

#### **Armando Martinez**

Operations Lead, Portfolio Operations Central

October 20, 2021

New Mexico Oil Conservation Division – District I 1625 N. French Drive Hobbs, New Mexico 88240

Re: Vacuum Glorieta West Satellite 3
Deferral Request Report
NMOCD Case No. 1RP-3648

Lea County, New Mexico

#### Dear Bradford Billings:

Chevron Environmental Management Company (CEMC) submits herein the *Deferral Request Report* for 1RP-3648, Vacuum Glorieta West Satellite 3. The Report was prepared by Arcadis U.S., Inc. (Arcadis), on behalf of CEMC. Based on the data presented in this Report and concurrence from the NMOCD, a deferral for no further assessments or additional cleanup actions are requested at the Site until after abandonment of the facility.

If you have any questions regarding this submittal, please contact Scott Foord of Arcadis at (713) 953-4853 or me at (505) 690 5408.

Respectfully,

Armando Martinez

Should met

Encl. Deferral Request Report - Vacuum Glorietta West Satellite 3

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New Mexico Oil Conservation Division – District I 1625 N French Drive Hobbs, New Mexico 88240

Subject:

**Deferral Request Report** 

2018 HES Transfer Site Vacuum Glorieta West Unit Satellite 3 NMOCD Case No. 1RP-3648 Lea County, New Mexico

Dear whom it concerns:

On behalf of Chevron Environmental Management Company (CEMC), Arcadis U.S., Inc. (Arcadis) prepared this Site Closure Report (Report) for the Vacuum Glorieta West Unit Satellite 3 (VGWU Sat 3), located in Lea County, New Mexico (Site; **Figure 1**). The purpose of the Report is to present final soil boring locations, excavation activities, results of samples collected, and data evaluation performed as part of the investigations after the May 16, 2015 release of 11.31 barrels (bbls) (42 gallons per bbl) of produced water (**Attachment 1**). This Report summarizes the field activities completed and the results of samples collected during soil investigation activities conducted on Site in March, June, and September of 2016, August 2017, and additionally, the remediation via excavation of impacted soils in October 2018.

SITE DESCRIPTION AND BACKGROUND

#### **Site Location and Description**

The Site is located within the Vacuum Glorieta West Unit (VGWU) approximately 14.5 miles southwest of Lovington, New Mexico. New Mexico Highway 238 is located approximately 0.44 mile east of the Site.

The Site is located in the western edge of the Permian Basin, a 75,000-square-mile area in west Texas and New Mexico that is populated by numerous oil and gas production wells. In New Mexico, the Permian Basin extends to Roosevelt County to the north and Chaves County to the west.

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**ENVIRONMENT** 

Date:

April 28, 2020

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#### Climate

Monthly average temperatures near the Site vary from a minimum of 27.9 degrees Fahrenheit (°F) in January to a maximum of 93.9°F in July (Western Regional Climate Center [WRCC] Hobbs, New Mexico [294026] weather station). Average annual precipitation recorded for the area of the Site from the available WRCC period of record between 1912 and 2016 was approximately 15.75 inches per year (WRCC 2019a).

Due to the arid climate, the Site experiences low precipitation and high evaporation rates. The average annual evaporation from the available WRCC period of record between 1914 and 2005 was approximately 87.68 inches per year (WRCC 2019b).

#### **Regional Geology and Hydrogeology**

The Site elevation is approximately 4,000 feet (ft) above mean sea level (amsl). The Site is located on the Llano Estacado of the Western High Plains, an ecoregion of the Great Plains of North America. The Site is positioned immediately east of the Mescalero Ridge, which demarcates the western boundary of the (Miocene to Pliocene) High Plains Ogallala Formation (Reeves 1972). A rapid drop in elevation of 200 feet (ft) to 250 ft occurs west of the northwest-trending Mescalero Ridge. The Ogallala formation is unconfined and is predominantly composed of unconsolidated alluvial fan deposits of sand and gravel near the base, overlain by interbedded sand and clay in the upper portion of the formation (Seni 1980). Repeated depositional events on the High Plains surface beginning approximately 7 million years ago, followed by aerial exposure, generated a thick sequence of caliche horizons that are competent enough to act as a cliff for the expression of Mescalero Ridge. These hard caliche deposits form the upper portion of the stratigraphic sequence. In the Site area, the Ogallala Formation is underlain by red beds of the Upper Triassic-age Dockum Group consisting of claystones, sandstones, and siltstones. Aquifers within the Dockum Group are not considered a major water resource in the area of the Site due to poor water production rates and elevated levels of natural dissolved solids.

The main source of fresh groundwater in the area of the Site comes from the Ogallala aquifer. The Ogallala aquifer has a thickness of approximately 100 ft in the vicinity of the Site and is considered the primary source of fresh water in the area. Depth to the groundwater regionally ranges from approximately 120 ft to 135 ft below ground surface (bgs).

Water-supply wells located within the region are completed in the Ogallala aquifer, also known as the High Plains Aquifer (HPA).

Based on satellite imagery, no surface-water bodies were identified within 2 miles of the Site (GoogleEarth 2018). In February 2019, Arcadis reviewed information obtained from the New Mexico Office of the State Engineer (NMOSE) online database (NMOSE 2019). Results of the database inquiry indicated that no water-supply wells are located within a radius of 1,000 ft of the Site. In addition, results of the database review indicate average depth to groundwater is 131 ft bgs (**Attachment 2**). Depth to groundwater was also measured at VGWUBATTERY-MW1, located approximately 0.70 miles northwest of the Site, at a depth of 133.43 ft bgs on October 1, 2018.

#### **INITIAL RELEASE RESPONSE ACTIVITIES**

According to the New Mexico Oil Conservation Division (NMOCD) Notification of Release and Correction Action Form (Form C-141) submitted on May 26, 2015, a release of 11.31 bbls of produced water occurred at the Site on May 16, 2015 due to significant rainfall causing the sump pump to overrun. Chevron personnel from the Mid-Continent Business Unit (MCBU) stopped the release and conducted the initial response activities. On March 29, 2016, Chevron personnel excavated visually affected soil in the area to a depth of approximately 1 foot and collected five discrete confirmation soil samples (1, 2, 3, 4 and 5) from the base of the excavation. Sample locations are presented in **Figure 2**. Soil samples were collected in laboratory provided bottles and submitted to Cardinal Laboratories in Hobbs, NM for the following compounds:

- Benzene, toluene, ethylene, and xylenes (collectively referred to as BTEX) in accordance with United States Environmental Protection Agency (USEPA) Method 8021B
- Chloride in accordance with Standard Method 4500Cl-B
- Total petroleum hydrocarbons (TPH) Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) in accordance with USEPA Method 8015M

The complete laboratory analytical results with chain of custody documentation are included in **Attachment 3**. Laboratory analytical results are summarized in **Table 1** and displayed on **Figure 2**. The analytical data indicated:

- BTEX compounds were not detected above their respective laboratory reporting limits
- Chloride was detected in each of the five samples collected at concentrations ranging from 304
  milligrams per kilogram (mg/kg) (Sample #1) to 928 mg/kg (Sample #5), which prompted additional
  site assessment activities
- TPH-GRO was not detected above respective laboratory reporting limits; and
- TPH-DRO was detected in Sample #5 at a concentration of 4,250 mg/kg.

After collecting discrete confirmation soil samples, Chevron backfilled the excavation. Information regarding material used to backfill the excavation nor the information regarding the disposal method of the excavated soil was available to Arcadis.

Pursuant to NMOCD requirements (NMOCD 1993), a Form C-141 (**Attachment 1**) detailing the location, volume of release, and initial and planned cleanup efforts was submitted by Chevron for the release.

#### 2016 AND 2017 SOIL INVESTIGATIONS

### 2016 Soil Investigation

In June and September 2016, Arcadis conducted site assessment activities to characterize the lateral and vertical extents of potentially affected soil at the Site. Soil boring locations were selected based on the results of confirmation soil sampling completed at the Site in March 2016, locations of pipelines and other equipment at the Site, and the extent of the release as documented by Chevron MCBU personnel during the initial response activities. Soil boring locations are shown on **Figure 2**.

Prior to conducting drilling activities, each boring location was cleared for subsurface utilities to caprock refusal at approximately 0.5 ft bgs to 1-ft bgs utilizing air knife soft digging technology. Each soil boring was then advanced using air rotary drilling and soil cuttings were continuously logged according to the Unified Soil Classification System (USCS) for stratigraphic characteristics. Lithologic data indicate that the subsurface material primarily consists of caliche (soil carbonate) profiles including "caprock," nodular, and sandy caliche layers from approximately 0 ft to 22 ft bgs. Weakly cemented calcareous sandstone is present from 22 ft to 30 ft bgs, with a fine grain sand unit starting at 55 ft bgs. Boring logs for VGWUSAT3-01 through VGWUSAT3-05 are presented in **Attachment 4**. Nineteen soil samples from five soil borings (VGWUSAT3-01 through VGWUSAT3-05) were collected from each boring location ranging from a depth of 4 ft bgs to 60 ft bgs.

Soil samples were placed in laboratory-supplied containers and submitted under appropriate chain of custody protocols to Xenco Laboratories (Xenco) in Midland, TX for the analysis of chloride by USEPA Method 300.0. Analysis of soil samples from VGWUSAT3-01 (20'), VGWUSAT3-01 (30'), VGWUSAT3-04 (10') and VGWUSAT3-04 (20') were put on hold pending analytical results. A total of 13 soil samples from the 2016 investigation were analyzed for chloride (**Table 1**).

Following sampling, the boreholes were filled with soil cuttings and grouted to ground surface. The ground surface was restored to match the surrounding conditions.

Chloride was detected in 12 of the 13 soil samples analyzed with concentrations ranging from 12.0 mg/kg (VGWUSAT3-03 at 40 ft bgs) to 3,590 mg/kg (VGWUSAT3-02 at 10 ft bgs). Pursuant to the New Mexico Oil Conservation Division (NMOCD) requirements (NMOCD 1993) directive published in 1993 by the NMOCD, 2016 chloride results were initially compared to the soil remediation action level of 600 mg/kg required for vertical delineation, and 250 mg/kg required for lateral delineation. Although vertical delineation had been achieved, chloride was detected at concentrations greater than the soil remediation action level of 250 mg/kg for lateral delineation in all surface soil samples, with the exception of surface soil samples collected from VGWUSAT3-04.

The cumulative analytical results for chloride are provided in **Table 1**. Laboratory analytical results with chain of custody documentation are provided in **Attachment 3**.

#### 2017 Soil Investigation

To further evaluate the lateral and vertical extent of affected soil at the Site, Arcadis advanced two soil borings (VGWUSAT3-06 and VGWUSAT3-07) on August 14 and 15 of 2017. Soil boring locations are shown on **Figure 2**.

Prior to conducting drilling activities, each boring location was cleared for subsurface utilities to caprock refusal at approximately 0.5 ft bgs to 1-ft bgs utilizing air knife soft digging technology. Each soil boring was then advanced using air rotary drilling and soil cuttings were continuously logged according to the USCS for stratigraphic characteristics. Soil samples were field screened for the presence of volatile organic compounds using a photo ionization detector (PID) and for chloride using Quantab® field screening methodology (Boyer 2004). Soil sample collection intervals and total depths were contingent on chloride concentrations observed during field screening. No staining or elevated PID readings were observed during drilling activities. VGWUSAT3-06 was advanced to 30 ft bgs, and VGWUSAT3-07 was advanced to 60 ft bgs. Based on chloride field screening, samples were collected at the 4, 10, 20, and 30-

ft bgs intervals from VGWUSAT3-06, and at 4, 10, 20, 30, 40, 50, and 60 ft bgs from VGWUSAT3-07. Following sampling, the boreholes were filled with soil cuttings and grouted to ground surface. The ground surface was restored to match the surrounding conditions. Boring logs for VGWUSAT3-06 and VGWUSAT3-07 are presented in **Attachment 4**.

Soil samples were placed in laboratory-supplied containers and submitted under appropriate chain of custody protocols to Xenco Laboratories (Xenco) in Midland, TX for the analysis of chloride by USEPA Method 300.0. Analysis of soil samples from VGWUSAT3-06 (20 ft bgs through 30 ft bgs) were placed on hold pending analytical results. A total of nine soil samples from the 2017 investigation were analyzed for chloride.

Chloride was detected in all nine soil samples analyzed with concentrations ranging from 27.8 mg/kg (VGWUSAT3-06 at 10 ft bgs) to 607 mg/kg (VGWUSAT3-07 at 50 ft bgs). Chloride concentrations were below the historical soil remediation action level for vertical delineation in all samples with the exception of VGWUSAT3-07 (50 ft bgs) which exhibited a chloride concentration of 607 mg/kg. Four of the nine samples (VGWUSAT3-06 at 4 ft bgs and VGWUSAT3-07 at 30, 40, and 50 ft bgs) contained chloride concentrations above the historical lateral delineation limit of 250 mg/kg.

The cumulative analytical results for chloride are provided in **Table 1**. Laboratory analytical results with chain of custody documentation are provided in **Attachment 3**.

