0	84.7	70 - 130				
Surr: 4-Bromofluorobenzene	0.09996	0.0054	0.107	0	93.4	70 - 123				

MSD	Sample ID: HS21100714-01MSD	Units: mg/Kg	Analysis Date: 14-Oct-2021 14:09							
Client ID: SB-31 (3-4')	Run ID: FID-14_393443	SeqNo: 6319688	PrepDate: DF: 1							
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit	RPD Qual
Gasoline Range Organics	0.8967	0.054	1.09	0	82.3	70 - 130	0.9058	1.01	30	
Surr: 4-Bromofluorobenzene	0.09435	0.0054	0.109	0	86.6	70 - 123	0.09996	5.77	30	

The following samples were analyzed in this batch:

HS21100714-01	HS21100714-02	HS21100714-03	HS21100714-04
HS21100714-05	HS21100714-06	HS21100714-07	HS21100714-08
HS21100714-09	HS21100714-10		

Revision: 1

ALS Houston, US

Date: 25-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100714

QC BATCH REPORT

Batch ID: R393459 (0)		Instrument: Balance1		Method: MOISTURE					
DUP	Sample ID: HS21100714-10DUP	Units: wt%		Analysis Date: 14-Oct-2021 16:01					
Client ID: DUP-03	Run ID: Balance1_393459	SeqNo: 6320060		PrepDate:		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD %RPD	RPD Limit Qual

Percent Moisture	1.91	0.0100					1.95	2.07	20
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The following samples were analyzed in this batch:

HS21100714-01	HS21100714-02	HS21100714-03	HS21100714-04
HS21100714-05	HS21100714-06	HS21100714-07	HS21100714-08
HS21100714-09	HS21100714-10		

Revision: 1

ALS Houston, US

Date: 25-Oct-21

Client: TRC San Antonio
Project: HEP Klein Ranch
WorkOrder: HS21100714

**QUALIFIERS,
ACRONYMS, UNITS**

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL/SDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

ALS Houston, US

Date: 25-Oct-21

CERTIFICATIONS,ACCREDITATIONS & LICENSES

Agency	Number	Expire Date
Arkansas	21-022-0	26-Mar-2022
Dept of Defense	PJLA L20-507-R2	22-Dec-2021
Florida	E87611-33	30-Jun-2022
Illinois	2000322021-7	09-May-2022
Kansas	E-10352 2021-2022	31-Jul-2022
Kentucky	123043, 2021-2022	30-Apr-2022
Louisiana	03087, 2021-2022	30-Jun-2022
North Carolina	624-2021	31-Dec-2021
Texas	T104704231-21-28	30-Apr-2022

ALS Houston, US

Date: 25-Oct-21

Sample Receipt Checklist

Work Order ID: HS21100714

Date/Time Received: 13-Oct-2021 09:40

Client Name: TRC - San Antonio

Received by: Paresh M. Giga

Completed By: /S/ Jared R. Makan	13-Oct-2021 14:27	Reviewed by: /S/ Ragen Giga	14-Oct-2021 12:33
eSignature	Date/Time	eSignature	Date/Time

Matrices: **Soil, Trip Blank** Carrier name: **FedEx Priority Overnight**

- Shipping container/cooler in good condition? Yes No Not Present
- Custody seals intact on shipping container/cooler? Yes No Not Present
- Custody seals intact on sample bottles? Yes No Not Present
- VOA/TX1005/TX1006 Solids in hermetically sealed vials? Yes No Not Present
- Chain of custody present? Yes No 1 Page(s)
- Chain of custody signed when relinquished and received? Yes No COC IDs:251111
- Samplers name present on COC? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Container/Temp Blank temperature in compliance? Yes No

Temperature(s)/Thermometer(s):	1.8°C UC/C	IR31
Cooler(s)/Kit(s):	45140	
Date/Time sample(s) sent to storage:	10/13/2021 14:30	

- Water - VOA vials have zero headspace? Yes No No VOA vials submitted
- Water - pH acceptable upon receipt? Yes No N/A
- pH adjusted? Yes No N/A

pH adjusted by:

Login Notes: Trip Blank received, not listed on COC. Placed on hold. Logged in for 2 Day TAT per client request.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

Corrective Action:

Chain of Custody Form

HS21100714



Page 1 of 1

COC ID: 251111

TRC San Antonio
HEP Klein Ranch



Customer Information		ALS Project Manager:	
Purchase Order		Project Name	HEP Klein Ranch
Work Order		Project Number	
Company Name	TRC San Antonio	Bill To Company	TRC San Antonio
Send Report To	Cody Gaston	Invoice Attn	Cody Gaston
Address	5811 University Heights Suite 106	Address	5811 University Heights Suite 106
City/State/Zip	San Antonio, TX 78249	City/State/Zip	San Antonio TX 78249
Phone	(817)-75-2-36	Phone	(817)-75-2-36
Fax	(817)-52-2-10	Fax	(817)-52-2-10
e-Mail Address	cgaston@trccompanies.com	e-Mail Address	cgaston@trccompanies.com

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SB-31 (3-4')	10-7-21	1544	S	None	2					X	X	X				
2	SB-31 (5-6')		1545								X	X	X				
3	SB-31 (9-10')		1547								X	X	X				
4	SB-31 (16-17')		1647								X	X	X				
5	SB-31 (19-20')		1650								X	X	X				
6	SB-31 (23-24')	10-8-21	856								X	X	X				
7	SB-31 (25-26')		857								X	X	X				
8	SB-31 (30-31')		902								X	X	X				
9	SB-31 (34-35')		905								X	X	X				
10	DWP-03										X	X	X				

Samples Please Print & Sign Relinquished by: <i>Cody Gaston</i> Date: 10-12-21 Time: 1400 Relinquished by: <i>Cody Gaston</i> Date: _____ Time: _____ Logged by (Laboratory): _____ Date: _____ Time: _____		Shipment Method: <i>Fedex</i> Required Turnaround Time: (Check Box) <input type="checkbox"/> STD: 10 Wk Days <input checked="" type="checkbox"/> 5 Wk Days <input type="checkbox"/> 1 Wk Days <input type="checkbox"/> 24 Hour	Results Due Date: _____ Notes: HEP Klein Ranch Cooler ID: 45140 Cooler Temp: 1.801 QC Package: (Check One Box Below) <input checked="" type="checkbox"/> Level 1 SW/GR <input type="checkbox"/> Level 1 SW/GR Vial Date <input type="checkbox"/> Level 1 SW/GR SK LP <input type="checkbox"/> TRRP Checklist <input type="checkbox"/> TRRP Inventory
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Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C 9-5035

Notes: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.

45140

OCT 13 2021



45140

ORIGIN ID:SGRA (737) 266-4829
CODY GASTON (RESIDENCE)
TRC SAN ANTONIO
114 CORDOVA

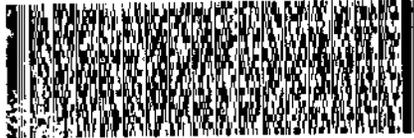
SHIP DATE: 20SEP21
ACTWT: 1.00 LB MAX
CRD: 0221347/CAF3504
DIMS: 25x14x14 IN

BOERAE, TX #PJ06
UNITED STATES 1,2

TO SHIPPING DEPT
ALS LABORATORY GROUP
10450 STANCLIFF RD
SUITE 210
HOUSTON TX 77099

(281) 530-5668
REF: MEP KLEIN RANCH - B080913 - RG

RMA: ||| ||| |||



FedEx
Express



FedEx
TRK# 5300 5222 6570
12221

WED - 13 OCT 10:30A
PRIORITY OVERNIGHT

AB SGRA

77099
TX-US IAH



#2026E 10/12 562J2/0779/FL4R



Appendix G: References



REFERENCES

- AFCEE, 2004. *Procedures for Conducting Bioventing Pilot Tests and Long-Term Monitoring of Bioventing Systems*, dated May 2004.
- AFCEE, 1992. *Test Plan and Technical Protocol for a Field Treatability Test for Bioventing*, dated May 1992.
- BLM, 2020. Karst potential data for the Site and surrounding area provided by the New Mexico Bureau of Land Management (BLM). Data accessible from https://www.nm.blm.gov/shapeFiles/cfo/carlsbad_spatial_data.html.
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CONDITIONS
 Action 61641

CONDITIONS

Operator: HOLLY ENERGY PARTNERS - OPERATING, LP 1602 W. Main St. Artesia, NM 88210	OGRID: 282505
	Action Number: 61641
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
chensley	The OCD would like to see more sample data at SB-19 that includes BTEX sampling at the various depths mentioned.	12/9/2021