



March 15, 2024

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

**Subject        Remediation Report and Closure Request**  
**Maverick Permian, LLC**  
**SEMU Permian #034 Flowline Release**  
**Unit Letter K, Section 19, Township 20 South, Range 38 East**  
**Lea County, New Mexico**  
**Incident ID nJXK1608141111**

Dear Sir or Madam,

Tetra Tech, Inc. (Tetra Tech) was initially contracted by the previous operator, ConocoPhillips, to assess a historical release that occurred from a flowline associated with the South East Monument Unit (SEMU) Permian #034 Well (API # 30-025-07820) in Unit Letter K, Section 19, Township 20 South, Range 38 East, in Lea County, New Mexico (Site). The approximate release point occurred at coordinates 32.557546°, -103.189646°, as shown in **Figure 1** and **Figure 2**. In 2022 Maverick Permian LLC (Maverick) acquired the Site from COP and began operating the Site in June 2022 and performed the remediation activities described within this report.

The previously submitted C-141 documentation erroneously reported the Incident Location as 32.556786°, -103.1856232°, which is reflected in the NMOCD records under Incident ID nJXK1608141111. The erroneously reported incident location is the center of the SEMU Permian #034 well pad approximately 1,200 feet east-southeast of the actual release location.

## **BACKGROUND**

According to the State of New Mexico C-141 Initial Report, the reported release occurred on March 18, 2016. The cause of the release was reported as a flowline leak which released a total of 15 barrels (bbl) of produced water to the ground surface. The release affected a portion of pastureland located approximately 1,200 feet west-northwest of the SEMU Permian #034 well pad. Immediate action taken by COP was to shut down the well and put in a work order to repair the line. According to the C-141, 1 bbl of produced water was recovered. The New Mexico Oil Conservation Division (NMOCD) was notified of the release on March 21, 2016. NMOCD received the initial C-141 on March 21, 2016, and subsequently assigned the Site incident ID nJXK1608141111.

The original C-141 Form associated with the nJXK1608141111 release was previously submitted to the NMOCD in the COP Release Characterization and Remediation Work Plan dated January 25, 2021, and October 13, 2022 (Remediation Work Plan) and are available in the NMOCD Permitting portal under the Incident ID.

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## SITE CHARACTERIZATION

### Receptors

Tetra Tech performed a site characterization that identified no watercourses, sinkholes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, playa lakes, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains within the distances specified in 19.15.29 New Mexico Administrative Code (NMAC). The Site is also located in an area mapped as low karst potential.

### Depth to Groundwater

According to the New Mexico Office of the State Engineers (NMOSE) reporting system, there are no water wells within a ½-mile radius of the Site. Furthermore, there are no water wells within a one-mile radius of the Site, however, there is a single depth-to-water boring listed within 1 mile of the Site that demonstrated that groundwater is greater than 100 feet below ground surface (bgs) in the area.

On March 7, 2024, Tetra Tech and West Texas Water Well mobilized to the SEMU Permian #027 (API 30-025-07814) Well Pad and installed a Depth-To-Water (DTW) boring to 55 feet bgs at 32.560329°, -103.189912°, approximately 900-feet north of the Site. The DTW boring did not encounter groundwater in the upper 55 feet, and confirms that groundwater is not present to a depth of 55 feet bgs at the Site.

The site characterization data is included in **Attachment 1** and boring logs are provided in **Attachment 2**.

## REGULATORY FRAMEWORK

Based upon the release footprint location and in accordance with Subsection E of 19.15.29.12 NMAC, per 19.15.29.11 NMAC, the site characterization data was used to determine recommended remedial action levels (RRALs) for Benzene, Toluene, Ethylbenzene, and Xylene (BTEX), Total Petroleum Hydrocarbons (TPH), and chloride in soil.

Based on the site characterization, established depth to groundwater, and in accordance with Table 1 of 19.15.29.12 NMAC, the remediation RRALs for the Site are as follows:

### Closure Criteria for Soils Impacted by a Release

Constituent	Remediation RRAL
Chloride	10,000 mg/kg
TPH (GRO+DRO+ORO)	2,500 mg/kg
TPH (GRO+DRO)	1,000 mg/kg
BTEX	50 mg/kg
Benzene	10 mg/kg

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Additionally, in accordance with the New Mexico Oil Conservation District (NMOCD) guidance *Procedures for Implementation of the Spill Rule (19.15.29 NMAC)* dated September 6, 2019, the following Reclamation Requirements for surface soils (0-4 feet bgs) are as follows:

#### Reclamation Requirements

Constituent	Remediation RRAL
Chloride	600 mg/kg
TPH (GRO+DRO+ORO)	100 mg/kg
BTEX	50 mg/kg
Benzene	10 mg/kg

## INITIAL SITE ASSESSMENT

### nJXK1608141111 Release Extent

This release was previously assessed by Basin Environmental Service Technologies (Basin). An initial site assessment was conducted by Basin inside the reported release extent on behalf of COP in 2016. Basin initially identified the release extent associated with nJXK1608141111 as approximately 1,600 square feet of pastureland. On March 23 and 28, 2016, Basin screened and collected soil samples from four (4) sample point locations (PT.1, PT.2, PT.3, and PT.4) within the release extent associated with nJXK1608141111 as shown in **Figure 3**. Selected soil samples were submitted to Cardinal Laboratories in Hobbs, New Mexico (Cardinal) for analysis of chloride by EPA Method SM4500Cl-B, TPH by EPA Method 8015M, and BTEX by EPA Method 8021B.

The majority of the soil samples collected by Basin were field screened only. Basin selected six (6) samples for laboratory analysis by Cardinal. The analytical results associated with samples PT.1 (6') and PT.1 (10') reported TPH concentrations as greater than remediation RRALs. Noticeably, the analytical results from the higher stratigraphic interval from PT.1 (4'), reported TPH concentrations as less than the RRAL for TPH. All other Basin analytical results reported TPH, BTEX, and chloride concentrations as less than the respective RRALs. The release extent and Basin sampling locations are shown in **Figure 3**. The aerial image used in **Figure 3** is the available 2014 aerial imagery, representing conditions before remedial actions were initiated at the Site.

Neither horizontal nor vertical delineation of the release was achieved during the initial Basin assessment. Assessment Location GPS coordinates are presented in **Table 1**. Analytical results from the initial assessment screened against Reclamation Requirements are summarized in **Table 2**. The laboratory analytical data packages associated with the nJXK1608141111 release Initial Site Assessment were previously submitted to the NMOCD in the COP Remediation Work Plan and are available in the NMOCD Permitting portal under the Incident ID.

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## Asphaltic Area Footprint

During the initial Basin site assessment activities, a large historic release footprint referred to by Basin as the asphaltic area was identified just north of the release extent associated with nJXK1608141111. This historically impacted asphaltic area footprint identified by Basin encompassed approximately 23,400 square feet of pastureland. **Figure 3** depicts the asphaltic area release extent and sampling locations.

Upon identification of the asphaltic area, COP scheduled a meeting at the site with Jamie Keyes of the NMOCD and Shelly Tucker with the Bureau of Land Management (BLM) on March 28, 2016. After sampling, it was determined that the soil containing chloride concentrations above the RRAL could be easily “cleaned up”, but the high TPH readings at depth within the asphaltic area would need to be addressed at the request of the BLM.

To characterize the asphaltic area, Basin collected soil samples at three (3) sample point locations (PT.1, PT.2, and PT.3) within the footprint interior on March 28, 2016. Samples were collected at the 2-foot and 4-foot depth intervals at each location and submitted to Cardinal for analysis of BTEX, TPH, and chloride. The laboratory report has “HISTORICAL” in the title to differentiate it from the initial nJXK1608141111 assessment sampling.

The analytical results associated with PT.1 (4'), PT.2 (2'), and PT.3 (4') reported TPH concentrations as greater than the Reclamation Requirements for TPH of 100 mg/kg. The analytical results associated with PT.3 (4') reported TPH concentrations as greater than the remediation RRAL of 2,500 mg/kg and benzene concentrations above the remediation RRAL for benzene of 10 mg/kg. All other analytical results reported concentrations for BTEX, TPH, and chloride as less than Reclamation Requirements or remediation RRALs for TPH, BTEX, and chloride, as applicable. The analytical results of the asphaltic area sampling event are summarized in **Table 2** screened against Reclamation Requirements.

The laboratory analytical data packages associated with Asphaltic Area Footprint site assessment activities were previously submitted to the NMOCD in the COP Remediation Work Plan and are available in the NMOCD Permitting portal under the Incident ID nJXK1608141111.

## CORRECTIVE ACTION PLAN

Based on the initial assessment data, a Corrective Action Plan (CAP) was submitted to the NMOCD on February 15, 2017, by Justin Wright of ConocoPhillips. The CAP states that “ConocoPhillips will excavate the entire area [both the historical asphaltic area and the nJXK1608141111 release footprint] to a depth of 4' and backfill with clean topsoil”. The CAP is stamped “Preliminary Results” by the NMOCD. The CAP was previously submitted to the NMOCD in the COP Remediation Work Plan and are available in the NMOCD Permitting portal under the Incident ID nJXK1608141111.

In response to the CAP, via email, Ms. Shelly Tucker of the BLM responded to Justin Wright on February 15, 2017, requesting the following stipulations be made to the CAP:

- PT.1 from the initial release site will need to be delineated to reach RRALs for TPH;
- In regard to the historic area, the chloride and TPH levels are not significantly elevated at PT.1 and PT.2, and the BLM preferred the area to be addressed in place without excavating the impacted material; and



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- In regard to the historic asphaltic area site, PT.3 will need to be delineated to reach RRALs for TPH, and upon delineation, remediation options can be discussed.

Ms. Tucker further noted that "Once you have delineated the aforementioned points, we can discuss whether or not a liner will need to be added to encapsulate the remaining impact below 4'." Ms. Tucker then forwarded the stipulations email to Olivia Yu, NMOCD. In emails from Ms. Yu on March 9 and March 17, 2017, the following stipulations were requested to be made to the CAP:

#### **Initial Release**

- Delineate vertically at PT.3 until permissible levels of TPH are obtained and maintained for an additional 10 feet;
- At PT.2, PT.3, and PT.4, delineate an additional 10 feet with sample depths no more than 5 feet to confirm that chloride levels are maintained;
- Complete vertical delineation is required at all 4 sample locations to 250 mg/kg chloride and maintained for an additional 10 feet below, and for BTEX and TPH, obtain permissible levels and maintained for 3 feet; and
- All field data is to be provided with all laboratory data to have corresponding field data for correlation.

#### **Historic Release**

- Delineate to 10 feet at PT.1 and obtain confirmation samples with depth intervals no greater than 5 feet (*i.e.*, collect a sample at 7 feet and 10 feet);
- At PT.3, delineate until permissible levels of TPH are obtained and maintained for an additional 10 feet;
- At PT.1 and PT.3, obtain 50 mg/kg TPH and maintain for 3 feet below, At a minimum, the bottom, and 1 other depth must have laboratory analyses; and
- Establish an additional sample location in the asphaltene area (somewhere center of PT.1, PT.2, and PT.3).

The email correspondence with BLM and NMOCD were previously submitted to the NMOCD in the COP Remediation Work Plan and are available in the NMOCD Permitting portal under the Incident ID nJXK1608141111.

#### **INTERIM REMEDIAL ACTIVITIES**

Based on correspondence with Justin Wright, In 2017 ConocoPhillips began excavation of the nJXK1608141111 and historical release area footprints to depths of approximately 2 to 4 feet bgs. COP personnel used backhoes and track hoes to remove the visually impacted soils from both release extents.

This interim remedial action resulted in the majority of the nJXK1608141111 footprint being excavated to 4' bgs (Figure 4). This interim remedial action also resulted in the excavation of a large portion of the western asphaltic area to 2 feet bgs (Figure 4). The impacted material was transported offsite and taken to an NMOCD-approved facility for disposal. Clean material was stockpiled in two areas in the vicinity of the asphaltic area for eventual backfill. These stockpiles are labeled Stockpile-1 and Stockpile-2 and

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shown in **Figure 4**. These areas excavated during this interim remedial action were not backfilled after excavation.

## **ADDITIONAL 2020 SITE ASSESSMENTS**

### **August 2020 Additional Site Assessment**

In order to achieve vertical delineation of the release extent(s) and adhere to the above-mentioned CAP stipulations from NMOCD and BLM, Tetra Tech personnel conducted additional soil sampling at the Site in August 2020. A total of nine (9) borings (BH-1A through BH-9A) were completed using a truck-mounted direct-push technology (DPT) drilling rig. Discrete soil samples were collected in 4-foot-long clear acetate liners contained within an outer stainless steel sampler. The "A" (Assessment) designation was used to differentiate these new boring locations from any previous characterization work. Selected samples were submitted to Pace Analytical Laboratory in Mount Juliet, Tennessee (Pace) for analysis of BTEX by Method 8021B, TPH by Method 8015M, and chloride by Method 300.0.

Boring BH-1A was drilled to determine if a horizontal connection was present in the subsurface between the historic asphaltic area and the nJXK1608141111 release footprint. The remainder of the borings (BH-2A through BH-9A) were installed to various depths within the historical asphaltic area (as visually delineated by Basin) to provide additional characterization data and achieve vertical delineation of the historical footprint. Additional areas with evidence of asphaltic staining were also observed outside of the Basin reported historical extent during the assessment. Boring locations and this additional area are indicated in **Figure 4**. Boring logs from the August 2020 assessment activities are included in **Attachment 2**.

### Summary of August 2020 Analytical Results

The analytical results associated with samples collected during this additional soil assessment reported concentrations of BTEX and chloride as less than applicable Reclamation Requirements and remediation RRALs. Laboratory analytical results for samples collected from boring location BH-1A reported BTEX, TPH, and chloride concentrations as less than all respective Reclamation Requirements or remediation RRALs, as applicable. The data for this boring provided evidence that the historical asphaltic extent was not laterally connected with the nJXK1608141111 extent in the subsurface.

Laboratory analytical results associated with boring locations BH-2A and BH-3A (inside historical footprint) reported TPH concentrations as greater than Reclamation Requirements and remediation RRALs down to a depth of 10 feet bgs. Laboratory analytical for samples collected from boring locations BH-4A and BH-8A (historical footprint east and west edges) reported TPH concentrations as greater than Reclamation Requirements and remediation RRALs for TPH down to a depth of 1 foot bgs.

Laboratory analytical results associated with the BH-5A and BH-6A (inside historical) locations reported TPH concentrations as greater than Reclamation Requirements down to a depth of 3 feet bgs. Laboratory analytical results associated with samples collected from BH-7A reported concentrations of BTEX, TPH, and chloride as less than Reclamation Requirements and remediation RRALs. Laboratory analytical results for samples collected from boring location BH-9A (inside historical) reported TPH concentrations as greater than remediation RRALs for TPH down to a depth of 8 feet bgs. Several of these locations were located in previously excavated areas.

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As a result of the Tetra Tech August 2020 Additional Site Assessment, vertical delineation was completed inside the historical footprint in accordance with the previous NMOCD request. Laboratory analytical results for samples collected from borings completed as part of this sampling event reported concentrations above TPH Reclamation Requirements in the 1-foot sample depth interval at several locations. These perimeter borings encountered historical impact at the edge of the observed historical release footprint, thus, horizontal delineation was incomplete for the entire release area.

Results from the August 2020 sampling event are summarized in **Table 3** screened against Reclamation Requirements. Photographic documentation of the release footprint, initial site assessment, and additional site assessment are included in **Attachment 3**. The laboratory analytical data packages associated with the August 2020 Additional Site Assessment activities were previously submitted to the NMOCD in the Remediation Work Plan and are available in the NMOCD Permitting portal under the Incident ID nJXK1608141111.

### September 2020 Additional Site Assessment

Tetra Tech conducted an additional soil investigation in September 2020 to complete horizontal delineation and refine vertical delineation of the release extents. This additional delineation was necessary to properly characterize the release extents. A total of 11 borings (BH-10A through BH-20A) were installed using hand auger methods to various depths to evaluate the vertical and horizontal impacts of the release extents. Two (2) borings (BH-19A and BH-20A) were installed within the originally identified nJXK1608141111 release extent at depths ranging from 7 feet bgs to 14 feet bgs to refine vertical delineation of the initial release. The remaining nine (9) borings (BH-10A through BH-18A) were installed around the perimeter of the release extent to complete horizontal delineation.

A total of twenty-four (24) samples were submitted to Pace for analysis of BTEX by Method 8021B, TPH by Method 8015M, and chloride by Method 300.0. The boring locations are shown in **Figure 4**.

#### Summary of September 2020 Analytical Results

Results from the September 2020 sampling event are summarized in **Table 3** screened against Reclamation Requirements. Analytical results from BH-15A reported TPH concentrations as slightly above Reclamation Requirements down to a depth of 3 feet bgs. The remainder of the analytical results from the nine (9) perimeter borings (BH-10A through BH-14A, and BH-16A through BH-18A) reported TPH concentrations as less than Reclamation Requirements. Horizontal delineation was achieved for the majority of the release area.

The laboratory analytical data packages associated with the September 2020 Additional Site Assessment activities were previously submitted to the NMOCD in the Remediation Work Plan and are available in the NMOCD Permitting portal under the Incident ID nJXK1608141111.

### October 2020 Additional Site Assessment

Based on the laboratory analytical results from samples collected at BH-15A, Tetra Tech conducted one further soil investigation in October 2020. This additional sampling was conducted in an attempt to further delineate TPH impacts in the vicinity of boring BH-15A. A total of three (3) borings (BH-21A through BH-23A) were installed to 3 feet bgs using hand auger methods to evaluate the horizontal impacts in this

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area. Boring BH-21A was installed to the east of BH-15A. Boring BH-22A was installed to the north of BH-15A. Boring BH-23A was installed to the south of BH-15A.

A total of six (6) samples were submitted to Pace for analysis of BTEX by Method 8021B, TPH by Method 8015M, and chloride by Method 300.0. The boring locations are shown in **Figure 4**.

### Summary of October 2020 Analytical Results

Results from the October 2020 sampling event are summarized in **Table 3**. Laboratory analytical results reported TPH concentrations in samples collected from BH-21A as slightly greater than Reclamation Requirements in the 0-1 foot interval. The Laboratory analytical results reported for samples collected from BH-22A reported TPH concentrations as less than Reclamation Requirements. Laboratory analytical results reported TPH concentrations for samples collected from BH-23A as slightly greater than Reclamation Requirements down to 3 feet bgs. With BH-14A serving as a southern boundary point, and BH-22A serving as a northern boundary point, the horizontal impact for this area was considered delineated. During 2023 remediation, these areas were excavated and confirmation samples SW-9, SW-10, and SW-11 confirmed that the eastern boundary had been delineated and remediated.

The laboratory analytical data packages associated with the October 2020 Additional Site Assessment activities were previously submitted to the NMOCD in the Remediation Work Plan and are available in the NMOCD Permitting portal under the Incident ID nJXK1608141111.

## REMEDIATION WORK PLAN

On January 25, 2021, Tetra Tech submitted the COP *Release Characterization and Remediation Work Plan* document for the Site dated January 25, 2021, to the NMOCD. After more than one and a half years, a response from the NMOCD was not received and the Remediation Work Plan was again submitted to the NMOCD on October 13, 2022.

### COP Remediation Work Plan Variance Content

The submitted *Release Characterization and Remediation Work Plan* included the following assessment and proposed remedial activities not in alignment with 19.15.29 NMAC or NMOCD guidance *Procedures for Implementation of the Spill Rule (19.15.29 NMAC)* dated September 6, 2019:

- The submitted Site Characterization included a depth to groundwater determination using groundwater data from greater than 1 mile away from the Site to establish groundwater at a depth of between 51 and 100 feet bgs;
- A Variance Request in accordance with 19.15.29.14(A) NMAC requesting a variance for the remediation of the initial and historical release areas should excavation floor concentrations exceed Reclamation Requirements for BTEX, TPH, or chloride. The Variance Request proposed managing remaining impacts below 4 feet bgs with the installation of a 20-mil reinforced polyethylene liner will be installed, domed, and properly seated at a depth of 4 feet below the original grade within the excavated areas to provide an engineered barrier inhibiting the downward migration of residual constituents to groundwater; and
- An Alternative Confirmation Sampling Plan in accordance with 19.15.29.12(D)(1)(b) NMAC requested 31 confirmation floor samples and thirty-two 32 confirmation sidewall samples for

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verification of remedial activities representative of no more than approximately 500 square feet of excavated area per sample.

- Notification of NMOCD once final analytical results are received after the excavation is completed, and prior to backfill.

### **COP Remediation Work Plan Rejection**

On October 13, 2022, the same day as the resubmission of the *Release Characterization and Remediation Work Plan* for the Site, Ms. Brittany Hall of the NMOCD rejected the submission with the following reasoning:

- *The depth to groundwater has not been adequately determined. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old, and well construction information should be provided in the submission. The responsible party may choose to remediate to the most stringent levels listed in Table 1 of 19.15.29 NMAC in lieu of drilling to determine the depth to groundwater.*
- *Per 19.15.29.14(A) NMAC each variance request must include “a detailed statement explaining the need for a variance” along with “a detailed written demonstration that the variance will provide equal or better protection of fresh water, public health and the environment.”*
- *Alternative confirmation sampling plan denied. OCD will approve an alternate sampling size of samples representing no more than 400 square feet.*

### **Maverick Response to COP Remediation Work Plan Rejection**

In response to the Remediation Work Plan rejection, Tetra Tech undertook the following activities to address the rejection reasoning:

- On March 7, 2024, Tetra Tech and West Texas Water Well mobilized to the SEMU Permian #027 (API 30-025-07814) Well Pad approximately 900 feet north of the Site and installed a Depth-To-Water (DTW) boring to 55 feet bgs at 32.560329°, -103.189912°. The DTW boring did not encounter groundwater in the upper 55 feet and confirms that groundwater is found below 55 feet bgs at the Site. Additionally, in November 2022, a depth-to-water boring (L 15414 POD1) was advanced to over 100 feet bgs on the SEMU Burger B #108 (API 30-025-26269) well pad approximately 0.65 miles east of the Site which did not identify groundwater in the upper 100 feet bgs.
- Based on the rejection of the variance requesting the installation of a liner to manage impacts below 4 feet bgs, Maverick adjusted the remedial strategy to remove all material in the upper 4 feet bgs impacted with constituent concentrations greater than Reclamation Requirements and remove all material below 4 feet bgs impacted with constituent concentrations greater than remediation RRALs based on a depth to groundwater determination of between 51 and 100 feet bgs.
- The Remediation Work Plan rejection by the NMOCD stated “OCD will approve an alternate sampling size of samples representing no more than 400 square feet”, therefore Maverick



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implemented confirmation sampling at a density of one sample per every 400 square feet or less during remediation.

## ALTERNATIVE CONFIRMATION SAMPLING PLAN

In accordance with 19.15.29.12(D)(1)(b) NMAC, COP requested an alternative confirmation sampling plan in the Remediation Work Plan. NMOCD rejected the proposed alternative confirmation sampling plan representative of no more than approximately 500 square feet of the excavated area and stated *"OCD will approve an alternate sampling size of samples representing no more than 400 square feet"*

## REMEDICATION AND CONFIRMATION SAMPLING

McNabb Enterprises mobilized to the site on October 27, 2023, and began field hydro-excavation of flowlines on October 30, 2023. Once McNabb had exposed subsurface lines using hydro-excavation, excavation began on November 2, 2023. The excavation was performed over a large area ranging in depth from 1 foot bgs to 11 feet bgs as shown in **Figure 5**. As the COP Remediation Work Plan included a variance request to install a liner as discussed above was rejected, Maverick opted to excavate material to depths where confirmation samples demonstrated that applicable Reclamation Requirement or remediation RRLs were achieved. These depths are reported as below ground surface and refer in this case to the original native ground surface prior to COP's interim remedial action described above. McNabb reported a total of 7,114 cubic yards of material were excavated and transported for disposal to either the Sundance landfill or the R360 Halfway landfill in Lea County, New Mexico, both NMOCD-approved landfills.

### Confirmation Sampling

A total of 90 floor and 29 sidewall confirmation samples were obtained during and at the completion of excavation and prior to backfilling to verify reclamation/remediation standards with a sampling density of approximately one sample per 325 square feet. Tetra Tech submitted confirmation samples to Cardinal for analysis of BTEX by method 8021B, TPH by Method 8015M, and chloride by method SM4500Cl-B. The laboratory analytical results for confirmation samples collected in the shallow excavations (less than 4 feet bgs) are summarized in **Table 4** screened against Reclamation Requirements. Final confirmation sample analytical results for samples collected from shallow excavations reported constituent concentrations as less than respective Reclamation Requirements. The laboratory analytical results of the confirmation samples taken in the deeper excavation areas (4 feet to 11 feet bgs) are presented in **Table 5** screened against remediation RRLs. Final confirmation sample analytical results for samples collected from the deeper excavations reported constituent concentrations as less than remediation RRLs. Confirmation sampling locations are shown in **Figure 5** and laboratory analytical data packages including chain-of-custody documentation are included in **Attachment 4**.

A total of 29 sidewall and 90 floor confirmation samples were obtained after excavation to verify reclamation/remediation standards had been obtained. The samples were submitted to Cardinal for analysis of BTEX by Method 8021B, TPH by Method 8015M, and chloride by Method SM4500Cl-B.



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## Excavation Backfill

As discussed in the "Interim Remedial Activities" section of this report, in 2017 COP performed initial excavation to begin removing impacted soils at the Site. During the 2017 COP excavation, McNabb sourced clean backfill to the Site from McCasland Pit that comprised the two stockpiles shown in **Figure 4**. Tetra Tech estimates the total volume of both stockpiles at approximately 2,500 cubic yards. Prior to using the stockpiled material as excavation backfill, Tetra Tech verified to provenance of the stockpile material with the McNabb Chief Operating Officer, Zac McNabb.

### Stockpile Verification Sampling

To ensure the material contained within the two onsite soil stockpiles was suitable for use as clean backfill for the remediation, Tetra Tech used a hand auger to collect three (3) 5-point composite soil samples from each stockpile. WP-1, WP-2, and WP-3 were collected from Stockpile 1, and EP-1, EP-2, and EP-3 were collected from Stockpile 2, as shown in **Figure 4**. The samples were submitted to Cardinal for analysis of BTEX by Method 8021B, TPH by Method 8015M, and chloride by Method SM4500Cl-B.

The six (6) samples reported constituent concentrations as non-detect with the exception of chloride in EP-1 and WP-3 at concentrations of 32 mg/kg and 16 mg/kg, respectively. Laboratory analytical results for the Stockpile Verification Sampling are summarized in **Table 6** screened against Reclamation Requirements.

Based on the Laboratory analytical results of the stockpile verification samples, the two soil stockpiles were assessed as clean and suitable for use as remediation backfill at the Site. The laboratory analytical data package including chain-of-custody documentation is included in **Attachment 4**.

### Additional Backfill Material

In addition to the clean backfill used from the on-site stockpiles, McNabb sourced an additional 4,498 cubic yards of clean soil from McCasland Pit located south of Hobbs, New Mexico. Backfilling operations were completed between December 1 and 20, 2023.

## Reclamation

Subsequent to backfilling the excavation with clean soil, the backfilled areas were graded and contoured to match the surrounding surface before being seeded to expedite revegetation of the area. Based United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil mapping of the soils at the Site, New Mexico State Land Office (NMSLO) Sandy (S) Sites Seed Mixture was broadcasted over the disturbed areas at the Site at double the seed drill application rate in the pounds pure live seed (PLS) per acre as specified in the NMSLO Seed Mix data sheet provided in **Attachment 5**.

## VARIANCE REQUEST

Tetra Tech and Maverick understand that failure to notify the NMOCD of sampling events including any changes in date/time per the requirements of 19.15.29.12.D.(1)(a) NMAC, may result in the remediation closure samples not being accepted. Tetra Tech failed to notify the NMOCD of sampling 48 hours in advance in accordance with 19.15.29.12.D.(1)(a). Tetra Tech respectfully requests a variance for the failure to notify the NMOCD of sampling in consideration of the significant changes to the NMOCD notification process and changes that were implemented by the NMOCD in early December 2023.

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March 15, 2024

Tetra Tech has reviewed the C-141N notification process and NMOCD *Public Notice Implementation of Digital C-141 and Incident Statuses* document dated December 1, 2023, and has shifted to strictly adhering to the sampling notification requirements of 19.15.29.12.D.(1).(a) NMAC and NMOCD notification guidance.

## CONCLUSIONS

Based on the results of the remediation and reclamation confirmation sampling, the impacted soil within the release footprint with concentrations greater than Reclamation Requirements and/or remediation RRALs has been removed and properly disposed of offsite. The excavated area has been backfilled with clean soil, graded, and seeded with BLM-approved seed mixture; therefore, Site remediation and reclamation are complete.

If you have any questions concerning the remediation activities for the Site, please contact Charles Terhune by phone at (832) 252-2093 or by email at [chuck.terhune@tetrattech.com](mailto:chuck.terhune@tetrattech.com).

Sincerely,



Stephen Jester  
Project Manager  
Tetra Tech, Inc.