#### 2017 GEOPHYSICAL SURVEY

On December 6 and 7, 2017, Arcadis performed an electromagnetic conductivity survey over accessible areas of the Site covering approximately 3.2 acres (**Figures 3** through **5**). The objective of the survey was to determine background electrical conductivity (EC) response and identify EC anomalies within the surveyed area to assess the lateral extent of possible produced water-related soil impacts.

The particularly high electrical conductivity of oil field production water makes the detection of produced water-related soil impacts by geophysical methods sensitive to the electrical conductivity of soil and groundwater a reliable approach. There are several methods that can be used for quantifying the EC of soil and groundwater, but a class of instruments which utilize the concept of electromagnetic induction to measure EC are very effective in many situations. Electromagnetic (EM) instruments that operate in what is known as the frequency domain are well suited for shallow investigations. EM conductivity instruments consist of co-planar transmitter and receiver coils, and a power source that can be handled by one or two persons. During the operation of the instrument, the transmitter coil is energized by an alternating current and radiates an electromagnetic field into the earth. This transmitted primary field induces electrical currents in the earth below the instrument. The magnitude of the induced current is proportional to the EC of the earth materials beneath the instrument. The induced current flow generates a secondary electromagnetic field, phase-lagged behind the primary field, that is detected by the receiver coil on the instrument. The receiver coil also detects the primary field and uses the ratio of the secondary to primary field to calculate the EC of the earth. This reading represents a bulk EC measurement, known as the apparent EC, within a volume of ground directly beneath the instrument down to its effective depth of penetration. The penetration depth is determined by the transmitter frequency, coil separation, height of instrument off the ground surface, and orientation of the coils.

For this Site, Arcadis performed shallow-imaging EM surveys with a GEM-2 broadband electromagnetic sensor manufactured by Geophex Ltd. The GEM-2 is a digital, multi-frequency sensor capable of transmitting and receiving a digitally synthesized arbitrary waveform containing multiple frequencies. The approximate depth of exploration for a given earth medium is determined by the operating frequency of the sensor. By utilizing multiple frequencies to measure the earth response from several depths, a concept of the approximate three-dimensional distribution of subsurface materials can be created. The quad-phase and in-phase instrument response values are stored in a handheld computer for subsequent processing. Data were collected in vertical dipole mode using five discrete frequencies (93 kilohertz (kHz), 63 kHz, 18.3 kHz, 5.3 kHz, and 1.5 kHz). The higher instrument frequencies are sensitive to shallow variations in the subsurface, while the lower instrument frequencies are more sensitive to deeper variations in the subsurface.

Data were collected along lines spaced approximately 10 ft apart with nearly continuous data coverage along these lines. Positioning information was provided by a Hemisphere A100 global positioning system (GPS) receiver with dynamic, real time correction (submeter accuracy). GPS and instrument response data were simultaneously recorded in a handheld field computer. All GPS and geophysical data collected during the survey were merged into a single data file for subsequent data processing.

Once EM data sets were collected, they were transferred to a laptop computer while on Site. The data sets were preprocessed using *WinGEM* from Geophex Ltd. and imported into *Surfer Version 15* to create relative conductivity maps. A raw plot of the GPS positions was created to verify the sufficiency of data coverage, which was verified affirmatively. Preliminary contour plots of the raw apparent conductivity data were also created while on Site to verify that the data were within acceptable bounds and that project objectives were being met.

To further assess EC variations in the subsurface, additional GEM-2 data were collected along a west to east transect line (A-A') and a south to north transect line (B-B') as depicted in **Figure 3**. In order to produce a more robust model, data from nine discrete frequencies were collected along the two transect lines (93 kHz, 80kHz, 63kHz, 38.3kHz, 18.3kHz, 12.4 kHz, 5.3kHz, 2.4kHz, and 1.5 kHz). The data were inverse modeled using the software IX1Dv3 by Interpex to produce electrical resistivity cross-sections of the subsurface. Note that modeled GEM-2 2D data at depths near the limit of the penetration of the GEM-2 instrument are less constrained with results typically displaying distortions near the base of the model.

#### **Interpretation of Geophysical Results**

**Figures 4** through **5** present color-filled contour maps for the 63kHz GEM2 data (4-ft bgs to 8-ft bgs sensing depth), the 18.3kHz GEM2 data (6-ft bgs to 10-ft bgs sensing depth), and the 5.3kHz GEM2 data (8-ft bgs to 12-ft bgs sensing depth), respectively. **Figures 6** and **7** present GEM-2 2D modelling results along the A-A' and B-B' profiles. Locations of metallic pipelines (based on field observations and aerial photographs) and 2016 soil sample locations are denoted in the figures.

The color scale used in **Figures 3** through **7** is designed to visually portray the deviation from the background EC conditions which are in the gray to blue green range. In contrast, anomalous areas of high EC are shown in upper portion of the color scale, from green to yellow to red, progressively indicating higher EC which is generally assumed to reflect proportionately higher total dissolved solids (TDS) pore fluids (produced water influence) or conductive metallic features (Site structure or subsurface utilities). Anomaly intensity and physical dimensions typically reveal whether the anomalies are due to

pore fluid chemistry or metallic objects. Note that the data output for the GEM-2 model profiles presented in **Figures 6** and **7** is in units of electrical resistivity (ohm-meters, logarithmic scale) which is the inverse quantity of electrical conductivity measured in millisiemens per meter (mS/m). A corresponding logarithmic color scale is used in **Figures 6** and **7** to depict areas of low electrical resistivity in the A-A' and B-B' profiles with warm colors (yellow to red) that correlate to areas of high EC in the contour maps.

In general, an elevated EC response is observed throughout the central portion of the area surveyed with EC values >200 mS/m (red colors) as shown in **Figures 3** through **5**. The lateral footprint of the high EC response intersects the red outlined spill area and extends to the west. The west to east GEM-2 A-A' profile shown in **Figure 6** displays a similar lateral extent of high EC response, with elevated conductivity present throughout the central portion of the A-A' profile. The A-A' model resolves a confined "perched" high conductivity zone that extends from approximately 1 ft bgs to 28 ft bgs, providing some vertical delineation of the elevated EC response and suggesting that produced water impacts may not extend to deeper soils. The south to north GEM-2 B-B' profile shown in **Figure 7** bisects the eastern extent of the high EC zone, within the red outlined spill area. The B-B' model resolves two confined "perched" high conductivity zones that extend to a maximum depth of 15 ft bgs, suggesting that produced water impacts are shallower in depth at the eastern extent of the spill.

#### 2018 SOIL EXCAVATION

To minimize soil containing chloride concentrations exceeding the revised 2018 closure criteria (CC) of 600 mg/kg outlined in Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC) concerning natural resources and wildlife, oil and gas, and releases which became effective on August 14, 2018, Arcadis conducted a limited excavation (up to 4 ft bgs) at the Site to establish potential vegetation in the future. On October 22, 2018, Arcadis began potholing the perimeters of the excavation areas as well as exposing buried lines within or in proximity to the area using hydrovac technology. Following line exposure, the area within the potholed perimeters were excavated using a backhoe to approximately 0.5 ft bgs to 4 ft bgs as displayed in **Figure 8**. The excavation boundaries were limited by the requirement to maintain the structural integrity of facility equipment and due to encountering caprock caliche. Three excavations were completed on Site. Approximately 356 cubic yards of impacted soil was excavated and stockpiled on visquen onsite pending laboratory analytical analysis. A photo log detailing each phase of excavation activities can be seen on **Attachment 5**. Sidewall confirmation soil samples were collected from the base of each wall of the three excavations (**Figure 8**). Four sidewall soil samples were collected from excavation area VGWUSAT3-001 located on the southeast end of the Site at depths between 0.58 ft bgs and 0.60 ft bgs:

- VGWUSAT3-001-N
- VGWUSAT3-001-S

- VGWUSAT3-001-E
- VGWUSAT3-001-W

Four sidewall soil samples were collected from excavation area VGWUSAT3-005 located south of VGWUSAT-001 in the Southeast corner of the Site at depth between 0.25 ft bgs and 0.45 ft bgs.

- VGWUSAT3-005-N
- VGWUSAT3-005-S

- VGWUSAT3-005-E
- VGWUSAT3-005-W

Eighteen sidewall soil samples, including four composite samples, were collected from the larger excavation (VGWUSAT3-Large) located in the north central section of the Site at depths between 0.50 ft bgs and 4 ft bgs:

- VGWUSAT3-Large-#1
- VGWUSAT3-Large-#2
- VGWUSAT3-Large-#3
- VGWUSAT3-Large-#4
- VGWUSAT3-Large-#5
- VGWUSAT3-Large-#6
- VGWUSAT3-Large-#6Stepout
- VGWUSAT3-Large-#7
- VGWUSAT3-Large-#8

- VGWUSAT3-Large-#8Stepout
- VGWUSAT3-Large-#9
- VGWUSAT3-Large-#9Stepout
- VGWUSAT3-Large-#10
- VGWUSAT3-Large-#11
- VGWUSAT3-Large-N Wall Comp
- VGWUSAT3-Large-S Wall Comp
- VGWUSAT3-Large-E Wall Comp
- VGWUSAT3-Large-W Wall Comp

Confirmation sidewall soil samples were placed in laboratory-supplied containers and submitted under appropriate chain of custody protocols to Xenco for the following analysis:

- Chloride by USEPA Method 300.0
- Total Petroleum Hydrocarbons Motor Oil Range Organics (TPH-MRO), TPH-GRO, TPH-DRO, and Total TPH by Method SW8015

Following excavation of the chloride and TPH impacted soils, either to below the revised 2018 CC regulatory limits or to the extent possible due to the location of subsurface or surface infrastructure, clean caliche fill was used to backfill the center section of the large excavation and clean top soil was used to backfill the North and East ends of the large excavation area as well as both VGWUSAT3-001 and VGWUSAT3-005 excavated areas. Due to caprock caliche not being encountered at a depth of 4 ft bgs along the furthermost eastern end of the large excavation, a visqeen liner was installed preventing possible chloride migration into deeper soils. Each excavation area was backfilled with clean topsoil and native grass seed was then spread over each area. Upon receiving laboratory confirmation, the soil removed using hydrovac technology was transported offsite to Environmental Solutions (Controlled Recovery INC. Halfway R-360) in Hobbs, New Mexico on October 24 and 25, 2018 for disposal and the excavated soil using a backhoe was taken to Sundance Services in Eunice, New Mexico for disposal in accordance with state and federal regulations on October 29 through November 1, 2018. Non-hazardous waste manifests for the transportation and disposal of all excavated soils can be viewed in **Attachment 6**.

#### **Soil Sample Results**

The analytical data from the soil samples collected in October and November 2018 were compared to the revised 2018 NMAC CC.

A summary of the analytical results for the four sidewall soil samples collected from excavation area VGWUSAT3-001 located on the Southeast end of the Site is as follows:

- TPH-GRO was not detected above the laboratory reporting limit in any of the four samples
- TPH-DRO was not detected above the laboratory reporting limit in any of the four samples

- TPH-MRO was not detected above the laboratory reporting limit in any of the four samples
- Total TPH was not detected above the laboratory reporting limit in any of the four samples
- Chloride was detected in each of the four soil samples with concentrations ranging from 15.5 mg/kg (VGWUSAT3-001-W) to 571 mg/kg (VGWUSAT3-001-S). Chloride concentrations did not exceed the 2018 NMAC CC of 600 mg/kg

A summary of the analytical results for the four sidewall soil samples collected from excavation area VGWUSAT3-005 located South of VGWUSAT-001 is as follows:

- TPH-GRO was not detected above the laboratory reporting limit in any of the four samples
- TPH-DRO was not detected above the laboratory reporting limit in any of the four samples
- TPH-MRO was not detected above the laboratory reporting limit in any of the four samples
- Total TPH was not detected above the laboratory reporting limit in any of the four samples
- Chloride was detected in three of the four soil samples with concentrations ranging from 12.5 mg/kg (VGWUSAT3-005-S) to 150 mg/kg (VGWUSAT3-005-W). Chloride concentrations did not exceed the 2018 NMAC CC of 600 mg/kg

A summary of the analytical results for the 14 sidewall soil samples, excluding the four composite samples, collected from the larger excavation located in the north central section of the Site is as follows:

- TPH-GRO was not detected above the laboratory reporting limit in any of the 14 samples
- TPH-DRO was detected in one (VGWUSAT3-Large- #3) of the 14 samples at a concentration of 83.8 mg/kg
- TPH-MRO was detected in one (VGWUSAT3-Large- #3) of the 14 samples at a concentration of 40.5 mg/kg
- Total TPH was detected in one (VGWUSAT3-Large- #3) of the 14 samples at a concentration of 124 mg/kg. The total TPH concentration detected in VGWUSAT3-Large- #3 slightly exceeds the 2018 NMAC CC of 100 mg/kg
- Chloride was detected in each of the 14 soil samples with concentrations ranging from 44.7 mg/kg (VGWUSAT3-Large- #7) to 3,560 mg/kg (VGWUSAT3-Large- #8). Chloride concentrations exceeded the 2018 NMAC CC of 600 mg/kg in seven of the 14 sidewall soil samples

A summary of the analytical results for the four composite samples collected from the sidewalls of the larger excavation located in the north central section of the Site is as follows:

- TPH-GRO was not detected above the laboratory reporting limit in any of the four samples
- TPH-DRO was detected in each of the 4 soil samples with concentrations ranging from 17.8 mg/kg (VGWUSAT3-Large-S Wall Comp) to 38.5 mg/kg (VGWUSAT3-Large-W Wall Comp)
- TPH-MRO was not detected above the laboratory reporting limit in any of the four samples
- Total TPH was detected in each of the four samples with concentrations ranging from 17.8 mg/kg (VGWUSAT3-Large-S Wall Comp) to 38.5 mg/kg (VGWUSAT3-Large-W Wall Comp). Total TPH

- consist entirely of TPH-DRO compounds. The Total TPH concentration does not exceed the 2018 NMAC CC of 100 mg/kg
- Chloride was detected in each of the four soil samples with concentrations ranging from 643 mg/kg (VGWUSAT3-Large-E Wall Comp) to 3,930 mg/kg (VGWUSAT3-Large-W Wall Comp). Chloride concentrations exceeded the 2018 NMAC CC of 600 mg/kg in each of the sidewall composite soil samples

Analytical results for the confirmation soil samples collected from each sidewall of the three excavation areas on Site in October 2018 are presented **Table 1** and displayed in **Figure 8**. The laboratory analytical report is included in **Attachment 3**.

#### CONCLUSION

A release of produced water occurred at the Site on May 16, 2015 due to a sump pump overrun caused by significant rainfall. Chevron personnel excavated visually affected soil in the area to a depth of approximately 1 ft bgs and collected five discrete confirmation soil samples from the base of the excavation on March 29, 2016. Chloride concentrations in three of the five confirmation soil samples were above the 2009 CC of 500 mg/kg, which prompted additional site assessment activities. In June and September 2016 and August 2017, additional soil samples were collected to assess soil impacts within the observed aerial extent of the release. Of the 22 soil samples collected during the 2016 and 2017 site assessment, only five were above the 2018 NMAC revised closure criteria of 600 mg/kg.

To minimize soil exceeding the 600 mg/kg chloride concentration, Arcadis completed a limited excavation at the Site. Shallow soil (up to 4 ft bgs) with chloride concentrations above 600 mg/kg was excavated to the extent possible and replaced with clean soil to establish regrowth of vegetation at the Site in the future. Sidewall samples collected from the two smaller excavations located in the south-southeastern portion of the Site confirmed chloride concentrations in the soil are below the 2018 NMAC revised CC. Although eight of the eighteen sidewall soil samples collected from the large excavation area in the northern portion of the site were reported with chloride concentrations above 600 mg/kg, chloride impacted soils have been excavated to the extent possible due to the location of subsurface and surface infrastructure at the Site (**Figure 8**).

Soil and geophysical data presented in this report support a conclusion that impacted soil associated with the reported release at the Site poses no significant threat to groundwater resources or other receptors. The A-A' model resolves a confined "perched" high conductivity zone that extends from approximately 1 ft bgs to 28 ft bgs, providing some vertical delineation of the elevated EC response and suggesting that produced water impacts may not extend to deeper soils. The B-B' model resolves two confined "perched" high conductivity zones that extend to a maximum depth of 15 feet bgs, suggesting that produced water impacts are shallower in depth at the eastern extent of the spill. Depth-to-groundwater at the site is expected to be approximately 130 ft bgs (**Attachment 2**).

### **CLOSING**

Chloride impacted soils have been excavated to the extent possible due to the location of oil field production facility structures both aboveground and belowground preventing additional drilling and other subsurface work in this area. Delineation activities beyond the pipelines and oilfield facility equipment

surrounding the release would not be representative of the release area. For similar reasons, full remediation of the May 16, 2015 release location will need to be deferred until operations at the facility cease and the associated structures and equipment are abandoned. Potential migration of remaining chloride to groundwater is not expected due to observed fine-grained nature of caliche layers present beneath the site and the results of the geophysical survey suggesting that produced water impacts may not extend to deeper soils. A visquen liner was installed to prevent chloride migration into deeper soils at a depth of 4 ft bgs along the furthermost eastern end of the large excavation where the confining caprock was not encountered. Based on the data presented in this Report and concurrence from the NMOCD, a deferral for no further assessments or additional cleanup actions required at the Site until after abandonment of the facility is being requested for the Site.

If you have any questions or comments regarding the information presented in this Report, please contact Scott Foord at 713.953.4853 or at William.Foord@arcadis.com.

Sincerely,

Arcadis U.S., Inc.

Scott Foord Project Manager Greg Cutshall Program Manager

Copies:

Jason Michelson (CEMC)

Enclosures:

#### **Tables**

Soil Sampling Analytical Results

#### **Figures**

- 1 Site Vicinity Map
- 2 Release and Soil Boring Location Map
- 3 GEM-2 Conductivity Map 63kHz
- 4 GEM-2 Conductivity Map 18.3kHz
- 5 GEM-2 Conductivity Map 5.3kHz
- 6 Modelled GEM-2 Profile Section A-A'
- 7 Modelled GEM-2 Profile Section B-B'
- 8 Soil Excavation Analytical Results

#### **Attachments**

- 1 Form C-141
- 2 New Mexico Office of The State Engineer Water Column/Average Depth to Water
- 3 Laboratory Reports
- 4 Soil Boring Logs
- 5 Photographic Log
- 6 Non-Hazardous Waste Manifests

#### References

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## **TABLES**

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Table 1
Soil Analytical Results
Chevron EMC
Vacuum Glorieta West Unit Sat 3
Lea County, New Mexico



Boring Location ID	Sample Date	Sample Type	Sample Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-MRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
		NMAC Close	ure Criteria <sup>(a)</sup>	10				50		2,500		100	600
1	3/29/2016	Confirmation	1	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0			304
2	3/29/2016	Confirmation	1	<0.050	< 0.050	<0.050	<0.150	<0.300	<10.0	<10.0			544
3	3/29/2016	Confirmation	1	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	280			464
4	3/29/2016	Confirmation	1	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0			640
5	3/29/2016	Confirmation	1	<0.05	<0.05	0.050	<0.150	<0.300	<50.0	4,250			928
VGWUSat3-01	6/24/2016	Confirmation	4						-				681
VGVVO3at3-01	0/24/2010	Committation	10						-				54.4
			4						1				3,340
			10						-				3,590
VGWUSat3-02	6/24/2016	Confirmation	20						-				546
			30										635
			60										22.9
VGWUSat3-03	9/14/2016	Confirmation	4						-				454.0
vevvecate oo	3/14/2010	Committation	40										12.0
VGWUSat3-04	6/24/2016	Confirmation	4										58.4
V01100at0 01	0/2 1/2010	Committation	30						-				72.2
VGWUSat3-05	9/14/2016	Confirmation	4										943
VOVVOGalo 00	3/14/2010	Committation	40						-				<5.0
VGWUSat3-06	8/15/2017	Confirmation	4										279
	0, 10,2011	00	10						-				28
			4										68.7
			10										36.8
			20						-				64.9
VGWUSat3-07	8/14/2017	Confirmation	30						-				427
			40						-				489
			50						-				607
			60				-		ł				140
VGWUSAT3-001-W	10/23/2018	Confirmation	0.58						< 15.0	< 15.0	< 15.0	< 15.0	15.5
VGWUSAT3-001-S	10/23/2018	Confirmation	0.6						< 15.0	< 15.0	< 15.0	< 15.0	571
VGWUSAT3-001-N	10/23/2018	Confirmation	0.65						< 14.9	< 14.9	< 14.9	< 14.9	66.9
VGWUSAT3-001-E	10/23/2018	Confirmation	0.6						< 15.0	< 15.0	< 15.0	< 15.0	87.9
VGWUSAT3-005-W	10/23/2018	Confirmation	0.45						< 15.0	< 15.0	< 15.0	< 15.0	150
VGWUSAT3-005-S	10/23/2018	Confirmation	0.3						< 15.0	< 15.0	< 15.0	< 15.0	12.5
VGWUSAT3-005-N	10/23/2018	Confirmation	0.25						< 15.0	< 15.0	< 15.0	< 15.0	66.8
VGWUSAT3-005-E	10/23/2018	Confirmation	0.3						< 14.9	< 14.9	< 14.9	< 14.9	< 4.95

UPDATED HES Transfer sites\_results 2018 11 08

Table 1 **Soil Analytical Results** Chevron EMC Vacuum Glorieta West Unit Sat 3 Lea County, New Mexico



Boring Location ID	Sample Date	Sample Type	Sample Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-MRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
	•	NMAC Close	ure Criteria <sup>(a)</sup>	10				50		2,500		100	600
VGWUSAT3-Large- #1	10/25/2018	Confirmation	0.5						< 15.0	< 15.0	< 15.0	< 15.0	67.5
VGWUSAT3-Large- #2	10/25/2018	Confirmation	0.67						< 15.0	< 15.0	< 15.0	< 15.0	404
VGWUSAT3-Large- #3	10/25/2018	Discrete	1.4						< 15.0	83.8	40.5	124	159
VGWUSAT3-Large- #4	10/25/2018	Discrete	0.75						< 15.0	< 15.0	< 15.0	< 15.0	974
VGWUSAT3-Large- #5	10/25/2018	Confirmation	0.6						< 15.0	< 15.0	< 15.0	< 15.0	137
VGWUSAT3-Large- #6	10/26/2018	Confirmation	0.68						< 15.0	< 15.0	< 15.0	< 15.0	1020
VGWUSAT3-Large-#6stepout	10/31/2018	Discrete	0.55						< 15.0	< 15.0	< 15.0	< 15.0	260
VGWUSAT3-Large-#7	10/25/2018	Confirmation	3.8						< 15.0	< 15.0	< 15.0	< 15.0	44.7
VGWUSAT3-Large-#8	10/26/2018	Discrete	2.3						< 15.0	< 15.0	< 15.0	< 15.0	3560
VGWUSAT3-Large-#8Stepout	10/26/2018	Discrete	1.3						< 14.9	< 14.9	< 14.9	< 14.9	1140
VGWUSAT3-Large #9	10/26/2018	Discrete	2.2						< 15.0	< 15.0	< 15.0	< 15.0	1460
VGWUSAT3-Large-#9Stepout	10/26/2018	Discrete	2.3						< 15.0	< 15.0	< 15.0	< 15.0	1320
VGWUSAT3-Large-#10	10/25/2018	Confirmation	3.2						< 15.0	< 15.0	< 15.0	< 15.0	137
VGWUSAT3-Large-#11	10/25/2018	Discrete	2.4						< 14.9	< 14.9	< 14.9	< 14.9	643
VGWUSAT3-Large-N Wall Comp	11/1/2018	Composite Confirmation							< 15.0	19.8	< 15.0	19.8	1140
VGWUSAT3-Large-W Wall Comp	11/1/2018	Composite Confirmation							< 15.0	38.5	< 15.0	38.5	3930
VGWUSAT3-Large-E Wall Comp	11/1/2018	Composite Confirmation							< 14.9	21.8	< 14.9	21.8	634
VGWUSAT3-Large-S Wall Comp	11/1/2018	Composite Confirmation							< 15.0	17.8	< 15.0	17.8	1170

Legend: VALUES Analytical value is greater than or equal to NMAC closure criteria

mg/kg Miligram(s) per kilogram

< Analyte was not detected above the specified method reporting limit

Not Analyzed/Not Listed bgs Below ground surface

**BTEX** Benzene, toluene, ethylbenzene, and total xylenes

NMAC New Mexico Administrative Code

TPH-GRO Total Petroleum Hydrocarbons as Gasoline Range Organics Total Petroleum Hydrocarbons as Diesel Range Organics TPH-DRO Total Petroleum Hydrocarbons as Motor Oil Range Organics TPH-MRO

(a) Title 19, Chapter 15 of the NMAC for Natural Resources and Wildlife, Oil and Gas, and Releases, 19.15.29 NMAC. August 2018.

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## **FIGURES**

238 Lea 31 VGWU SAT 3 ( LEGEND: SITE LOCATION NOTE: 1. AERIAL PHOTOGRAPH FROM GOOGLE EARTH PRO. 12000' 6000' **GRAPHIC SCALE** CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
VGWU BATTERY
LEA COUNTY, NEW MEXICO
SITE CLOSURE REPORT SITE LOCATION MAP VGWU SAT 3 **FIGURE** ARCADIS trestural and built assets

CITY: MANCHESTER DIV/GROUP: ENVCAD DB: B.SMALL PM: TM



#### LEGEND:

- JULY 2015 ASSESSMENT SOIL SAMPLING LOCATION
- AUGUST 2016 SHALLOW BORING LOCATION
- JUNE 2016 DEEP BORING LOCATION
- AUGUST 2017 SOIL BORING LOCATION

APPROXIMATE EXTENT OF SPILL

UNDERGROUND UTILITY LINE

#### NOTES:

- 1. AERIAL PHOTOGRAPH FROM GOOGLE EARTH PRO.
- 2. FMT REQUIRES BORING TO BE AT MINIMUM 10 FEET FROM UNDERGROUND UTILITIES.
- 3. GROUND IS DISTURBED ALONG THIS CORRIDOR. UNDERGROUND LINES MAY BE PRESENT.