Charles H. Terhune IV, P.G.  
Program Manager  
Tetra Tech, Inc.

cc: Mr. Bryce Wagoner, Maverick Permian LLC  
Bureau of Land Management

Site Remediation Closure Report  
SEMU Permian #034 Flowline Release  
nJXK1608141111

Maverick Permian, LLC  
March 15, 2024

## LIST OF ATTACHMENTS

### Figures:

- Figure 1 – Overview Map
- Figure 2 – Site Location & Topographic Map
- Figure 3 – Approximate Release Extents and Initial Assessment
- Figure 4 – Additional Assessment and 2020 Conditions
- Figure 5 – Remediation Extent & Confirmation Sample Locations

### Tables

- Table 1 – Summary of Analytical Results – Initial Soil Assessment
- Table 2 – Summary of Analytical Results – Historical Basin Soil Assessment
- Table 3 – Summary of Analytical Results – 2020 Soil Assessment
- Table 4 – Summary of Analytical Results – Backfill Soil Validation Sampling
- Table 5 – Summary of Analytical Results – Shallow Soil Confirmation Sampling
- Table 6 – Summary of Analytical Results – Deep Soil Confirmation Sampling

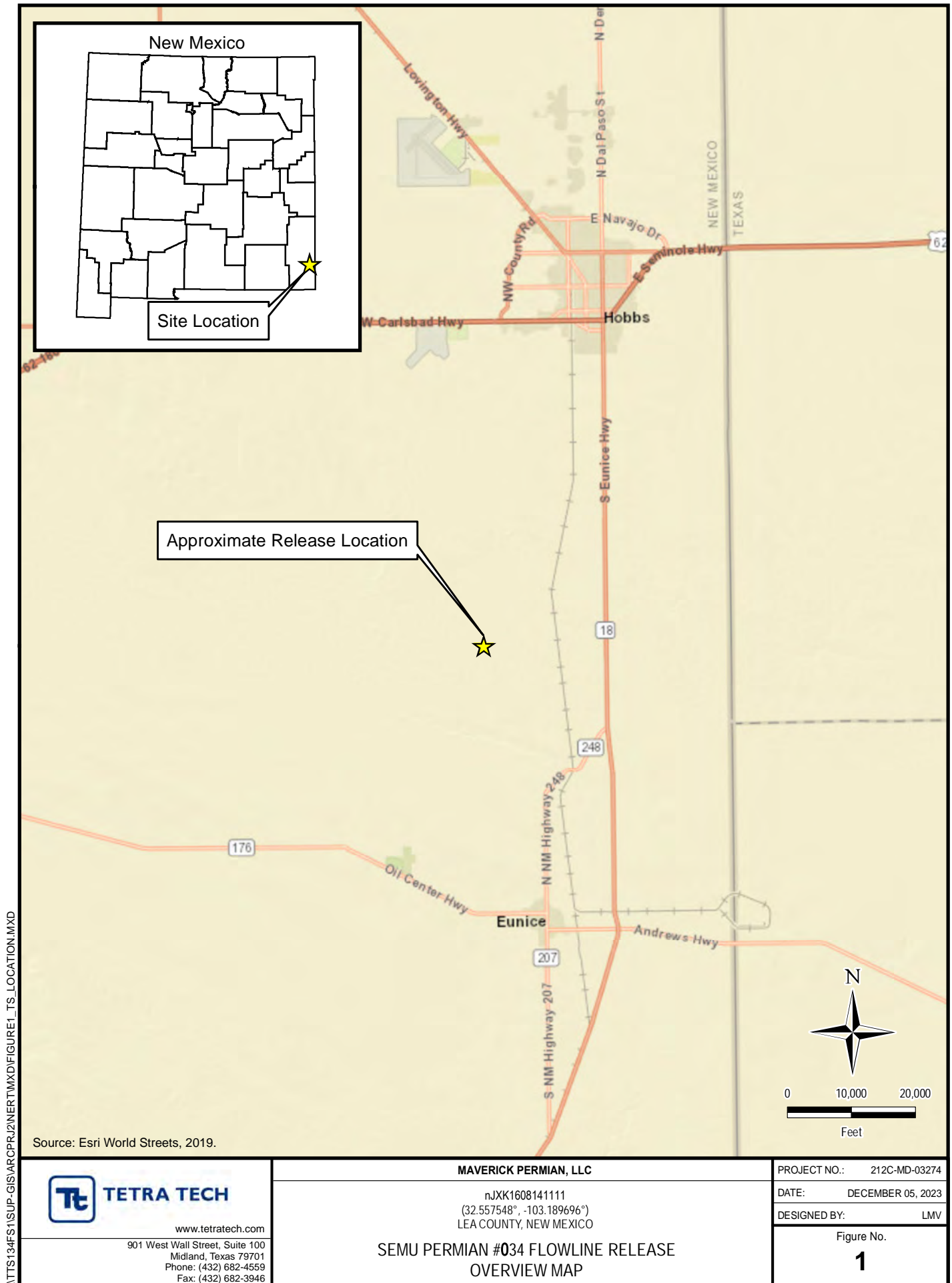
### Appendices

- Attachment 1 – Site Characterization Data
- Attachment 2 – Boring Logs
- Attachment 3 – Photographic Documentation
- Attachment 4 – Laboratory Analytical Data
- Attachment 5 – NMSLO Seed Mixture

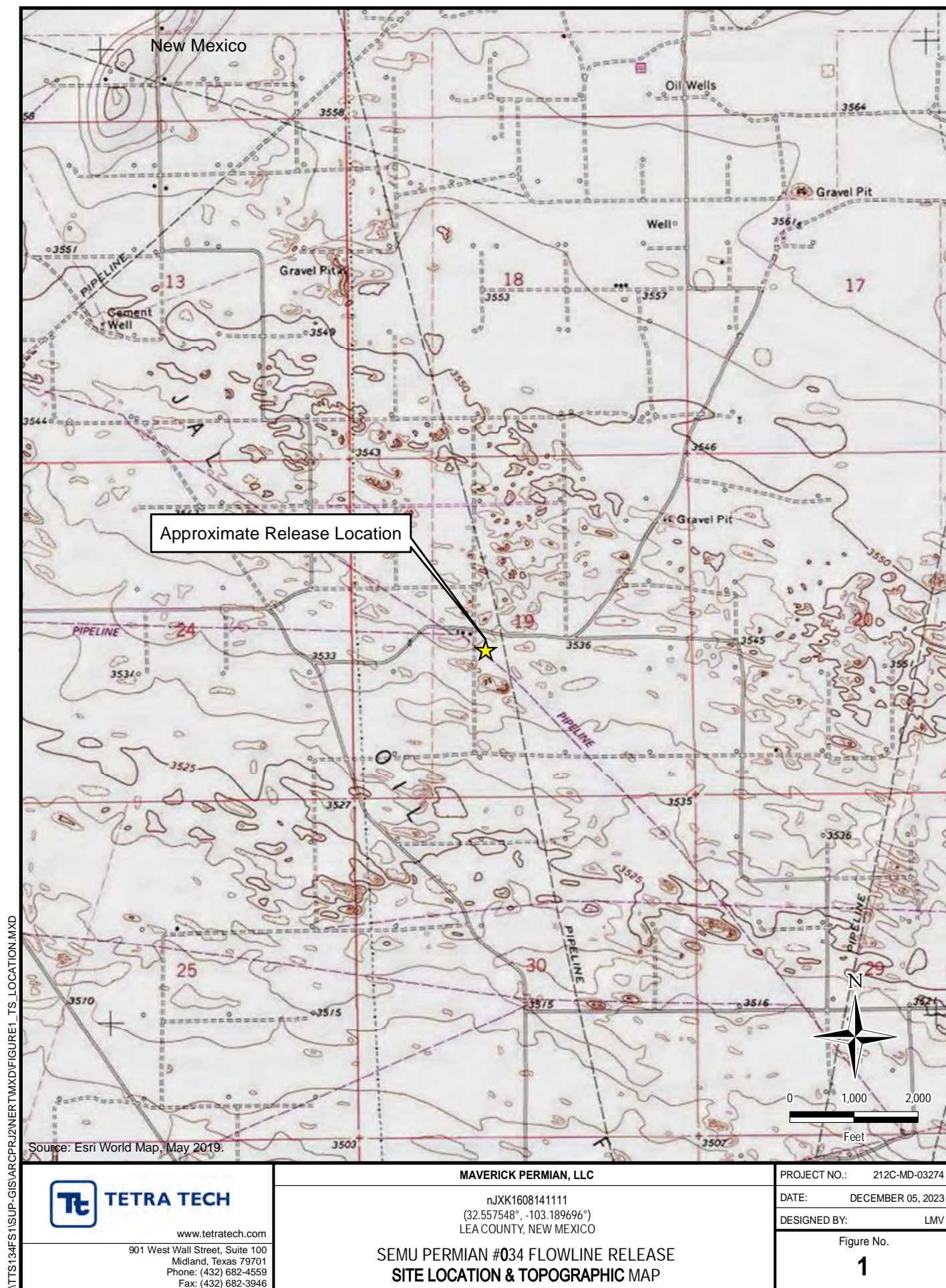
Site Remediation Closure Report  
SEMU Permian #034 Flowline Release  
nJXK1608141111

Maverick Permian, LLC  
March 15, 2024

## FIGURES

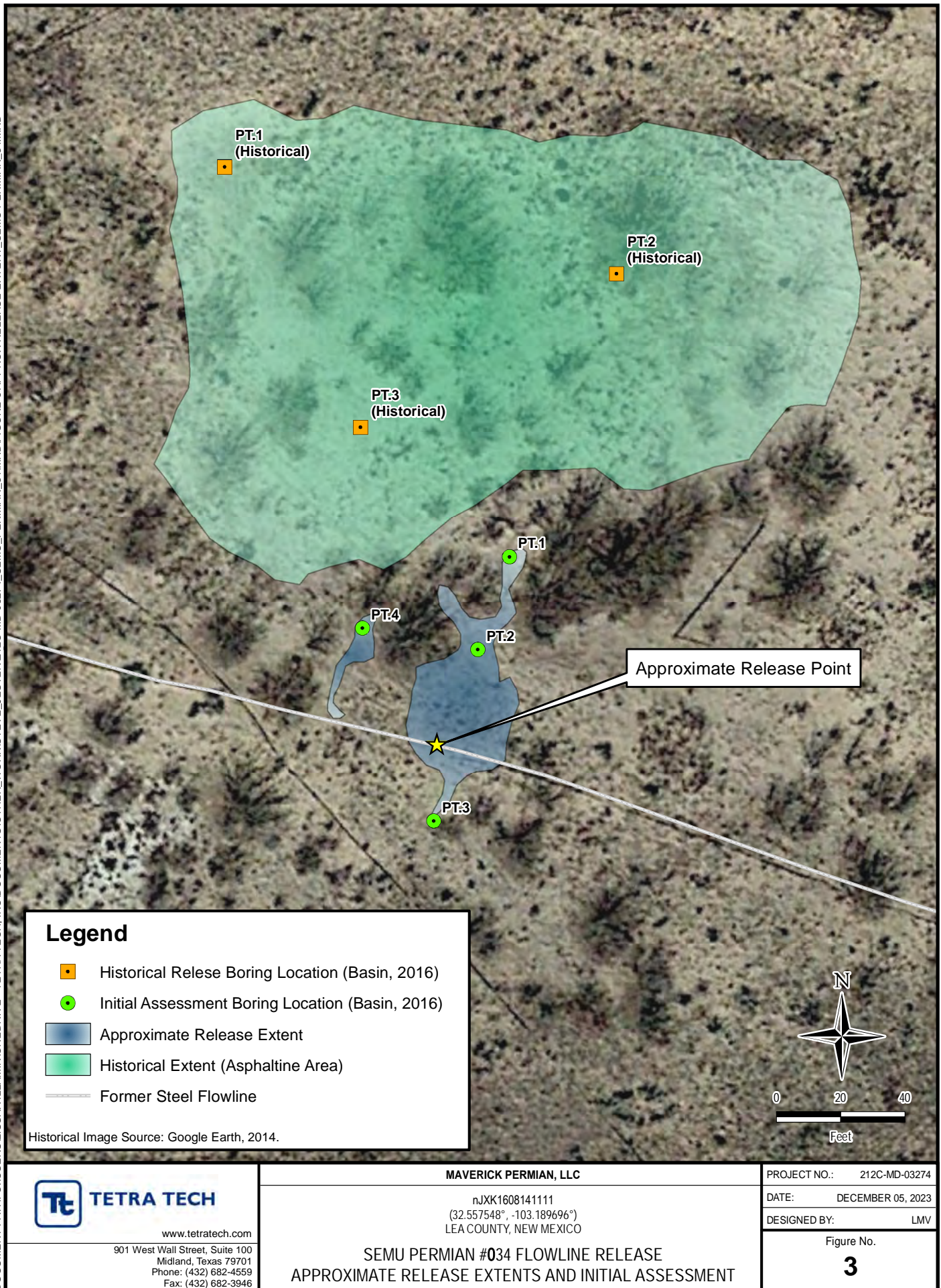




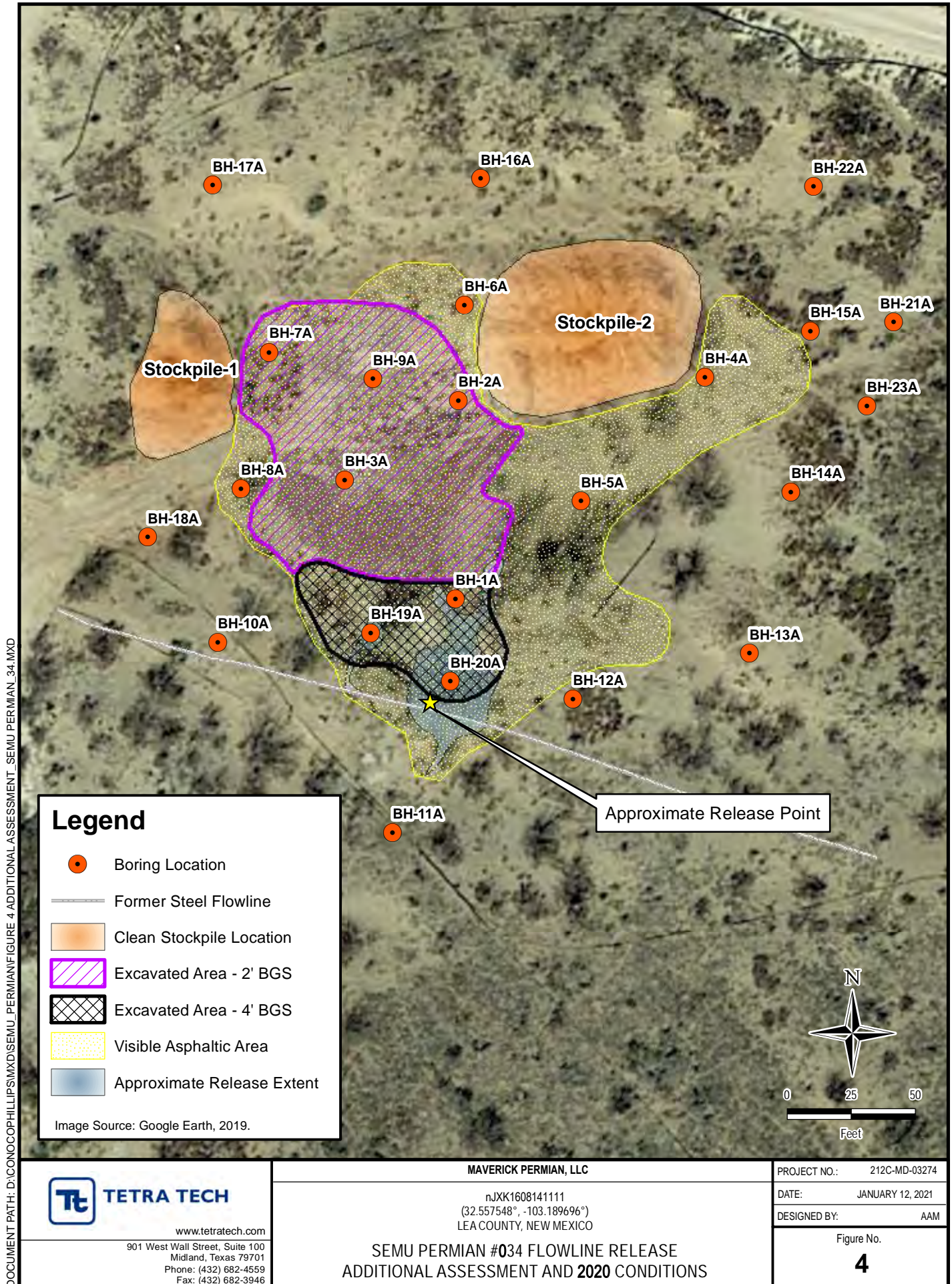




DOCUMENT PATH: C:\USERS\LISSA.VILLAMONEDRIVE - TETRA TECH, INC\DOCUMENTS\OTHER\_WORK\STEVE\_JESTER\212C-MD-03274\_SEMU\_PERMIAN\_34\MXD\FIGURE 3 APPROX RELEASE EXTENT\_SEMU PERMIAN\_34.MXD

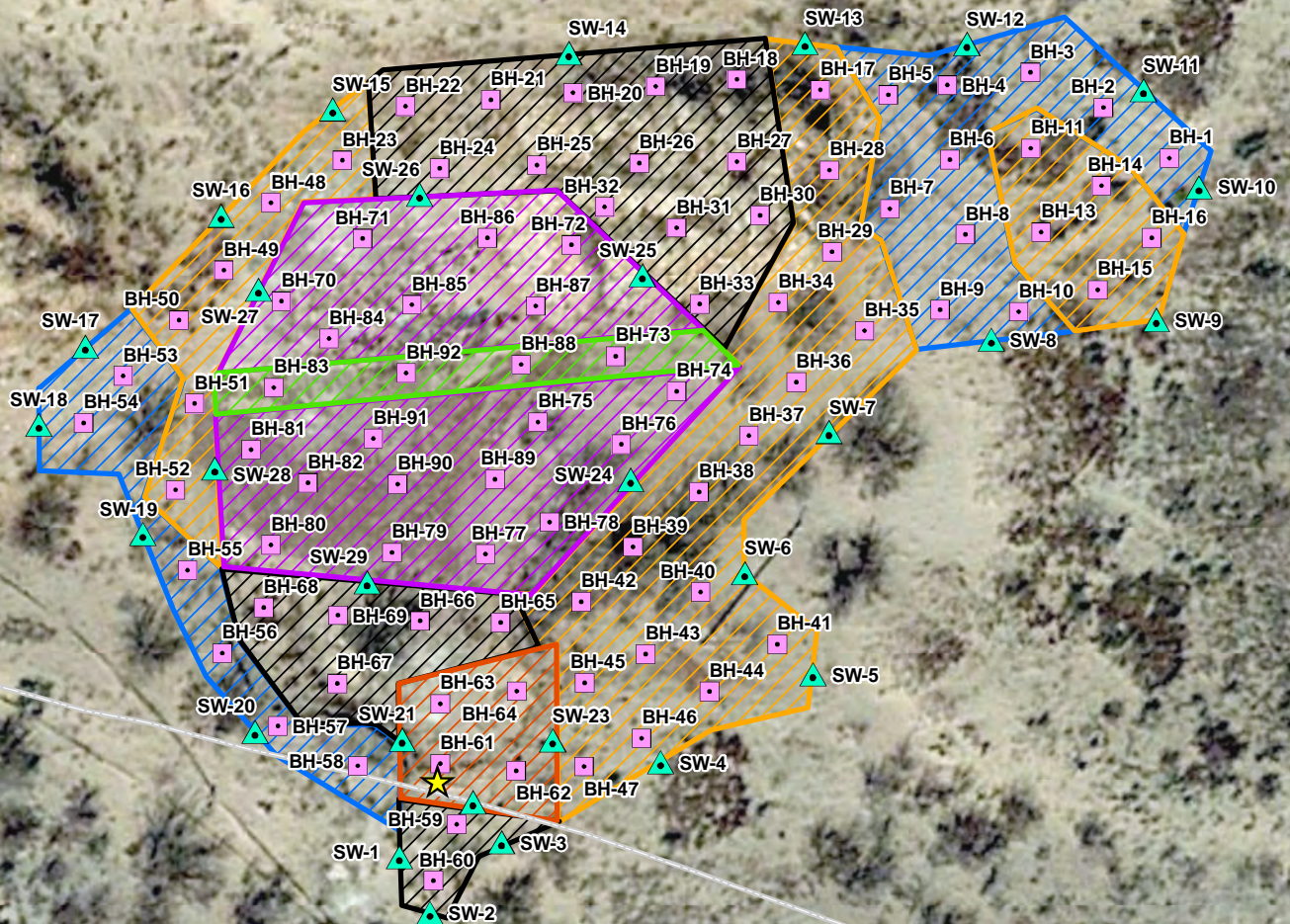








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## Legend

- ★ Approximate Release Location
- Base Confirmation Sample Location
- ▲ Sidewall Confirmation Sample Location
- ▨ 1' Excavation Area
- ▨ 3' Excavation Area
- ▨ 4' Excavation Area
- ▨ 8' Excavation Area
- ▨ 10' Excavation Area
- ▨ 11' Excavation Area
- Former Steel Flowline

BGS: Below Ground Surface  
Image Source: Google Earth, 2019.



0 25 50  
Feet



www.tetrattech.com

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Phone: (432) 682-4559  
Fax: (432) 682-3946

MAVERICK PERMIAN, LLC

nJXK1608141111  
(32.557548°, -103.189696°)  
LEA COUNTY, NEW MEXICO

SEMUR PERMIAN #034 FLOWLINE RELEASE  
REMEDATION EXTENT AND CONFIRMATION SAMPLE LOCATIONS

PROJECT NO.: 212C-MD-03274

DATE: DECEMBER 05, 2023

DESIGNED BY: LMV

Figure No.

5

Site Remediation Closure Report  
SEMU Permian #034 Flowline Release  
nJXK1608141111

Maverick Permian, LLC  
March 15, 2024

## TABLES




**TETRA TECH**

TABLE 1

**SOIL ASSESSMENT LOCATIONS  
INCIDENT NJXK1608141111  
MAVERICK PERMIAN, LLC  
SEMU PERMIAN #034 FLOWLINE RELEASE  
LEA COUNTY, NEW MEXICO**

Boring ID	Date	Latitude	Longitude
<b>Basin Initial Assessment Locations</b>			
PT.1	3/23/2016	32.557709	-103.189594
PT.2	3/23/2016	32.557630	-103.189627
PT.3	3/28/2016	32.557483	-103.189674
PT.4	3/28/2016	32.557649	-103.189744
<b>Basin Historical Release Assessment Locations</b>			
PT.1 (Historical)	3/23/2016	32.558035	-103.189870
PT.2 (Historical)	3/28/2016	32.557950	-103.189483
PT.3 (Historical)	3/28/2016	32.557821	-103.189744
<b>Tetra Tech 2020 Assessment Locations</b>			
BH-1A	8/1/2020	32.557754	-103.189514
BH-2A	8/1/2020	32.557754	-103.189514
BH-3A	8/1/2020	32.557754	-103.189514
BH-4A	8/1/2020	32.557754	-103.189514
BH-5A	8/1/2020	32.557754	-103.189514
BH-6A	8/1/2020	32.557754	-103.189514
BH-7A	8/1/2020	32.557754	-103.189514
BH-8A	8/1/2020	32.557754	-103.189514
BH-9A	8/1/2020	32.557754	-103.189514
BH-10A	9/1/2020	32.557623	-103.189941
BH-11A	9/1/2020	32.557408	-103.189618
BH-12A	9/1/2020	32.557784	-103.189649
BH-13A	9/1/2020	32.557784	-103.189649
BH-14A	9/1/2020	32.557788	-103.189441
BH-15A	9/1/2020	32.557851	-103.189286
BH-16A	9/1/2020	32.557963	-103.189428
BH-17A	9/1/2020	32.557985	-103.189805
BH-18A	9/1/2020	32.557905	-103.189810
BH-19A	9/1/2020	32.557556	-103.189624
BH-20A	9/1/2020	32.557556	-103.189624
BH-21A	10/1/2020	32.557741	-103.189288
BH-22A	10/1/2020	32.557741	-103.189288
BH-23A	10/1/2020	32.557741	-103.189288



TABLE 2  
SUMMARY OF ANALYTICAL RESULTS  
BASIN INITIAL SOIL ASSESSMENTS - INCIDENT NJXK1608141111  
MAVERICK PERMIAN, LLC  
SEMU PERMIAN #34 FLOWLINE RELEASE  
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth	Chloride <sup>1</sup>		BTEX <sup>2</sup>										TPH <sup>3</sup>							
					Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		ORO		Total TPH (GRO+DRO+EXT DRO)	
		feet bgs	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	C <sub>6</sub> - C <sub>10</sub>	> C <sub>10</sub> - C <sub>28</sub>	> C <sub>28</sub> - C <sub>36</sub>	mg/kg	Q	mg/kg		
Reclamation Requirements (19.15.29 NMAC)			600		10								50								100	
PT. 1	3/23/2016	4	48		< 0.050		< 0.050		< 0.050		< 0.150		-		< 10.0		< 10.0		NA		-	
	3/23/2016	6	< 16.0		< 0.200		0.305		1.86		5.91		8.08		353		2,850		NA		3,203	
	3/28/2016	10	112		< 0.500		1.69		1.94		4.96		8.58		290		4,970		NA		5,260	
PT. 2	3/23/2016	3	48		< 0.050		< 0.050		< 0.050		< 0.150		-		< 10.0		< 10.0		NA		-	
PT. 3	3/28/2016	5	576		< 0.050		< 0.050		< 0.050		< 0.150		-		< 10.0		< 10.0		NA		-	
	3/28/2016	8	128		< 0.050		< 0.050		< 0.050		< 0.150		-		< 10.0		< 10.0		NA		-	
PT. 4	3/28/2016	5	208		< 0.050		< 0.050		< 0.050		< 0.150		-		< 10.0		< 10.0		NA		-	
PT. 1 (Historical)	3/28/2016	2	< 16.0		< 0.050		< 0.050		< 0.050		< 0.150		-		< 10.0		65		NA		65	
	3/28/2016	4	< 16.0		< 0.050		< 0.050		< 0.050		< 0.150		-		< 10.0		516		NA		516	
PT. 2 (Historical)	3/28/2016	2	< 16.0		< 0.050		< 0.050		< 0.050		< 0.150		-		< 100		< 100		NA		-	
	3/28/2016	4	< 16.0		< 0.050		< 0.050		< 0.050		< 0.150		-		< 10.0		< 10.0		NA		-	
PT. 3 (Historical)	3/28/2016	2	< 16.0		< 0.050		< 0.050		0		< 0.150		-		< 10.0		395		NA		395	
	3/28/2016	4	< 16.0		< 0.050		1		6		9		16		691		6,770		NA		7,461	

NOTES:  
bgs: Below ground surface  
mg/kg: Milligrams per kilogram  
TPH: Total Petroleum Hydrocarbons

GRO: Gasoline Range Organics  
DRO: Diesel Range Organics  
ORO: Oil Range Organics

1: Method 300.0  
2: Method 8260B  
3: Method 8015M

**Bold and highlighted values indicate exceedance of Reclamation Requirements (19.15.29 NMAC).**  
NA: Not Analyzed





**TABLE 3**  
**SUMMARY OF ANALYTICAL RESULTS**  
**TETRA TECH 2020 SOIL ASSESSMENTS - INCIDENT NJXK1608141111**  
**MAVERICK PERMIAN, LLC**  
**SEMU PERMIAN #34 FLOWLINE RELEASE**  
**LEA COUNTY, NEW MEXICO**

Sample ID	Sample Date	Sample Depth	Chloride <sup>1</sup>		BTEX <sup>2</sup>										TPH <sup>3</sup>							
					Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		ORO		Total TPH (GRO+DRO+EXT DRO)	
		mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	C <sub>6</sub> - C <sub>10</sub>	Q	> C <sub>10</sub> - C <sub>28</sub>	Q	> C <sub>28</sub> - C <sub>36</sub>	Q			
Reclamation Requirements (19.15.29 NMAC)			600		10								50								100	
BH-1A	8/4/2020	4-5	< 20.2		0.00101		0.00131		0.00253		0.00138	J	0.00138		0.0471	J	2.34	J	0.643	J	3.03	
	8/4/2020	6-7	< 21.7		0.00108		0.00542		0.00271		0.00126	J	0.00126		< 0.108		< 4.33		< 4.33		-	
	8/4/2020	9-10	< 21.6		0.00108		0.0054		0.0027		0.00702		-		0.0251	J	< 4.32		< 4.32		0.03	
	8/4/2020	14-15	< 20.9		0.00104		0.00521		0.00261		0.00104	J	0.00104		< 0.104		< 4.17		< 4.17		-	
	8/4/2020	19-20	< 20.7		0.00103		0.00516		0.00258		0.00101	J	0.00101		< 0.103		< 4.13		1.09	J	1.09	
	8/4/2020	24-25	< 23.6		0.00136		0.00682		0.00341		0.00887		-		< 0.118		< 4.73		< 4.73		-	
	8/4/2020	29-30	< 21.9		0.00109		0.00546		0.00273		0.00123	J	0.00123		< 0.109		2.55	J	< 4.37		2.55	
	8/4/2020	34-35	< 21.8		0.00109		0.00544		0.00272		0.00109	J	0.00109		< 0.109		2.12	J	< 4.35		2.12	
8/4/2020	39-40	43		0.00129		0.00644		0.00322		0.00175	J	0.00175		< 0.114		< 4.57		< 4.57		-		
BH-2A	8/4/2020	2-3	< 20.3		0.000735	J	0.00221	J	0.0147		0.0188		0.036445		< 0.101		578		1,610		2,188	
	8/4/2020	4-5	< 21.5		0.00452	J	0.0153	J	1.57		1.61		3.19982		288		5,430		4,650		10,368	
	8/4/2020	6-7	20	J	0.00986		0.0493		1.63		1.77		3.4		304		2,410		1,610		4,324	
	8/4/2020	9-10	32		0.000511	J	0.00543		0.187		0.116		0.303511		5.12		1,890		1,350		3,245	
	8/4/2020	14-15	31		0.00107		0.00537		0.00164	J	0.0015	J	0.00314		0.0796	J	2.26	J	< 4.30		2.34	
	8/4/2020	19-20	15	J	0.00126		0.00629		0.00314		0.00113	J	0.00113		< 0.113		< 4.51		< 4.51		-	
BH-3A	8/4/2020	2-3	< 21.2		0.00641		0.00513	J	0.16		0.149		0.32054		2		5,820		6,970		12,792	
	8/4/2020	4-5	15.4	J	0.203		0.12		2.65		3.56		6.533		327		14,600		12,500		27,427	
	8/4/2020	6-7	46.2		0.0472		0.0506		1.96		3.15		5.2078		372		10,100		7,250		17,722	
	8/4/2020	9-10	104		0.00107		0.00534		0.00267		0.00214	J	0.00214		0.0501	J	1,450		2,530		3,980	
	8/4/2020	14-15	384		0.0011		0.00548		0.00274		0.00713		-		< 0.110		4.05	J	2.52	BJ	6.57	
	8/4/2020	19-20	665		0.00111		0.00555		0.00278		0.00722		-		< 0.111		2.84	J	3.48	BJ	6.32	
	8/4/2020	24-25	732		0.0015		0.00751		0.00376		0.00997		-		< 0.119		2.59	J	1.69	BJ	4.28	
BH-4A	8/5/2020	0-1	< 20.2		0.00101		0.00504		0.00252		0.00655		-		< 0.101		483		1,580		2,063	
	8/5/2020	2-3	< 20.3		0.00102		0.00508		0.00254		0.00661		-		< 0.102		2.21	J	3.48	BJ	5.69	
	8/5/2020	5-6	< 20.4		0.00102		0.00509		0.00255		0.00662		-		< 0.102		4.08		11		15.1	
	8/5/2020	7-8	< 21.3		0.00107		0.00533		0.00266		0.00693		-		< 0.107		1.73	J	1.09	BJ	2.82	
BH-5A	8/5/2020	0-1	< 20.4		<0.00102		<0.0051		<0.00255		0.00138	J	0.00138		< 0.102		446		1,380		1,826	
	8/5/2020	2-3	< 20.6		0.00106		0.00328	J	0.00149	J	0.00444	J	0.01027		0.0376	J	627		2,350		2,977	
	8/5/2020	5-6	< 21.0		<0.00105		<0.00526		<0.00263		0.0013	J	0.0013		0.0233	J	409		1,190		1,599	
	8/5/2020	7-8	< 20.9		<0.00105		<0.00523		<0.00262		<0.0068		-		< 0.105		139		400		539	
BH-6A	8/5/2020	2-3	< 20.2		<0.00101		<0.00506		<0.00253		<0.00658		-		0.0222	J	90.6		297		388	
	8/5/2020	4-5	< 20.3		<0.00102		<0.00509		<0.00254		<0.00661		-		0.0224	J	2.39	J	3.34	BJ	5.75	
	8/5/2020	7-8	< 20.2		<0.00101		<0.00506		<0.00253		<0.00658		-		< 0.101		123		391		514	
	8/5/2020	9-10	< 106		<0.00106		<0.00529		<0.00264		<0.00687		-		< 0.106		3.13	J	6.66		9.79	



**TABLE 3**  
**SUMMARY OF ANALYTICAL RESULTS**  
**TETRA TECH 2020 SOIL ASSESSMENTS - INCIDENT NJXK1608141111**  
**MAVERICK PERMIAN, LLC**  
**SEMU PERMIAN #34 FLOWLINE RELEASE**  
**LEA COUNTY, NEW MEXICO**

Sample ID	Sample Date	Sample Depth	Chloride <sup>1</sup>		BTEX <sup>2</sup>										TPH <sup>3</sup>							
					Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		ORO		Total TPH (GRO+DRO+EXT DRO)	
		feet bgs	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	C <sub>6</sub> - C <sub>10</sub>	Q	> C <sub>10</sub> - C <sub>28</sub>	Q	> C <sub>28</sub> - C <sub>36</sub>	Q		mg/kg
Reclamation Requirements (19.15.29 NMAC)			600		10								50								100	
BH-7A	8/5/2020	2-3	< 20.3		<0.00101		<0.00507		<0.00254		<0.00659		-		< 0.101		21		71.5		92.5	
	8/5/2020	4-5	< 106		<0.00106		<0.00532		<0.00266		<0.00692		-		< 0.106		2.71	J	1.59	BJ	4.3	
	8/5/2020	7-8	< 21.1		<0.00105		<0.00527		<0.00263		<0.00685		-		< 0.105		< 4.21		0.794	BJ	0.79	
	8/5/2020	9-10	11.7	J	<0.00104		<0.00522		<0.00261		<0.00679		-		< 0.104		1.8	J	< 4.18		1.8	
BH-8A	8/5/2020	0-1	< 20.2		<0.00101		<0.00504		<0.00252		<0.00655		-		< 0.101		820		2,280		3,100	
	8/5/2020	2-3	< 20.1		<0.001		<0.00502		<0.00251		<0.00653		-		< 0.100		< 4.02		2.09		2.09	
	8/5/2020	5-6	42.9		<0.00103		<0.00513		<0.00256		<0.00666		-		0.0253	J	< 4.10		1.25		1.28	
BH-9A	8/5/2020	2-3	11.7	J	0.0316		0.0303	J	0.655		1.35		2.0669		270		9,730		11,100		21,100	
	8/5/2020	4-5	30.1		<0.00981		<0.0490		0.233		0.306		0.539		239		6,600		4,460		11,299	
	8/5/2020	7-8	32.3		0.00811	J	0.0134	J	0.516		1.24		1.77751		436		6,570		4,070		11,076	
	8/5/2020	9-10	34.8		<0.00105		<0.00527		<0.00264		<0.00685		-		< 0.105		2.33	J	2.16	BJ	4.49	
BH-10A	9/22/2020	0-1	< 20.2		<0.00102		<0.0051		<0.00255		<0.00663		-		< 2.55		11		43.6		54.6	
	9/22/2020	2-3	27.8		<0.001		<0.00502		<0.00251		<0.00653		-		< 2.51		4.73		5.72		10.5	
BH-11A	9/22/2020	0-1	49.7		<0.00101		<0.00503		<0.00252		<0.00654		-		< 2.52		5.09		24.2		29.3	
	9/22/2020	2-3	33		<0.00161		<0.00804		<0.00403		<0.0105		-		< 4.03		< 4.06		1.1	J	1.1	
BH-12A	9/22/2020	0-1	54.7		<0.00101		<0.00504		<0.00252		<0.00655		-		< 2.52		14.1		47.7		61.8	
	9/22/2020	2-3	11.2	J	<0.00102		<0.00511		<0.00256		<0.00663		-		< 2.56		4.99		21.3		26.3	
BH-13A	9/22/2020	0-1	< 20.1		<0.00101		<0.00503		<0.00252		<0.00654		-		< 2.52		9.98		38.5		48.5	
	9/22/2020	2-3	11.4	J	<0.0014		<0.00702		<0.00352		<0.00914		-		< 3.52		2.48		7.18		9.66	
BH-14A	9/22/2020	0-1	46.9		<0.00104		<0.00518		<0.0026		<0.00674		-		< 2.60		4.42		16.2		20.6	
	9/22/2020	2-3	53		0.0006	J	0.00151		<0.0026		0.00204	J	0.00415		< 2.60		< 4.01		2.48		2.48	
BH-15A	9/22/2020	0-1	27.9		<0.00101		<0.00506		<0.00254		0.000955	J	0.000955		< 2.54		31.3		95.6		126.9	
	9/22/2020	2-3	28.4		0.000534	J	<0.00501		<0.00251		<0.00651		0.000534		< 2.51		28.6		80.3		108.9	
BH-16A	9/22/2020	0-1	46.1		<0.00101		<0.00503		<0.00251		0.00133	J	0.00133		< 2.51		9.05		28.7		37.8	
	9/22/2020	2-3	44.2		<0.00101		<0.00503		<0.00252		0.00112	J	0.00112		< 2.52		3.56	J	13.3		16.9	
BH-17A	9/22/2020	0-1	13.2	J	0.000512	J	0.00136	J	<0.00251		<0.00653		0.001872		< 2.51		7.58		28.3		35.9	
	9/22/2020	2-3	53.8		<0.00101		<0.00503		<0.00251		<0.00654		-		< 2.51		12.8		37.8		50.6	
BH-18A	9/22/2020	0-1	16	J	<0.00101		<0.00505		<0.00265		0.0011	J	0.0011		< 2.52		8.53		39.3		47.8	
	9/22/2020	2-3	< 20.0		<0.001		<0.00501		<0.00251		<0.00651		-		1.08		2.87	J	5.51		9.5	
BH-19A	9/23/2020	4-5	< 24.1		<0.00167		<0.00833		<0.00416		<0.0108		-		< 4.16		3.2	J	7.52	B	10.7	
	9/23/2020	6-7	208		<0.00147		<0.00735		<0.00368		<0.00956		-		1.61	BJ	5.68		15		22.3	
BH-20A	9/23/2020	4-5	< 21.0		0.00148		0.00436	J	0.00255	J	0.00856		0.01695		< 2.74		800		553		1,353	
	9/23/2020	6-7	12	J	0.000686	J	0.00729		0.00365		0.00948		0.000686		1.88	BJ	1,370	V	1,720		3,092	
	9/23/2020	8-10	38		<0.001		<0.005		<0.0025		<0.0065		-		0.865	BJ	34.5		33.4		68.8	
	9/23/2020	13-14	548		<0.00147		<0.00733		<0.00367		<0.00953		-		< 3.67		4.89		< 4.29		4.89	



TABLE 3  
SUMMARY OF ANALYTICAL RESULTS  
TETRA TECH 2020 SOIL ASSESSMENTS - INCIDENT NJXK1608141111  
MAVERICK PERMIAN, LLC  
SEMU PERMIAN #34 FLOWLINE RELEASE  
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth	Chloride <sup>1</sup>		BTEX <sup>2</sup>										TPH <sup>3</sup>							
					Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		ORO		Total TPH (GRO+DRO+EXT DRO)	
		C <sub>6</sub> - C <sub>10</sub>		> C <sub>10</sub> - C <sub>28</sub>		> C <sub>28</sub> - C <sub>36</sub>																
		feet bgs	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	
Reclamation Requirements (19.15.29 NMAC)			600		10							50								100		
BH-21A	10/21/2020	0-1	< 20.1		<0.00101		<0.00503		0.000754	J	0.00312	J	0.003874		0.0236	J	24.8		103		128	
	10/21/2020	2-3	< 20.1		<0.00101		<0.00506		<0.00253		0.000987	J	0.000987		< 0.101		18.4		71.2		89.6	
BH-22A	10/21/2020	0-1	18.5	J	<0.00126		<0.00632		<0.00316		<0.00822		-		0.0549	J	3.55	J	14.3		17.9	
	10/21/2020	2-3	< 20.1		<0.00101		<0.00504		<0.00252		<0.00655		-		0.0246	J	2.64	J	12.4		15.1	
BH-23A	10/21/2020	0-1	< 20.1		0.000584	BJ	0.00191	J	0.00254		0.00274	J	0.005234		0.0845	J	41.2		155		196.3	
	10/21/2020	2-3	< 20.2		0.000509	BJ	0.00509		0.00254		0.0015	J	0.002009		0.0326	J J3	28.3		124		152.3	

NOTES:  
bgs: Below ground surface      GRO: Gasoline Range Organics      1: Method 300.0  
mg/kg: Milligrams per kilogram      DRO: Diesel Range Organics      2: Method 8260B  
TPH: Total Petroleum Hydrocarbons      ORO: Oil Range Organics      3: Method 8015M  
B: The same analyte is found in the associated blank.

**Bold and highlighted values indicate exceedance of Reclamation Requirements (19.15.29 NMAC).**  
J: The identification of the analyte is acceptable; the reported value is an estimate.  
J3: The associated batch QC was outside the established quality control range for precision.  
V: The sample concentration is too high to evaluate accurate spike recoveries.



**TABLE 4**  
**SUMMARY OF ANALYTICAL RESULTS**  
**SHALLOW SOIL CONFIRMATION SAMPLING - INCIDENT nJXK1608141111**  
**MAVERICK PERMIAN, LLC**  
**SEMU PERMIAN #34 FLOWLINE RELEASE**  
**LEA COUNTY, NEW MEXICO**

Sample ID	Sample Date	Sample Depth	Chloride <sup>1</sup>		BTEX <sup>2</sup>										TPH <sup>3</sup>							
					Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		EXT DRO		Total TPH (GRO+DRO+EXT DRO)	
		mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	C <sub>6</sub> - C <sub>10</sub>	Q	> C <sub>10</sub> - C <sub>28</sub>	Q	> C <sub>28</sub> - C <sub>36</sub>	Q			
Reclamation Requirements (19.15.29 NMAC)			600		10								50							100		
BH - 1 (1.0')	11/7/2023	1.0 - 1.5	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 2 (1.0')	11/7/2023	1.0 - 1.5	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 3 (3.0')	11/7/2023	1.0 - 1.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 4 (3.0')	11/3/2023	3.0 - 3.5	48		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 5 (3.0')	11/7/2023	3.0 - 3.5	48		<0.050		<0.100		<0.050		<0.150		<0.350		<10.0		<10.0		<10.0	-		
BH - 6 (3.0')	11/3/2023	3.0 - 3.5	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 7 (3.0')	11/3/2023	3.0 - 3.5	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 8 (3.0')	11/3/2023	3.0 - 3.5	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 9 (3.0')	11/3/2023	3.0 - 3.5	32		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 10 (3.0')	11/7/2023	3.0 - 3.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 11 (3.0')	11/7/2023	3.0 - 3.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 12	-	-	Sample number skipped in sampling scheme																			
BH - 13 (3.0')	11/7/2023	3.0 - 3.5	32		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 14	-	-	Sample number skipped in sampling scheme																			
BH - 15 (3.0')	11/7/2023	3.0 - 3.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 16 (3.0')	11/7/2023	3.0 - 3.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 17 (3.0')	11/7/2023	3.0 - 3.5	16		<0.050		<0.100		<0.050		<0.150		<0.350		<10.0		<10.0		<10.0	-		
BH - 28 (3.0')	11/7/2023	3.0 - 3.5	<16.0		<0.050		<0.100		<0.050		<0.150		<0.350		<10.0		<10.0		<10.0	-		
BH - 29 (3.0')	11/7/2023	3.0 - 3.5	<16.0		<0.050		<0.100		<0.050		<0.150		<0.350		<10.0		<10.0		<10.0	-		
BH - 30 (3.0')	11/7/2023	3.0 - 3.5	<16.0		<0.050		<0.100		<0.050		<0.150		<0.350		<10.0		<10.0		<10.0	-		
BH - 34 (3.0')	11/7/2023	3.0 - 3.5	<16.0		<0.050		<0.100		<0.050		<0.150		<0.350		<10.0		<10.0		<10.0	-		
BH - 35 (3.0')	11/7/2023	3.0 - 3.5	<16.0		<0.050		<0.100		<0.050		<0.150		<0.350		<10.0		<10.0		<10.0	-		
BH - 36 (3.0')	11/7/2023	3.0 - 3.5	<16.0		<0.050		<0.100		<0.050		<0.150		<0.350		<10.0		<10.0		<10.0	-		
BH - 37 (3.0')	11/7/2023	3.0 - 3.5	<16.0		<0.050		<0.100		<0.050		<0.150		<0.350		<10.0		12.5		<10.0	12.5		
BH - 38 (3.0')	11/7/2023	3.0 - 3.5	<16.0		<0.050		<0.100		<0.050		<0.150		<0.350		<10.0		39.1		46.2	85.3		
BH - 39 (3.0')	11/9/2023	3.0 - 3.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 40 (3.0')	11/8/2023	3.0 - 3.5	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 41 (3.0')	11/8/2023	3.0 - 3.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 42 (3.0')	11/9/2023	3.0 - 3.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 43 (3.0')	11/8/2023	3.0 - 3.5	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 44 (3.0')	11/8/2023	3.0 - 3.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 45 (3.0')	11/8/2023	3.0 - 3.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 46 (3.0')	11/8/2023	3.0 - 3.5	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 47 (3.0')	11/9/2023	3.0 - 3.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 53 (1.0')	11/21/2023	1.0 - 1.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 54 (1.0')	11/21/2023	1.0 - 1.5	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 55 (1.0')	11/29/2023	1.0 - 1.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		



**TABLE 4**  
**SUMMARY OF ANALYTICAL RESULTS**  
**SHALLOW SOIL CONFIRMATION SAMPLING - INCIDENT nJXK1608141111**  
**MAVERICK PERMIAN, LLC**  
**SEMU PERMIAN #34 FLOWLINE RELEASE**  
**LEA COUNTY, NEW MEXICO**

Sample ID	Sample Date	Sample Depth	Chloride <sup>1</sup>		BTEX <sup>2</sup>										TPH <sup>3</sup>							
					Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		EXT DRO		Total TPH (GRO+DRO+EXT DRO)	
		mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	C <sub>6</sub> - C <sub>10</sub>	> C <sub>10</sub> - C <sub>28</sub>	> C <sub>28</sub> - C <sub>36</sub>	mg/kg					
Reclamation Requirements (19.15.29 NMAC)			600		10								50							100		
BH - 56 (1.0')	11/9/2023	1.0 - 1.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 57 (1.0')	11/9/2023	1.0 - 1.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
BH - 58 (1.0')	11/9/2023	1.0 - 1.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 1	11/9/2023	0.0 - 4.0	32		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 2	11/9/2023	0.0 - 4.0	32		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 3	11/9/2023	0.0 - 4.0	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 4	11/8/2023	0.0 - 3.0	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 5	11/8/2023	0.0 - 3.0	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 6	11/7/2023	0.0 - 3.0	<16.0		<0.050		<0.100		<0.050		<0.150		<0.350		<10.0		<10.0		<10.0	-		
SW - 7	11/7/2023	0.0 - 3.0	<16.0		<0.050		<0.100		<0.050		<0.150		<0.350		<10.0		<10.0		<10.0	-		
SW - 8	11/7/2023	0.0 - 3.0	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 9	11/7/2023	0.0 - 3.0	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 10	11/29/2023	0.0 - 1.0	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 11	11/7/2023	0.0 - 3.0	32		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 12	11/3/2023	0.0 - 3.0	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 13	11/17/2023	0.0 - 3.0	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 14	11/17/2023	0.0 - 4.0	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 15	11/17/2023	0.0 - 3.0	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 16	11/17/2023	0.0 - 3.0	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 17	11/21/2023	0.0 - 1.0	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 18	11/21/2023	0.0 - 1.0	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 19	11/9/2023	0.0 - 1.0	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 20	11/9/2023	0.0 - 1.0	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		
SW - 21	11/9/2023	1.0 - 8.0	32		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0	-		

**NOTES:**  
bgs: Below ground surface      GRO: Gasoline Range Organics      1: Method SM4500CI-B      **Bold and highlighted values indicate exceedance of Reclamation Requirements (19.15.29 NMAC).**  
mg/kg: Milligrams per kilogram      DRO: Diesel Range Organics      2: Method 8021B  
TPH: Total Petroleum Hydrocarbons      ORO: Oil Range Organics      3: Method 8015M





**TABLE 5**  
**SUMMARY OF ANALYTICAL RESULTS**  
**DEEP CONFIRMATION SAMPLING - INCIDENT nJXK1608141111**  
**MAVERICK PERMIAN, LLC**  
**SEMU PERMIAN #34 FLOWLINE RELEASE**  
**LEA COUNTY, NEW MEXICO**

Sample ID	Sample Date	Sample Depth	Chloride <sup>1</sup>		BTEX <sup>2</sup>										TPH <sup>3</sup>													
					Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		EXT DRO		TPH		Total TPH					
		feet bgs	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	C <sub>6</sub> - C <sub>10</sub>	mg/kg	Q	> C <sub>10</sub> - C <sub>28</sub>	mg/kg	Q	> C <sub>28</sub> - C <sub>36</sub>	mg/kg	Q	GRO + DRO	mg/kg	(GRO+DRO+EXT DRO)		
RRALs (Table I 19.15.29.12 NMAC)			10,000			10								50											1,000		2,500	
BH - 18 (4.0')	11/17/2023	4.0 - 4.5	16			<0.050			<0.050			<0.150			<0.300			<10.0			42			<10.0			42	42
BH - 19 (4.0')	11/17/2023	4.0 - 4.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			69.1			14			69.1	83.1
BH - 20 (4.0')	11/17/2023	4.0 - 4.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			<10.0			<10.0			-	-
BH - 21 (4.0')	11/17/2023	4.0 - 4.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			37.2			<10.0			37.2	37.2
BH - 22 (4.0')	11/17/2023	4.0 - 4.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			36.6			<10.0			36.6	36.6
BH - 23 (4.0')	11/17/2023	4.0 - 4.5	16			<0.050			<0.050			<0.150			<0.300			<10.0			383			183			383	566
BH - 24 (4.0')	11/17/2023	4.0 - 4.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			274			112			274	386
BH - 25 (4.0')	11/17/2023	4.0 - 4.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			31.2			<10.0			31.2	31.2
BH - 26 (4.0')	11/17/2023	4.0 - 4.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			58.4			<10.0			58.4	58.4
BH - 27 (4.0')	11/17/2023	4.0 - 4.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			222			86.4			222	308.4
BH - 31 (4.0')	11/17/2023	4.0 - 4.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			<10.0			<10.0			-	-
BH - 32 (4.0')	11/17/2023	4.0 - 4.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			56.3			<10.0			56.3	56.3
BH - 33 (4.0')	11/17/2023	4.0 - 4.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			80.9			19.1			80.9	100
BH - 48 (4.0')	11/17/2023	4.0 - 4.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			81.8			20.8			81.8	102.6
BH - 49 (4.0')	11/17/2023	4.0 - 4.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			33.1			<10.0			33.1	33.1
BH - 50 (4.0')	11/17/2023	4.0 - 4.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			53.8			<10.0			53.8	53.8
BH - 51 (4.0')	11/21/2023	4.0 - 4.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			413			207			413	620
BH - 52 (4.0')	11/21/2023	4.0 - 4.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			269			133			269	402
BH - 59 (4.0')	11/9/2023	4.0 - 4.5	48			<0.050			<0.050			<0.150			<0.300			<10.0			<10.0			<10.0			-	-
BH - 60 (4.0')	11/9/2023	4.0 - 4.5	48			<0.050			<0.050			<0.150			<0.300			<10.0			<10.0			<10.0			-	-
BH - 61 (8.0')	11/8/2023	8.0 - 8.5	144			<0.050			<0.050			<0.150			<0.300			<10.0			<10.0			<10.0			-	-
BH - 62 (8.0')	11/8/2023	8.0 - 8.5	208			<0.050			<0.050			<0.150			<0.300			<10.0			<10.0			<10.0			-	-
BH - 63 (8.0')	11/8/2023	8.0 - 8.5	176			<0.050			<0.050			<0.150			<0.300			<10.0			<10.0			<10.0			-	-
BH - 64 (8.0')	11/8/2023	8.0 - 8.5	192			<0.050			<0.050			<0.150			<0.300			<10.0			<10.0			<10.0			-	-
BH - 65 (4.0')	11/14/2023	4.0 - 4.5	32			<0.050			<0.050			<0.150			<0.300			<10.0			<10.0			<10.0			-	-
BH - 66 (4.0')	11/14/2023	4.0 - 4.5	32			<0.050			<0.050			<0.150			<0.300			<10.0			<10.0			<10.0			-	-
BH - 67 (4.0')	11/14/2023	4.0 - 4.5	48			<0.050			<0.050			<0.150			<0.300			<10.0			<10.0			<10.0			-	-
BH - 68 (4.0')	11/14/2023	4.0 - 4.5	32			<0.050			<0.050			<0.150			<0.300			<10.0			<10.0			<10.0			-	-
BH - 69 (4.0')	11/14/2023	4.0 - 4.5	16			<0.050			<0.050			<0.150			<0.300			<10.0			<10.0			<10.0			-	-
BH - 70 (11.0')	11/14/2023	11.0 - 11.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			209			83.2			209	292.2
BH - 71 (11.0')	11/14/2023	11.0 - 11.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			16.6			11.3			16.6	27.9
BH - 72 (11.0')	11/14/2023	11.0 - 11.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			14.3			<10.0			14.3	14.3
BH - 73 (10.0')	11/14/2023	10.0 - 10.5	32			<0.050			<0.050			<0.150			<0.300			<10.0			29.2			10.4			29.2	39.6
BH - 74 (11.0')	11/21/2023	11.0 - 11.5	16			<0.050			<0.050			<0.150			<0.300			<10.0			431			222			431	653
BH - 75 (11.0')	11/21/2023	11.0 - 11.5	32			<0.050			<0.050			<0.150			<0.300			<10.0			53.3			25.4			53.3	78.7
BH - 76 (11.0')	11/21/2023	11.0 - 11.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			348			145			348	493
BH - 77 (11.0')	11/21/2023	11.0 - 11.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			267			164			267	431
BH - 78 (11.0')	11/21/2023	11.0 - 11.5	16			<0.050			<0.050			<0.150			<0.300			<10.0			195			109			195	304
BH - 79 (11.0')	11/21/2023	11.0 - 11.5	<16.0			<0.050			<0.050			<0.150			<0.300			<10.0			206			111			206	317





TABLE 5  
SUMMARY OF ANALYTICAL RESULTS  
DEEP CONFIRMATION SAMPLING - INCIDENT nJXK1608141111  
MAVERICK PERMIAN, LLC  
SEMU PERMIAN #34 FLOWLINE RELEASE  
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth	Chloride <sup>1</sup>		BTEX <sup>2</sup>										TPH <sup>3</sup>							
					Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		EXT DRO		TPH GRO + DRO	Total TPH (GRO+DRO+EXT DRO)
															C <sub>6</sub> - C <sub>10</sub>		> C <sub>10</sub> - C <sub>28</sub>		> C <sub>28</sub> - C <sub>36</sub>			
feet bgs			mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	mg/kg
RRALs (Table I 19.15.29.12 NMAC)			10,000		10								50								1,000	2,500
BH - 80 (11.0')	11/21/2023	11.0 - 11.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		328		159		328	487
BH - 81 (11.0')	11/21/2023	11.0 - 11.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	-
BH - 82 (11.0')	11/21/2023	11.0 - 11.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	-
BH - 83 (10.0')	11/14/2023	10.0 - 10.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		41.8		12.7		41.8	54.5
BH - 84 (11.0')	11/14/2023	11.0 - 11.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		24.7		<10.0		24.7	24.7
BH - 85 (11.0')	11/14/2023	11.0 - 11.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	-
BH - 86 (11.0')	11/14/2023	11.0 - 11.5	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	-
BH - 87 (11.0')	11/14/2023	11.0 - 11.5	96		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		23.8		<10.0		23.8	23.8
BH - 88 (10.0')	11/14/2023	10.0 - 10.5	96		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		35.7		15.2		35.7	50.9
BH - 89 (11.0')	11/21/2023	10.0 - 10.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		224		122		224	346
BH - 90 (11.0')	11/21/2023	10.0 - 10.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		376		156		376	532
BH - 91 (11.0')	11/21/2023	10.0 - 10.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		109		31.9		109	140.9
BH - 92 (10.0')	11/14/2023	10.0 - 10.5	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		115		55.6		115	170.6
SW - 22	11/9/2023	4.0 - 8.0	288		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	-
SW - 23	11/9/2023	4.0 - 8.0	32		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	-
SW - 24	11/21/2023	4.0 - 11.0	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	-
SW - 25	11/17/2023	4.0 - 11.0	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		91.5		22.4		91.5	113.9
SW - 26	11/17/2023	4.0 - 11.0	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		121		28.9		121	149.9
SW - 27	11/17/2023	4.0 - 11.0	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		76.9		19.7		76.9	96.6
SW - 28	11/21/2023	4.0 - 11.0	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		17.4		19.9		17.4	37.3
SW - 29	11/29/2023	4.0 - 11.0	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		344		166		344	510

NOTES:  
bgs: Below ground surface  
mg/kg: Milligrams per kilogram  
TPH: Total Petroleum Hydrocarbons

GRO: Gasoline Range Organics  
DRO: Diesel Range Organics  
EXT DRO: Oil Range Organics

1: Method SM4500CI-B  
2: Method 8021B  
3: Method 8015M

**Bold and highlighted values indicate exceedance of Table I 19.15.29.12 NMAC.**  
**Areas where samples were collected were then overexcavated to achieve clean margins**



TABLE 6  
SUMMARY OF ANALYTICAL RESULTS  
BACKFILL SOIL VALIDATION SAMPLING - INCIDENT nJXK1608141111  
MAVERICK PERMIAN, LLC  
SEMU PERMIAN #34 FLOWLINE RELEASE  
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth	Chloride <sup>1</sup>		BTEX <sup>2</sup>										TPH <sup>3</sup>							
					Benzene		Toluene		Ethylbenzene		Total Xylenes		Total BTEX		GRO		DRO		EXT DRO		Total TPH (GRO+DRO+EXT DRO)	
		C <sub>6</sub> - C <sub>10</sub>		> C <sub>10</sub> - C <sub>28</sub>											> C <sub>28</sub> - C <sub>36</sub>							
		feet bgs	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	
Reclamation Requirements (19.15.29 NMAC)			600		10						50								100			
EP - 1	11/2/2023	N/A	32		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
EP - 2	11/2/2023	N/A	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
EP - 3	11/2/2023	N/A	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
WP - 1	11/2/2023	N/A	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
WP - 2	11/2/2023	N/A	<16.0		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	
WP - 3	11/2/2023	N/A	16		<0.050		<0.050		<0.050		<0.150		<0.300		<10.0		<10.0		<10.0		-	

NOTES:  
bgs: Below ground surface  
mg/kg: Milligrams per kilogram  
TPH: Total Petroleum Hydrocarbons

GRO: Gasoline Range Organics  
DRO: Diesel Range Organics  
EXT DRO: Oil Range Organics

1: Method SM4500CI-B  
2: Method 8021B  
3: Method 8015M

**Bold and highlighted values indicate exceedance of Reclamation Requirements (19.15.29 NMAC).**  
N/A: Not Applicable, samples taken from soil stockpiles

Site Remediation Closure Report  
SEMU Permian #034 Flowline Release  
nJXK1608141111

Maverick Permian, LLC  
March 15, 2024

## ATTACHMENT 1: SITE CHARACTERIZATION DATA

# Karst Potential Map

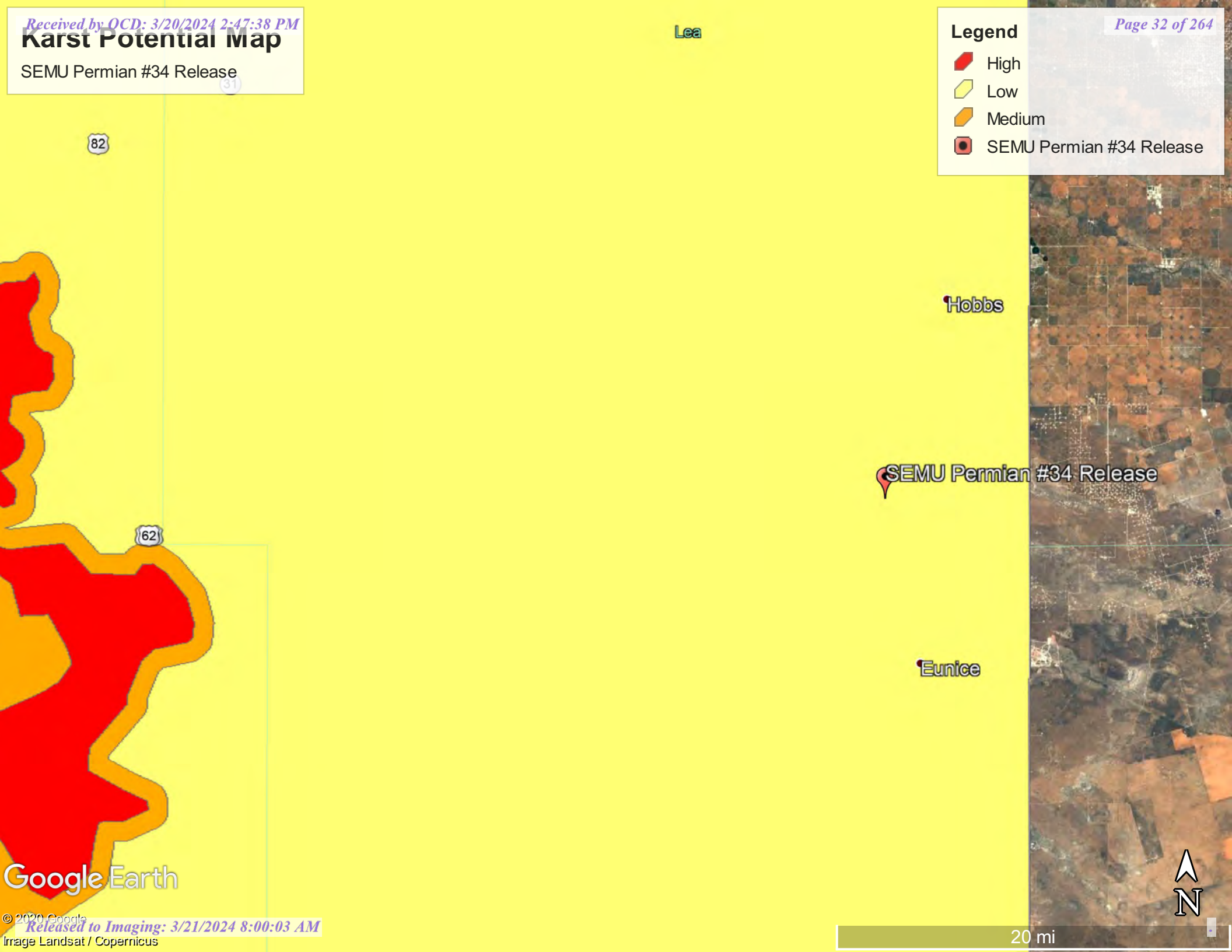
SEMU Permian #34 Release

Lea

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**Legend**

- High
- Low
- Medium
- SEMU Permian #34 Release



SEMU Permian #34 Release

Hobbs

Eunice

Google Earth

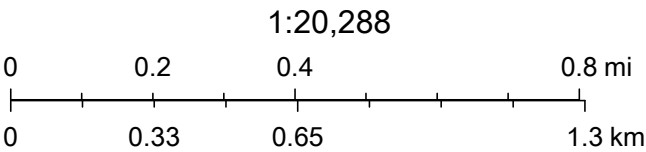
20 mi

# SEMU Permian #34 Release



3/31/2020, 8:36:17 AM

- Override 1
- ▬ NMDOT GPS ROADS
- ▬ PLJV Probable Playas
- ▬ New Mexico Counties
- ▬ NMDOT Railroads
- ▬ OSE Streams
- ▬ New Mexico Towns
- ▬ OSE Water-bodies



US Census Bureau, NMDOT, Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the





# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

---

No records found.

### UTMNAD83 Radius Search (in meters):

**Easting (X):** 669972.52

**Northing (Y):** 3603714.55

**Radius:** 800

---

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

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3/15/24 1:28 PM

Page 1 of 1

WATER COLUMN/ AVERAGE  
DEPTH TO WATER



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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

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

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
<a href="#">L 15414 POD1</a>	L	LE		3	1	3	20	20S	38E	671043	3603587	1078	103		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 1

### UTM NAD83 Radius Search (in meters):

**Easting (X):** 669972.52

**Northing (Y):** 3603714.55

**Radius:** 1600

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

3/15/24 2:36 PM

Page 1 of 1

WATER COLUMN/ AVERAGE  
DEPTH TO WATER

# Custom Soil Resource Report Soil Map






## Custom Soil Resource Report

## MAP LEGEND

## Area of Interest (AOI)

 Area of Interest (AOI)


## Soils


 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points

## Special Point Features

 Blowout

 Borrow Pit


 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole

 Slide or Slip


 Sodic Spot

 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

## Water Features

 Streams and Canals

## Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

## Background

 Aerial Photography

## MAP INFORMATION

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

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

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

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

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

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

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

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

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

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

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

## Custom Soil Resource Report

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KM	Kermit soils and Dune land, 0 to 12 percent slopes	0.7	100.0%
<b>Totals for Area of Interest</b>		<b>0.7</b>	<b>100.0%</b>

## Map Unit Descriptions

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

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

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

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

## Custom Soil Resource Report

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

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

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

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

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

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

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

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

## Custom Soil Resource Report

## Lea County, New Mexico

## KM—Kermit soils and Dune land, 0 to 12 percent slopes

## Map Unit Setting

*National map unit symbol:* dmpx  
*Elevation:* 3,000 to 4,400 feet  
*Mean annual precipitation:* 10 to 15 inches  
*Mean annual air temperature:* 60 to 62 degrees F  
*Frost-free period:* 190 to 205 days  
*Farmland classification:* Not prime farmland

## Map Unit Composition

*Kermit and similar soils:* 46 percent  
*Dune land:* 44 percent  
*Minor components:* 10 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

## Description of Kermit

## Setting

*Landform:* Dunes  
*Landform position (two-dimensional):* Shoulder, backslope, footslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex, linear, concave  
*Across-slope shape:* Convex  
*Parent material:* Calcareous sandy eolian deposits derived from sedimentary rock

## Typical profile

*A - 0 to 8 inches:* fine sand  
*C - 8 to 60 inches:* fine sand

## Properties and qualities

*Slope:* 5 to 12 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Excessively drained  
*Runoff class:* Very low  
*Capacity of the most limiting layer to transmit water (Ksat):* Very high (20.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 3 percent  
*Gypsum, maximum content:* 1 percent  
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)  
*Sodium adsorption ratio, maximum:* 2.0  
*Available water capacity:* Low (about 3.1 inches)

## Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7e  
*Hydrologic Soil Group:* A  
*Ecological site:* R042XC022NM - Sandhills  
*Hydric soil rating:* No



## Custom Soil Resource Report

**Description of Dune Land****Setting**

*Landform:* Dunes

*Landform position (two-dimensional):* Shoulder, backslope, footslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex, linear, concave

*Across-slope shape:* Convex

**Typical profile**

*A - 0 to 6 inches:* fine sand

*C - 6 to 60 inches:* fine sand

**Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 8e

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

**Minor Components****Palomas**

*Percent of map unit:* 3 percent

*Ecological site:* R042XC003NM - Loamy Sand

*Hydric soil rating:* No

**Pyote**

*Percent of map unit:* 3 percent

*Ecological site:* R042XC003NM - Loamy Sand

*Hydric soil rating:* No

**Wink**

*Percent of map unit:* 2 percent

*Ecological site:* R042XC003NM - Loamy Sand

*Hydric soil rating:* No

**Maljamar**

*Percent of map unit:* 2 percent

*Ecological site:* R042XC003NM - Loamy Sand

*Hydric soil rating:* No

Site Remediation Closure Report  
SEMU Permian #034 Flowline Release  
nJXK1608141111

Maverick Permian, LLC  
March 15, 2024

## ATTACHMENT 2: BORING LOGS

212C-MD-00954		<b>TETRA TECH</b>		<b>LOG OF BORING BH-1A</b>				Page 1 of 2	
Project Name: SEMU Permian 34 Flow Line Release									
Borehole Location: GPS: 32.557666°, -103.189640°					Surface Elevation: 3546 ft				
Borehole Number: BH-1A				Borehole Diameter (in.): 8		Date Started: 8/4/2020		Date Finished: 8/4/2020	

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm)	VOC FIELD SCREENING (ppm)	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	MINUS NO. 200 (%)	GRAPHIC LOG	WATER LEVEL OBSERVATIONS					
												While Drilling	Upon Completion of Drilling				
												While Drilling <u>▽</u> DRY ft    Upon Completion of Drilling <u>▽</u> DRY ft Remarks:					
												MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS			
												-- Previously excavated to approximately 4' bgs.	4				
5				2.8									-SM- SILTY SAND: Brown, loose, non-cemented, with no hydrocarbon odor, no staining.	4	BH-1A (4-5')		
				2.6												BH-1A (6-7')	
10				1.6													BH-1A (9-10')
15				0.9													BH-1A (14-15')
20				3.2													BH-1A (19-20')
25				1.9													BH-1A (24-25')

<b>Sampler Types:</b> <input checked="" type="checkbox"/> Split Spoon <input type="checkbox"/> Shelby <input type="checkbox"/> Bulk Sample <input type="checkbox"/> Grab Sample	<input type="checkbox"/> Acetate Liner <input type="checkbox"/> Vane Shear <input checked="" type="checkbox"/> California <input type="checkbox"/> Test Pit	<b>Operation Types:</b> <input type="checkbox"/> Mud Rotary <input type="checkbox"/> Continuous Flight Auger <input type="checkbox"/> Wash Rotary	<input type="checkbox"/> Hand Auger <input type="checkbox"/> Air Rotary <input type="checkbox"/> Direct Push <input type="checkbox"/> Core Barrel	<b>Notes:</b> Analytical samples are shown in the "Remarks" column. Surface elevation is an estimated value.
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Logger: Joe Tyler	Drilling Equipment: Air Rotary	Driller: Scarborough Drilling
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212C-MD-00954	<b>TETRA TECH</b>	LOG OF BORING BH-1A	Page 2 of 2
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Project Name: SEMU Permian 34 Flow Line Release

Borehole Location: GPS: 32.557666°, -103.189640°

Surface Elevation: 3546 ft

Borehole Number: BH-1A

Borehole  
Diameter (in.): 8

Date Started: 8/4/2020

Date Finished: 8/4/2020

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm)	VOC FIELD SCREENING (ppm)	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	MINUS NO. 200 (%)	GRAPHIC LOG	WATER LEVEL OBSERVATIONS		DEPTH (ft)	REMARKS
												While Drilling	Upon Completion of Drilling		
			ExStik	PID				LL	PI			<b>Remarks:</b> While Drilling <u>▽</u> DRY ft    Upon Completion of Drilling <u>▽</u> DRY ft			
												MATERIAL DESCRIPTION			
30				1.4										27	
35				1.4									-SM- SILTY SAND: White, dense, heavily cemented, with gravel, no hydrocarbon odor, no staining.		BH-1A (29-30')
40				2.1										40	BH-1A (39-40')

Bottom of borehole at 40.0 feet.