VACUUM AND SKELLY FUNCTIONAL MANAGEMENT TEAM UNITS
LEA AND EDDY COUNTIES, NEW MEXICO SITE ASSESSMENT REPORT

RELEASE AND SOIL BORING LOCATION MAP - VGWU SAT 3



FIGURE



# ELECTRICAL CONDUCTIVITY milliSiemens/meter

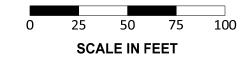
## **LEGEND**

•••••• UNDERGROUND UTILITY LINE

**APPROXIMATE EXTENT OF SPILL** 

AUGUST 2016 SHALLOW BORING LOCATION

► - - MODELLED GEM-2 PROFILE

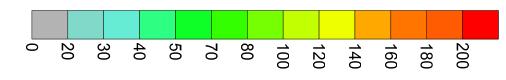


NOTE: AERIAL PHOTOGRAPH FROM GOOGLE EARTH PRO.



GEM-2 Electrical Conductivity Depth Map - 63 kHz Frequency Approximate Penetration Depth of 4 to 8 feet bgs

FIGURE 3



# ELECTRICAL CONDUCTIVITY milliSiemens/meter

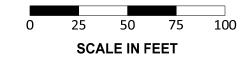
## **LEGEND**

•••••• UNDERGROUND UTILITY LINE

APPROXIMATE EXTENT OF SPILL

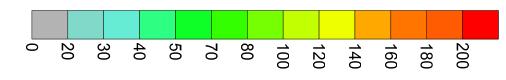
AUGUST 2016 SHALLOW BORING LOCATION

► - - MODELLED GEM-2 PROFILE



NOTE: AERIAL PHOTOGRAPH FROM GOOGLE EARTH PRO.





# ELECTRICAL CONDUCTIVITY milliSiemens/meter

## **LEGEND**

•••••• UNDERGROUND UTILITY LINE

APPROXIMATE EXTENT OF SPILL

AUGUST 2016 SHALLOW BORING LOCATION

MODELLED GEM-2 PROFILE

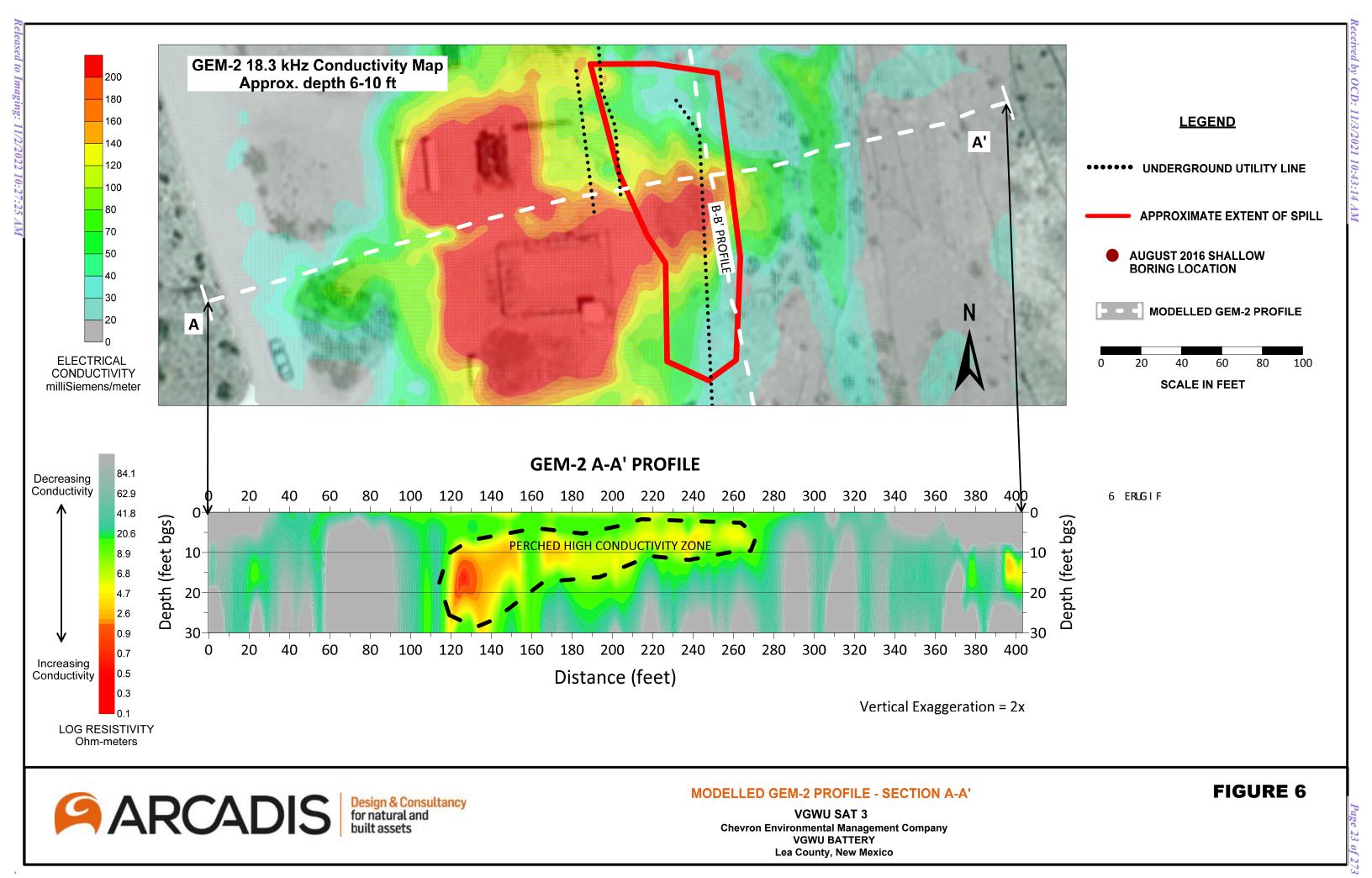


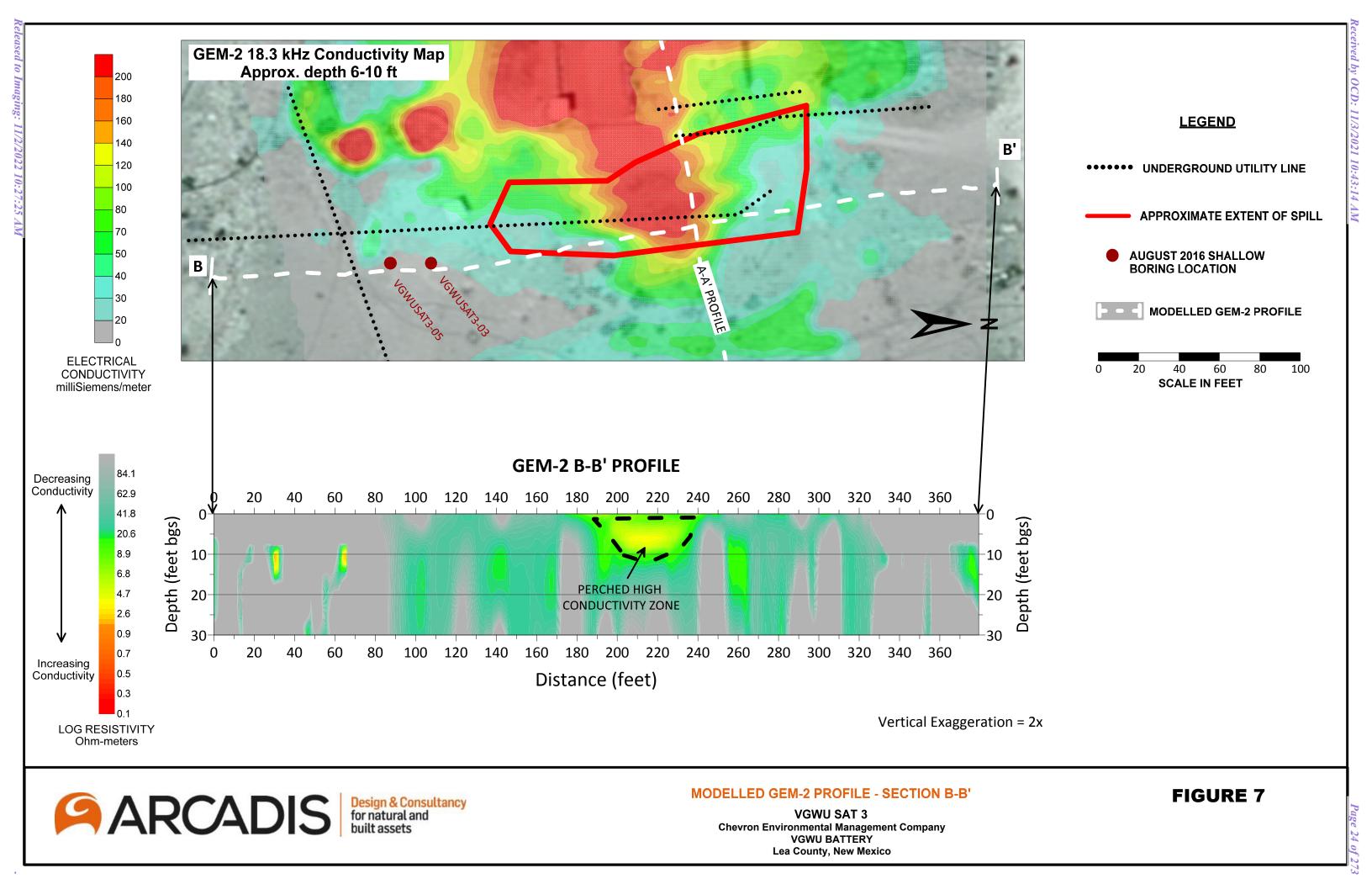
NOTE: AERIAL PHOTOGRAPH FROM GOOGLE EARTH PRO.



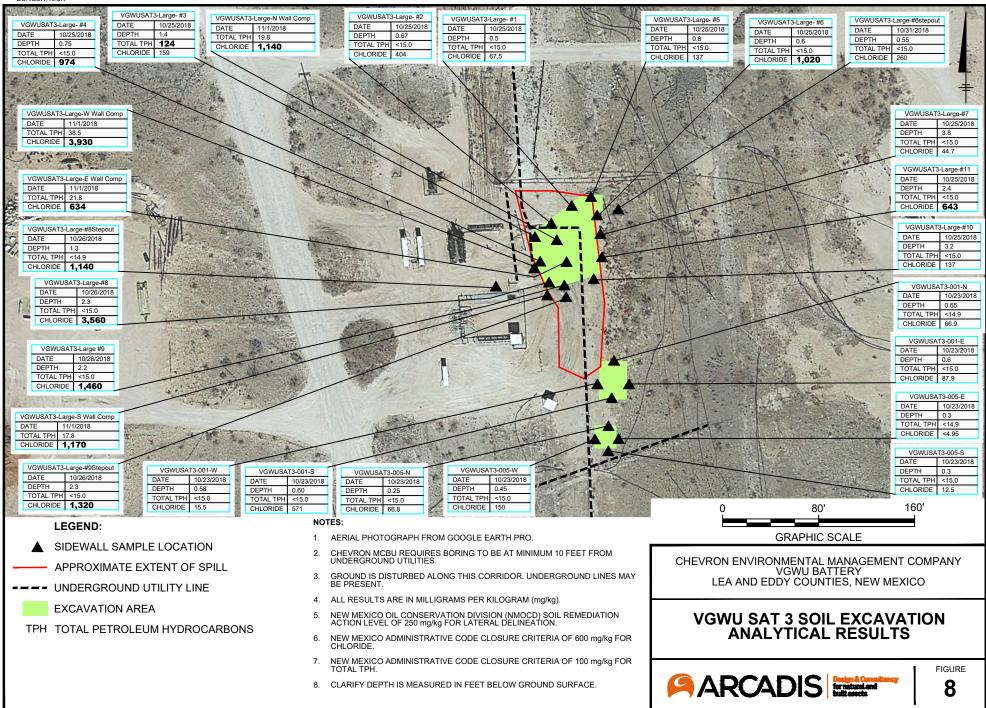
GEM-2 Electrical Conductivity Depth Map - 5.3 kHz Frequency Approximate Penetration Depth of 8 to 12 feet bgs

FIGURE 5





CITY: MANCHESTER DIV/GROUP: ENVCAD DB: B.SMALL PM: TM
C:\Ubsers\nburger\BIM 360\Arcadis\ANA - CHEVRON CORPORATION\Project Files\VGWU Sat 3\2019\B0048626.1701\01-DWG\P-MW-Data-Fig1.dwg LAYOUT: 2 SAVED: 4/10/2020 1:47 PM ACADVER: 23.0S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: --- PLOTTED: 4/10/2020 1:49 PM BY:
BURGER. NICK



## **ATTACHMENT 1**

Form C-141

Form C-141

Revised August 8, 2011

#### District I

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

### State of New Mexico Energy Minerals and Natural Resources

accordance with 19.15.29 NMAC.