<b>Sampler Types:</b> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;">  Split Spoon   Shelby   Bulk Sample   Grab Sample         </div> <div style="width: 50%;">  Acetate Liner   Vane Shear   California   Test Pit         </div> </div>	<b>Operation Types:</b> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;">  Mud Rotary   Continuous Flight Auger   Wash Rotary         </div> <div style="width: 50%;">  Hand Auger   Air Rotary   Direct Push   Core Barrel         </div> </div>	<b>Notes:</b> Analytical samples are shown in the "Remarks" column. Surface elevation is an estimated value.
<b>Logger:</b> Joe Tyler	<b>Drilling Equipment:</b> Air Rotary	<b>Driller:</b> Scarborough Drilling



212C-MD-00954		<b>TETRA TECH</b>		<b>LOG OF BORING BH-2A</b>				Page 1 of 1	
Project Name: SEMU Permian 34 Flow Line Release									
Borehole Location: GPS: 32.557879°, -103.189634°					Surface Elevation: 3545 ft				
Borehole Number: BH-2A				Borehole Diameter (in.): 8		Date Started: 8/4/2020		Date Finished: 8/4/2020	

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm)	VOC FIELD SCREENING (ppm)	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	MINUS NO. 200 (%)	GRAPHIC LOG	WATER LEVEL OBSERVATIONS		
												While Drilling	Upon Completion of Drilling	
												While Drilling <u>▽</u> DRY ft    Upon Completion of Drilling <u>▽</u> DRY ft Remarks:		
												MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
												-- Previously excavated to 2' bgs.	2	
												<b>-SM-</b> SILTY SAND; Black, loose, non-cemented, with high hydrocarbon odor, heavy staining, free fluids visible.	2	BH-2A (2-3')
													5	BH-2A (4-5')
													10	BH-2A (6-7')
												<b>-SM-</b> SILTY SAND: Brown, loose, non-cemented, with low hydrocarbon odor, low staining.	10	BH-2A (9-10')
													15	BH-2A (14-15')
													17	
												<b>-SM-</b> SILTY SAND: Brown, medium dense, moderately cemented, with occasional gravel, no hydrocarbon odor, no staining.	20	BH-2A (19-20')
													20	
Bottom of borehole at 20.0 feet.														

<b>Sampler Types:</b> <input checked="" type="checkbox"/> Split Spoon <input type="checkbox"/> Shelby <input type="checkbox"/> Bulk Sample <input type="checkbox"/> Grab Sample		<input type="checkbox"/> Acetate Liner <input type="checkbox"/> Vane Shear <input checked="" type="checkbox"/> California <input type="checkbox"/> Test Pit		<b>Operation Types:</b> <input type="checkbox"/> Mud Rotary <input type="checkbox"/> Continuous Flight Auger <input type="checkbox"/> Wash Rotary		<input type="checkbox"/> Hand Auger <input type="checkbox"/> Air Rotary <input type="checkbox"/> Direct Push <input type="checkbox"/> Core Barrel		<b>Notes:</b> Analytical samples are shown in the "Remarks" column. Surface elevation is an estimated value.	
<b>Logger:</b> Joe Tyler				<b>Drilling Equipment:</b> Air Rotary		<b>Driller:</b> Scarborough Drilling			

212C-MD-00954		<b>TETRA TECH</b>		<b>LOG OF BORING BH-3A</b>				Page 1 of 1	
Project Name: SEMU Permian 34 Flow Line Release									
Borehole Location: GPS: 32.557795°, -103.189779°					Surface Elevation: 3545 ft				
Borehole Number: BH-3A				Borehole Diameter (in.): 8		Date Started: 8/4/2020		Date Finished: 8/4/2020	

DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm)	VOC FIELD SCREENING (ppm)	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	MINUS NO. 200 (%)	GRAPHIC LOG	WATER LEVEL OBSERVATIONS		
												While Drilling <input type="checkbox"/> DRY ft    Upon Completion of Drilling <input type="checkbox"/> DRY ft		
												Remarks:		
												MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
												-- Previously excavated to 2' bgs.		
												<b>-SM-</b> SILTY SAND; Black, loose, non-cemented, with high hydrocarbon odor, heavy staining, free fluids visible.	2	BH-3A (2-3')
													5	BH-3A (4-5')
													10	BH-3A (6-7')
													10	BH-3A (9-10')
												<b>-SM-</b> SILTY SAND: Brown, loose, non-cemented, with low hydrocarbon odor, low staining.	15	BH-3A (14-15')
													17	
												<b>-SM-</b> SILTY SAND: Brown, medium dense, moderately cemented, with occasional gravel, no hydrocarbon odor, no staining.	20	BH-3A (19-20')
													25	BH-3A (24-25')


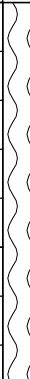


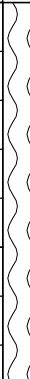


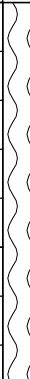

















  

Sampler Types: <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input checked="" type="checkbox"/> Split Spoon  <input type="checkbox"/> Shelby  <input type="checkbox"/> Bulk Sample  <input type="checkbox"/> Grab Sample         </div> <div style="width: 50%;"> <input type="checkbox"/> Acetate Liner  <input type="checkbox"/> Vane Shear  <input type="checkbox"/> California  <input type="checkbox"/> Test Pit         </div> </div>	Operation Types: <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Mud Rotary  <input type="checkbox"/> Continuous Flight Auger  <input type="checkbox"/> Wash Rotary         </div> <div style="width: 50%;"> <input type="checkbox"/> Hand Auger  <input type="checkbox"/> Air Rotary  <input type="checkbox"/> Direct Push  <input type="checkbox"/> Core Barrel         </div> </div>	Bottom of borehole at 25.0 feet. Notes: Analytical samples are shown in the "Remarks" column. Surface elevation is an estimated value.
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Logger: Joe Tyler	Drilling Equipment: Air Rotary	Driller: Scarborough Drilling
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212C-MD-00954		TETRA TECH		LOG OF BORING BH-4A				Page 1 of 1																																																																			
Project Name: SEMU Permian 34 Flow Line Release																																																																											
Borehole Location: GPS: 32.557901°, -103.189321°					Surface Elevation: 3545 ft																																																																						
Borehole Number: BH-4A				Borehole Diameter (in.): 8		Date Started: 8/5/2020		Date Finished: 8/5/2020																																																																			
<div>WATER LEVEL OBSERVATIONS</div> <div>While Drilling <u>▽</u> <u>DRY</u> ft Upon Completion of Drilling <u>▽</u> <u>DRY</u> ft</div> <div>Remarks:</div>																																																																											
<table><thead><tr><th rowspan="2">DEPTH (ft)</th><th rowspan="2">OPERATION TYPE</th><th rowspan="2">SAMPLE</th><th rowspan="2">CHLORIDE FIELD SCREENING (ppm)</th><th rowspan="2">VOC FIELD SCREENING (ppm)</th><th rowspan="2">SAMPLE RECOVERY (%)</th><th rowspan="2">MOISTURE CONTENT (%)</th><th rowspan="2">DRY DENSITY (pcf)</th><th colspan="2">LIQUID LIMIT</th><th rowspan="2">PLASTICITY INDEX</th><th rowspan="2">MINUS NO. 200 (%)</th><th rowspan="2">GRAPHIC LOG</th><th rowspan="2">MATERIAL DESCRIPTION</th><th rowspan="2">DEPTH (ft)</th><th rowspan="2">REMARKS</th></tr><tr><th>LL</th><th>PI</th></tr></thead><tbody><tr><td rowspan="4">5</td><td rowspan="4"></td><td rowspan="4"></td><td rowspan="4"></td><td>4.6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td rowspan="4"></td><td rowspan="4"><b>-SM-</b> SILTY SAND: Brown, loose, non-cemented, with no hydrocarbon odor, no staining.</td><td></td><td>BH-4A (0-1')</td></tr><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>BH-4A (2-3')</td></tr><tr><td>0.5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>BH-4A (5-6')</td></tr><tr><td>0.4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>BH-4A (7-8')</td></tr></tbody></table>										DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm)	VOC FIELD SCREENING (ppm)	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT		PLASTICITY INDEX	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS	LL	PI	5				4.6									<b>-SM-</b> SILTY SAND: Brown, loose, non-cemented, with no hydrocarbon odor, no staining.		BH-4A (0-1')	1									BH-4A (2-3')	0.5										BH-4A (5-6')	0.4										BH-4A (7-8')
DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm)	VOC FIELD SCREENING (ppm)	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT										PLASTICITY INDEX	MINUS NO. 200 (%)							GRAPHIC LOG	MATERIAL DESCRIPTION					DEPTH (ft)	REMARKS																																										
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Logger: Joe Tyler			Drilling Equipment: Air Rotary			Driller: Scarborough Drilling																																																																					

212C-MD-00954		 TETRA TECH		LOG OF BORING BH-5A			Page 1 of 1																																																														
Project Name: SEMU Permian 34 Flow Line Release																																																																					
Borehole Location: GPS: 32.557769°, -103.189479°				Surface Elevation: 3545 ft																																																																	
Borehole Number: BH-5A				Borehole Diameter (in.): 8		Date Started: 8/5/2020		Date Finished: 8/5/2020																																																													
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DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm)	VOC FIELD SCREENING (ppm)	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT									PLASTICITY INDEX	MINUS NO. 200 (%)							GRAPHIC LOG	MATERIAL DESCRIPTION					DEPTH (ft)	REMARKS																																					
								LL	PI																																																												
5				2.5									<b>-SM-</b> SILTY SAND: Brown, loose, non-cemented, with no hydrocarbon odor, no staining.		BH-5A (0-1')																																																						
				0.7										BH-5A (2-3')																																																							
				0.9										BH-5A (5-6')																																																							
				0.9										BH-5A (7-8')																																																							
Bottom of borehole at 8.0 feet.																																																																					
<div><div><div>Sampler Types:</div><div> Split Spoon</div><div> Shelby</div><div> Bulk Sample</div><div> Grab Sample</div><div> Acetate Liner</div><div> Vane Shear</div><div> California</div><div> Test Pit</div></div><div><div>Operation Types:</div><div> Mud Rotary</div><div> Continuous Flight Auger</div><div> Wash Rotary</div><div> Hand Auger</div><div> Air Rotary</div><div> Direct Push</div><div> Core Barrel</div></div></div> <div>Notes: Analytical samples are shown in the "Remarks" column. Surface elevation is an estimated value.</div>																																																																					
Logger: Joe Tyler				Drilling Equipment: Air Rotary				Driller: Scarborough Drilling																																																													




























SEMUR PERMAN 34 (LOGS NOT GOOD) GPJ ' 1-21-21 ' TT AUS

212C-MD-00954		<b>TETRA TECH</b>		<b>LOG OF BORING BH-7A</b>				Page 1 of 1						
Project Name: SEMU Permian 34 Flow Line Release														
Borehole Location: GPS: 32.557933°, -103.189873°					Surface Elevation: 3546 ft									
Borehole Number: BH-7A				Borehole Diameter (in.): 8		Date Started: 8/5/2020		Date Finished: 8/5/2020						
DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm)	VOC FIELD SCREENING (ppm)	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT	PLASTICITY INDEX	MINUS NO. 200 (%)	GRAPHIC LOG	<b>WATER LEVEL OBSERVATIONS</b> While Drilling <u>▽</u> DRY ft    Upon Completion of Drilling <u>▽</u> DRY ft  Remarks:		
												MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS
5				1.4								2	-- Previously excavated to 2' bgs.	
				0.9									-SM- SILTY SAND: Brown, loose, non-cemented, with no hydrocarbon odor, no staining.	
				0.7										BH-7A (2-3')
				0.5										BH-7A (4-5')
														BH-7A (7-8')
10												10	BH-7A (9-10')	

Bottom of borehole at 10.0 feet.

<b>Sampler Types:</b> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;">  Split Spoon   Shelby   Bulk Sample   Grab Sample         </div> <div style="width: 50%;">  Acetate Liner   Vane Shear   California   Test Pit         </div> </div>	<b>Operation Types:</b> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;">  Mud Rotary   Continuous Flight Auger   Wash Rotary         </div> <div style="width: 50%;">  Hand Auger   Air Rotary   Direct Push   Core Barrel         </div> </div>	<b>Notes:</b> Analytical samples are shown in the "Remarks" column. Surface elevation is an estimated value.
<b>Logger:</b> Joe Tyler	<b>Drilling Equipment:</b> Air Rotary	<b>Driller:</b> Scarborough Drilling

212C-MD-00954		 TETRA TECH		LOG OF BORING BH-8A			Page 1 of 1																																																							
Project Name: SEMU Permian 34 Flow Line Release																																																														
Borehole Location: GPS: 32.557787°, -103.189910°				Surface Elevation: 3545 ft																																																										
Borehole Number: BH-8A				Borehole Diameter (in.): 8		Date Started: 8/5/2020		Date Finished: 8/5/2020																																																						
<div>WATER LEVEL OBSERVATIONS</div> <div>While Drilling <u>▽</u> <u>DRY</u> ft Upon Completion of Drilling <u>▽</u> <u>DRY</u> ft</div> <div>Remarks:</div>																																																														
<table><thead><tr><th rowspan="2">DEPTH (ft)</th><th rowspan="2">OPERATION TYPE</th><th rowspan="2">SAMPLE</th><th rowspan="2">CHLORIDE FIELD SCREENING (ppm)</th><th rowspan="2">VOC FIELD SCREENING (ppm)</th><th rowspan="2">SAMPLE RECOVERY (%)</th><th rowspan="2">MOISTURE CONTENT (%)</th><th rowspan="2">DRY DENSITY (pcf)</th><th colspan="2">LIQUID LIMIT</th><th rowspan="2">PLASTICITY INDEX</th><th rowspan="2">MINUS NO. 200 (%)</th><th rowspan="2">GRAPHIC LOG</th><th rowspan="2">MATERIAL DESCRIPTION</th><th rowspan="2">DEPTH (ft)</th><th rowspan="2">REMARKS</th></tr><tr><th>LL</th><th>PI</th></tr></thead><tbody><tr><td rowspan="3">5</td><td rowspan="3"></td><td rowspan="3"></td><td rowspan="3"></td><td>1.4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td rowspan="3"></td><td rowspan="3"><b>-SM-</b> SILTY SAND: Brown, loose, non-cemented, with no hydrocarbon odor, no staining.</td><td></td><td>BH-8A (0-1')</td></tr><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>BH-8A (2-3')</td></tr><tr><td>0.6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>BH-8A (5-6')</td></tr></tbody></table>									DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm)	VOC FIELD SCREENING (ppm)	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT		PLASTICITY INDEX	MINUS NO. 200 (%)	GRAPHIC LOG	MATERIAL DESCRIPTION	DEPTH (ft)	REMARKS	LL	PI	5				1.4									<b>-SM-</b> SILTY SAND: Brown, loose, non-cemented, with no hydrocarbon odor, no staining.		BH-8A (0-1')	1									BH-8A (2-3')	0.6									BH-8A (5-6')
DEPTH (ft)	OPERATION TYPE	SAMPLE	CHLORIDE FIELD SCREENING (ppm)	VOC FIELD SCREENING (ppm)	SAMPLE RECOVERY (%)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT									PLASTICITY INDEX	MINUS NO. 200 (%)							GRAPHIC LOG	MATERIAL DESCRIPTION					DEPTH (ft)	REMARKS																														
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Logger: Joe Tyler			Drilling Equipment: Air Rotary			Driller: Scarborough Drilling																																																								

212C-MD-00954		TETRA TECH		LOG OF BORING BH-9A				Page 1 of 1																																																																																			
Project Name: SEMU Permian 34 Flow Line Release																																																																																											
Borehole Location: GPS: 32.557903°, -103.189742°				Surface Elevation: 3546 ft																																																																																							
Borehole Number: BH-9A				Borehole Diameter (in.): 8		Date Started: 8/5/2020		Date Finished: 8/5/2020																																																																																			
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TETRA TECH

## BORING LOG: DTW-01 (L-15651 POD1)

<b>PROJECT NUMBER:</b> 212C-MD-03271	<b>DRILLING COMPANY:</b> West Texas Water Well	<b>LATITUDE:</b> 32.560316°
<b>PROJECT NAME:</b> SEMU Permian Remediations	<b>DRILL RIG:</b> Air Rotary Rig	<b>LONGITUDE:</b> -103.190072°
<b>CLIENT:</b> Maverick Permian, LLC	<b>DRILLING METHOD:</b> Air Rotary	<b>SURFACE ELEVATION:</b> 3,547 feet AMSL
<b>ADDRESS:</b> 1410 NW County Road	<b>BORING TYPE:</b> Depth-to-Water	<b>LOGGED BY:</b> Adrian Garcia
Hobbs, NM 88240	<b>TOTAL DEPTH:</b> 55 feet	<b>CHECKED BY:</b> Charles Terhune
	<b>DIAMETER:</b> 8 inches	

**COMMENTS:** AMSL: Above Mean Sea Level

Depth (Feet)	Drilling Method	Boring Completion	Graphic Log	Material Description
				CALICHE, white, dry, poorly sorted, angular, homogeneous.
5				SAND, light brown, dry, fine to medium grained, poorly sorted, loose, sub-angular to sub-rounded, homogeneous.
10				
15	AR			CALICHE, white/pink, moist, medium dense.
20				SAND, light brown, moist, loose, fine to medium grained, sub-angular to sub-rounded, poorly sorted.
25				CALICHE/SAND, tan, loose, moist.
30				
35				
40				SAND, brown, moist, loose, fine to medium grained, sub-angular to sub-rounded, poorly sorted.
45				SAND/CALICHE, tan and white, moist, medium dense, poorly sorted.
50				
55				End of Hole at 55 feet below ground surface. No groundwater encountered, Hole plugged with hydrated 3/8" bentonite chips.

**Disclaimer** This bore log is intended for environmental not geotechnical purposes.

Page 1 of 1

Site Remediation Closure Report  
SEMU Permian #034 Flowline Release  
nJXK1608141111

Maverick Permian, LLC  
March 15, 2024

## **ATTACHMENT 3: PHOTOGRAPHIC DOCUMENTATION**



TETRA TECH, INC. PROJECT NO. 212C-MD-00954	DESCRIPTION	View north. Southern extent of release area (near Vertical 3).	1
	SITE NAME	SEMU Permian #34 Release	3/23/2016



TETRA TECH, INC. PROJECT NO. 212C-MD-00954	DESCRIPTION	View northwest. Release area near the release source.	2
	SITE NAME	SEMU Permian #34 Release	3/23/2016



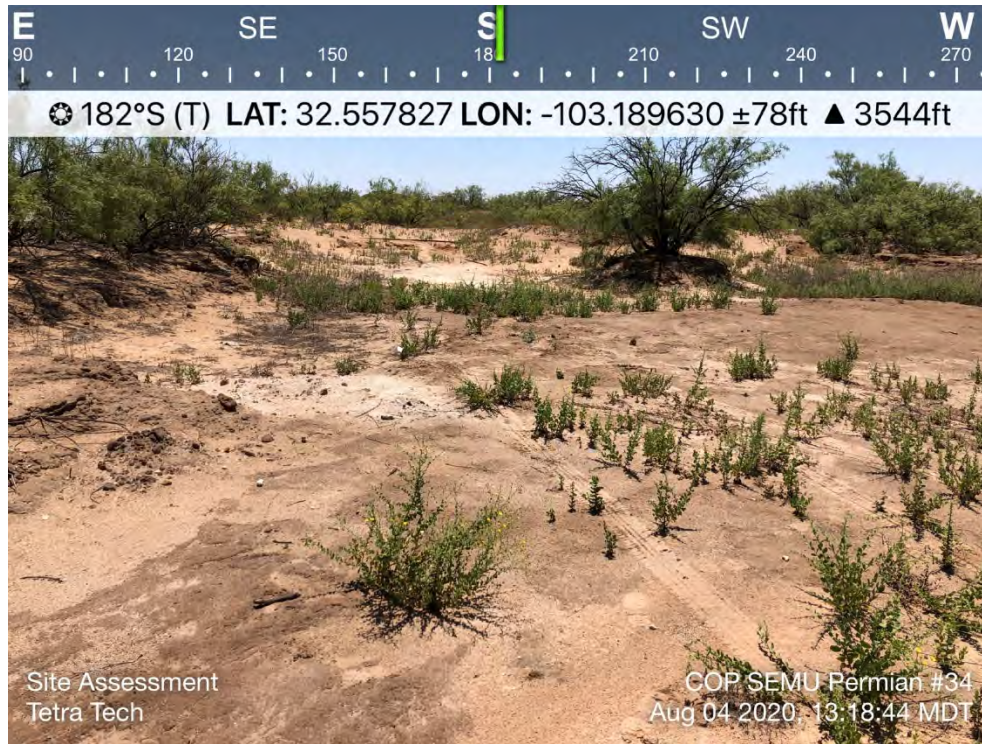


TETRA TECH, INC. PROJECT NO. 212C-MD-00954	DESCRIPTION	View southeast. Northern extent of release area.	3
	SITE NAME	SEMU Permian #34 Release	3/23/2016

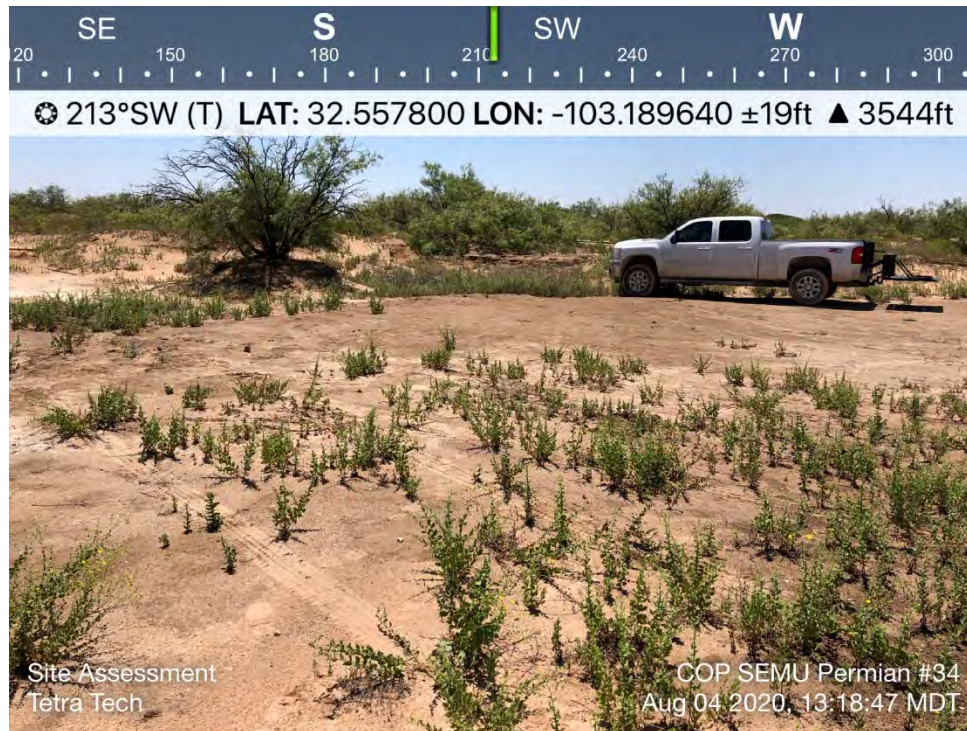


TETRA TECH, INC. PROJECT NO. 212C-MD-00954	DESCRIPTION	View east. Installation of Vertical 1.	4
	SITE NAME	SEMU Permian #34 Release	3/23/2016



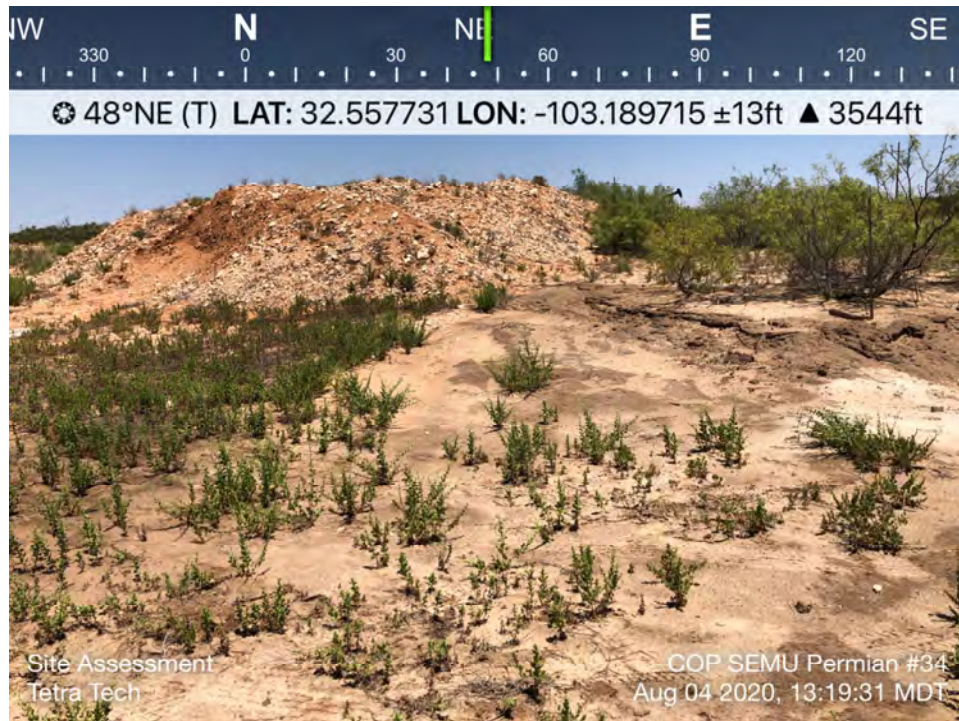


TETRA TECH, INC. PROJECT NO. 212C-MD-00954	DESCRIPTION	View south at southern extent of initial release area.	5
	SITE NAME	SEMU Permian #34 Release	8/4/2020



TETRA TECH, INC. PROJECT NO. 212C-MD-00954	DESCRIPTION	View southwest from central portion of main historical release area.	6
	SITE NAME	SEMU Permian #34 Release	8/4/2020





TETRA TECH, INC. PROJECT NO. 212C-MD-00954	DESCRIPTION	View northeast of clean soil pile. Asphaltic staining visible to east.	7
	SITE NAME	SEMU Permian #34 Release	8/4/2020



TETRA TECH, INC. PROJECT NO. 212C-MD-00954	DESCRIPTION	View east. Southern extent of observed asphaltic area.	8
	SITE NAME	SEMU Permian #34 Release	8/4/2020





TETRA TECH, INC. PROJECT NO. 212C-MD-00954	DESCRIPTION	View west from initial release excavated area. Asphaltic area edge visible.	9
	SITE NAME	SEMU Permian #34 Release	8/4/2020

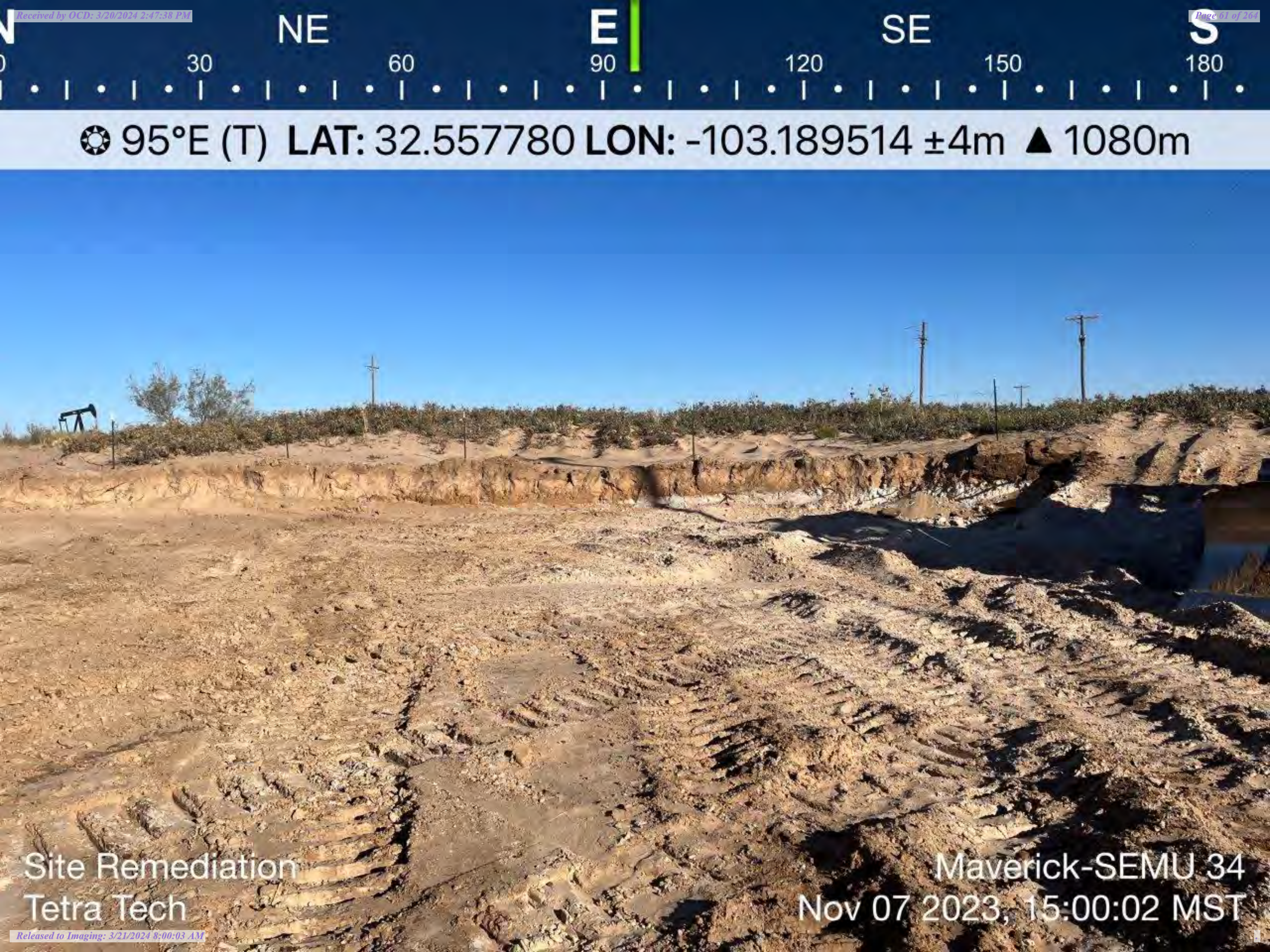


TETRA TECH, INC. PROJECT NO. 212C-MD-00954	DESCRIPTION	View east. Asphaltic areas visible.	10
	SITE NAME	SEMU Permian #34 Release	8/4/2020



TETRA TECH, INC. PROJECT NO. 212C-MD-00954	DESCRIPTION	View west-northwest over site from initial release excavated area. Clean soil pile visible.	11
	SITE NAME	SEMU Permian #34 Release	8/4/2020





☉ 95°E (T) LAT: 32.557780 LON: -103.189514 ±4m ▲ 1080m

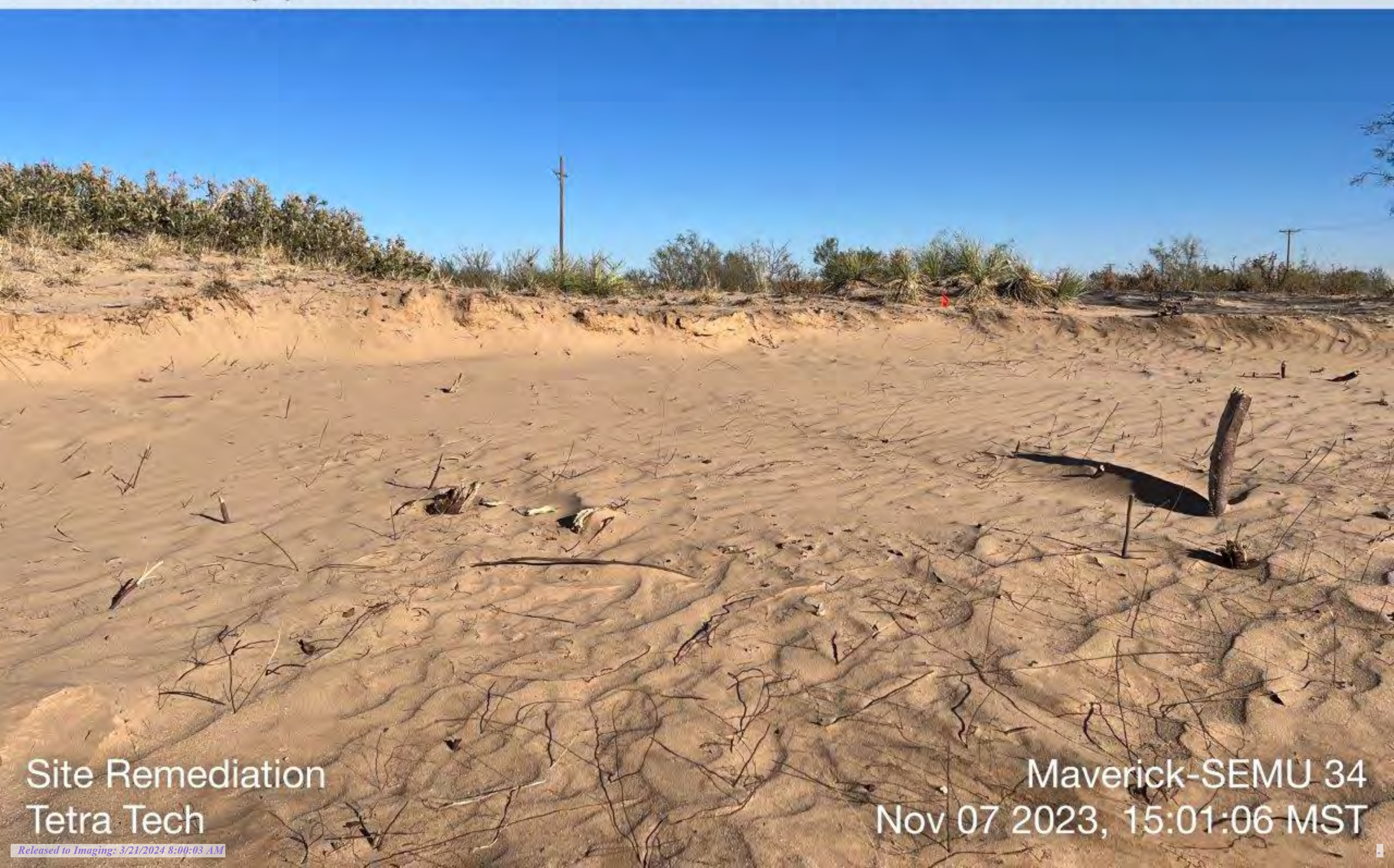
Site Remediation  
Tetra Tech

Maverick-SEMU 34  
Nov 07 2023, 15:00:02 MST





☉ 98°E (T) LAT: 32.558021 LON: -103.189164 ±3m ▲ 1082m



Site Remediation  
Tetra Tech

Maverick-SEMU 34  
Nov 07 2023, 15:01:06 MST



NE

E

SE

S

30

60

90

120

150

180

☀ 110°E (T) LAT: 32.557976 LON: -103.189243 ±4m ▲ 1083m



Site Remediation  
Tetra Tech

Maverick-SEMU 34  
Nov 07 2023, 15:01:32 MST





☀ 118°SE (T) LAT: 32.557987 LON: -103.189237 ±4m ▲ 1081m



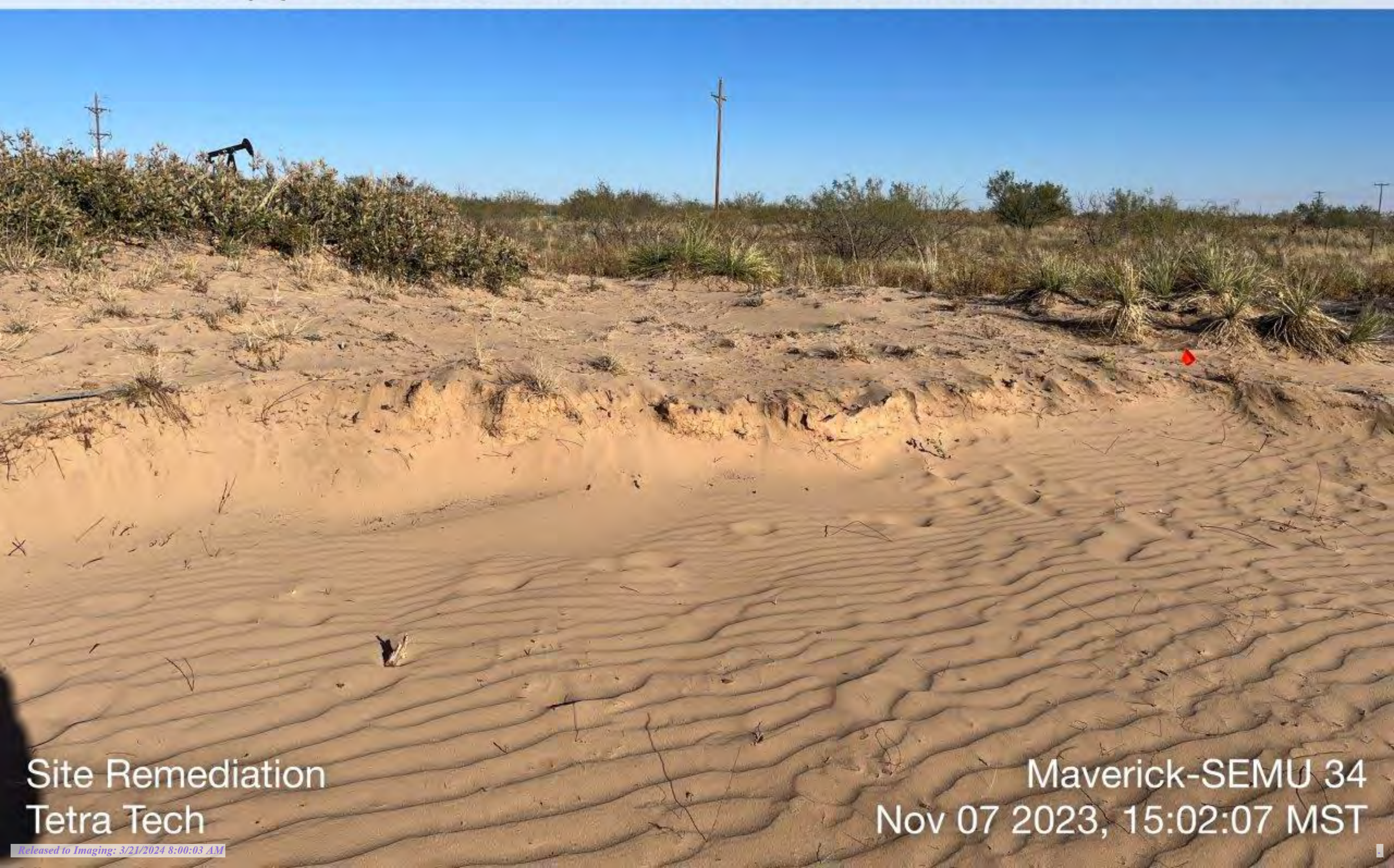
Site Remediation  
Tetra Tech

Maverick-SEMU 34  
Nov 07 2023, 15:01:47 MST





☉ 88°E (T) LAT: 32.558045 LON: -103.189108 ±4m ▲ 1079m



Site Remediation  
Tetra Tech

Maverick-SEMU 34  
Nov 07 2023, 15:02:07 MST





☀ 7°N (T) LAT: 32.557953 LON: -103.189216 ±4m ▲ 1082m

Site Remediation  
Tetra Tech

Maverick-SEMU 34  
Nov 07 2023, 15:02:29 MST



N

NE

E

SE

330

0

30

60

90

120

150

☀ 56°NE (T) LAT: 32.557989 LON: -103.189242 ±4m ▲ 1081m



Site Remediation  
Tetra Tech

Maverick-SEMU 34  
Nov 07 2023, 15:02:44 MST





☉ 174°S (T) **LAT: 32.557794 LON: -103.189849 ±4m ▲ 1083m**



Site Remediation  
Tetra Tech

Maverick-SEMU 34  
Nov 09 2023, 15:16:05 MST



NE

E

SE

S

30

60

90

120

150

180

☀ 107°E (T) LAT: 32.557634 LON: -103.189699 ±4m ▲ 1080m

Site Remediation  
Tetra Tech

Maverick-SEMU 34  
Nov 09 2023, 15:16:41 MST





☉ 169°S (T) **LAT: 32.557635 LON: -103.189657 ±4m ▲ 1081m**



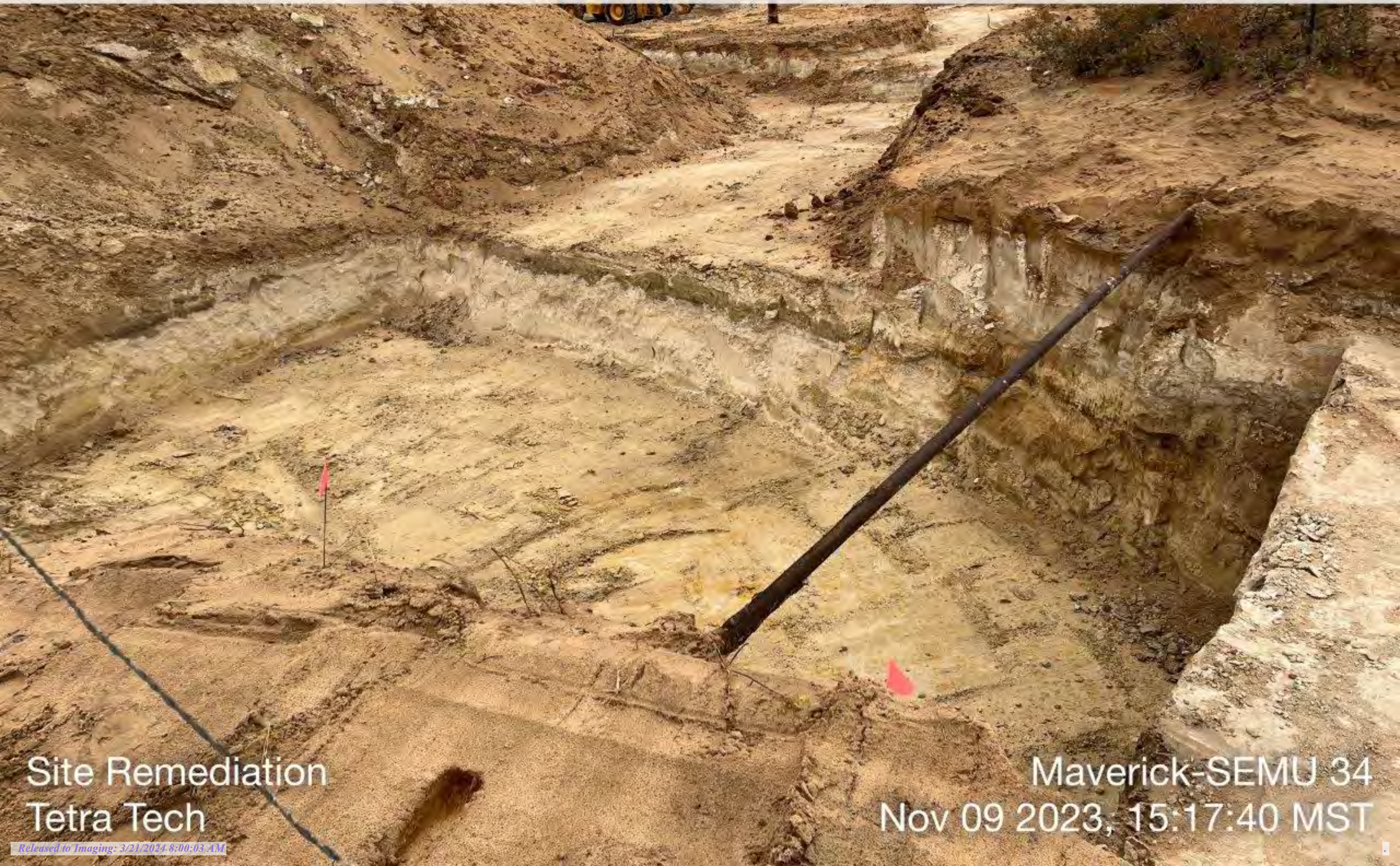
Site Remediation  
Tetra Tech

Maverick-SEMU 34  
Nov 09 2023, 15:16:48 MST





☉ 64°NE (T) LAT: 32.557526 LON: -103.189688 ±4m ▲ 1080m



Site Remediation  
Tetra Tech

Maverick-SEMU 34  
Nov 09 2023, 15:17:40 MST





☉ 37°NE (T) LAT: 32.557714 LON: -103.189392 ±4m ▲ 1077m



Site Remediation  
Tetra Tech

Maverick-SEMU 34  
Nov 10 2023, 13:08:33 MST



S

SW

W

NW

180

210

240

270

300

330

☉ 250°W (T) LAT: 32.557630 LON: -103.189341 ±4m ▲ 1077m



Site Remediation  
Tetra Tech

Maverick-SEMU 34  
Nov 10 2023, 13:11:39 MST



NE

E

SE

S

30

60

90

120

150

180

☉ 99°E (T) LAT: 32.557601 LON: -103.189599 ±4m ▲ 1078m



Site Remediation  
Tetra Tech

Maverick-SEMU 34  
Nov 10 2023, 13:12:36 MST





☉ 228°SW (T) LAT: 32.557595 LON: -103.189594 ±3m ▲ 1075m



Site Remediation  
Tetra Tech

Maverick-SEMU 34  
Nov 10 2023, 13:12:50 MST





☉ 212°SW (T) LAT: 32.557714 LON: -103.189601 ±4m ▲ 1078m

Site Remediation  
Tetra Tech

Maverick- SEMU 34  
Nov 21 2023, 13:18:42 MST





☉ 230°SW (T) LAT: 32.557698 LON: -103.189430 ±4m ▲ 1080m

Site Remediation  
Tetra Tech

Maverick- SEMU 34  
Nov 21 2023, 13:22:58 MST





☉ 273°W (T) LAT: 32.557753 LON: -103.189185 ±4m ▲ 1079m



Site Remediation  
Tetra Tech

Maverick- SEMU 34  
Jan 09 2024, 11:05:33 MST





☉ 335°NW (T) LAT: 32.557592 LON: -103.189306 ±3m ▲ 1077m

Site Remediation  
Tetra Tech

Maverick- SEMU 34  
Jan 09 2024, 11:06:15 MST





☉ 74°E (T) LAT: 32.557678 LON: -103.189935 ±4m ▲ 1076m

Site Remediation  
Tetra Tech

Maverick- SEMU 34  
Jan 09 2024, 11:07:41 MST



Site Remediation Closure Report  
SEMU Permian #034 Flowline Release  
nJXK1608141111

Maverick Permian, LLC  
March 15, 2024

## **ATTACHMENT 4: LABORATORY ANALYTICAL DATA**





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

November 08, 2023

CHUCK TERHUNE

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: SEMU PERMIAN 34

Enclosed are the results of analyses for samples received by the laboratory on 11/03/23 15:47.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/03/2023  
 Reported: 11/08/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/03/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: BH - 4 (3.0') (H236059-01)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/06/2023	ND	2.33	116	2.00	0.0337		
Toluene*	<0.050	0.050	11/06/2023	ND	2.14	107	2.00	1.93		
Ethylbenzene*	<0.050	0.050	11/06/2023	ND	2.12	106	2.00	2.70		
Total Xylenes*	<0.150	0.150	11/06/2023	ND	6.09	102	6.00	3.11		
Total BTEx	<0.300	0.300	11/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	11/07/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/07/2023	ND	225	113	200	20.9	
DRO >C10-C28*	<10.0	10.0	11/07/2023	ND	235	117	200	20.4	
EXT DRO >C28-C36	<10.0	10.0	11/07/2023	ND					

Surrogate: 1-Chlorooctane 95.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 110 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/03/2023  
 Reported: 11/08/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/03/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: BH - 6 (3.0') (H236059-02)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/06/2023	ND	2.33	116	2.00	0.0337		
Toluene*	<0.050	0.050	11/06/2023	ND	2.14	107	2.00	1.93		
Ethylbenzene*	<0.050	0.050	11/06/2023	ND	2.12	106	2.00	2.70		
Total Xylenes*	<0.150	0.150	11/06/2023	ND	6.09	102	6.00	3.11		
Total BTEX	<0.300	0.300	11/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.7 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/07/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/07/2023	ND	225	113	200	20.9	
DRO >C10-C28*	<10.0	10.0	11/07/2023	ND	235	117	200	20.4	
EXT DRO >C28-C36	<10.0	10.0	11/07/2023	ND					

Surrogate: 1-Chlorooctane 82.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.2 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/03/2023  
 Reported: 11/08/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/03/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: BH - 7 (3.0') (H236059-03)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/06/2023	ND	2.33	116	2.00	0.0337		
Toluene*	<0.050	0.050	11/06/2023	ND	2.14	107	2.00	1.93		
Ethylbenzene*	<0.050	0.050	11/06/2023	ND	2.12	106	2.00	2.70		
Total Xylenes*	<0.150	0.150	11/06/2023	ND	6.09	102	6.00	3.11		
Total BTEX	<0.300	0.300	11/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.8 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/07/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/07/2023	ND	225	113	200	20.9	
DRO >C10-C28*	<10.0	10.0	11/07/2023	ND	235	117	200	20.4	
EXT DRO >C28-C36	<10.0	10.0	11/07/2023	ND					

Surrogate: 1-Chlorooctane 88.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/03/2023  
 Reported: 11/08/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/03/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: BH - 8 (3.0') (H236059-04)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/06/2023	ND	2.33	116	2.00	0.0337		
Toluene*	<0.050	0.050	11/06/2023	ND	2.14	107	2.00	1.93		
Ethylbenzene*	<0.050	0.050	11/06/2023	ND	2.12	106	2.00	2.70		
Total Xylenes*	<0.150	0.150	11/06/2023	ND	6.09	102	6.00	3.11		
Total BTEX	<0.300	0.300	11/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/07/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/07/2023	ND	225	113	200	20.9	
DRO >C10-C28*	<10.0	10.0	11/07/2023	ND	235	117	200	20.4	
EXT DRO >C28-C36	<10.0	10.0	11/07/2023	ND					

Surrogate: 1-Chlorooctane 109 % 48.2-134

Surrogate: 1-Chlorooctadecane 126 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/03/2023  
 Reported: 11/08/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/03/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: BH - 9 (3.0') (H236059-05)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/06/2023	ND	2.33	116	2.00	0.0337		
Toluene*	<0.050	0.050	11/06/2023	ND	2.14	107	2.00	1.93		
Ethylbenzene*	<0.050	0.050	11/06/2023	ND	2.12	106	2.00	2.70		
Total Xylenes*	<0.150	0.150	11/06/2023	ND	6.09	102	6.00	3.11		
Total BTEX	<0.300	0.300	11/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.4 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	11/07/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/07/2023	ND	225	113	200	20.9	
DRO >C10-C28*	<10.0	10.0	11/07/2023	ND	235	117	200	20.4	
EXT DRO >C28-C36	<10.0	10.0	11/07/2023	ND					

Surrogate: 1-Chlorooctane 90.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/03/2023  
 Reported: 11/08/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/03/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: SW - 12 (H236059-06)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/06/2023	ND	2.33	116	2.00	0.0337		
Toluene*	<0.050	0.050	11/06/2023	ND	2.14	107	2.00	1.93		
Ethylbenzene*	<0.050	0.050	11/06/2023	ND	2.12	106	2.00	2.70		
Total Xylenes*	<0.150	0.150	11/06/2023	ND	6.09	102	6.00	3.11		
Total BTEX	<0.300	0.300	11/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.2 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/07/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/07/2023	ND	225	113	200	20.9	
DRO >C10-C28*	<10.0	10.0	11/07/2023	ND	235	117	200	20.4	
EXT DRO >C28-C36	<10.0	10.0	11/07/2023	ND					

Surrogate: 1-Chlorooctane 92.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 107 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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Notes and Definitions

- QR-03      The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- ND      Analyte NOT DETECTED at or above the reporting limit
- RPD      Relative Percent Difference
- \*\*      Samples not received at proper temperature of 6°C or below.
- \*\*\*      Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

\*=Accredited Analyte

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A handwritten signature in black ink, appearing to read "C. D. Keene".

Celey D. Keene, Lab Director/Quality Manager



Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

901 W. Wall Street, Ste 100  
Midland, Texas 79701  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name:

Maverick Natural Resources

Site Manager:

Chuck Terhune

Project Name:

SEMU Permian 34

281-755-8965

Project Location:

(county, state)  
Lea County, NM

Project #:

[chuck.terhune@tetratech.com](mailto:chuck.terhune@tetratech.com)

Invoice to:

Attn: Chuck Terhune

Receiving Laboratory:

Cardinal Labs

Sampler Signature:

Jorge Fernandez

Comments:

LAB #  
H236059

SAMPLE IDENTIFICATION

LAB USE ONLY

LAB #	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD		# CONTAINERS	FILTERED (Y/N)
		DATE	TIME	WATER	SOIL	HCL	HNO <sub>3</sub>		
1	BH-4 (3.0')	11/3/2023		X			X		
2	BH-6 (3.0')	11/3/2023		X			X		
3	BH-7 (3.0')	11/3/2023		X			X		
4	BH-8 (3.0')	11/3/2023		X			X		
5	BH-9 (3.0')	11/3/2023		X			X		
6	SW-12	11/3/2023		X			X		

Relinquished by: Date: Time: 1546

Relinquished by: Date: Time: 11-2-27

Relinquished by: Date: Time:

Received by:

Date: Time:

Received by:

Date: Time:

ANALYSIS REQUEST

(Circle or Specify Method No.)

BTEX 8021B	BTEX 8260B
TPH TX1005 (Ext to C35)	
TPH 8015M ( GRO - DRO - ORO - MRO)	
PAH 8270C	
Total Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Volatiles	
TCLP Semi Volatiles	
RCI	
GC/MS Vol. 8260B / 624	
GC/MS Semi. Vol. 8270C/625	
PCB's 8082 / 608	
NORM	
PLM (Asbestos)	
Chloride	
Chloride Sulfate TDS	
General Water Chemistry (see attached list)	
Anion/Cation Balance	

REMARKS: Standard TAT

LAB USE ONLY

Sample Temperature

- ☐ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

ORIGINAL COPY





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---

November 10, 2023

CHUCK TERHUNE

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: SEMU PERMIAN 34

Enclosed are the results of analyses for samples received by the laboratory on 11/07/23 17:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Coley D. Keene".

Celey D. Keene

Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/07/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 1 (1.0') (H236110-01)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/08/2023	ND	1.66	83.1	2.00	12.4	
Toluene*	<0.050	0.050	11/08/2023	ND	1.82	90.9	2.00	11.2	
Ethylbenzene*	<0.050	0.050	11/08/2023	ND	1.84	91.9	2.00	9.87	
Total Xylenes*	<0.150	0.150	11/08/2023	ND	5.58	93.0	6.00	9.72	
Total BTX	<0.300	0.300	11/08/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	11/08/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	186	93.2	200	0.854	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	177	88.4	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 113 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/07/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 2 (1.0') (H236110-02)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/08/2023	ND	1.66	83.1	2.00	12.4		
Toluene*	<0.050	0.050	11/08/2023	ND	1.82	90.9	2.00	11.2		
Ethylbenzene*	<0.050	0.050	11/08/2023	ND	1.84	91.9	2.00	9.87		
Total Xylenes*	<0.150	0.150	11/08/2023	ND	5.58	93.0	6.00	9.72		
Total BTEX	<0.300	0.300	11/08/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/08/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	186	93.2	200	0.854	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	177	88.4	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 113 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/07/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 3 (3.0') (H236110-03)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/09/2023	ND	1.66	83.1	2.00	12.4		
Toluene*	<0.050	0.050	11/09/2023	ND	1.82	90.9	2.00	11.2		
Ethylbenzene*	<0.050	0.050	11/09/2023	ND	1.84	91.9	2.00	9.87		
Total Xylenes*	<0.150	0.150	11/09/2023	ND	5.58	93.0	6.00	9.72		
Total BTEx	<0.300	0.300	11/09/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/08/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	186	93.2	200	0.854	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	177	88.4	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 115 % 48.2-134

Surrogate: 1-Chlorooctadecane 120 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/07/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 10 (3.0') (H236110-04)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/09/2023	ND	1.66	83.1	2.00	12.4		
Toluene*	<0.050	0.050	11/09/2023	ND	1.82	90.9	2.00	11.2		
Ethylbenzene*	<0.050	0.050	11/09/2023	ND	1.84	91.9	2.00	9.87		
Total Xylenes*	<0.150	0.150	11/09/2023	ND	5.58	93.0	6.00	9.72		
Total BTEx	<0.300	0.300	11/09/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/08/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	186	93.2	200	0.854	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	177	88.4	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 111 % 48.2-134

Surrogate: 1-Chlorooctadecane 116 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/07/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 11 (3.0') (H236110-05)**

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/09/2023	ND	1.66	83.1	2.00	12.4		
Toluene*	<0.050	0.050	11/09/2023	ND	1.82	90.9	2.00	11.2		
Ethylbenzene*	<0.050	0.050	11/09/2023	ND	1.84	91.9	2.00	9.87		
Total Xylenes*	<0.150	0.150	11/09/2023	ND	5.58	93.0	6.00	9.72		
Total BTEX	<0.300	0.300	11/09/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/08/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	186	93.2	200	0.854	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	177	88.4	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 118 % 49.1-148

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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/07/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 13 (3.0') (H236110-06)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/09/2023	ND	1.66	83.1	2.00	12.4		
Toluene*	<0.050	0.050	11/09/2023	ND	1.82	90.9	2.00	11.2		
Ethylbenzene*	<0.050	0.050	11/09/2023	ND	1.84	91.9	2.00	9.87		
Total Xylenes*	<0.150	0.150	11/09/2023	ND	5.58	93.0	6.00	9.72		
Total BTEX	<0.300	0.300	11/09/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	11/08/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	186	93.2	200	0.854	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	177	88.4	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 111 % 49.1-148

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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/07/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 15 (3.0') (H236110-07)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/09/2023	ND	1.66	83.1	2.00	12.4	
Toluene*	<0.050	0.050	11/09/2023	ND	1.82	90.9	2.00	11.2	
Ethylbenzene*	<0.050	0.050	11/09/2023	ND	1.84	91.9	2.00	9.87	
Total Xylenes*	<0.150	0.150	11/09/2023	ND	5.58	93.0	6.00	9.72	
Total BTEX	<0.300	0.300	11/09/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 114 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/08/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	186	93.2	200	0.854	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	177	88.4	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/07/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 16 (3.0') (H236110-08)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/09/2023	ND	1.66	83.1	2.00	12.4		
Toluene*	<0.050	0.050	11/09/2023	ND	1.82	90.9	2.00	11.2		
Ethylbenzene*	<0.050	0.050	11/09/2023	ND	1.84	91.9	2.00	9.87		
Total Xylenes*	<0.150	0.150	11/09/2023	ND	5.58	93.0	6.00	9.72		
Total BTEX	<0.300	0.300	11/09/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/08/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	186	93.2	200	0.854	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	177	88.4	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 111 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/07/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SW - 8 (H236110-09)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/09/2023	ND	1.66	83.1	2.00	12.4	
Toluene*	<0.050	0.050	11/09/2023	ND	1.82	90.9	2.00	11.2	
Ethylbenzene*	<0.050	0.050	11/09/2023	ND	1.84	91.9	2.00	9.87	
Total Xylenes*	<0.150	0.150	11/09/2023	ND	5.58	93.0	6.00	9.72	
Total BTEX	<0.300	0.300	11/09/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 114 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	11/08/2023	ND	400	100	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	186	93.2	200	0.854	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	177	88.4	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 110 % 48.2-134

Surrogate: 1-Chlorooctadecane 115 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/07/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SW - 9 (H236110-10)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/09/2023	ND	1.66	83.1	2.00	12.4		
Toluene*	<0.050	0.050	11/09/2023	ND	1.82	90.9	2.00	11.2		
Ethylbenzene*	<0.050	0.050	11/09/2023	ND	1.84	91.9	2.00	9.87		
Total Xylenes*	<0.150	0.150	11/09/2023	ND	5.58	93.0	6.00	9.72		
Total BTEX	<0.300	0.300	11/09/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/08/2023	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	186	93.2	200	0.854	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	177	88.4	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 112 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/07/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SW - 11 (H236110-11)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/09/2023	ND	1.66	83.1	2.00	12.4		
Toluene*	<0.050	0.050	11/09/2023	ND	1.82	90.9	2.00	11.2		
Ethylbenzene*	<0.050	0.050	11/09/2023	ND	1.84	91.9	2.00	9.87		
Total Xylenes*	<0.150	0.150	11/09/2023	ND	5.58	93.0	6.00	9.72		
Total BTEX	<0.300	0.300	11/09/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	11/08/2023	ND	400	100	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	186	93.2	200	0.854	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	177	88.4	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 118 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager



Analysis Request of Chain of Custody Record



901 W Wall Street, Ste 100  
Midland, Texas 79701  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name: Maverick Natural Resources Site Manager: Chuck Terhune

Project Name: SEMIU Permian 34 281-755-8965  
[chuck.terhune@tetratech.com](mailto:chuck.terhune@tetratech.com)

Project Location: Lea County, NM Project #: 212C-MD-03274

Invoice to: Attn: Chuck Terhune

Receiving Laboratory: Cardinal Labs Sampler Signature: Jorge Fernandez

Comments:

LAB #  LAB USE ONLY	H336110	SAMPLE IDENTIFICATION	SAMPLING		MATRIX	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B	BTE		
			DATE	TIME					WATER		HCL	
									SOIL		HNO <sub>3</sub>	
						ICE						

1	BH-1 (1.0')	11/7/2023		X			X		
2	BH-2 (1.0')	11/7/2023		X			X		
3	BH-3 (3.0')	11/7/2023		X			X		
4	BH-10 (3.0')	11/7/2023		X			X		
5	BH-11 (3.0')	11/7/2023		X			X		
6	BH-13 (3.0')	11/7/2023		X			X		
7	BH-15 (3.0')	11/7/2023		X			X		
8	BH-16 (3.0')	11/7/2023		X			X		
9	SW-8	11/7/2023		X			X		
10	SW-9	11/7/2023		X			X		

Relinquished by: [Signature] Date: 11-7-23 Time: 1700

Received by: [Signature] Date: 11-7-23 Time: 1700

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

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

ANALYSIS REQUEST  
(Circle or Specify Method No.)