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

Submit 1 Copy to appropriate District Office in

#### 1220 S. St. Francis Dr., Santa Fe, NM 87505 Release Notification and Corrective Action OPERATOR Final Report Name of Company: Chevron USA Inc. Contact: Edem Sededii Telephone No. 432-234-4437 Address: 15 Smith Rd., Midland, TX, 79705 Facility Name: VGWU Satellite 3 Facility Type: Satellite Mineral Owner: New Mexico API No. 3002531132 Surface Owner: New Mexico LOCATION OF RELEASE Unit Letter Section Township Range Feet from the North/South Line Feet from the East/West Line County B 18S 34E 280 North 2080 East Lea Closest well: VGWU 114 Latitude 32.7835 Longitude -103.5123 NATURE OF RELEASE Type of Release: Release to land Volume of Release: 11 bbls of Volume Recovered: 0 Produced Water Date and Hour of Occurrence: Date and Hour of Discovery Source of Release: Sump pump 05/16/2015 09:30 PM 05/16/2015 09:30 PM If YES, To Whom? Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required Date and Hour By Whom? If YES, Volume Impacting the Watercourse. Was a Watercourse Reached? Yes No If a Watercourse was Impacted, Describe Fully.\* Describe Cause of Problem and Remedial Action Taken.\* Sump pump overran due to substantial rain fall causing 11.31 bbls of produced water spilled to ground. Describe Area Affected and Cleanup Action Taken.\* The area affected was around Vacuum Glorietta West Unit Battery. A vacuum truck was called out and cleaned up the spill. The next step is for backhoe to excavate top layer of soil approximate 12" deep and soil samples will be taken to the laboratory to determine TPH, Benzene and Chlorides contaminants levels. In case any of the contaminants levels are still high, the spill location will be turned over to Chevron management Company (EMC) for further remediation. I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. OIL CONSERVATION DIVISION Signature: Printed Name: Edem Sededji Approved by Environmental Specialist: Approval Date: **Expiration Date:** Title: HE Specialist Conditions of Approval: E-mail Address: etpo@chevron.com Attached

Date: 05/26/2015

Phone: 432-234-4437

<sup>\*</sup> Attach Additional Sheets If Necessary

Form C-141

Revised August 8, 2011

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

### State of New Mexico **Energy Minerals and Natural Resources**

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

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

#### **Release Notification and Corrective Action OPERATOR** ☐ Initial Report Final Report Name of Company: CHEVRON U.S.A. Inc. Contact: Jason Michelson Address: 100 Northpark Blvd Telephone No.: Office: 985.773.6746 Mobile: 281.660.8564 Covington, LA 70433 Facility Name: VGWU Satellite 3 Facility Type: Satellite Surface Owner: State of New Mexico Mineral Owner: State of New Mexico API No. 3002531132 LOCATION OF RELEASE Feet from the North/South Line Feet from the East/West Line Unit Letter Section Township County Range 2080 East Lea Closest Well: Latitude 32.7835° **Longitude** -103.5123° NATURE OF RELEASE Volume of Release: 11 bbls of total Volume Recovered: 0 Type of Release: Release to land Source of Release: Sump pump Date and Hour of Occurrence: Date and Hour of Discovery: 05/16/15 09:30 PM 05/16/15 09:30 PM Was Immediate Notice Given? If YES, To Whom? ☐ Yes ☐ No ☒ Not Required By Whom? Date and Hour: Was a Watercourse Reached? ☐ Yes 🖾 No If YES, Volume Impacting the Watercourse. If a Watercourse was Impacted, Describe Fully.\* Describe Cause of Problem and Remedial Action Taken.\* Sump pump overran due to substantial rainfall causing 11.31 barrels (bbls) of produced water to spill onto the ground. Describe Area Affected and Cleanup Action Taken.\* The area affected was around the Vacuum Glorietta West Unit Battery. Initial response activities consisted of using a vacuum truck to clean up the spill. Affected soil was excavated to a depth of 12 inches and soil samples were collected from the bottom of the excavation and submitted for laboratory analysis of total petroleum hydrocarbons (TPH), TPH diesel range organics (DRO), TPH gasoline range organics (GRO), BTEX (benzene, toluene, ethylbenzene, and total xylenes), total BTEX, and chloride. In June 2016, September 2016, and August 2017 seven additional soil borings were installed to assess onsite soil conditions. Soil samples were submitted for laboratory analysis of chloride. Analytical data is attached as Table 1. I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. OIL CONSERVATION DIVISION Signature: Printed Name: Jason Michelson Approved by Environmental Specialist: Title: Project Manager Approval Date: **Expiration Date:** E-mail Address: JMichelson@chevron.com Conditions of Approval: Attached

Phone: (o) 985.773.6746 (m) 281.660.8564

<sup>\*</sup> Attach Additional Sheets If Necessary

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

Responsible Party: Chevron USA

Contact Name: Armando Martinez

State of New Mexico Energy Minerals and Natural Resources Department

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised August 24, 2018 Submit to appropriate OCD District office

Incident ID	nKJ1514727866
District RP	1RP-3648
Facility ID	30-025-31132
Application ID	pKJ1514728011

## **Release Notification**

## **Responsible Party**

OGRID: 4243

Contact Telephone: 505-690-5408

Contact email: amarti@chevron.com				Incident # (assigned by OCD) nKJ1514727866					
Contact mailing address:									
			Location	n of R	elease So	ource			
Latitude 32.7	835		(NAD 83 in d		Longitude - crees to 5 decim				
Site Name: V	GWU Satell	lite 3			Site Type: S	Satellite			
Date Release	Discovered:	: 05/16/2015			API# (if app	licable): N/A			
Unit Letter	Section	Township	Range		Coun	ity	]		
В	1	18S	34E	Lea					
Surface Owner		Federal Tr	Nature an				volumes provided below)		
Crude Oil		Volume Release			ons or speeme	Volume Reco			
Produced	Water	Volume Release	d (bbls): 11		Volume Recovered (bbls): 0				
		Is the concentrate produced water:		chloride	e in the Yes No				
Condensa	te	Volume Release			Volume Recovered (bbls)				
Natural G	as	Volume Release	d (Mcf)			Volume Recovered (Mcf)			
Other (describe) Volume/Weight Released (provide units			de units)		Volume/Weig	ght Recovered (provide units)			
Cause of Rele	ease: Sump	pump overran due	to substantial ra	in fall ca	using 11.31	bbls of produce	ed water spilled to ground.		

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	Page 30 of 273
Incident ID	nKJ1514727866
District RP	1RP-3648
Facility ID	30-025-31132
Application ID	pKJ1514728011

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

	Page 31 of 27	3
Incident ID	nKJ1514727866	
District RP	1RP-3648	
Facility ID	30-025-31132	
Application ID	pKJ1514728011	

## **Site Assessment/Characterization**

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

What is the shallowest depth to groundwater beneath the area affected by the release?	131_(ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ⊠ <u>No</u>
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ⊠ <u>No</u>
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ⊠ <u>No</u>
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ⊠ <u>No</u>
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ⊠ <u>No</u>
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ⊠ <u>No</u>
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ⊠ <u>No</u>
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ⊠ <u>No</u>
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ⊠ <u>No</u>
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ⊠ <u>No</u>
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ⊠ <u>No</u>
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	☐ Yes ⊠ <u>No</u>

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

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

Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells. Attached.

Field data: Attached.

Data table of soil contaminant concentration data: Attached.

Depth to water determination: Greater than 100 ft bgs.

Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release: None identified.

Boring or excavation logs: Attached

Photographs including date and GIS information: Photograph log attached.

Topographic/Aerial maps; Aerial map attached.

Laboratory data including chain of custody: Attached.

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

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Page 32 of 27	3
nV 11514727966	

Incident ID	nKJ1514727866
District RP	1RP-3648
Facility ID	30-025-31132
Application ID	pKJ1514728011

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.

and/or regulations.	
Printed Name: Armando Martinez	Title: Operations Lead Central
Signature:	
Signature:	Date: _10/20/2021
email: amarti@chevron.com	Telephone: 505-690-5408
OCD Only	
Received by:	Date:

Ceived by OCD: 11/3/2021 10:43:14 AM
State of New Mexico

Incident ID | pK | 1514727866 | |

Incident ID	nKJ1514727866
District RP	1RP-3648
Facility ID	30-025-31132
Application ID	pKJ1514728011

## **Remediation Plan**

Remediation Plan Checklist: Each of the following items must be included in the plan.											
<ul> <li>□ Detailed description of proposed remediation technique</li> <li>□ Scaled sitemap with GPS coordinates showing delineation points</li> <li>□ Estimated volume of material to be remediated</li> <li>□ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC</li> <li>□ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)</li> </ul>											
<u>Deferral Requests Only</u> : Each of the following items must be confirmed as part of any request for deferral of remediation.											
○ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.											
Extents of contamination must be fully delineated. Lateral delineation was achieved.											
○ Contamination does not cause an imminent risk to human health, the environment, or groundwater.											
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.											
Printed Name: Armando Martinez Title: Operation Lead Central											
Signature: Date: _10/20/2021											
email: amarti@chevron.com											
OCD Only											
Received by: Date:											
Approved											
Signature: Bradford Billings Date: 11/02/2022											

Received by OCD: 11/3/2021 10:43:14 AM Form C-141 State of New Mexico Page 6 Oil Conservation Division Page 34 of 273

Incident ID	nKJ1514727866
District RP	1RP-3648
Facility ID	30-025-31132
Application ID	pKJ1514728011

## **ATTACHMENT 2**

**New Mexico Office of The State Engineer 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

POD Number		Sub- basin County		Q Q Q										W	Vater
	Code		County	64	16	4	Sec	Tws Rng	X	Y	DistanceDepthWellDepthWater Column				
L 13820 POD1		L	LE	3	1	3	01	18S	34E	639472	3628296	240	150	131	19
L. 13820 POD2		I.	LE	3	1	3	01	188	34E	639472	3628296	240	150	131	19

Average Depth to Water:

131 feet

Minimum Depth:

131 feet

Maximum Depth:

131 feet

Record Count: 2

UTMNAD83 Radius Search (in meters):

**Easting (X):** 639272.6 **Northing (Y):** 3628431.33

**Radius:** 304.8

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.

2/4/19 3:10 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

### **ATTACHMENT 3**

**Laboratory Reports** 



April 04, 2016

**NICK HAMPTON** 

Chevron - Lovington

HCR 60 Box 423

Lovington, NM 88260

RE: SOIL SAMPLES

Enclosed are the results of analyses for samples received by the laboratory on 03/29/16 12:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-15-7. 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 <a href="https://www.tceq.texas.gov/field/ga/lab">www.tceq.texas.gov/field/ga/lab</a> accred certif.html.

Cardinal Laboratories is accreditated 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.

Celey D. Keene

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,

Celey D. Keene

Lab Director/Quality Manager



### Analytical Results For:

Chevron - Lovington NICK HAMPTON HCR 60 Box 423 Lovington NM, 88260 Fax To: None

Received: 03/29/2016 Reported: 04/04/2016

Project Name: SOIL SAMPLES
Project Number: NONE GIVEN
Project Location: NOT GIVEN

Sampling Date: 03/29/2016

Sampling Type: Soil

Sampling Condition: Cool & Intact
Sample Received By: Jodi Henson

### Sample ID: VGWU SAT 3 #1 (H600656-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/30/2016	ND	2.11	106	2.00	4.65	
Toluene*	<0.050	0.050	03/30/2016	ND	2.00	99.8	2.00	6.38	
Ethylbenzene*	<0.050	0.050	03/30/2016	ND	1.75	87.7	2.00	6.84	
Total Xylenes*	<0.150	0.150	03/30/2016	ND	5.39	89.8	6.00	6.36	
Total BTEX	<0.300	0.300	03/30/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	100 9	% 73.6-14	0						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	03/30/2016	ND	400	100	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/30/2016	ND	173	86.7	200	2.18	
DRO >C10-C28	<10.0	10.0	03/30/2016	ND	157	78.7	200	2.90	
Surrogate: 1-Chlorooctane	52.4	% 35-147	,						
Surrogate: 1-Chlorooctadecane	57.3	% 28-171							

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 whistoever 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.