<input checked="" type="checkbox"/> BTEX 8021B	<input checked="" type="checkbox"/> BTEX 8260B
<input checked="" type="checkbox"/> TPH TX1005 (Ext to C35)	
<input checked="" type="checkbox"/> TPH 8015M (GRO - DRO - ORO - MRO)	
<input checked="" type="checkbox"/> PAH 8270C	
<input checked="" type="checkbox"/> Total Metals Ag As Ba Cd Cr Pb Se Hg	
<input checked="" type="checkbox"/> TCLP Metals Ag As Ba Cd Cr Pb Se Hg	
<input checked="" type="checkbox"/> TCLP Volatiles	
<input checked="" type="checkbox"/> TCLP Semi Volatiles	
<input checked="" type="checkbox"/> RCI	
<input checked="" type="checkbox"/> GC/MS Vol. 8260B / 624	
<input checked="" type="checkbox"/> GC/MS Semi. Vol. 8270C/625	
<input checked="" type="checkbox"/> PCB's 8082 / 608	
<input checked="" type="checkbox"/> NORM	
<input checked="" type="checkbox"/> PLM (Asbestos)	
<input checked="" type="checkbox"/> Chloride	
<input checked="" type="checkbox"/> Chloride Sulfate TDS	
<input checked="" type="checkbox"/> General Water Chemistry (see attached list)	
<input checked="" type="checkbox"/> Anion/Cation Balance	
<input checked="" type="checkbox"/> Hold	

LAB USE ONLY

Sample Temperature: -0.3°C

REMARKS: Standard TAT

☒ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

ORIGINAL COPY



Analysis Request of Custody Record



Tetra Tech, Inc.

901 W Wall Street, Ste 100  
Midland, Texas 79701  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name:

Maverick Natural Resources

Site Manager:

Chuck Terhune

Project Name:

SEMU Permian 34

281-755-8965

Project Location:

Lea County, NM

Project #:

[chuck.terhune@tetratech.com](mailto:chuck.terhune@tetratech.com)

Invoice to:

Attn: Chuck Terhune

Receiving Laboratory:

Cardinal Labs

Sampler Signature:

Jorge Fernandez

Comments:

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # H336110  
(LAB USE ONLY)

SAMPLE IDENTIFICATION

SW-11

SAMPLING

YEAR: 2023

DATE 11/7/2023  
TIME

MATRIX

WATER  
SOIL  
HCL  
HNO<sub>3</sub>  
ICE

PRESERVATIVE METHOD

# CONTAINERS  
FILTERED (Y/N)

BTEX 8021B BTEX 8260B  
TPH TX1005 (Ext to C35)  
TPH 8015M ( GRO - DRO - ORO - MRO)  
PAH 8270C  
Total Metals Ag As Ba Cd Cr Pb Se Hg  
TCLP Metals Ag As Ba Cd Cr Pb Se Hg  
TCLP Volatiles  
TCLP Semi Volatiles  
RCI  
GC/MS Vol. 8260B / 624  
GC/MS Semi. Vol. 8270C/625  
PCB's 8082 / 608  
NORM  
PLM (Asbestos)  
Chloride  
Chloride Sulfate TDS  
General Water Chemistry (see attached list)  
Anion/Cation Balance

Hold

Relinquished by:

Date: Time:

Relinquished by:

Date: Time:

Relinquished by:

Date: Time:

Received by:

Date: Time:

Received by:

Date: Time:

REMARKS:

Standard TAT

LAB USE ONLY

Sample Temperature

-0.3°C

- ☒ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

---

November 10, 2023

CHUCK TERHUNE

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: SEMU PERMIAN 34

Enclosed are the results of analyses for samples received by the laboratory on 11/08/23 8:57.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 5 (3.0') (H236114-01)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/09/2023	ND	1.96	97.9	2.00	6.65	
Toluene*	<0.100	0.100	11/09/2023	ND	1.96	98.2	2.00	5.23	
Ethylbenzene*	<0.050	0.050	11/09/2023	ND	2.16	108	2.00	4.91	
Total Xylenes*	<0.150	0.150	11/09/2023	ND	6.41	107	6.00	5.22	
Total BTX	<0.350	0.350	11/09/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	11/09/2023	ND	448	112	400	7.41	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	194	97.2	200	2.71	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	207	104	200	2.95	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 82.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 80.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 17 (3.0') (H236114-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/09/2023	ND	1.88	93.8	2.00	15.9	QM-07	
Toluene*	<0.100	0.100	11/09/2023	ND	1.81	90.4	2.00	17.2		
Ethylbenzene*	<0.050	0.050	11/09/2023	ND	1.85	92.3	2.00	16.7		
Total Xylenes*	<0.150	0.150	11/09/2023	ND	5.35	89.2	6.00	16.6		
Total BTEX	<0.350	0.350	11/09/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	11/09/2023	ND	448	112	400	7.41	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	199	99.4	200	2.17	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	208	104	200	3.82	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 84.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.6 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 28 (3.0') (H236114-03)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/09/2023	ND	1.88	93.8	2.00	15.9		
Toluene*	<0.100	0.100	11/09/2023	ND	1.81	90.4	2.00	17.2		
Ethylbenzene*	<0.050	0.050	11/09/2023	ND	1.85	92.3	2.00	16.7		
Total Xylenes*	<0.150	0.150	11/09/2023	ND	5.35	89.2	6.00	16.6		
Total BTEX	<0.350	0.350	11/09/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 123 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/09/2023	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	199	99.4	200	2.17	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	208	104	200	3.82	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 82.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 29 (3.0') (H236114-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/08/2023	ND	1.88	93.8	2.00	15.9		
Toluene*	<0.100	0.100	11/08/2023	ND	1.81	90.4	2.00	17.2		
Ethylbenzene*	<0.050	0.050	11/08/2023	ND	1.85	92.3	2.00	16.7		
Total Xylenes*	<0.150	0.150	11/08/2023	ND	5.35	89.2	6.00	16.6		
Total BTEx	<0.350	0.350	11/08/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/09/2023	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	199	99.4	200	2.17	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	208	104	200	3.82	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 84.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.4 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 30 (3.0') (H236114-05)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/08/2023	ND	1.88	93.8	2.00	15.9		
Toluene*	<0.100	0.100	11/08/2023	ND	1.81	90.4	2.00	17.2		
Ethylbenzene*	<0.050	0.050	11/08/2023	ND	1.85	92.3	2.00	16.7		
Total Xylenes*	<0.150	0.150	11/08/2023	ND	5.35	89.2	6.00	16.6		
Total BTEx	<0.350	0.350	11/08/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/09/2023	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	199	99.4	200	2.17	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	208	104	200	3.82	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 79.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.5 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 34 (3.0') (H236114-06)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/08/2023	ND	1.88	93.8	2.00	15.9		
Toluene*	<0.100	0.100	11/08/2023	ND	1.81	90.4	2.00	17.2		
Ethylbenzene*	<0.050	0.050	11/08/2023	ND	1.85	92.3	2.00	16.7		
Total Xylenes*	<0.150	0.150	11/08/2023	ND	5.35	89.2	6.00	16.6		
Total BTEx	<0.350	0.350	11/08/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/09/2023	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	199	99.4	200	2.17	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	208	104	200	3.82	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 81.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 36 (3.0') (H236114-07)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/08/2023	ND	1.88	93.8	2.00	15.9		
Toluene*	<0.100	0.100	11/08/2023	ND	1.81	90.4	2.00	17.2		
Ethylbenzene*	<0.050	0.050	11/08/2023	ND	1.85	92.3	2.00	16.7		
Total Xylenes*	<0.150	0.150	11/08/2023	ND	5.35	89.2	6.00	16.6		
Total BTEX	<0.350	0.350	11/08/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/09/2023	ND	448	112	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	199	99.4	200	2.17	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	208	104	200	3.82	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 84.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 35 (3.0') (H236114-08)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/08/2023	ND	1.88	93.8	2.00	15.9		
Toluene*	<0.100	0.100	11/08/2023	ND	1.81	90.4	2.00	17.2		
Ethylbenzene*	<0.050	0.050	11/08/2023	ND	1.85	92.3	2.00	16.7		
Total Xylenes*	<0.150	0.150	11/08/2023	ND	5.35	89.2	6.00	16.6		
Total BTEx	<0.350	0.350	11/08/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/09/2023	ND	448	112	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	199	99.4	200	2.17	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	208	104	200	3.82	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 89.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 100 % 49.1-148

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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 37 (3.0') (H236114-09)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/08/2023	ND	1.88	93.8	2.00	15.9	
Toluene*	<0.100	0.100	11/08/2023	ND	1.81	90.4	2.00	17.2	
Ethylbenzene*	<0.050	0.050	11/08/2023	ND	1.85	92.3	2.00	16.7	
Total Xylenes*	<0.150	0.150	11/08/2023	ND	5.35	89.2	6.00	16.6	
Total BTEX	<0.350	0.350	11/08/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/09/2023	ND	448	112	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	199	99.4	200	2.17	
<b>DRO &gt;C10-C28*</b>	<b>12.5</b>	10.0	11/09/2023	ND	208	104	200	3.82	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 83.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.2 % 49.1-148

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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 38 (3.0') (H236114-10)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/08/2023	ND	1.88	93.8	2.00	15.9		
Toluene*	<0.100	0.100	11/08/2023	ND	1.81	90.4	2.00	17.2		
Ethylbenzene*	<0.050	0.050	11/08/2023	ND	1.85	92.3	2.00	16.7		
Total Xylenes*	<0.150	0.150	11/08/2023	ND	5.35	89.2	6.00	16.6		
Total BTEX	<0.350	0.350	11/08/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/09/2023	ND	448	112	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	199	99.4	200	2.17	
DRO >C10-C28*	39.1	10.0	11/09/2023	ND	208	104	200	3.82	
EXT DRO >C28-C36	46.2	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 86.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SW - 6 (H236114-11)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/08/2023	ND	1.88	93.8	2.00	15.9		
Toluene*	<0.100	0.100	11/08/2023	ND	1.81	90.4	2.00	17.2		
Ethylbenzene*	<0.050	0.050	11/08/2023	ND	1.85	92.3	2.00	16.7		
Total Xylenes*	<0.150	0.150	11/08/2023	ND	5.35	89.2	6.00	16.6		
Total BTEX	<0.350	0.350	11/08/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/09/2023	ND	448	112	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	199	99.4	200	2.17	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	208	104	200	3.82	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 83.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 97.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/10/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/07/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SW - 7 (H236114-12)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/08/2023	ND	1.88	93.8	2.00	15.9	
Toluene*	<0.100	0.100	11/08/2023	ND	1.81	90.4	2.00	17.2	
Ethylbenzene*	<0.050	0.050	11/08/2023	ND	1.85	92.3	2.00	16.7	
Total Xylenes*	<0.150	0.150	11/08/2023	ND	5.35	89.2	6.00	16.6	
Total BTEX	<0.350	0.350	11/08/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/09/2023	ND	448	112	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/09/2023	ND	199	99.4	200	2.17	
DRO >C10-C28*	<10.0	10.0	11/09/2023	ND	208	104	200	3.82	
EXT DRO >C28-C36	<10.0	10.0	11/09/2023	ND					

Surrogate: 1-Chlorooctane 85.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

QR-04	The RPD for the BS/BSD was outside of historical limits.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "C. D. Keene".

Celey D. Keene, Lab Director/Quality Manager



Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

901 W. Wall Street, Ste 100  
Midland, Texas 79701  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name:

Maverick Natural Resources

Site Manager:

Chuck Terhune

Project Name:

SEMU Permian 34

281-755-8965

Project Location:

Lea County, NM

Project #:

212C-MD-03274

Invoice to:

Attn: Chuck Terhune

Receiving Laboratory:

Cardinal Labs

Sampler Signature:

Jorge Fernandez

Comments:

LAB #	LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD		# CONTAINERS	FILTERED (Y/N)	ANALYSIS REQUEST (Circle or Specify Method No.)															Hold																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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1		BH-5 (3.0')	11/7/2023		X				X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
2		BH-17 (3.0')	11/7/2023		X				X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3		BH-28 (3.0')	11/7/2023		X				X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
4		BH-29 (3.0')	11/7/2023		X				X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
5		BH-30 (3.0')	11/7/2023		X				X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
6		BH-34 (3.0')	11/7/2023		X				X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
7		BH-36 (3.0')	11/7/2023		X				X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8		BH-35 (3.0')	11/7/2023		X				X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
9		BH-37 (3.0')	11/7/2023		X				X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
10		BH-38 (3.0')	11/7/2023		X				X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Chuck Terhune	11-7-23	1800	Chuck Terhune	11/8/23	0730
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Chuck Terhune	11/8/23	0856	Chuck Terhune	11-8-23	0857

LAB USE ONLY

REMARKS: Standard TAT

Sample Temperature

☒ RUSH: Same Day 24 hr ☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

ORIGINAL COPY







PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

November 13, 2023

CHUCK TERHUNE

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: SEMU PERMIAN 34

Enclosed are the results of analyses for samples received by the laboratory on 11/08/23 15:52.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	11/08/2023	Sampling Date:	11/08/2023
Reported:	11/13/2023	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 34	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03274	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK -LEA CO NM		

**Sample ID: BH - 40 (3.0') (H236134-01)**

BTEX 8021B			mg/kg		Analyzed By: JH				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/10/2023	ND	2.20	110	2.00	2.28	
Toluene*	<0.050	0.050	11/10/2023	ND	2.19	109	2.00	2.55	
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.19	109	2.00	2.52	
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.75	113	6.00	2.63	
Total BTEX	<0.300	0.300	11/10/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B			mg/kg		Analyzed By: HM				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	11/09/2023	ND	432	108	400	7.69	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	177	88.7	200	0.648	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	171	85.3	200	1.34	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 116 % 48.2-134

Surrogate: 1-Chlorooctadecane 121 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/13/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/08/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 41 (3.0') (H236134-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.20	110	2.00	2.28		
Toluene*	<0.050	0.050	11/10/2023	ND	2.19	109	2.00	2.55		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.19	109	2.00	2.52		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.75	113	6.00	2.63		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/09/2023	ND	432	108	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	177	88.7	200	0.648	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	171	85.3	200	1.34	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 110 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/13/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/08/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 43 (3.0') (H236134-03)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/10/2023	ND	2.20	110	2.00	2.28	
Toluene*	<0.050	0.050	11/10/2023	ND	2.19	109	2.00	2.55	
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.19	109	2.00	2.52	
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.75	113	6.00	2.63	
Total BTEX	<0.300	0.300	11/10/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	11/09/2023	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	177	88.7	200	0.648	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	171	85.3	200	1.34	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 121 % 48.2-134

Surrogate: 1-Chlorooctadecane 126 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/13/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/08/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 44 (3.0') (H236134-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.20	110	2.00	2.28		
Toluene*	<0.050	0.050	11/10/2023	ND	2.19	109	2.00	2.55		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.19	109	2.00	2.52		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.75	113	6.00	2.63		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/09/2023	ND	432	108	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	177	88.7	200	0.648	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	171	85.3	200	1.34	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 117 % 48.2-134

Surrogate: 1-Chlorooctadecane 121 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/13/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/08/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 45 (3.0') (H236134-05)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.20	110	2.00	2.28		
Toluene*	<0.050	0.050	11/10/2023	ND	2.19	109	2.00	2.55		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.19	109	2.00	2.52		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.75	113	6.00	2.63		
Total BTEx	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/09/2023	ND	432	108	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	177	88.7	200	0.648	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	171	85.3	200	1.34	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 118 % 48.2-134

Surrogate: 1-Chlorooctadecane 123 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/13/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/08/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 46 (3.0') (H236134-06)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/10/2023	ND	2.20	110	2.00	2.28	
Toluene*	<0.050	0.050	11/10/2023	ND	2.19	109	2.00	2.55	
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.19	109	2.00	2.52	
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.75	113	6.00	2.63	
Total BTEX	<0.300	0.300	11/10/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	11/09/2023	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	177	88.7	200	0.648	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	171	85.3	200	1.34	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 111 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/13/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/08/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SW - 4 (H236134-07)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/10/2023	ND	2.07	104	2.00	0.00777	
Toluene*	<0.050	0.050	11/10/2023	ND	2.17	109	2.00	0.204	
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.19	110	2.00	0.139	
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.67	111	6.00	1.42	
Total BTEX	<0.300	0.300	11/10/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/09/2023	ND	432	108	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	177	88.7	200	0.648	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	171	85.3	200	1.34	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 114 % 48.2-134

Surrogate: 1-Chlorooctadecane 120 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/08/2023  
 Reported: 11/13/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/08/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SW - 5 (H236134-08)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/10/2023	ND	2.07	104	2.00	0.00777	
Toluene*	<0.050	0.050	11/10/2023	ND	2.17	109	2.00	0.204	
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.19	110	2.00	0.139	
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.67	111	6.00	1.42	
Total BTEX	<0.300	0.300	11/10/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/09/2023	ND	432	108	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	177	88.7	200	0.648	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	171	85.3	200	1.34	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 122 % 48.2-134

Surrogate: 1-Chlorooctadecane 127 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager







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---

November 14, 2023

CHUCK TERHUNE

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: SEMU PERMIAN 34

Enclosed are the results of analyses for samples received by the laboratory on 11/09/23 10:26.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/09/2023  
 Reported: 11/14/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/08/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 64 (8.0') (H236149-01)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/10/2023	ND	2.07	104	2.00	0.00777	
Toluene*	<0.050	0.050	11/10/2023	ND	2.17	109	2.00	0.204	
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.19	110	2.00	0.139	
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.67	111	6.00	1.42	
Total BTX	<0.300	0.300	11/10/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	11/10/2023	ND	432	108	400	7.69	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	180	90.0	200	4.09	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	182	91.0	200	10.8	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 106 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/09/2023  
 Reported: 11/14/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/08/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 63 (8.0') (H236149-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	1.78	89.1	2.00	19.1		
Toluene*	<0.050	0.050	11/10/2023	ND	1.76	87.9	2.00	14.9		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	1.90	95.0	2.00	11.8		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	5.70	95.1	6.00	9.47		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	176	16.0	11/10/2023	ND	432	108	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	180	90.0	200	4.09	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	182	91.0	200	10.8	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 109 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/09/2023  
 Reported: 11/14/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/08/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 62 (8.0') (H236149-03)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	1.78	89.1	2.00	19.1		
Toluene*	<0.050	0.050	11/10/2023	ND	1.76	87.9	2.00	14.9		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	1.90	95.0	2.00	11.8		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	5.70	95.1	6.00	9.47		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	11/10/2023	ND	432	108	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	180	90.0	200	4.09	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	182	91.0	200	10.8	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 104 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/09/2023  
 Reported: 11/14/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/08/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 61 (8.0') (H236149-04)**

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.02	101	2.00	0.852		
Toluene*	<0.050	0.050	11/10/2023	ND	2.12	106	2.00	7.31		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.27	113	2.00	8.10		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.88	115	6.00	7.96		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	11/10/2023	ND	432	108	400	7.69		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	180	90.0	200	4.09	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	182	91.0	200	10.8	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 106 % 49.1-148

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Notes and Definitions

- QR-04            The RPD for the BS/BSD was outside of historical limits.
- ND               Analyte NOT DETECTED at or above the reporting limit
- RPD              Relative Percent Difference
- \*\*                Samples not received at proper temperature of 6°C or below.
- \*\*\*              Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories \*=Accredited Analyte

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A handwritten signature in black ink, appearing to read "C. D. Keene".

Celey D. Keene, Lab Director/Quality Manager

Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

901 W Wall Street, Ste 100  
Midland, Texas 79701  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name: Maverick Natural Resources

Site Manager:

Chuck Terhune

Project Name: SEMU Permian 34

281-755-8965

[chuck.terhune@tetratech.com](mailto:chuck.terhune@tetratech.com)

Project Location: Lea County, NM

Project #:

212C-MD-03274

Invoice to:

Attn: Chuck Terhune

Receiving Laboratory:

Cardinal Labs

Sampler Signature:

Jorge Fernandez

Comments:

SAMPLE IDENTIFICATION

LAB #

LAB USE ONLY

SAMPLING  
YEAR 2023  
DATE  
TIME

MATRIX  
WATER  
SOIL  
HCL  
HNO<sub>3</sub>  
ICE  
PRESERVATIVE METHOD

# CONTAINERS  
FILTERED (Y/N)

BTEX 8021B BTEX 8260B  
TPH TX1005 (Ext to C35)  
TPH 8015M (GRO - DRO - ORO - MRO)  
PAH 8270C  
Total Metals Ag As Ba Cd Cr Pb Se Hg  
TCLP Metals Ag As Ba Cd Cr Pb Se Hg  
TCLP Volatiles  
TCLP Semi Volatiles  
RCI  
GC/MS Vol. 8260B / 624  
GC/MS Semi. Vol. 8270C/625  
PCB's 8082 / 608  
NORM  
PLM (Asbestos)  
Chloride  
Chloride Sulfate TDS  
General Water Chemistry (see attached list)  
Anion/Cation Balance

Hold

ANALYSIS REQUEST  
(Circle or Specify Method No.)

Relinquished by: *Chuck Terhune* Date: 11-8-23 Time: 19:00

Relinquished by: *Chuck Terhune* Date: 11/9/23 Time: 12:25

Relinquished by: *Chuck Terhune* Date: 11/9/23 Time: 12:25

Received by: *Chuck Terhune* Date: 11/8/23 Time: 19:01

Received by: *Chuck Terhune* Date: 11/8/23 Time: 19:01

LAB USE ONLY

REMARKS: Standard TAT

Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY





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---

November 15, 2023

CHUCK TERHUNE

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: SEMU PERMIAN 34

Enclosed are the results of analyses for samples received by the laboratory on 11/10/23 9:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/10/2023  
 Reported: 11/15/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/09/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SW - 1 (H236166-01)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/11/2023	ND	2.13	106	2.00	9.97	
Toluene*	<0.050	0.050	11/11/2023	ND	2.05	103	2.00	4.67	
Ethylbenzene*	<0.050	0.050	11/11/2023	ND	2.23	111	2.00	2.34	
Total Xylenes*	<0.150	0.150	11/11/2023	ND	6.70	112	6.00	0.914	
Total BTEX	<0.300	0.300	11/11/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/10/2023	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	178	89.0	200	2.82	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	190	94.8	200	5.68	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 109 % 48.2-134

Surrogate: 1-Chlorooctadecane 112 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/10/2023  
 Reported: 11/15/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/09/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SW - 2 (H236166-02)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/11/2023	ND	2.13	106	2.00	9.97		
Toluene*	<0.050	0.050	11/11/2023	ND	2.05	103	2.00	4.67		
Ethylbenzene*	<0.050	0.050	11/11/2023	ND	2.23	111	2.00	2.34		
Total Xylenes*	<0.150	0.150	11/11/2023	ND	6.70	112	6.00	0.914		
Total BTEX	<0.300	0.300	11/11/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	11/10/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	178	89.0	200	2.82	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	190	94.8	200	5.68	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 114 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/10/2023  
 Reported: 11/15/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/09/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SW - 3 (H236166-03)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/11/2023	ND	2.13	106	2.00	9.97	
Toluene*	<0.050	0.050	11/11/2023	ND	2.05	103	2.00	4.67	
Ethylbenzene*	<0.050	0.050	11/11/2023	ND	2.23	111	2.00	2.34	
Total Xylenes*	<0.150	0.150	11/11/2023	ND	6.70	112	6.00	0.914	
Total BTEX	<0.300	0.300	11/11/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/10/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	178	89.0	200	2.82	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	190	94.8	200	5.68	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 111 % 48.2-134

Surrogate: 1-Chlorooctadecane 114 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/10/2023  
 Reported: 11/15/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/09/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SW - 19 (H236166-04)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/11/2023	ND	2.13	106	2.00	9.97	
Toluene*	<0.050	0.050	11/11/2023	ND	2.05	103	2.00	4.67	
Ethylbenzene*	<0.050	0.050	11/11/2023	ND	2.23	111	2.00	2.34	
Total Xylenes*	<0.150	0.150	11/11/2023	ND	6.70	112	6.00	0.914	
Total BTEX	<0.300	0.300	11/11/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	11/10/2023	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	178	89.0	200	2.82	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	190	94.8	200	5.68	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 113 % 48.2-134

Surrogate: 1-Chlorooctadecane 118 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/10/2023  
 Reported: 11/15/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/09/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SW - 20 (H236166-05)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/11/2023	ND	2.13	106	2.00	9.97		
Toluene*	<0.050	0.050	11/11/2023	ND	2.05	103	2.00	4.67		
Ethylbenzene*	<0.050	0.050	11/11/2023	ND	2.23	111	2.00	2.34		
Total Xylenes*	<0.150	0.150	11/11/2023	ND	6.70	112	6.00	0.914		
Total BTEX	<0.300	0.300	11/11/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/10/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	178	89.0	200	2.82	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	190	94.8	200	5.68	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 99.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 104 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/10/2023  
 Reported: 11/15/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/09/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SW - 21 (H236166-06)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/10/2023	ND	2.06	103	2.00	0.844	
Toluene*	<0.050	0.050	11/10/2023	ND	2.17	109	2.00	1.72	
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	0.335	
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.53	109	6.00	0.190	
Total BTEX	<0.300	0.300	11/10/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 119 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/10/2023	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	178	89.0	200	2.82	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	190	94.8	200	5.68	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 114 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/10/2023  
 Reported: 11/15/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/09/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SW - 22 (H236166-07)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.06	103	2.00	0.844		
Toluene*	<0.050	0.050	11/10/2023	ND	2.17	109	2.00	1.72		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	0.335		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.53	109	6.00	0.190		
Total BTEx	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	288	16.0	11/10/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	178	89.0	200	2.82	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	190	94.8	200	5.68	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 108 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/10/2023  
 Reported: 11/15/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/09/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SW - 23 (H236166-08)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/10/2023	ND	2.06	103	2.00	0.844	
Toluene*	<0.050	0.050	11/10/2023	ND	2.17	109	2.00	1.72	
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	0.335	
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.53	109	6.00	0.190	
Total BTEX	<0.300	0.300	11/10/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/10/2023	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	186	93.1	200	2.35	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	201	101	200	4.16	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 113 % 48.2-134

Surrogate: 1-Chlorooctadecane 129 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/10/2023  
 Reported: 11/15/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/09/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 39 (3.0') (H236166-09)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.06	103	2.00	0.844		
Toluene*	<0.050	0.050	11/10/2023	ND	2.17	109	2.00	1.72		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	0.335		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.53	109	6.00	0.190		
Total BTEx	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/10/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	186	93.1	200	2.35	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	201	101	200	4.16	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 122 % 48.2-134

Surrogate: 1-Chlorooctadecane 143 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/10/2023  
 Reported: 11/15/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/09/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 42 (3.0') (H236166-10)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.06	103	2.00	0.844		
Toluene*	<0.050	0.050	11/10/2023	ND	2.17	109	2.00	1.72		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	0.335		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.53	109	6.00	0.190		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/10/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	186	93.1	200	2.35	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	201	101	200	4.16	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 122 % 48.2-134

Surrogate: 1-Chlorooctadecane 143 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/10/2023  
 Reported: 11/15/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/09/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 47 (3.0') (H236166-11)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.06	103	2.00	0.844		
Toluene*	<0.050	0.050	11/10/2023	ND	2.17	109	2.00	1.72		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	0.335		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.53	109	6.00	0.190		
Total BTEx	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/10/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/11/2023	ND	186	93.1	200	2.35	
DRO >C10-C28*	<10.0	10.0	11/11/2023	ND	201	101	200	4.16	
EXT DRO >C28-C36	<10.0	10.0	11/11/2023	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 100 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/10/2023  
 Reported: 11/15/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/09/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 56 (1.0') (H236166-12)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.06	103	2.00	0.844		
Toluene*	<0.050	0.050	11/10/2023	ND	2.17	109	2.00	1.72		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.16	108	2.00	0.335		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.53	109	6.00	0.190		
Total BTEx	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 116 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/10/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	186	93.1	200	2.35	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	201	101	200	4.16	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 120 % 48.2-134

Surrogate: 1-Chlorooctadecane 140 % 49.1-148

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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/10/2023  
 Reported: 11/15/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/09/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 57 (1.0') (H236166-13)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.01	101	2.00	3.53		
Toluene*	<0.050	0.050	11/10/2023	ND	2.10	105	2.00	4.41		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.11	106	2.00	5.26		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.28	105	6.00	4.76		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 126 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/10/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	186	93.1	200	2.35	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	201	101	200	4.16	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 125 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/10/2023  
 Reported: 11/15/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/09/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 58 (1.0') (H236166-14)**

BTEX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/10/2023	ND	2.01	101	2.00	3.53	
Toluene*	<0.050	0.050	11/10/2023	ND	2.10	105	2.00	4.41	
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.11	106	2.00	5.26	
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.28	105	6.00	4.76	
Total BTEX	<0.300	0.300	11/10/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/10/2023	ND	432	108	400	3.64	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	186	93.1	200	2.35	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	201	101	200	4.16	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 121 % 48.2-134

Surrogate: 1-Chlorooctadecane 142 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/10/2023  
 Reported: 11/15/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/09/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 59 (4.0') (H236166-15)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.01	101	2.00	3.53		
Toluene*	<0.050	0.050	11/10/2023	ND	2.10	105	2.00	4.41		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.11	106	2.00	5.26		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.28	105	6.00	4.76		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	11/10/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/10/2023	ND	186	93.1	200	2.35	
DRO >C10-C28*	<10.0	10.0	11/10/2023	ND	201	101	200	4.16	
EXT DRO >C28-C36	<10.0	10.0	11/10/2023	ND					

Surrogate: 1-Chlorooctane 120 % 48.2-134

Surrogate: 1-Chlorooctadecane 143 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/10/2023  
 Reported: 11/15/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/09/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 60 (4.0') (H236166-16)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/10/2023	ND	2.01	101	2.00	3.53		
Toluene*	<0.050	0.050	11/10/2023	ND	2.10	105	2.00	4.41		
Ethylbenzene*	<0.050	0.050	11/10/2023	ND	2.11	106	2.00	5.26		
Total Xylenes*	<0.150	0.150	11/10/2023	ND	6.28	105	6.00	4.76		
Total BTEX	<0.300	0.300	11/10/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	11/10/2023	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/11/2023	ND	186	93.1	200	2.35	
DRO >C10-C28*	<10.0	10.0	11/11/2023	ND	201	101	200	4.16	
EXT DRO >C28-C36	<10.0	10.0	11/11/2023	ND					

Surrogate: 1-Chlorooctane 86.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

901 W Main Street, Ste 100  
Midland, Texas 79701  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name:

Maverick Natural Resources

Site Manager:

Chuck Terhune

Project Name:

SEMU Permian 34

281-755-8965

Project Location:

Lea County, NM

Project #:

[chuck.terhune@tetratech.com](mailto:chuck.terhune@tetratech.com)

212C-MD-03274

Invoice to:

Attn: Chuck Terhune

Receiving Laboratory:

Cardinal Labs

Sampler Signature:

Jorge Fernandez

Comments:

SAMPLE IDENTIFICATION

LAB #  
H236166  
(LAB USE ONLY)

YEAR 2023	DATE	TIME	SAMPLING		MATRIX		PRESERVATIVE METHOD		# CONTAINERS	FILTERED (Y/N)
			WATER	SOIL	HCL	HNO <sub>3</sub>	ICE			

1	SW-1	11/9/2023		X			X			
2	SW-2	11/9/2023		X			X			
3	SW-3	11/9/2023		X			X			
4	SW-19	11/9/2023		X			X			
5	SW-20	11/9/2023		X			X			
6	SW-21	11/9/2023		X			X			
7	SW-22	11/9/2023		X			X			
8	SW-23	11/9/2023		X			X			
9	BH-39 (3.0')	11/9/2023		X			X			
10	BH-42 (3.0')	11/9/2023		X			X			

Relinquished by: *[Signature]* Date: 0900 Time: 11-10-23

Relinquished by: *[Signature]* Date: 0900 Time: 11-10-23

Relinquished by: *[Signature]* Date: 0900 Time: 11-10-23

Received by: *[Signature]* Date: 0900 Time: 11-10-23

Received by: *[Signature]* Date: 0900 Time: 11-10-23

ANALYSIS REQUEST  
(Circle or Specify Method No.)