Celey D. Keene



### Analytical Results For:

Chevron - Lovington NICK HAMPTON HCR 60 Box 423 Lovington NM, 88260 Fax To: None

Received: 03/29/2016 Reported:

04/04/2016 SOIL SAMPLES

NONE GIVEN **NOT GIVEN** 

Sampling Date: 03/29/2016

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

### Sample ID: VGWU SAT 3 #2 (H600656-02)

Project Name:

Project Number:

Project Location:

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/30/2016	ND	2.11	106	2.00	4.65	
Toluene*	< 0.050	0.050	03/30/2016	ND	2.00	99.8	2.00	6.38	
Ethylbenzene*	< 0.050	0.050	03/30/2016	ND	1.75	87.7	2.00	6.84	
Total Xylenes*	<0.150	0.150	03/30/2016	ND	5.39	89.8	6.00	6.36	
Total BTEX	<0.300	0.300	03/30/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	99.8	% 73.6-14	0						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	03/30/2016	ND	400	100	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/30/2016	ND	173	86.7	200	2.18	
DRO >C10-C28	<10.0	10.0	03/30/2016	ND	157	78.7	200	2.90	
Surrogate: 1-Chlorooctane	79.65	% 35-147	,						
Surrogate: 1-Chlorooctadecane	89.2 9	% 28-171							

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Celeg D. Keene



### Analytical Results For:

Chevron - Lovington NICK HAMPTON HCR 60 Box 423 Lovington NM, 88260 Fax To: None

Received: 03/29/2016 Reported: 04/04/2016

04/04/2016 SOIL SAMPLES

NONE GIVEN

**NOT GIVEN** 

Project Location:

Project Name:

Project Number:

Sampling Date: 03/29/2016

Sampling Type: Soil

Sampling Condition: Cool & Intact Sample Received By: Jodi Henson

### Sample ID: VGWU SAT 3 #3 (H600656-03)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/30/2016	ND	2.11	106	2.00	4.65	
Toluene*	< 0.050	0.050	03/30/2016	ND	2.00	99.8	2.00	6.38	
Ethylbenzene*	< 0.050	0.050	03/30/2016	ND	1.75	87.7	2.00	6.84	
Total Xylenes*	<0.150	0.150	03/30/2016	ND	5.39	89.8	6.00	6.36	
Total BTEX	<0.300	0.300	03/30/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	100 %	6 73.6-14	0						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	464	16.0	03/30/2016	ND	400	100	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/30/2016	ND	173	86.7	200	2.18	
DRO >C10-C28	280	10.0	03/30/2016	ND	157	78.7	200	2.90	
Surrogate: 1-Chlorooctane	75.9 9	% 35-147	,						
Surrogate: 1-Chlorooctadecane	100 9	6 28-171							

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Celey D. Keene



### Analytical Results For:

Chevron - Lovington NICK HAMPTON HCR 60 Box 423 Lovington NM, 88260 Fax To: None

Received: 03/29/2016

04/04/2016

Sampling Date:

03/29/2016

Reported: Project Name:

SOIL SAMPLES

Sampling Type: Sampling Condition: Soil Cool & Intact

Project Number: Project Location: NONE GIVEN

Sample Received By: Jodi Henson

### Sample ID: VGWU SAT 3 #4 (H600656-04)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/30/2016	ND	2.11	106	2.00	4.65	
Toluene*	<0.050	0.050	03/30/2016	ND	2.00	99.8	2.00	6.38	
Ethylbenzene*	<0.050	0.050	03/30/2016	ND	1.75	87.7	2.00	6.84	
Total Xylenes*	<0.150	0.150	03/30/2016	ND	5.39	89.8	6.00	6.36	
Total BTEX	<0.300	0.300	03/30/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	100 9	73.6-14	0						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	640	16.0	03/30/2016	ND	400	100	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/30/2016	ND	173	86.7	200	2.18	
DRO >C10-C28	<10.0	10.0	03/30/2016	ND	157	78.7	200	2.90	
Surrogate: 1-Chlorooctane	71.4	% 35-147							
Surrogate: 1-Chlorooctadecane	76.3	% 28-171							

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Celey D. Keine



### Analytical Results For:

Chevron - Lovington NICK HAMPTON HCR 60 Box 423 Lovington NM, 88260 Fax To: None

Received: 03/29/2016 Reported:

04/04/2016

Project Name: SOIL SAMPLES Project Number: NONE GIVEN Project Location: **NOT GIVEN** 

Sampling Date: 03/29/2016

Sampling Type: Soil Sampling Condition:

Cool & Intact Sample Received By: Jodi Henson

### Sample ID: VGWU SAT 3 #5 (H600656-05)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/30/2016	ND	2.11	106	2.00	4.65	
Toluene*	<0.050	0.050	03/30/2016	ND	2.00	99.8	2.00	6.38	
Ethylbenzene*	0.050	0.050	03/30/2016	ND	1.75	87.7	2.00	6.84	
Total Xylenes*	<0.150	0.150	03/30/2016	ND	5.39	89.8	6.00	6.36	
Total BTEX	<0.300	0.300	03/30/2016	ND					
Surrogate: 4-Bromofluorobenzene (PID	107 %	6 73.6-14	0						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	928	16.0	03/30/2016	ND	400	100	400	7.69	
TPH 8015M	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<50.0	50.0	03/30/2016	ND	173	86.7	200	2.18	
DRO >C10-C28	4250	50.0	03/30/2016	ND	157	78.7	200	2.90	
Surrogate: 1-Chlorooctane	74.8 9	% 35-147	,						
Surrogate: 1-Chlorooctadecane	170 %	6 28-171							

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Celey D. Keine



### **Notes and Definitions**

QR-03 The RPD value for the sample duplicate or MS/MSD was outside if 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

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Celey D. Keene



# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

# 101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Company Name:	Charron	١	1	١	١	1	1	1				0		П							ò	긺	21	3	1				J
Project Manager	-									1	1	1	DILL	10		-	-	$\mathbf{I}$	١,	AINALTOIO	000	אבעטבטו	6	45	1	1	1	1	上
Address: 56	Address: 56 Toyor (am) Bod								3	Company:	2	١ ا				-			_										
City: Lovington	State: NM	Zip:	00	88240	4	0			Attn:	Ħ.		ľ																	
Phone #:									Ad	Address:	SS																		_
Project #:	Project Owner:								City:	Ÿ									_										
Project Name:									Sta	State:			Z	Zip:						_									
Project Location:	n:	-							Ph	Phone #:	#								-										-
Sampler Name:	Nick Hampton								Fa	Fax #:																			
FOR LAB USE ONLY			$\dashv$			MATRIX	낈			PR	ES	PRESERV.	~	SAMPLING	G														
Lab I.D. Hk00656	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:		DATE	TIME	TPH	Benzene	Chlorides											
_	VGWU Sat 3 # 1	_	_			-	9				-		-	3/29	//:30m	<	<	<	-	4	4			$\dashv$			$\dashv$	4	
N	VGWU Sat 3 # 2	0											(A)	3/29	-	<	<	<											
W.	VGWU Sat 3 # 3	S				_							CAN	3/29		<	<	<						_					
7	VGWU Sats #4	G											S	3/29		<	<	<						_					
(1	VGWU Sa/3 # 5	0	- Contractor			******							W	6/29	_	<	<	<											
LEASE NOTE: Liability an Inalyses. All claims includin inalyses. In no event shall Caervice. In no event shall Caervices or successors arising	PLEASE NOTE: Liability and Damages. Cardinal's liability and clients exclusive remedy for any claim arising whether based in contract or tot, shall be limited to the amount paid by the client for the malyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after competion of the applicable revice. In no event shall Cardinal be liable for incidental or consequential damages, including without finitiation, business interruptions, loss of use, or loss of profits incurred by client, its substituties, stiffliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.	y claim eemed v without I ardinal, r	arising vaived mitation	unles on, bu	her b s ma sines whet	ased de in de in s inte	in cor writin rrupti	itract g and ons, I aim i	or tor recei	t, sha ved t vee, use,	Il be I y Car or los on an	imiter dinal ss of y of t	within brofits he ab	he amount paid b in 30 days after c is incurred by clie bove stated reaso	y the client for the ompletion of the ompletion of the nt, its subsidiarie ons or otherwise.	he applicable es,													
Relinquished By:	Time: 3/29/16	Received By:	eive	7 8	A X			-	3		_	MAN	>	7	Phone Result: Fax Result: REMARKS:	Et.	☐ Yes	ON O		Add'l Phone #: Add'l Fax #:	one #: x #:								
Relinquished By:	r: Date:	Received By:	ei V	2	Ý.	(	a			1	1																		-

Sample Condition
Cool Intact
Yes Yes
No No

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

### **Analytical Report 532368**

## for ARCADIS

**Project Manager: Arti Patel** 

**Chevron Sites** 

713.953.4841

21-JUL-16

Collected By: Client





### 1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054) Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)

Xenco-San Antonio: Texas (T104704534)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)





21-JUL-16

Project Manager: Arti Patel

**ARCADIS** 

1004 N. Big Spring St. Midland, TX 79701

Reference: XENCO Report No(s): 532368

**Chevron Sites** 

Project Address: Hobbs, NM

### **Arti Patel**:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 532368. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 532368 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Kelsey Brooks** 

Knus Koah

Project Manager

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### **Sample Cross Reference 532368**

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### ARCADIS, Midland, TX

Chevron Sites

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
STATEA-10-04 4'	S	06-24-16 00:00	- 4 ft	532368-001
STATEA-10-04 10'	S	06-24-16 00:00	- 10 ft	532368-002
STATEA-10-04 20'	S	06-24-16 00:00	- 20 ft	532368-003
STATEA-10-04 30'	S	06-24-16 00:00	- 30 ft	532368-004
STATEA-10-03 4'	S	06-24-16 00:00	- 4 ft	532368-005
STATEA-10-03 10'	S	06-24-16 00:00	- 10 ft	532368-006
STATEA-10-03 20'	S	06-24-16 00:00	- 20 ft	532368-007
STATEA-10-03 30'	S	06-24-16 00:00	- 30 ft	532368-008
STATEA-10-01 4'	S	06-24-16 00:00	- 4 ft	532368-009
STATEA-10-01 10'	S	06-24-16 00:00	- 10 ft	532368-010
STATEA-10-01 20'	S	06-24-16 00:00	- 20 ft	532368-011
STATEA-10-01 30'	S	06-24-16 00:00	- 30 ft	532368-012
STATEA-10-02 4'	S	06-24-16 00:00	- 4 ft	532368-013
STATEA-10-02 10'	S	06-24-16 00:00	- 10 ft	532368-014
STATEA-10-02 20'	S	06-24-16 00:00	- 20 ft	532368-015
STATEA-10-02 30'	S	06-24-16 00:00	- 30 ft	532368-016
STATEA-10-02 50'	S	06-24-16 00:00	- 50 ft	532368-018
STATEA-10-02 70'	S	06-24-16 00:00	- 70 ft	532368-020
STATEA-10-05 4'	S	06-24-16 00:00	- 4 ft	532368-021
STATEA-10-05 10'	S	06-24-16 00:00	- 10 ft	532368-022
STATEA-10-05 20'	S	06-24-16 00:00	- 20 ft	532368-023
STATEA-10-05 30'	S	06-24-16 00:00	- 30 ft	532368-024
VGWUSAT3-02 4'	S	06-24-16 00:00	- 4 ft	532368-025
VGWUSAT3-02 10'	S	06-24-16 00:00	- 10 ft	532368-026
VGWUSAT3-02 20'	S	06-24-16 00:00	- 20 ft	532368-027
VGWUSAT3-02 30'	S	06-24-16 00:00	- 30 ft	532368-028
VGWUSAT3-02 60'	S	06-24-16 00:00	- 60 ft	532368-031
VGWUSAT3-04 4'	S	06-24-16 00:00	- 4 ft	532368-032
VGWUSAT3-04 30'	S	06-24-16 00:00	- 30 ft	532368-035
VGWUSAT3-01 4'	S	06-24-16 00:00	- 4 ft	532368-036
VGWUSAT3-01 10'	S	06-24-16 00:00	- 10 ft	532368-037
STATEA-10-02 40'	S	06-24-16 00:00	- 40 ft	Not Analyzed
STATEA-10-02 60'	S	06-24-16 00:00	- 60 ft	Not Analyzed
VGWUSAT3-02 40'	S	06-24-16 00:00	- 40 ft	Not Analyzed
VGWUSAT3-02 50'	S	06-24-16 00:00	- 50 ft	Not Analyzed
VGWUSAT3-04 10'	S	06-24-16 00:00	- 10 ft	Not Analyzed
VGWUSAT3-04 20'	S	06-24-16 00:00	- 20 ft	Not Analyzed
VGWUSAT3-01 20'	S	06-24-16 00:00	- 20 ft	Not Analyzed
VGWUSAT3-01 30'	S	06-24-16 00:00	- 30 ft	Not Analyzed



### CASE NARRATIVE



Client Name: ARCADIS
Project Name: Chevron Sites

Project ID: 713.953.4841 Report Date: 21-JUL-16
Work Order Number(s): 532368 Date Received: 06/25/2016

Sample receipt non conformances and comments:

### Sample receipt non conformances and comments per sample:

None

### Analytical non conformances and comments:

Batch: LBA-997612 Inorganic Anions by EPA 300/300.1

Lab Sample ID 532437-015 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 532368-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -021.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.