BTEX 8021B	BTEX 8260B
TPH TX1005 (Ext to C35)	
TPH 8015M ( GRO - DRO - ORO - MRO)	
PAH 8270C	
Total Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Volatiles	
TCLP Semi Volatiles	
RCI	
GC/MS Vol. 8260B / 624	
GC/MS Semi. Vol. 8270C/625	
PCB's 8082 / 608	
NORM	
PLM (Asbestos)	
Chloride	
Chloride Sulfate TDS	
General Water Chemistry (see attached list)	
Anion/Cation Balance	
Hold	

REMARKS: Standard TAT

LAB USE ONLY

Sample Temperature

2-7:

#140

- ☐ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY



**Tetra Tech, Inc.**

901 W Wall Street, Ste 100  
Midland, Texas 79701  
Tel (432) 682-4559  
Fax (432) 682-3946

[illegible]

Page 20 of 20





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

November 20, 2023

CHUCK TERHUNE

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: SEMU PERMIAN 34

Enclosed are the results of analyses for samples received by the laboratory on 11/15/23 8:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Mike Snyder". The signature is fluid and cursive, with the first name "Mike" and last name "Snyder" clearly distinguishable.

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	11/15/2023	Sampling Date:	11/14/2023
Reported:	11/20/2023	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 34	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03274	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK -LEA CO NM		

**Sample ID: BH - 65 ( 4.0' ) (H236243-01)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/16/2023	ND	1.94	96.9	2.00	0.960	
Toluene*	<0.050	0.050	11/16/2023	ND	2.05	102	2.00	0.483	
Ethylbenzene*	<0.050	0.050	11/16/2023	ND	2.10	105	2.00	1.36	
Total Xylenes*	<0.150	0.150	11/16/2023	ND	6.40	107	6.00	1.74	
Total BTEX	<0.300	0.300	11/16/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	11/17/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	11/16/2023	ND	202	101	200	0.893		
DRO >C10-C28*	<10.0	10.0	11/16/2023	ND	210	105	200	1.49		
EXT DRO >C28-C36	<10.0	10.0	11/16/2023	ND						

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 118 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/15/2023  
 Reported: 11/20/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 66 (4.0') (H236243-02)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/16/2023	ND	1.94	96.9	2.00	0.960	
Toluene*	<0.050	0.050	11/16/2023	ND	2.05	102	2.00	0.483	
Ethylbenzene*	<0.050	0.050	11/16/2023	ND	2.10	105	2.00	1.36	
Total Xylenes*	<0.150	0.150	11/16/2023	ND	6.40	107	6.00	1.74	
Total BTEX	<0.300	0.300	11/16/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/17/2023	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/16/2023	ND	202	101	200	0.893	
DRO >C10-C28*	<10.0	10.0	11/16/2023	ND	210	105	200	1.49	
EXT DRO >C28-C36	<10.0	10.0	11/16/2023	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 120 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/15/2023  
 Reported: 11/20/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 67 (4.0') (H236243-03)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/16/2023	ND	1.94	96.9	2.00	0.960		
Toluene*	<0.050	0.050	11/16/2023	ND	2.05	102	2.00	0.483		
Ethylbenzene*	<0.050	0.050	11/16/2023	ND	2.10	105	2.00	1.36		
Total Xylenes*	<0.150	0.150	11/16/2023	ND	6.40	107	6.00	1.74		
Total BTEX	<0.300	0.300	11/16/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	11/17/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/16/2023	ND	202	101	200	0.893	
DRO >C10-C28*	<10.0	10.0	11/16/2023	ND	210	105	200	1.49	
EXT DRO >C28-C36	<10.0	10.0	11/16/2023	ND					

Surrogate: 1-Chlorooctane 98.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 111 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/15/2023  
 Reported: 11/20/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 68 (4.0') (H236243-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/16/2023	ND	1.94	96.9	2.00	0.960		
Toluene*	<0.050	0.050	11/16/2023	ND	2.05	102	2.00	0.483		
Ethylbenzene*	<0.050	0.050	11/16/2023	ND	2.10	105	2.00	1.36		
Total Xylenes*	<0.150	0.150	11/16/2023	ND	6.40	107	6.00	1.74		
Total BTEx	<0.300	0.300	11/16/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	11/17/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/16/2023	ND	202	101	200	0.893	
DRO >C10-C28*	<10.0	10.0	11/16/2023	ND	210	105	200	1.49	
EXT DRO >C28-C36	<10.0	10.0	11/16/2023	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/15/2023  
 Reported: 11/20/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 69 (4.0') (H236243-05)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/16/2023	ND	1.94	96.9	2.00	0.960		
Toluene*	<0.050	0.050	11/16/2023	ND	2.05	102	2.00	0.483		
Ethylbenzene*	<0.050	0.050	11/16/2023	ND	2.10	105	2.00	1.36		
Total Xylenes*	<0.150	0.150	11/16/2023	ND	6.40	107	6.00	1.74		
Total BTEX	<0.300	0.300	11/16/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/17/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/16/2023	ND	202	101	200	0.893	
DRO >C10-C28*	<10.0	10.0	11/16/2023	ND	210	105	200	1.49	
EXT DRO >C28-C36	<10.0	10.0	11/16/2023	ND					

Surrogate: 1-Chlorooctane 110 % 48.2-134

Surrogate: 1-Chlorooctadecane 124 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/15/2023  
 Reported: 11/20/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 70 ( 11.0' ) (H236243-06)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/17/2023	ND	1.94	96.9	2.00	0.960		
Toluene*	<0.050	0.050	11/17/2023	ND	2.05	102	2.00	0.483		
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.10	105	2.00	1.36		
Total Xylenes*	<0.150	0.150	11/17/2023	ND	6.40	107	6.00	1.74		
Total BTEX	<0.300	0.300	11/17/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/17/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/16/2023	ND	202	101	200	0.893	
DRO >C10-C28*	209	10.0	11/16/2023	ND	210	105	200	1.49	
EXT DRO >C28-C36	83.2	10.0	11/16/2023	ND					

Surrogate: 1-Chlorooctane 108 % 48.2-134

Surrogate: 1-Chlorooctadecane 129 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/15/2023  
 Reported: 11/20/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 71 ( 11.0' ) (H236243-07)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/17/2023	ND	1.94	96.9	2.00	0.960		
Toluene*	<0.050	0.050	11/17/2023	ND	2.05	102	2.00	0.483		
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.10	105	2.00	1.36		
Total Xylenes*	<0.150	0.150	11/17/2023	ND	6.40	107	6.00	1.74		
Total BTEX	<0.300	0.300	11/17/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 116 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/17/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/16/2023	ND	202	101	200	0.893	
DRO >C10-C28*	16.6	10.0	11/16/2023	ND	210	105	200	1.49	
EXT DRO >C28-C36	11.3	10.0	11/16/2023	ND					

Surrogate: 1-Chlorooctane 93.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 104 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/15/2023  
 Reported: 11/20/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 72 ( 11.0' ) (H236243-08)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/16/2023	ND	2.06	103	2.00	1.96		
Toluene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.67		
Ethylbenzene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.77		
Total Xylenes*	<0.150	0.150	11/16/2023	ND	6.56	109	6.00	2.21		
Total BTEX	<0.300	0.300	11/16/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/17/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/16/2023	ND	191	95.5	200	1.44	
<b>DRO &gt;C10-C28*</b>	<b>14.3</b>	10.0	11/16/2023	ND	187	93.4	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	11/16/2023	ND					

Surrogate: 1-Chlorooctane 113 % 48.2-134

Surrogate: 1-Chlorooctadecane 133 % 49.1-148

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\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/15/2023  
 Reported: 11/20/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 84 ( 11.0' ) (H236243-09)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/16/2023	ND	2.06	103	2.00	1.96	
Toluene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.67	
Ethylbenzene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.77	
Total Xylenes*	<0.150	0.150	11/16/2023	ND	6.56	109	6.00	2.21	
Total BTEX	<0.300	0.300	11/16/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/17/2023	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/16/2023	ND	191	95.5	200	1.44	
<b>DRO &gt;C10-C28*</b>	<b>24.7</b>	10.0	11/16/2023	ND	187	93.4	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	11/16/2023	ND					

Surrogate: 1-Chlorooctane 115 % 48.2-134

Surrogate: 1-Chlorooctadecane 135 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/15/2023  
 Reported: 11/20/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 85 ( 11.0' ) (H236243-10)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/16/2023	ND	2.06	103	2.00	1.96	
Toluene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.67	
Ethylbenzene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.77	
Total Xylenes*	<0.150	0.150	11/16/2023	ND	6.56	109	6.00	2.21	
Total BTEX	<0.300	0.300	11/16/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/17/2023	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/16/2023	ND	191	95.5	200	1.44	
DRO >C10-C28*	<10.0	10.0	11/16/2023	ND	187	93.4	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	11/16/2023	ND					

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 131 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/15/2023  
 Reported: 11/20/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 86 ( 11.0' ) (H236243-11)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/16/2023	ND	2.06	103	2.00	1.96		
Toluene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.67		
Ethylbenzene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.77		
Total Xylenes*	<0.150	0.150	11/16/2023	ND	6.56	109	6.00	2.21		
Total BTEX	<0.300	0.300	11/16/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/17/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/16/2023	ND	191	95.5	200	1.44	
DRO >C10-C28*	<10.0	10.0	11/16/2023	ND	187	93.4	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	11/16/2023	ND					

Surrogate: 1-Chlorooctane 118 % 48.2-134

Surrogate: 1-Chlorooctadecane 138 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/15/2023  
 Reported: 11/20/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 87 ( 11.0' ) (H236243-12)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/16/2023	ND	2.06	103	2.00	1.96	
Toluene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.67	
Ethylbenzene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.77	
Total Xylenes*	<0.150	0.150	11/16/2023	ND	6.56	109	6.00	2.21	
Total BTEX	<0.300	0.300	11/16/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	11/17/2023	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/16/2023	ND	191	95.5	200	1.44	
DRO >C10-C28*	23.8	10.0	11/16/2023	ND	187	93.4	200	2.23	
EXT DRO >C28-C36	<10.0	10.0	11/16/2023	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 125 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/15/2023  
 Reported: 11/20/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 83 ( 10.0' ) (H236243-13)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/16/2023	ND	2.06	103	2.00	1.96		
Toluene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.67		
Ethylbenzene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.77		
Total Xylenes*	<0.150	0.150	11/16/2023	ND	6.56	109	6.00	2.21		
Total BTEX	<0.300	0.300	11/16/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/17/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/16/2023	ND	191	95.5	200	1.44	
DRO >C10-C28*	41.8	10.0	11/16/2023	ND	187	93.4	200	2.23	
EXT DRO >C28-C36	12.7	10.0	11/16/2023	ND					

Surrogate: 1-Chlorooctane 120 % 48.2-134

Surrogate: 1-Chlorooctadecane 141 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/15/2023  
 Reported: 11/20/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 92 ( 10.0' ) (H236243-14)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/16/2023	ND	2.06	103	2.00	1.96		
Toluene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.67		
Ethylbenzene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.77		
Total Xylenes*	<0.150	0.150	11/16/2023	ND	6.56	109	6.00	2.21		
Total BTEX	<0.300	0.300	11/16/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/17/2023	ND	416	104	400	0.00		

TPH 8015M	mg/kg		Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/16/2023	ND	191	95.5	200	1.44	
DRO >C10-C28*	115	10.0	11/16/2023	ND	187	93.4	200	2.23	
EXT DRO >C28-C36	55.6	10.0	11/16/2023	ND					

Surrogate: 1-Chlorooctane 126 % 48.2-134

Surrogate: 1-Chlorooctadecane 155 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/15/2023  
 Reported: 11/20/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 88 ( 10.0' ) (H236243-15)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/16/2023	ND	2.06	103	2.00	1.96	
Toluene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.67	
Ethylbenzene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.77	
Total Xylenes*	<0.150	0.150	11/16/2023	ND	6.56	109	6.00	2.21	
Total BTEX	<0.300	0.300	11/16/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	11/17/2023	ND	416	104	400	0.00	

TPH 8015M	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/16/2023	ND	191	95.5	200	1.44	
DRO >C10-C28*	35.7	10.0	11/16/2023	ND	187	93.4	200	2.23	
EXT DRO >C28-C36	15.2	10.0	11/16/2023	ND					

Surrogate: 1-Chlorooctane 126 % 48.2-134

Surrogate: 1-Chlorooctadecane 148 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/15/2023  
 Reported: 11/20/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/14/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 73 ( 10.0' ) (H236243-16)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/16/2023	ND	2.06	103	2.00	1.96		
Toluene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.67		
Ethylbenzene*	<0.050	0.050	11/16/2023	ND	2.07	104	2.00	2.77		
Total Xylenes*	<0.150	0.150	11/16/2023	ND	6.56	109	6.00	2.21		
Total BTEX	<0.300	0.300	11/16/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	11/17/2023	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/16/2023	ND	191	95.5	200	1.44	
DRO >C10-C28*	29.2	10.0	11/16/2023	ND	187	93.4	200	2.23	
EXT DRO >C28-C36	10.4	10.0	11/16/2023	ND					

Surrogate: 1-Chlorooctane 121 % 48.2-134

Surrogate: 1-Chlorooctadecane 142 % 49.1-148

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\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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---

### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Mike Snyder".

---

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



Analysis Request of Custody Record



Tetra Tech, Inc.

901 W Wall Street, Ste 100  
Midland, Texas 79701  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name:

Maverick Natural Resources

Site Manager:

Chuck Terhune

Project Name:

SEMU Permian 34

281-755-8965

Project Location:

Lea County, NM

Project #:

[chuck.terhune@tetratech.com](mailto:chuck.terhune@tetratech.com)

Invoice ID:

212C-MD-03274

Receiving Laboratory:

Attn: Chuck Terhune

Sampler Signature:

Jorge Fernandez

Comments:

Cardinal Labs

ANALYSIS REQUEST

(Circle or Specify Method No.)

BTEX 8021B BTEX 8260B  
TPH TX1005 (Ext to C35)  
TPH 8015M ( GRO - DRO - ORO - MRO)  
PAH 8270C  
Total Metals Ag As Ba Cd Cr Pb Se Hg  
TCLP Metals Ag As Ba Cd Cr Pb Se Hg  
TCLP Volatiles  
TCLP Semi Volatiles  
RCI  
GC/MS Vol. 8260B / 624  
GC/MS Semi. Vol. 8270C/625  
PCB's 8082 / 608  
NORM  
PLM (Asbestos)  
Chloride  
Chloride Sulfate TDS  
General Water Chemistry (see attached list)  
Anion/Cation Balance

Hold

SAMPLE IDENTIFICATION

LAB #  
LAB USE ONLY

H236213

YEAR: 2023	SAMPLING		MATRIX	PRESERVATIVE METHOD				# CONTAINERS	FILTERED (Y/N)
	DATE	TIME		WATER	SOIL	HCL	HNO <sub>3</sub>		

1	BH-65 (4.0')	11/14/2023		X			X			X	
2	BH-66 (4.0')	11/14/2023		X			X			X	
3	BH-67 (4.0')	11/14/2023		X			X			X	
4	BH-68 (4.0')	11/14/2023		X			X			X	
5	BH-69 (4.0')	11/14/2023		X			X			X	
6	BH-70 (11.0')	11/14/2023		X			X			X	
7	BH-71 (11.0')	11/14/2023		X			X			X	
8	BH-72 (11.0')	11/14/2023		X			X			X	
9	BH-84 (11.0')	11/14/2023		X			X			X	
10	BH-85 (11.0')	11/14/2023		X			X			X	

Relinquished by: Date: Time: 814

Relinquished by: Date: Time: 11-15-23

Relinquished by: Date: Time:

Received by: Date: Time: 0815

Received by: Date: Time:

LAB USE ONLY

REMARKS: Standard TAT

Sample Temperature

3.1°

#140

- ☐ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY









PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

November 21, 2023

CHUCK TERHUNE

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: SEMU PERMIAN 34

Enclosed are the results of analyses for samples received by the laboratory on 11/20/23 7:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Mike Snyder". The signature is fluid and cursive, with the first name "Mike" and last name "Snyder" clearly distinguishable.

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	11/20/2023	Sampling Date:	11/17/2023
Reported:	11/21/2023	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 34	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03274	Sample Received By:	Brandi Bautista
Project Location:	MAVERICK -LEA CO NM		

**Sample ID: BH - 18 (4.0') (H236308-01)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/20/2023	ND	1.99	99.5	2.00	3.74	
Toluene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.61	
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.41	
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.27	104	6.00	4.28	
Total BTEX	<0.300	0.300	11/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 119 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	11/20/2023	ND	432	108	400	3.77	

TPH 8015M	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	213	106	200	5.48	
DRO >C10-C28*	42.0	10.0	11/20/2023	ND	200	100	200	5.11	
EXT DRO >C28-C36	<10.0	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 85.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 80.5 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: BH - 19 (4.0') (H236308-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/20/2023	ND	1.99	99.5	2.00	3.74		
Toluene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.61		
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.41		
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.27	104	6.00	4.28		
Total BTEX	<0.300	0.300	11/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	213	106	200	5.48	
DRO >C10-C28*	69.1	10.0	11/20/2023	ND	200	100	200	5.11	
EXT DRO >C28-C36	14.0	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 78.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 74.3 % 49.1-148

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\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: BH - 20 (4.0') (H236308-03)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/20/2023	ND	1.99	99.5	2.00	3.74		
Toluene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.61		
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.41		
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.27	104	6.00	4.28		
Total BTEX	<0.300	0.300	11/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	213	106	200	5.48	
DRO >C10-C28*	<10.0	10.0	11/20/2023	ND	200	100	200	5.11	
EXT DRO >C28-C36	<10.0	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 88.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 81.3 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: BH - 21 (4.0') (H236308-04)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/20/2023	ND	1.99	99.5	2.00	3.74	
Toluene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.61	
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.41	
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.27	104	6.00	4.28	
Total BTX	<0.300	0.300	11/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	213	106	200	5.48	
<b>DRO &gt;C10-C28*</b>	<b>37.2</b>	10.0	11/20/2023	ND	200	100	200	5.11	
EXT DRO >C28-C36	<10.0	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 88.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 82.0 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: BH - 22 (4.0') (H236308-05)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/20/2023	ND	1.99	99.5	2.00	3.74		
Toluene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.61		
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.41		
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.27	104	6.00	4.28		
Total BTEx	<0.300	0.300	11/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	213	106	200	5.48	
<b>DRO &gt;C10-C28*</b>	<b>36.6</b>	10.0	11/20/2023	ND	200	100	200	5.11	
EXT DRO >C28-C36	<10.0	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 72.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 67.4 % 49.1-148

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\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: BH - 23 (4.0') (H236308-06)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/20/2023	ND	1.99	99.5	2.00	3.74		
Toluene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.61		
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.41		
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.27	104	6.00	4.28		
Total BTEx	<0.300	0.300	11/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/20/2023	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	213	106	200	5.48	
DRO >C10-C28*	383	10.0	11/20/2023	ND	200	100	200	5.11	
EXT DRO >C28-C36	183	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 81.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 79.4 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: BH - 24 (4.0') (H236308-07)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/20/2023	ND	1.99	99.5	2.00	3.74	
Toluene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.61	
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.41	
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.27	104	6.00	4.28	
Total BTEX	<0.300	0.300	11/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 119 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	213	106	200	5.48	
DRO >C10-C28*	274	10.0	11/20/2023	ND	200	100	200	5.11	
EXT DRO >C28-C36	112	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 82.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 77.1 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: BH - 25 (4.0') (H236308-08)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/20/2023	ND	1.99	99.5	2.00	3.74		
Toluene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.61		
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.41		
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.27	104	6.00	4.28		
Total BTEx	<0.300	0.300	11/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 116 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	213	106	200	5.48	
<b>DRO &gt;C10-C28*</b>	<b>31.2</b>	10.0	11/20/2023	ND	200	100	200	5.11	
EXT DRO >C28-C36	<10.0	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 74.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 69.0 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: BH - 26 (4.0') (H236308-09)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/20/2023	ND	1.99	99.5	2.00	3.74	
Toluene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.61	
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.41	
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.27	104	6.00	4.28	
Total BTEX	<0.300	0.300	11/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	213	106	200	5.48	
<b>DRO &gt;C10-C28*</b>	<b>58.4</b>	10.0	11/20/2023	ND	200	100	200	5.11	
EXT DRO >C28-C36	<10.0	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 75.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 70.4 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: BH - 27 (4.0') (H236308-10)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/20/2023	ND	1.99	99.5	2.00	3.74		
Toluene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.61		
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.41		
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.27	104	6.00	4.28		
Total BTEX	<0.300	0.300	11/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	213	106	200	5.48	
DRO >C10-C28*	222	10.0	11/20/2023	ND	200	100	200	5.11	
EXT DRO >C28-C36	86.4	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 78.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 73.8 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: BH - 31 (4.0') (H236308-11)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/20/2023	ND	1.99	99.5	2.00	3.74		
Toluene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.61		
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.41		
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.27	104	6.00	4.28		
Total BTEx	<0.300	0.300	11/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	195	97.4	200	2.46	
DRO >C10-C28*	<10.0	10.0	11/20/2023	ND	183	91.5	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 76.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 70.0 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: BH - 32 (4.0') (H236308-12)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/20/2023	ND	1.99	99.5	2.00	3.74		
Toluene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.61		
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.41		
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.27	104	6.00	4.28		
Total BTEX	<0.300	0.300	11/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	195	97.4	200	2.46	
<b>DRO &gt;C10-C28*</b>	<b>56.3</b>	10.0	11/20/2023	ND	183	91.5	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 72.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 67.7 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: BH - 33 (4.0') (H236308-13)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/20/2023	ND	1.99	99.5	2.00	3.74	
Toluene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.61	
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.41	
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.27	104	6.00	4.28	
Total BTEX	<0.300	0.300	11/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	195	97.4	200	2.46	
DRO >C10-C28*	80.9	10.0	11/20/2023	ND	183	91.5	200	1.17	
EXT DRO >C28-C36	19.1	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 78.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 73.8 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: BH - 48 (4.0') (H236308-14)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/20/2023	ND	1.99	99.5	2.00	3.74		
Toluene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.61		
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.41		
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.27	104	6.00	4.28		
Total BTEX	<0.300	0.300	11/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	195	97.4	200	2.46	
DRO >C10-C28*	81.8	10.0	11/20/2023	ND	183	91.5	200	1.17	
EXT DRO >C28-C36	20.8	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 73.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 69.4 % 49.1-148

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\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: BH - 49 (4.0') (H236308-15)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/20/2023	ND	1.99	99.5	2.00	3.74		
Toluene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.61		
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.41		
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.27	104	6.00	4.28		
Total BTEX	<0.300	0.300	11/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	195	97.4	200	2.46	
DRO >C10-C28*	33.1	10.0	11/20/2023	ND	183	91.5	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 72.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 67.0 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: BH - 50 (4.0') (H236308-16)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/20/2023	ND	1.99	99.5	2.00	3.74	
Toluene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.61	
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.41	
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.27	104	6.00	4.28	
Total BTEX	<0.300	0.300	11/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	195	97.4	200	2.46	
DRO >C10-C28*	53.8	10.0	11/20/2023	ND	183	91.5	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 73.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 69.2 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: SW - 25 (H236308-17)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/20/2023	ND	1.99	99.5	2.00	3.74	
Toluene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.61	
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.07	103	2.00	4.41	
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.27	104	6.00	4.28	
Total BTEX	<0.300	0.300	11/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	195	97.4	200	2.46	
DRO >C10-C28*	91.5	10.0	11/20/2023	ND	183	91.5	200	1.17	
EXT DRO >C28-C36	22.4	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 74.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 72.0 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: SW - 26 (H236308-18)**

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/20/2023	ND	1.90	94.8	2.00	15.0		
Toluene*	<0.050	0.050	11/20/2023	ND	2.05	102	2.00	16.0		
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.03	101	2.00	16.1		
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.21	104	6.00	16.1		
Total BTEX	<0.300	0.300	11/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	195	97.4	200	2.46	
DRO >C10-C28*	121	10.0	11/20/2023	ND	183	91.5	200	1.17	
EXT DRO >C28-C36	28.9	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 90.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.3 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: SW - 27 (H236308-19)**

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/20/2023	ND	1.90	94.8	2.00	15.0		
Toluene*	<0.050	0.050	11/20/2023	ND	2.05	102	2.00	16.0		
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.03	101	2.00	16.1		
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.21	104	6.00	16.1		
Total BTEX	<0.300	0.300	11/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	195	97.4	200	2.46	
DRO >C10-C28*	76.9	10.0	11/20/2023	ND	183	91.5	200	1.17	
EXT DRO >C28-C36	19.7	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 71.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 67.5 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: SW - 13 (H236308-20)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/20/2023	ND	1.90	94.8	2.00	15.0		
Toluene*	<0.050	0.050	11/20/2023	ND	2.05	102	2.00	16.0		
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.03	101	2.00	16.1		
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.21	104	6.00	16.1		
Total BTEX	<0.300	0.300	11/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	195	97.4	200	2.46	
DRO >C10-C28*	<10.0	10.0	11/20/2023	ND	183	91.5	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 82.7 % 48.2-134

Surrogate: 1-Chlorooctadecane 76.1 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



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 Fax To: (432) 682-3946

Received: 11/20/2023  
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 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: SW - 14 (H236308-21)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/20/2023	ND	1.90	94.8	2.00	15.0	
Toluene*	<0.050	0.050	11/20/2023	ND	2.05	102	2.00	16.0	
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.03	101	2.00	16.1	
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.21	104	6.00	16.1	
Total BTEX	<0.300	0.300	11/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	195	97.4	200	2.46	
DRO >C10-C28*	<10.0	10.0	11/20/2023	ND	183	91.5	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 76.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 70.2 % 49.1-148

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





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 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: SW - 15 (H236308-22)**

BTEX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/20/2023	ND	1.90	94.8	2.00	15.0	
Toluene*	<0.050	0.050	11/20/2023	ND	2.05	102	2.00	16.0	
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.03	101	2.00	16.1	
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.21	104	6.00	16.1	
Total BTEX	<0.300	0.300	11/20/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	195	97.4	200	2.46	
DRO >C10-C28*	<10.0	10.0	11/20/2023	ND	183	91.5	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 82.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 76.6 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/20/2023  
 Reported: 11/21/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/17/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Brandi Bautista

**Sample ID: SW - 16 (H236308-23)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/20/2023	ND	1.90	94.8	2.00	15.0		
Toluene*	<0.050	0.050	11/20/2023	ND	2.05	102	2.00	16.0		
Ethylbenzene*	<0.050	0.050	11/20/2023	ND	2.03	101	2.00	16.1		
Total Xylenes*	<0.150	0.150	11/20/2023	ND	6.21	104	6.00	16.1		
Total BTEX	<0.300	0.300	11/20/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/20/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/20/2023	ND	195	97.4	200	2.46	
DRO >C10-C28*	<10.0	10.0	11/20/2023	ND	183	91.5	200	1.17	
EXT DRO >C28-C36	<10.0	10.0	11/20/2023	ND					

Surrogate: 1-Chlorooctane 85.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 78.4 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager





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Notes and Definitions

- QR-04            The RPD for the BS/BSD was outside of historical limits.
- BS-3            Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
- ND              Analyte NOT DETECTED at or above the reporting limit
- RPD            Relative Percent Difference
- \*\*              Samples not received at proper temperature of 6°C or below.
- \*\*\*            Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Mike Snyder", is written over a horizontal line.

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

901 W Wall Street, Ste 100  
Midland, Texas 79701  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name:

Maverick Natural Resources

Site Manager:

Chuck Terhune

Project Name:

SEMU Permian 34

281-755-8965

Project Location:  
(county, state)

Lea County, NM

Project #:

chuck.terhune@tetratech.com

212C-MD-03274

Invoice to:

Attn: Chuck Terhune

Receiving Laboratory:

Cardinal Labs

Sampler Signature:

Jorge Fernandez

Comments:

LAB #  
LAB USE ONLY

10310308

SAMPLE IDENTIFICATION

		SAMPLING		MATRIX		PRESERVATIVE METHOD				# CONTAINERS	FILTERED (Y/N)
		DATE	TIME	WATER	SOIL	HCL	HNO <sub>3</sub>	ICE			
1	BH-18 (4.0')	11/17/2023		X				X			
2	BH-19 (4.0')	11/17/2023		X				X			
3	BH-20 (4.0')	11/17/2023		X				X			
4	BH-21 (4.0')	11/17/2023		X				X			
5	BH-22 (4.0')	11/17/2023		X				X			
6	BH-23 (4.0')	11/17/2023		X				X			
7	BH-24 (4.0')	11/17/2023		X				X			
8	BH-25 (4.0')	11/17/2023		X				X			
9	BH-26 (4.0')	11/17/2023		X				X			
10	BH-27 (4.0')	11/17/2023		X				X			

ANALYSIS REQUEST  
(Circle or Specify Method No.)

BTEX 8021B	BTEX 8260B
TPH TX1005 (Ext to C35)	
TPH 8015M (GRO - DRO - ORO - MRO)	
PAH 8270C	
Total Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Volatiles	
TCLP Semi Volatiles	
RCI	
GC/MS Vol. 8260B / 624	
GC/MS Semi. Vol. 8270C/625	
PCB's 8082 / 608	
NORM	
PLM (Asbestos)	
Chloride	
Chloride Sulfate TDS	
General Water Chemistry (see attached list)	
Anion/Cation Balance	
Hold	

Relinquished by:

Date: 11-19-23 Time: 1800

Relinquished by:

Date: 11-19-23 Time: 0751

Relinquished by:

Date: 11-20-23 Time: 0750

LAB USE ONLY

REMARKS: Standard TAT

Sample Temperature

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY



Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

901 W. Wall Street, Ste 100  
Midland, Texas 79701  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name: Maverick Natural Resources  
Site Manager: Chuck Terhune  
Project Name: SEMU Permian 34  
281-755-8965  
Project Location: Lea County, NM  
Project #: chuck.terhune@tetratech.com  
212C-MD-03274

Invoice to: Attn: Chuck Terhune  
Receiving Laboratory: Cardinal Labs  
Sampler Signature: Jorge Fernandez

Comments:

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD				# CONTAINERS	FILTERED (Y/N)
		DATE	TIME	WATER	SOIL	HCL	HNO <sub>3</sub>	ICE			
									YEAR 2023		
11	BH-31 (4.0')	11/17/2023		X			X				
12	BH-32 (4.0')	11/17/2023		X			X				
13	BH-33 (4.0')	11/17/2023		X			X				
14	BH-48 (4.0')	11/17/2023		X			X				
15	BH-49 (4.0')	11/17/2023		X			X				
16	BH-50 (4.0')	11/17/2023		X			X				
17	SW-25	11/17/2023		X			X				
18	SW-26	11/17/2023		X			X				
19	SW-27	11/17/2023		X			X				
20	SW-13	11/17/2023		X			X				

Signature: [Signature]  
Date: 11-19-23  
Time: 1800  
Signature: [Signature]  
Date: 11/20/23  
Time: 0750  
Received by: Brandon Bantista  
Date: 11-20-23  
Time: 7:50

ANALYSIS REQUEST  
(Circle or Specify Method No.)

<input checked="" type="checkbox"/> BTEX 8021B	<input checked="" type="checkbox"/> BTEX 8260B
<input checked="" type="checkbox"/> TPH TX1005 (Ext to C35)	
<input checked="" type="checkbox"/> TPH 8015M (GRO - DRO - ORO - MRO)	
<input checked="" type="checkbox"/> PAH 8270C	
<input checked="" type="checkbox"/> Total Metals Ag As Ba Cd Cr Pb Se Hg	
<input checked="" type="checkbox"/> TCLP Metals Ag As Ba Cd Cr Pb Se Hg	
<input checked="" type="checkbox"/> TCLP Volatiles	
<input checked="" type="checkbox"/> TCLP Semi Volatiles	
<input checked="" type="checkbox"/> RCI	
<input checked="" type="checkbox"/> GC/MS Vol. 8260B / 624	
<input checked="" type="checkbox"/> GC/MS Semi. Vol. 8270C/625	
<input checked="" type="checkbox"/> PCB's 8082 / 608	
<input checked="" type="checkbox"/> NORM	
<input checked="" type="checkbox"/> PLM (Asbestos)	
<input checked="" type="checkbox"/> Chloride	
<input checked="" type="checkbox"/> Chloride Sulfate TDS	
<input checked="" type="checkbox"/> General Water Chemistry (see attached list)	
<input checked="" type="checkbox"/> Anion/Cation Balance	
<input checked="" type="checkbox"/> Hold	

LAB USE ONLY  
Sample Temperature: 4.0  
REMARKS: Standard TAT  
☐ RUSH: Same Day 24 hr 48 hr 72 hr  
☐ Rush Charges Authorized  
☐ Special Report Limits or TRRP Report

ORIGINAL COPY

(Circle) HAND DELIVERED FEDEX UPS Tracking #:



901 W Wall Street, Ste 100  
Midland, Texas 79701  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name: Maverick Natural Resources		Site Manager: Chuck Terhune	
Project Name: SEMU Permian 34		281-755-8965	
Project Location: Lea County, NM		chuck.terhune@tetratech.com	
Invoice to: Lea County, NM		Project #: 212C-MD-03274	
Attn: Chuck Terhune		Sampler Signature: Jorge Fernandez	
Receiving Laboratory: Cardinal Labs		Comments:	
LAB # H30308 LAB USE ONLY		SAMPLE IDENTIFICATION	
21		SW-14	
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November 28, 2023

CHUCK TERHUNE

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: SEMU PERMIAN 34

Enclosed are the results of analyses for samples received by the laboratory on 11/22/23 12:49.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is fluid and cursive, with the first name "Celey" and last name "Keene" clearly distinguishable.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	11/22/2023	Sampling Date:	11/21/2023
Reported:	11/28/2023	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 34	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03274	Sample Received By:	Shalyn Rodriguez
Project Location:	MAVERICK -LEA CO NM		

**Sample ID: BH - 90 (11.0') (H236377-01)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47		
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24		
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23		
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62		
Total BTEX	<0.300	0.300	11/23/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 119 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/27/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	376	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	156	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 88.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 119 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 80 (11.0') (H236377-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47		
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24		
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23		
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62		
Total BTEX	<0.300	0.300	11/23/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/27/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	328	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	159	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 110 % 48.2-134

Surrogate: 1-Chlorooctadecane 142 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 79 (11.0') (H236377-03)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47	
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24	
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23	
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62	
Total BTEX	<0.300	0.300	11/23/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/27/2023	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	206	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	111	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 88.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 113 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 89 (11.0') (H236377-04)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47		
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24		
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23		
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62		
Total BTEX	<0.300	0.300	11/23/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 120 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/27/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	224	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	122	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 87.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 112 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 77 (11.0') (H236377-05)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47		
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24		
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23		
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62		
Total BTEX	<0.300	0.300	11/23/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/27/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	267	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	164	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 85.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 110 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 78 (11.0') (H236377-06)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47	
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24	
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23	
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62	
Total BTEX	<0.300	0.300	11/23/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/27/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	195	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	109	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 87.9 % 48.2-134

Surrogate: 1-Chlorooctadecane 112 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 75 (11.0') (H236377-07)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47	
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24	
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23	
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62	
Total BTEX	<0.300	0.300	11/23/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/27/2023	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	53.3	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	25.4	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 79.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.3 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 76 (11.0') (H236377-08)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47		
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24		
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23		
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62		
Total BTEX	<0.300	0.300	11/23/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/27/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	348	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	145	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 88.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.9 % 49.1-148

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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SW - 24 (H236377-09)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47		
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24		
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23		
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62		
Total BTEx	<0.300	0.300	11/23/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/27/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	<10.0	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	<10.0	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 90.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 74 (11.0') (H236377-10)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47	
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24	
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23	
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62	
Total BTEX	<0.300	0.300	11/23/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	11/27/2023	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	431	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	222	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 92.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 126 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SW - 18 (H236377-11)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47		
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24		
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23		
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62		
Total BTEx	<0.300	0.300	11/23/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/27/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	<10.0	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	<10.0	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 90.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SW - 17 (H236377-12)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47	
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24	
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23	
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62	
Total BTEX	<0.300	0.300	11/23/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/27/2023	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	<10.0	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	<10.0	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 84.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 92.9 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 54 (1.0') (H236377-13)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47		
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24		
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23		
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62		
Total BTEX	<0.300	0.300	11/23/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 116 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/27/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	<10.0	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	<10.0	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 91.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 53 (1.0') (H236377-14)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47		
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24		
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23		
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62		
Total BTEx	<0.300	0.300	11/23/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/27/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	<10.0	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	<10.0	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 88.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 101 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 52 (4.0') (H236377-15)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47	
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24	
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23	
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62	
Total BTEX	<0.300	0.300	11/23/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/27/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	269	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	133	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 86.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 113 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 51 (4.0') (H236377-16)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47	
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24	
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23	
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62	
Total BTEX	<0.300	0.300	11/23/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/27/2023	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	413	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	207	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 90.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 122 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SW - 28 (H236377-17)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47		
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24		
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23		
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62		
Total BTEx	<0.300	0.300	11/23/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/27/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	17.4	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	19.9	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 89.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 98.2 % 49.1-148

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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 81 (11.0') (H236377-18)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47		
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24		
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23		
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62		
Total BTEx	<0.300	0.300	11/23/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/27/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/27/2023	ND	212	106	200	0.174	
DRO >C10-C28*	<10.0	10.0	11/27/2023	ND	196	98.2	200	1.33	
EXT DRO >C28-C36	<10.0	10.0	11/27/2023	ND					

Surrogate: 1-Chlorooctane 91.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 105 % 49.1-148

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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 82 (11.0') (H236377-19)**

BTEx 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47	
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24	
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23	
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62	
Total BTEX	<0.300	0.300	11/23/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 117 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/27/2023	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/23/2023	ND	214	107	200	3.02	
DRO >C10-C28*	<10.0	10.0	11/23/2023	ND	219	110	200	4.84	
EXT DRO >C28-C36	<10.0	10.0	11/23/2023	ND					

Surrogate: 1-Chlorooctane 99.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/22/2023  
 Reported: 11/28/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/21/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: BH - 91 (11.0') (H236377-20)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/23/2023	ND	2.05	103	2.00	2.47		
Toluene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.24		
Ethylbenzene*	<0.050	0.050	11/23/2023	ND	2.17	109	2.00	2.23		
Total Xylenes*	<0.150	0.150	11/23/2023	ND	6.59	110	6.00	1.62		
Total BTEx	<0.300	0.300	11/23/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/27/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/23/2023	ND	214	107	200	3.02	
DRO >C10-C28*	109	10.0	11/23/2023	ND	219	110	200	4.84	
EXT DRO >C28-C36	31.9	10.0	11/23/2023	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 127 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

\*=Accredited Analyte

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

901 W Wall Street, Ste 100  
Midland, Texas 79701  
Tel (432) 882-4559  
Fax (432) 882-3648

Client Name: Maverick Natural Resources

Site Manager:

Chuck Terhune

Project Name: SEMU Permian 34

281-755-8965

[chuck.terhune@tetratech.com](mailto:chuck.terhune@tetratech.com)

Project Location: Lea County, NM

Project #:

212C-MD-03274

Invoice to:

Attn: Chuck Terhune

Receiving Laboratory:

Cardinal Labs

Sampler Signature:

Jorge Fernandez

Comments:

H236577

LAB #

(LAB USE ONLY)

SAMPLE IDENTIFICATION

		SAMPLING		MATRIX		PRESERVATIVE METHOD		# CONTAINERS	FILTERED (Y/N)	
		YEAR 2023	DATE	TIME	WATER	SOIL	HCL	HNO <sub>3</sub>	ICE	
1	BH-90 (11.0')		11/21/2023		X				X	BTEX 8021B BTEX 8260B
2	BH-80 (11.0')		11/21/2023		X				X	TPH TX1005 (Ext to C35)
3	BH-79 (11.0')		11/21/2023		X				X	TPH 8015M ( GRO - DRO - ORO - MRO)
4	BH-89 (11.0')		11/21/2023		X				X	PAH 8270C
5	BH-77 (11.0')		11/21/2023		X				X	Total Metals Ag As Ba Cd Cr Pb Se Hg
6	BH-78 (11.0')		11/21/2023		X				X	TCLP Metals Ag As Ba Cd Cr Pb Se Hg
7	BH-75 (11.0')		11/21/2023		X				X	TCLP Volatiles
8	BH-76 (11.0')		11/21/2023		X				X	TCLP Semi Volatiles
9	SW-24		11/21/2023		X				X	RCI
10	BH-74 (11.0')		11/21/2023		X				X	GC/MS Vol. 8260B / 624

Relinquished by:

Date: Time:

1800

Relinquished by:

Date: Time:

11/21/23 1248

Relinquished by:

Date: Time:

11/21/23 1249

ANALYSIS REQUEST  
(Circle or Specify Method No.)

- BTEX 8021B BTEX 8260B
- TPH TX1005 (Ext to C35)
- TPH 8015M ( GRO - DRO - ORO - MRO)
- PAH 8270C
- Total Metals Ag As Ba Cd Cr Pb Se Hg
- TCLP Metals Ag As Ba Cd Cr Pb Se Hg
- TCLP Volatiles
- TCLP Semi Volatiles
- RCI
- GC/MS Vol. 8260B / 624
- GC/MS Semi. Vol. 8270C/625
- PCB's 8082 / 608
- NORM
- PLM (Asbestos)
- Chloride
- Chloride Sulfate TDS
- General Water Chemistry (see attached list)
- Anion/Cation Balance

Hold

REMARKS:

Standard TAT

LAB USE ONLY

Sample Temperature

5.4

#140

☒ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

ORIGINAL COPY





**Tetra Tech, Inc.**

901 W Wall Street, Ste 100  
Midland, Texas 79701  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name: Maverick Natural Resources		Site Manager: Chuck Terhune	
Project Name: SEMU Permian 34		281-755-8965	
Project Location: Lea County, NM		chuck.terhune@tetratech.com	
Project #: 212C-MD-03274			
Invoice to: Atn: Chuck Terhune		Sampler Signature: Jorge Fernandez	
Receiving Laboratory: Cardinal Labs			
Comments:			
LAB # H236377 LAB USE ONLY		SAMPLE IDENTIFICATION	
11 SW-18		11/21/2023	
12 SW-17		11/21/2023	
13 BH-54 (1.0)		11/21/2023	
14 BH-53 (1.0)		11/21/2023	
15 BH-52 (4.0)		11/21/2023	
16 BH-51 (4.0)		11/21/2023	
17 SW-28		11/21/2023	
18 BH-81 (11.0)		11/21/2023	
19 BH-82 (11.0)		11/21/2023	
20 BH-91 (11.0)		11/21/2023	
Relinquished by: [Signature]		Date: 11-21-23 Time: 1800	
Relinquished by: [Signature]		Date: 11-21-23 Time: 1248	
Relinquished by: [Signature]		Date: 11-22-23 Time: 1248	
Received by: [Signature]		Date: 11-22-23 Time: 0700	
Received by: [Signature]		Date: 11-22-23 Time: 1249	
Received by: [Signature]		Date: 11-22-23 Time: 1249	
LAB USE ONLY		REMARKS: Standard TAT	
Sample Temperature: 54°C		[X] RUSH: Same Day 24 hr (48 hr) 72 hr	
[X] Rush Charges Authorized		[ ] Special Report Limits or TRRP Report	
[X] Special Report Limits or TRRP Report			
Hand Delivered FEDEX UPS Tracking #:			
ANALYSIS REQUEST (Circle or Specify Method No.)			
BTEX 8021B BTEX 8260B			
TPH TX1005 (Ext to C35)			
TPH 8015M (GRO - DRO - ORO - MRO)			
PAH 8270C			
Total Metals Ag As Ba Cd Cr Pb Se Hg			
TCLP Metals Ag As Ba Cd Cr Pb Se Hg			
TCLP Volatiles			
TCLP Semi Volatiles			
RCI			
GC/MS Vol. 8260B / 624			
GC/MS Semi. Vol. 8270C/625			
PCB's 8082 / 608			
NORM			
PLM (Asbestos)			
Chloride			
Chloride Sulfate TDS			
General Water Chemistry (see attached list)			
Anion/Cation Balance			
Hold			



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

---

November 30, 2023

CHUCK TERHUNE

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: SEMU PERMIAN 34

Enclosed are the results of analyses for samples received by the laboratory on 11/29/23 14:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received:	11/29/2023	Sampling Date:	11/29/2023
Reported:	11/30/2023	Sampling Type:	Soil
Project Name:	SEMU PERMIAN 34	Sampling Condition:	Cool & Intact
Project Number:	212C - MD - 03274	Sample Received By:	Tamara Oldaker
Project Location:	MAVERICK -LEA CO NM		

**Sample ID: SW - 10 (H236425-01)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/29/2023	ND	1.82	91.0	2.00	7.67	
Toluene*	<0.050	0.050	11/29/2023	ND	1.85	92.6	2.00	7.97	
Ethylbenzene*	<0.050	0.050	11/29/2023	ND	1.86	93.0	2.00	7.99	
Total Xylenes*	<0.150	0.150	11/29/2023	ND	5.52	91.9	6.00	7.82	
Total BTEX	<0.300	0.300	11/29/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 112 % 71.5-134

Chloride, SM4500Cl-B			mg/kg							
			Analyzed By: HM							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/30/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	11/29/2023	ND	208	104	200	0.558		
DRO >C10-C28*	<10.0	10.0	11/29/2023	ND	210	105	200	4.01		
EXT DRO >C28-C36	<10.0	10.0	11/29/2023	ND						

Surrogate: 1-Chlorooctane 87.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.3 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/29/2023  
 Reported: 11/30/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/29/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SW - 29 (H236425-02)**

BTEX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/29/2023	ND	1.82	91.0	2.00	7.67	
Toluene*	<0.050	0.050	11/29/2023	ND	1.85	92.6	2.00	7.97	
Ethylbenzene*	<0.050	0.050	11/29/2023	ND	1.86	93.0	2.00	7.99	
Total Xylenes*	<0.150	0.150	11/29/2023	ND	5.52	91.9	6.00	7.82	
Total BTEX	<0.300	0.300	11/29/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 114 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/30/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/29/2023	ND	208	104	200	0.558	
DRO >C10-C28*	344	10.0	11/29/2023	ND	210	105	200	4.01	
EXT DRO >C28-C36	166	10.0	11/29/2023	ND					

Surrogate: 1-Chlorooctane 83.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 109 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/29/2023  
 Reported: 11/30/2023  
 Project Name: SEMU PERMIAN 34  
 Project Number: 212C - MD - 03274  
 Project Location: MAVERICK -LEA CO NM

Sampling Date: 11/29/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: BH - 55 (1.0') (H236425-03)**

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/29/2023	ND	1.82	91.0	2.00	7.67		
Toluene*	<0.050	0.050	11/29/2023	ND	1.85	92.6	2.00	7.97		
Ethylbenzene*	<0.050	0.050	11/29/2023	ND	1.86	93.0	2.00	7.99		
Total Xylenes*	<0.150	0.150	11/29/2023	ND	5.52	91.9	6.00	7.82		
Total BTEX	<0.300	0.300	11/29/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/30/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/29/2023	ND	208	104	200	0.558	
DRO >C10-C28*	<10.0	10.0	11/29/2023	ND	210	105	200	4.01	
EXT DRO >C28-C36	<10.0	10.0	11/29/2023	ND					

Surrogate: 1-Chlorooctane 80.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.3 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Notes and Definitions

- QM-07      The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- ND      Analyte NOT DETECTED at or above the reporting limit
- RPD      Relative Percent Difference
- \*\*      Samples not received at proper temperature of 6°C or below.
- \*\*\*      Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

A handwritten signature in black ink, appearing to read "C. D. Keene".

Celey D. Keene, Lab Director/Quality Manager

Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

801 W Wall Street, Ste 100  
Midland, Texas 79701  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name: Maverick Natural Resources

Site Manager: Chuck Terhune

Project Name: SEMU Permian 34

281-755-8965

chuck.terhune@tetratech.com

Project Location: Lea County, NM

Project #: 212C-MD-03274

Invoice to:

Attn: Chuck Terhune

Receiving Laboratory:

Cardinal Labs

Sampler Signature:

Jorge Fernandez

Comments:

SAMPLE IDENTIFICATION

LAB #

LAB USE ONLY

YEAR: 2023

DATE

TIME

WATER

SOIL

HCL

HNO<sub>3</sub>

ICE

# CONTAINERS

FILTERED (Y/N)

BTEX 8021B

BTEX 8260B

TPH TX1005 (Ext to C35)

TPH 8015M ( GRO - DRO - ORO - MRO)

PAH 8270C

Total Metals Ag As Ba Cd Cr Pb Se Hg

TCLP Metals Ag As Ba Cd Cr Pb Se Hg

TCLP Volatiles

TCLP Semi Volatiles

RCI

GC/MS Vol. 8260B / 624

GC/MS Semi. Vol. 8270C/625

PCB's 8082 / 608

NORM

PLM (Asbestos)

Chloride

Chloride Sulfate TDS

General Water Chemistry (see attached list)

Anion/Cation Balance

Hold

Relinquished by: Date: Time: 1425

Received by: Date: Time:

Relinquished by: Date: Time: 11-29-23

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

ANALYSIS REQUEST

(Circle or Specify Method No.)

REMARKS: Standard TAT

LAB USE ONLY

Sample Temperature

☒ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

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(Circle) HAND DELIVERED FEDEX UPS Tracking #



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November 08, 2023

CHUCK TERHUNE

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: BACKFILL SOIL PILES

Enclosed are the results of analyses for samples received by the laboratory on 11/02/23 16:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is fluid and cursive, with the first name "Celey" and last name "Keene" clearly distinguishable.

Celey D. Keene

Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/02/2023  
 Reported: 11/08/2023  
 Project Name: BACKFILL SOIL PILES  
 Project Number: 212C - MD - 03274  
 Project Location: LEA COUNTY, NM

Sampling Date: 11/02/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: EP - 1 (H236040-01)**

BTEX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/06/2023	ND	1.96	98.1	2.00	1.19	
Toluene*	<0.050	0.050	11/06/2023	ND	2.01	100	2.00	0.947	
Ethylbenzene*	<0.050	0.050	11/06/2023	ND	2.03	101	2.00	1.73	
Total Xylenes*	<0.150	0.150	11/06/2023	ND	6.13	102	6.00	2.34	
Total BTEX	<0.300	0.300	11/06/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	11/06/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/07/2023	ND	210	105	200	1.60	
DRO >C10-C28*	<10.0	10.0	11/07/2023	ND	201	100	200	4.80	
EXT DRO >C28-C36	<10.0	10.0	11/07/2023	ND					

Surrogate: 1-Chlorooctane 88.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 103 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/02/2023  
 Reported: 11/08/2023  
 Project Name: BACKFILL SOIL PILES  
 Project Number: 212C - MD - 03274  
 Project Location: LEA COUNTY, NM

Sampling Date: 11/02/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: EP - 2 (H236040-02)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/06/2023	ND	1.96	98.1	2.00	1.19		
Toluene*	<0.050	0.050	11/06/2023	ND	2.01	100	2.00	0.947		
Ethylbenzene*	<0.050	0.050	11/06/2023	ND	2.03	101	2.00	1.73		
Total Xylenes*	<0.150	0.150	11/06/2023	ND	6.13	102	6.00	2.34		
Total BTEX	<0.300	0.300	11/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/06/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/07/2023	ND	210	105	200	1.60	
DRO >C10-C28*	<10.0	10.0	11/07/2023	ND	201	100	200	4.80	
EXT DRO >C28-C36	<10.0	10.0	11/07/2023	ND					

Surrogate: 1-Chlorooctane 87.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 99.2 % 49.1-148

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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/02/2023  
 Reported: 11/08/2023  
 Project Name: BACKFILL SOIL PILES  
 Project Number: 212C - MD - 03274  
 Project Location: LEA COUNTY, NM

Sampling Date: 11/02/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: EP - 3 (H236040-03)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/06/2023	ND	1.96	98.1	2.00	1.19		
Toluene*	<0.050	0.050	11/06/2023	ND	2.01	100	2.00	0.947		
Ethylbenzene*	<0.050	0.050	11/06/2023	ND	2.03	101	2.00	1.73		
Total Xylenes*	<0.150	0.150	11/06/2023	ND	6.13	102	6.00	2.34		
Total BTEx	<0.300	0.300	11/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/06/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/06/2023	ND	207	103	200	0.756	
DRO >C10-C28*	<10.0	10.0	11/06/2023	ND	195	97.4	200	2.75	
EXT DRO >C28-C36	<10.0	10.0	11/06/2023	ND					

Surrogate: 1-Chlorooctane 59.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 55.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/02/2023  
 Reported: 11/08/2023  
 Project Name: BACKFILL SOIL PILES  
 Project Number: 212C - MD - 03274  
 Project Location: LEA COUNTY, NM

Sampling Date: 11/02/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: WP - 1 (H236040-04)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/06/2023	ND	1.96	98.1	2.00	1.19		
Toluene*	<0.050	0.050	11/06/2023	ND	2.01	100	2.00	0.947		
Ethylbenzene*	<0.050	0.050	11/06/2023	ND	2.03	101	2.00	1.73		
Total Xylenes*	<0.150	0.150	11/06/2023	ND	6.13	102	6.00	2.34		
Total BTEX	<0.300	0.300	11/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/06/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/07/2023	ND	207	103	200	0.756	
DRO >C10-C28*	<10.0	10.0	11/07/2023	ND	195	97.4	200	2.75	
EXT DRO >C28-C36	<10.0	10.0	11/07/2023	ND					

Surrogate: 1-Chlorooctane 85.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 81.1 % 49.1-148

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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/02/2023  
 Reported: 11/08/2023  
 Project Name: BACKFILL SOIL PILES  
 Project Number: 212C - MD - 03274  
 Project Location: LEA COUNTY, NM

Sampling Date: 11/02/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: WP - 2 (H236040-05)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/06/2023	ND	1.96	98.1	2.00	1.19		
Toluene*	<0.050	0.050	11/06/2023	ND	2.01	100	2.00	0.947		
Ethylbenzene*	<0.050	0.050	11/06/2023	ND	2.03	101	2.00	1.73		
Total Xylenes*	<0.150	0.150	11/06/2023	ND	6.13	102	6.00	2.34		
Total BTEX	<0.300	0.300	11/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 110 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/06/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/07/2023	ND	207	103	200	0.756	
DRO >C10-C28*	<10.0	10.0	11/07/2023	ND	195	97.4	200	2.75	
EXT DRO >C28-C36	<10.0	10.0	11/07/2023	ND					

Surrogate: 1-Chlorooctane 100 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

TETRA TECH  
 CHUCK TERHUNE  
 901 WEST WALL STREET , STE 100  
 MIDLAND TX, 79701  
 Fax To: (432) 682-3946

Received: 11/02/2023  
 Reported: 11/08/2023  
 Project Name: BACKFILL SOIL PILES  
 Project Number: 212C - MD - 03274  
 Project Location: LEA COUNTY, NM

Sampling Date: 11/02/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: WP - 3 (H236040-06)**

BTEX 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/06/2023	ND	1.96	98.1	2.00	1.19		
Toluene*	<0.050	0.050	11/06/2023	ND	2.01	100	2.00	0.947		
Ethylbenzene*	<0.050	0.050	11/06/2023	ND	2.03	101	2.00	1.73		
Total Xylenes*	<0.150	0.150	11/06/2023	ND	6.13	102	6.00	2.34		
Total BTEX	<0.300	0.300	11/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/06/2023	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/06/2023	ND	207	103	200	0.756	
DRO >C10-C28*	<10.0	10.0	11/06/2023	ND	195	97.4	200	2.75	
EXT DRO >C28-C36	<10.0	10.0	11/06/2023	ND					

Surrogate: 1-Chlorooctane 58.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 54.3 % 49.1-148

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Notes and Definitions

- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C  
Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager

Analysis Request of Custody Record



Tetra Tech, Inc.

901 W Wall Street, Ste 100  
Midland, Texas 79701  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name:

Maverick Natural Resources

Site Manager:

Chuck Terhune

Project Name:

Backfill Soil Piles

281-755-8965

Project Location:

(county, state)  
Lea County, NM

Project #:

[chuck.terhune@tetratech.com](mailto:chuck.terhune@tetratech.com)

Invoice to:

Attn: Chuck Terhune

Receiving Laboratory:

Cardinal Labs

Sampler Signature:

Jorge Fernandez

Comments:

LAB #

LAB USE ONLY

SAMPLE IDENTIFICATION

SAMPLING

YEAR: 2023

DATE

TIME

MATRIX

PRESERVATIVE METHOD

WATER  
SOIL  
HCL  
HNO<sub>3</sub>  
ICE

# CONTAINERS

FILTERED (Y/N)

BTEX 8021B BTEX 8260B

TPH TX1005 (Ext to C35)

TPH 8015M ( GRO - DRO - ORO - MRO)

PAH 8270C

Total Metals Ag As Ba Cd Cr Pb Se Hg

TCLP Metals Ag As Ba Cd Cr Pb Se Hg

TCLP Volatiles

TCLP Semi Volatiles

RCI

GC/MS Vol. 8260B / 624

GC/MS Semi. Vol. 8270C/625

PCB's 8082 / 608

NORM

PLM (Asbestos)

Chloride

Chloride Sulfate TDS

General Water Chemistry (see attached list)

Anion/Cation Balance

Hold

ANALYSIS REQUEST

(Circle or Specify Method No.)

Relinquished by:

Date: Time:

Relinquished by:

Date: Time:

Relinquished by:

Date: Time:

Received by:

Date: Time:

Received by:

Date: Time:

REMARKS:

Standard TAT

LAB USE ONLY

Sample Temperature

- ☐ RUSH: Same Day 24 hr 48 hr 72 hr  
☐ Rush Charges Authorized  
☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY

Site Remediation Closure Report  
SEMU Permian #034 Flowline Release  
nJXK1608141111

Maverick Permian, LLC  
March 15, 2024

## **ATTACHMENT 5: NMSLO SEED MIXTURE**



**NMSLO Seed Mix****Sandy (S)****SANDY (S) SITES SEED MIXTURE:**

COMMON NAME	VARIETY	APPLICATION RATE (PLS/Acre)	DRILL BOX
<b>Grasses:</b>			
Sand bluestem	Elida, VNS, So.	2.0	F
Little bluestem	Cimarron, Pastura	3.0	F
Black grama	VNS, Southern	1.0	D
Sand dropseed	VNS, Southern	4.0	S
Plains bristlegrass	VNS, Southern	2.0	D
<b>Forbs:</b>			
Firewheel (Gaillardia)	VNS, Southern	1.0	D
Annual Sunflower	VNS, Southern	1.0	D
<b>Shrubs:</b>			
Fourwing Saltbush	VNS, Southern	1.0	F
<b>Total PLS/acre</b>		<b>16.0</b>	

S = Small seed drill box, D = Standard seed drill box, F = Fluffy seed drill box  
VNS = Variety Not Stated, PLS = Pure Live Seed

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





United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

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

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

**SEMU 34 - 1RP-4218**



January 25, 2021

# Preface

---

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

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

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

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

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

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

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# How Soil Surveys Are Made

---

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

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

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

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

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



## Custom Soil Resource Report

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

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

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

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

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

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

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

## Custom Soil Resource Report

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

## Soil Map

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



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QUESTIONS  
  
Action 325217

QUESTIONS

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID:	331199
	Action Number:	325217
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	nJXK1608141111
Incident Name	NJXK1608141111 SEMU PERMIAN 34 @ 30-025-07820
Incident Type	Produced Water Release
Incident Status	Remediation Closure Report Received
Incident Well	[30-025-07820] SEMU PERMIAN #034

Location of Release Source	
Please answer all the questions in this group.	
Site Name	SEMU PERMIAN 34
Date Release Discovered	03/18/2016
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Equipment Failure   Flow Line - Production   Produced Water   Released: 15 BBL   Recovered: 1 BBL   Lost: 14 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Not answered.

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QUESTIONS, Page 2

Action 325217

**QUESTIONS (continued)**

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID:	331199
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	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

Nature and Volume of Release (continued)	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	No
Reasons why this would be considered a submission for a notification of a major release	Unavailable.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

**Initial Response**

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

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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

I hereby agree and sign off to the above statement	Name: Chuck Terhune Email: <a href="mailto:chuck.terhune@tetrattech.com">chuck.terhune@tetrattech.com</a> Date: 03/20/2024
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QUESTIONS, Page 3

Action 325217

**QUESTIONS (continued)**

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID:	331199
	Action Number:	325217
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS****Site Characterization**

Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release in feet below ground surface (ft bgs)	Between 51 and 75 (ft.)
What method was used to determine the depth to ground water	Direct Measurement
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between 1 and 5 (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Between 1 and 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Between 1 and 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between ½ and 1 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	Yes

**Remediation Plan**

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No

**Soil Contamination Sampling:** (Provide the highest observable value for each, in milligrams per kilograms.)

Chloride (EPA 300.0 or SM4500 Cl B)	732
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	27427
GRO+DRO (EPA SW-846 Method 8015M)	10000
BTEX (EPA SW-846 Method 8021B or 8260B)	16
Benzene (EPA SW-846 Method 8021B or 8260B)	0.1

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

On what estimated date will the remediation commence	10/30/2023
On what date will (or did) the final sampling or liner inspection occur	11/29/2023
On what date will (or was) the remediation complete(d)	12/01/2023
What is the estimated surface area (in square feet) that will be reclaimed	30050
What is the estimated volume (in cubic yards) that will be reclaimed	7114
What is the estimated surface area (in square feet) that will be remediated	30050
What is the estimated volume (in cubic yards) that will be remediated	7114

These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.



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QUESTIONS, Page 4

Action 325217

**QUESTIONS (continued)**

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID:	331199
	Action Number:	325217
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS****Remediation Plan (continued)**

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

**This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:**

(Select all answers below that apply.)

(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for <b>off-site</b> disposal	HALFWAY DISPOSAL AND LANDFILL [fEEM0112334510]
<b>OR</b> which OCD approved well (API) will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, out-of-state	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

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

I hereby agree and sign off to the above statement	Name: Chuck Terhune Email: <a href="mailto:chuck.terhune@tetrattech.com">chuck.terhune@tetrattech.com</a> Date: 03/20/2024
--	--

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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QUESTIONS, Page 5  
  
Action 325217

QUESTIONS (continued)

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID: 331199
	Action Number: 325217
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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Action 325217

**QUESTIONS (continued)**

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID:	331199
	Action Number:	325217
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

Sampling Event Information	
Last sampling notification (C-141N) recorded	292142
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	11/06/2023
What was the (estimated) number of samples that were to be gathered	121
What was the sampling surface area in square feet	33000

**Remediation Closure Request**

*Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.*

Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	30050
What was the total volume (cubic yards) remediated	7114
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	30050
What was the total volume (in cubic yards) reclaimed	7114
Summarize any additional remediation activities not included by answers (above)	7114 CY of material excavated and disposed of off site and backfilled With clean soil sourced from McCasland Pit prior to recontouring to match surrounding surface and seeding with NMSLO Seed mixture to facilitate revegetation.

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

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

I hereby agree and sign off to the above statement	Name: Chuck Terhune Email: <a href="mailto:chuck.terhune@tetrattech.com">chuck.terhune@tetrattech.com</a> Date: 03/20/2024
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QUESTIONS, Page 7  
  
Action 325217

QUESTIONS (continued)

Operator:  Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID:  331199
	Action Number:  325217
	Action Type:  [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

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CONDITIONS

Action 325217

**CONDITIONS**

Operator: Maverick Permian LLC 1000 Main Street, Suite 2900 Houston, TX 77002	OGRID:
	331199
	Action Number:
	325217
Action Type:	
[C-141] Remediation Closure Request C-141 (C-141-v-Closure)	

**CONDITIONS**

Created By	Condition	Condition Date
amaxwell	Remediation closure approved.	3/21/2024
amaxwell	Operator failed to provide proper Sampling Notification pursuant to 19.15.29.12.D.(1).(a) NMAC. Failure to provide proper sampling notice is a compliance issue and OCD may pursue compliance actions pursuant to 19.15.5 NMAC. Operator shall ensure future compliance with 19.15.29.12.D.(1).(a) NMAC	3/21/2024
amaxwell	The reclamation report will need to include: Executive Summary of the reclamation activities; Scaled Site Map including sampling locations; Analytical results including, but not limited to, results showing that any remaining impacts meet the reclamation standards and results to prove the backfill is non-waste containing; At least one (1) representative 5-point composite sample will need to be collected from the backfill material that will be used for the reclamation of the top four feet of the excavation. OCD reserves the right to request additional sampling if needed; pictures of the backfilled areas showing that the area is back, as nearly as practical, to the original condition or the final land use and maintain those areas to control dust and minimize erosion to the extent practical; pictures of the top layer, which is either the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater; and a revegetation plan.	3/21/2024
amaxwell	All revegetation activities will need to be documented and included in the revegetation report. The revegetation report will need to include: An executive summary of the revegetation activities including: Seed mix, Method of seeding, dates of when the release area was reseeded, information pertinent to inspections, information about any amendments added to the soil, information on how the vegetative cover established meets the life-form ratio of plus or minus fifty percent of pre-disturbance levels and a total percent plant cover of at least seventy percent of pre-disturbance levels, excluding noxious weeds per 19.15.29.13 D.(3) NMAC, and any additional information; a scaled Site Map including area that was revegetated in square feet; and pictures of the revegetated areas during reseeded activities, inspections, and final pictures when revegetation is achieved.	3/21/2024
amaxwell	OR Per 19.15.29.13 E. NMAC, if a reclamation and revegetation report has been submitted to the surface owner, it may be used if the requirements of the surface owner provide equal or better protection of freshwater, human health, and the environment. A copy of the approval of the reclamation and revegetation report from the surface owner and a copy of the approved reclamation and revegetation report will need to be submitted to the OCD via the Permitting website.	3/21/2024