### ARCADIS, Midland, TX

Chevron Sites

Sample Id: STATEA-10-04 4' Matrix: Soil % Moisture: 5.73

Lab Sample Id: 532368-001

Date Collected: 06.24.16 00.00

Dry Weight

Flag

Sample Depth: 4 ft

Date Received: 06.25.16 10.30

Analytical Method: Inorganic Anions by EPA 300/300.1

Result

Prep Method: E300P

Seq Number

997612

Date Prep:

Basis:

07.06.16 12.00

Parameter

Cas Number

Units

**Analysis Date** 

Dil

Chloride

16887-00-6

131 mg/kg 07.06.16 19.22

Sample Id:

STATEA-10-04 4'

Matrix:

Soil

% Moisture:

Lab Sample Id: 532368-001

Date Collected: 06.24.16 00.00 Date Received: 06.25.16 10.30 Basis:

Wet Weight

Sample Depth: 4 ft

Analytical Method: Soil pH by EPA 9045C

Seq Number

**Parameter** 

pН

997530

Cas Number 12408-02-5

Result 8.12

**Analysis Date** 07.05.16 11.48

Units

SU

Flag

Dil 1

Sample Id:

STATEA-10-04 10'

Matrix:

Soil

% Moisture: 16.89

Lab Sample Id: 532368-002

Date Collected: 06.24.16 00.00

Basis:

Dry Weight

Sample Depth: 10 ft

Date Received: 06.25.16 10.30

Result

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number

997612

Date Prep:

07.06.16 12.00

**Parameter** 

Chloride

Units 07.06.16 19.30 mg/kg

**Analysis Date** 

Flag Dil

STATEA-10-04 10'

Matrix:

Cas Number

16887-00-6

Soil

Date Received: 06.25.16 10.30

73.7

% Moisture:

Sample Id:

Lab Sample Id: 532368-002

Date Collected: 06.24.16 00.00

Basis:

Wet Weight

Sample Depth: 10 ft

Analytical Method: Soil pH by EPA 9045C

Seq Number

997530

Parameter	Cas Number	Result	Units	<b>Analysis Date</b>	Flag	Dil
pH	12408-02-5	8.46	SU	07.05.16 11.48		1





### ARCADIS, Midland, TX

**Chevron Sites** 

Sample Id: **STATEA-10-04 20'** 

Matrix: Soil

% Moisture: .84

Lab Sample Id: 532368-003

Date Collected: 06.24.16 00.00

Basis: Dry Weight

Sample Depth: 20 ft

Date Received: 06.25.16 10.30

Analytical Method: TPH By SW8015B Mod

Prep Method: TX1005P

Seq Number

997171

Date Prep: 06.28.16 15.00

Parameter	Cas Number	Result	Units	<b>Analysis Date</b>	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	16.0	mg/kg	06.28.16 22.35		1
Total TPH	PHC635	16.0	mg/kg	06.28.16 22.35		1

Sample Id:

STATEA-10-04 20'

Matrix:

Soil

% Moisture:

Lab Sample Id: 532368-003

Date Collected : 06.24.16 00.00

Basis:

: Wet Weight

Sample Depth: 20 ft

Date Received: 06.25.16 10.30

Analytical Method: Soil pH by EPA 9045C

Seq Number

997530

Parameter	Cas Number	Result	Units	<b>Analysis Date</b>	Flag	Dil
pH	12408-02-5	8.99	SU	07.05.16 11.48		1

Sample Id:

STATEA-10-04 30'

Matrix:

Soil

% Moisture:

Basis:

Lab Sample Id: 532368-004

Date Collected: 06.24.16 00.00

Date Received: 06.25.16 10.30

Analytical Method: Soil pH by EPA 9045C

Sample Depth: 30 ft

Seq Number

997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	8.83	SU	07.05.16 11.48		1

Sample Id:

STATEA-10-03 4'

Matrix:

Soil

% Moisture: 3.94

Lab Sample Id: 532368-005

Date Collected: 06.24.16 00.00

Basis: Dry Weight

Sample Depth: 4 ft

Date Received: 06.25.16 10.30

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number

997612

Date Prep:

07.06.16 12.00

Wet Weight

Parameter	Cas Number	Result	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	94.3	mg/kg	07.06.16 20.09		1





### ARCADIS, Midland, TX

Chevron Sites

Sample Id: STATEA-10-03 4'

Matrix: Soil

% Moisture:

Basis:

Lab Sample Id: 532368-005

Date Collected: 06.24.16 00.00

Wet Weight

Sample Depth: 4 ft

Date Received: 06.25.16 10.30

Analytical Method: Soil pH by EPA 9045C

Seq Number

997530

Parameter	Cas Number	Result	Units	<b>Analysis Date</b>	Flag	Dil
рН	12408-02-5	8.63	SU	07.05.16 11.48		1

Sample Id: **STATEA-10-03 10'** 

Matrix: Soil

% Moisture : 6.18

Lab Sample Id: 532368-006

Date Collected: 06.24.16 00.00

Basis: Dry Weight

Sample Depth: 10 ft

Seq Number

Date Received: 06.25.16 10.30

Analytical Method: Inorganic Anions by EPA 300/300.1

997612

Prep Method: E300P

Date Prep:

07.06.16 12.00

Parameter	Cas Number	Result	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	45.9	mg/kg	07.06.16 20.17		1

Sample Id: **STATEA-10-03 10'** 

Matrix: Soil

% Moisture:

Lab Sample Id: 532368-006

Date Collected: 06.24.16 00.00

Basis: Wet Weight

Sample Depth: 10 ft

Date Received: 06.25.16 10.30

Analytical Method: Soil pH by EPA 9045C

Seq Number

997530

Parameter	Cas Number	Result	Units	<b>Analysis Date</b>	Flag	Dil
pH	12408-02-5	8.97	SU	07.05.16 11.48		1

Sample Id: **STATEA-10-03 20'** 

Matrix: Soil

% Moisture: 9.16

Lab Sample Id: 532368-007

Date Collected: 06.24.16 00.00

Basis: Dry Weight

Sample Depth: 20 ft

Date Received: 06.25.16 10.30

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number

997612

Date Prep:

07.06.16 12.00

ParameterCas NumberResultUnitsAnalysis DateFlagDilChloride16887-00-629.5mg/kg07.06.16 20.251





### ARCADIS, Midland, TX

**Chevron Sites** 

Sample Id: **STATEA-10-03 20'** 

Matrix: Soil

% Moisture:

Basis:

Lab Sample Id: 532368-007

Date Collected : 06.24.16 00.00

Wet Weight

Sample Depth: 20 ft

Date Received: 06.25.16 10.30

Analytical Method : Soil pH by EPA 9045C

Seq Number

997530

Parameter	Cas Number	Result	Units	<b>Analysis Date</b>	Flag	Dil
pH	12408-02-5	8.97	SU	07.05.16 11.48		1

Sample Id: **STATEA-10-03 30'** 

Matrix: Soil

% Moisture:

Lab Sample Id: 532368-008

Date Collected: 06.24.16 00.00

Basis: Wet Weight

Sample Depth: 30 ft

Date Received: 06.25.16 10.30

Analytical Method: Soil pH by EPA 9045C

Seq Number

997530

Parameter	Cas Number	Result	Units	<b>Analysis Date</b>	Flag	Dil
рН	12408-02-5	9.04	SU	07.05.16 11.48		1

Sample Id: STATEA-10-01 4'

Matrix: Soil

% Moisture : 4.23

Lab Sample Id: 532368-009

Date Collected: 06.24.16 00.00

Basis: Dry Weight

Sample Depth: 4 ft

Date Received: 06.25.16 10.30

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number

997612

Date Prep: 07.06.16 12.00

Parameter	Cas Number	Result	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	441	mg/kg	07.07.16 07.29		1

Sample Id:

STATEA-10-01 4'

Matrix: Soil

% Moisture:

Lab Sample Id: 532368-009

Date Collected: 06.24.16 00.00

Basis: Wet Weight

Sample Depth: 4 ft

Date Received: 06.25.16 10.30

Analytical Method: Soil pH by EPA 9045C

Seq Number

997530

Parameter	Cas Number	Result	Units	<b>Analysis Date</b>	Flag	Dil
pH	12408-02-5	8.22	SU	07.05.16 11.48		1





### ARCADIS, Midland, TX

Chevron Sites

Sample Id: STATEA-10-01 10' Matrix: Soil % Moisture:

Basis:

Lab Sample Id: 532368-010

Date Collected: 06.24.16 00.00

Wet Weight

Sample Depth: 10 ft

Date Received: 06.25.16 10.30

Analytical Method: Soil pH by EPA 9045C

Seq Number

997530

Parameter	Cas Number	Result	Units	<b>Analysis Date</b>	Flag	Dil
pH	12408-02-5	9.08	SU	07.05.16 11.48		1

Sample Id: STATEA-10-01 20' Matrix: Soil % Moisture:

Lab Sample Id: 532368-011

Date Collected: 06.24.16 00.00

Basis: Wet Weight

Sample Depth: 20 ft

Date Received: 06.25.16 10.30

Analytical Method: Soil pH by EPA 9045C

Seq Number

997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	9.11	SU	07.05.16 11.48		1

Sample Id: STATEA-10-01 30' Matrix: Soil % Moisture:

Lab Sample Id: 532368-012

Date Collected: 06.24.16 00.00

Basis: Wet Weight

Sample Depth: 30 ft

Date Received: 06.25.16 10.30

Analytical Method: Soil pH by EPA 9045C

Seq Number

997530

Parameter	Cas Number	Result	Units	<b>Analysis Date</b>	Flag	Dil
pH	12408-02-5	8.82	SU	07.05.16 11.48		1

Sample Id: STATEA-10-02 4' Matrix: Soil % Moisture: 9.44

Lab Sample Id: 532368-013

Date Collected: 06.24.16 00.00

Basis: Dry Weight

Sample Depth: 4 ft

Date Received: 06.25.16 10.30

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number

997612

Date Prep:

07.06.16 12.00

Parameter Cas Number **Analysis Date** Flag Result Units Dil Chloride 16887-00-6 07.07.16 08.31 86.4 mg/kg





### ARCADIS, Midland, TX

Chevron Sites

Sample Id: STATEA-10-02 4' Matrix: Soil % Moisture:

Basis:

Lab Sample Id: 532368-013

Date Collected: 06.24.16 00.00

Wet Weight

Sample Depth: 4 ft

Date Received: 06.25.16 10.30

Analytical Method: Soil pH by EPA 9045C

Seq Number

997530

Parameter	Cas Number	Result	Units	<b>Analysis Date</b>	Flag	Dil
pH	12408-02-5	9.41	SU	07.05.16 11.48		1

Sample Id: STATEA-10-02 10' Matrix: Soil % Moisture: 9.6

Lab Sample Id: 532368-014

Date Collected: 06.24.16 00.00

Dry Weight Basis:

Sample Depth: 10 ft

Date Received: 06.25.16 10.30

Analytical Method: Inorganic Anions by EPA 300/300.1

997612

Prep Method: E300P

Date Prep:

07.06.16 12.00

Wet Weight

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	131	mg/kg	07.07.16 08.39		5

Sample Id:

Seq Number

STATEA-10-02 10'

Matrix:

Lab Sample Id: 532368-014

Date Collected: 06.24.16 00.00

Soil

% Moisture: Basis:

Sample Depth: 10 ft

Date Received: 06.25.16 10.30

Analytical Method: Soil pH by EPA 9045C

Seq Number

997530

Parameter	Cas Number	Result	Units	<b>Analysis Date</b>	Flag	Dil
pH	12408-02-5	9.69	SU	07.05.16 11.48		1

Sample Id:

STATEA-10-02 20'

Matrix:

% Moisture: 12.62

Lab Sample Id: 532368-015

Date Collected: 06.24.16 00.00

Soil

Basis: Dry Weight

Sample Depth: 20 ft

Date Received: 06.25.16 10.30

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number

997612

Date Prep: 07.06.16 12.00

Parameter Cas Number **Analysis Date** Flag Result Units Dil Chloride 16887-00-6 07.07.16 08.47 316 mg/kg





### ARCADIS, Midland, TX

Chevron Sites

Sample Id: STATEA-10-02 20' Matrix: Soil % Moisture:

Basis:

Lab Sample Id: 532368-015

Date Collected: 06.24.16 00.00

Wet Weight

Sample Depth: 20 ft

Date Received: 06.25.16 10.30

Analytical Method: Soil pH by EPA 9045C

Seq Number

997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	9.60	SU	07.05.16 11.48		1

Sample Id: STATEA-10-02 30' Matrix: Soil % Moisture: 5.72

Lab Sample Id: 532368-016

Date Collected: 06.24.16 00.00

Basis: Dry Weight

Sample Depth: 30 ft

Date Received: 06.25.16 10.30

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P Date Prep:

07.06.16 12.00

Seq Number

997612

**Analysis Date** Flag

**Parameter** Cas Number Units Dil Result 07.07.16 08.55 Chloride 16887-00-6 418 5 mg/kg

Sample Id:

STATEA-10-02 30'

Matrix:

% Moisture:

Lab Sample Id: 532368-016

Date Collected: 06.24.16 00.00

Soil

Basis: Wet Weight

Sample Depth: 30 ft

Date Received: 06.25.16 10.30

Analytical Method: Soil pH by EPA 9045C

Seq Number

997530

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
pH	12408-02-5	9.68	SU	07.05.16 11.48		1

Sample Id:

STATEA-10-02 50'

Matrix:

Soil

% Moisture:

Lab Sample Id: 532368-018

Date Collected: 06.24.16 00.00

Basis: Wet Weight

Sample Depth: 50 ft

Date Received: 06.25.16 10.30

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number

998310

Date Prep:

07.18.16 14.00

Parameter Cas Number **Analysis Date** Flag Result Units Dil 16887-00-6 07.18.16 20.11 10 Chloride 1630 mg/kg





### ARCADIS, Midland, TX

Chevron Sites

Sample Id: STATEA-10-02 70' Matrix: Soil % Moisture: 6.09

Lab Sample Id: 532368-020

Date Collected: 06.24.16 00.00

Dry Weight

Sample Depth: 70 ft

Date Received: 06.25.16 10.30

Result

865

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number

998464

Date Prep:

07.20.16 12.00

Parameter Chloride

Cas Number 16887-00-6

Units mg/kg

**Analysis Date** 07.20.16 16.46

Basis:

Flag Dil

5

Sample Id:

STATEA-10-05 4'

Matrix: Soil % Moisture: 3.84

Lab Sample Id: 532368-021

Date Collected: 06.24.16 00.00

Basis: Dry Weight

Sample Depth: 4 ft

Date Received: 06.25.16 10.30

Analytical Method: Inorganic Anions by EPA 300/300.1

997612 Seq Number

Prep Method: E300P

Date Prep:

07.06.16 12.00

Flag

**Parameter** Chloride

Cas Number

Units Result 47.5 mg/kg

**Analysis Date** 07.07.16 09.02

Dil

1

Dil

Sample Id:

STATEA-10-05 4'

Matrix:

% Moisture:

Lab Sample Id: 532368-021

Date Collected: 06.24.16 00.00

Result

Basis:

**Analysis Date** 

07.05.16 15.52

Wet Weight

Flag

Wet Weight

Flag

Sample Depth: 4 ft

Cas Number

12408-02-5

16887-00-6

Date Received: 06.25.16 10.30

Soil

Analytical Method: Soil pH by EPA 9045C

Seq Number

997531

**Parameter** pН

Sample Id:

STATEA-10-05 10'

Matrix:

Soil

8.92

% Moisture:

Basis:

Lab Sample Id: 532368-022

Date Collected: 06.24.16 00.00

Units

SU

Sample Depth: 10 ft

Date Received: 06.25.16 10.30

Analytical Method: Soil pH by EPA 9045C

Seq Number

997531

**Parameter** 

Cas Number 12408-02-5 pН

Result 9.04

**Analysis Date** Units SU

07.05.16 15.52

Dil

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Final 1.000





### ARCADIS, Midland, TX

Chevron Sites

Sample Id: STATEA-10-05 20' Matrix: Soil % Moisture: 1.61

Lab Sample Id: 532368-023

Date Collected: 06.24.16 00.00

Result

Dry Weight

Flag

Sample Depth: 20 ft

Date Received: 06.25.16 10.30

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number

997641

Date Prep:

07.06.16 14.00

Parameter

Units

**Analysis Date** 

Chloride

Cas Number 16887-00-6

14.2 mg/kg 07.07.16 10.21

Basis:

Dil

Sample Id:

STATEA-10-05 20'

Matrix:

Soil

% Moisture:

Lab Sample Id: 532368-023

Sample Depth: 20 ft

Date Collected: 06.24.16 00.00 Date Received: 06.25.16 10.30 Basis:

Wet Weight

Analytical Method: Soil pH by EPA 9045C

Seq Number

997531

**Parameter** pН

Cas Number 12408-02-5

Result 9.27 Units SU

**Analysis Date** 07.05.16 15.52

Dil 1

Sample Id:

STATEA-10-05 30'

Matrix:

Soil

% Moisture: 8.11

Prep Method: E300P

Lab Sample Id: 532368-024

Date Collected: 06.24.16 00.00

Basis:

Dry Weight

Flag

Sample Depth: 30 ft

Date Received: 06.25.16 10.30

Result

Analytical Method: Inorganic Anions by EPA 300/300.1

Date Prep:

07.06.16 14.00

Seq Number

997641

Flag

**Parameter** Chloride

Units mg/kg

**Analysis Date** 07.07.16 10.28

Dil

Sample Id:

STATEA-10-05 30'

Matrix:

Cas Number

16887-00-6

Soil

23.4

% Moisture:

Lab Sample Id: 532368-024

Date Collected: 06.24.16 00.00

Basis:

Wet Weight

Sample Depth: 30 ft

Date Received: 06.25.16 10.30

Analytical Method: Soil pH by EPA 9045C

Seq Number

997531

**Parameter** Cas Number **Analysis Date** Result Units Flag Dil 12408-02-5 SU pН 8.84 07.05.16 15.52





### ARCADIS, Midland, TX

Chevron Sites

Sample Id: **VGWUSAT3-02 4'**  Matrix: Soil % Moisture: 0

Lab Sample Id: 532368-025

Date Collected: 06.24.16 00.00

Dry Weight

Sample Depth: 4 ft

Date Received: 06.25.16 10.30

Result

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number

998464

Date Prep:

Basis:

07.20.16 12.00

Parameter

Units

**Analysis Date** 

Flag Dil

Chloride

16887-00-6

Cas Number

3340 mg/kg 07.20.16 17.09

20

Sample Id:

**VGWUSAT3-02 10'** 

Matrix:

Soil

% Moisture: 0

Basis:

Dry Weight

Sample Depth: 10 ft

Lab Sample Id: 532368-026

Date Collected: 06.24.16 00.00 Date Received: 06.25.16 10.30

Analytical Method: Inorganic Anions by EPA 300/300.1

16887-00-6

Cas Number

16887-00-6

Prep Method: E300P

Flag

Seq Number

998464

Date Prep:

07.20.16 12.00

**Parameter** Chloride

Cas Number

Result

Units mg/kg

**Analysis Date** 07.20.16 17.17

20

Dil

Sample Id:

**VGWUSAT3-02 20'** 

Matrix:

Soil

3590

% Moisture:

Lab Sample Id: 532368-027

Date Collected: 06.24.16 00.00

Basis:

Wet Weight

Sample Depth: 20 ft

Date Received: 06.25.16 10.30

Result

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number

998310

Date Prep:

07.18.16 14.00

**Parameter** 

**Analysis Date** 

Flag

Chloride

546

Units mg/kg

07.18.16 20.18

Dil

**VGWUSAT3-02 30'** 

Matrix:

Soil

% Moisture:

Sample Id:

Lab Sample Id: 532368-028

Date Collected: 06.24.16 00.00

Basis:

Wet Weight

Sample Depth: 30 ft

Date Received: 06.25.16 10.30

Result

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number

998310

Date Prep:

07.18.16 14.00

Parameter

**Analysis Date** 

Dil

Cas Number

Units

Flag

Chloride

16887-00-6

635

mg/kg

07.18.16 20.26

5





### ARCADIS, Midland, TX

Chevron Sites

Sample Id: **VGWUSAT3-02 60'**  Matrix: Soil % Moisture: 7.45

Lab Sample Id: 532368-031

Date Collected: 06.24.16 00.00

Dry Weight

Flag

Sample Depth: 60 ft

Date Received: 06.25.16 10.30

Result

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number

997641

Date Prep:

Basis:

07.06.16 14.00

Parameter Chloride

**Analysis Date** 

Units

mg/kg

16887-00-6

Cas Number

Cas Number

16887-00-6

22.9

07.07.16 10.36

Dil

Sample Id:

**VGWUSAT3-04 4'** 

Matrix:

Soil

% Moisture:

Basis:

Wet Weight

Sample Depth: 4 ft

Lab Sample Id: 532368-032

Date Received: 06.25.16 10.30

Date Collected: 06.24.16 00.00

Seq Number

Analytical Method: Inorganic Anions by EPA 300/300.1 998310

Prep Method: E300P

Flag

Date Prep:

07.18.16 14.00

**Parameter** Chloride

Result

Units mg/kg

**Analysis Date** 07.18.16 20.34

Dil 1

Sample Id:

**VGWUSAT3-04 30'** 

Matrix:

Soil

Date Received: 06.25.16 10.30

Result

58.4

% Moisture: 7.45

Lab Sample Id: 532368-035

Date Collected: 06.24.16 00.00

Basis:

Dry Weight

Sample Depth: 30 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Cas Number

16887-00-6

Prep Method: E300P

Seq Number

997641

Date Prep:

07.06.16 14.00

**Parameter** 

**Analysis Date** 

Chloride

72.2

Units mg/kg

07.07.16 10.44

Flag Dil

Sample Id:

**VGWUSAT3-01 4'** 

Matrix:

Soil

% Moisture:

Lab Sample Id: 532368-036

Date Collected: 06.24.16 00.00

Basis:

Wet Weight

Sample Depth: 4 ft

Date Received: 06.25.16 10.30

Result

Analytical Method: Inorganic Anions by EPA 300/300.1

Date Prep:

Seq Number

998310

07.18.16 14.00

Parameter

Units

**Analysis Date** 

Flag

Chloride

16887-00-6

Cas Number

681

07.18.16 20.42 mg/kg

Prep Method: E300P

Dil

5

Page 15 of 57

Final 1.000





### ARCADIS, Midland, TX

Chevron Sites

Sample Id: VGWUSAT3-01 10'

Matrix: Soil

% Moisture : 7.45

Basis:

Lab Sample Id: 532368-037

Date Collected: 06.24.16 00.00

Dry Weight

Sample Depth: 10 ft

Date Received: 06.25.16 10.30

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Seq Number 997641

Date Prep: 07.06.16 14.00

Parameter	Cas Number	Result	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	54.4	mg/kg	07.07.16 11.07		1



ARCADIS, Midland, TX

**Project Name: Chevron Sites** 



Project Id: 713.953.4841
Contact: Arti Patel

Hobbs, NM

**Project Location:** 

Doto Da

Date Received in Lab: Sat Jun-25-16 10:30 am

**Report Date:** 21-JUL-16 **Project Manager:** Kelsey Brooks

	Lab Id:	532368-00	01	532368-00	02	532368-0	03	532368-00	)4	532368-0	05	532368-0	06
Analysis Requested	Field Id:	STATEA-10-	-04 4'	STATEA-10-0	04 10'	STATEA-10-0	04 20'	STATEA-10-0	04 30'	STATEA-10	-03 4'	STATEA-10-0	03 10'
Anaiysis Kequesieu	Depth:	4 ft		10 ft		20 ft		30 ft		4 ft		10 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-24-16 0	Jun-24-16 00:00		0:00	Jun-24-16 0	0:00	Jun-24-16 0	0:00	Jun-24-16 0	0:00	Jun-24-16 0	0:00
Percent Moisture	Extracted:												
	Analyzed:	Jul-01-16 1'	Jul-01-16 17:05		7:05	Jul-01-16 1'	7:05	Jul-01-16 17	7:05	Jul-01-16 1	7:05	Jul-01-16 1'	7:05
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		5.73	1.00	16.9	1.00	<1.00	1.00	5.06	1.00	3.94	1.00	6.18	1.00

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Mus Roah

Kelsey Brooks



ARCADIS, Midland, TX

**Project Name: Chevron Sites** 



Project Id: 713.953.4841
Contact: Arti Patel

Hobbs, NM

**Project Location:** 

Date Received in Lab: Sat Jun-25-16 10:30 am

**Report Date:** 21-JUL-16 **Project Manager:** Kelsey Brooks

	Lab Id:	532368-0	001	532368-0	02	532368-0	03	532368-0	γ <sub>1</sub>	532368-0	05	532368-0	06
Analysis Requested	Field Id:	STATEA-10	-04 4'	STATEA-10-0	04 10'	STATEA-10-0	04 20'	STATEA-10-0	)4 30'	STATEA-10-	03 4'	STATEA-10-0	03 10'
Analysis Requesieu	Depth:	4 ft		10 ft		20 ft		30 ft		4 ft		10 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-24-16 (	00:00	Jun-24-16 0	00:00	Jun-24-16 0	00:00	Jun-24-16 0	0:00	Jun-24-16 (	00:00	Jun-24-16 0	00:00
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-06-16 1	2:00	Jul-06-16 1	2:00	Jul-06-16 1	2:00	Jul-06-16 12	2:00	Jul-06-16 1	2:00	Jul-06-16 12	2:00
	Analyzed:	Jul-06-16 1	9:22	Jul-06-16 1	9:30	Jul-06-16 1	9:38	Jul-06-16 20	0:01	Jul-06-16 2	0:09	Jul-06-16 20	0:17
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		131	10.6	73.7	12.0	<10.1	10.1	<10.5	10.5	94.3	10.4	45.9	10.7
Soil pH by EPA 9045C	Extracted:												
	Analyzed:	Jul-05-16 1	1:48	Jul-05-16 11:48		Jul-05-16 1	1:48	Jul-05-16 1	1:48	Jul-05-16 11:48		Jul-05-16 1	1:48
	Units/RL:	SU	RL	SU RL		SU RL		SU RL		SU RL		SU	RL
pH		8.12		8.46		8.99		8.83		8.63		8.97	
TPH By SW8015B Mod	Extracted:	Jun-28-16	15:00	Jun-28-16 1	5:00	Jun-28-16 1	5:00	Jun-28-16 1	5:00	Jun-28-16 1	5:00	Jun-28-16 1	5:00
	Analyzed:	Jun-28-16	20:53	Jun-28-16 2	2:10	Jun-28-16 2	2:35	Jun-28-16 2	3:01	Jun-28-16 2	3:27	Jun-28-16 2	3:55
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		<15.9	15.9	<18.0	18.0	16.0	15.1	<15.8	15.8	<15.6	15.6	<16.0	16.0
C10-C28 Diesel Range Hydrocarbons		<15.9	15.9	<18.0	18.0	<15.1	15.1	<15.8	15.8	<15.6	15.6	<16.0	16.0
Total TPH		<15.9	15.9	<18.0	18.0	16.0	15.1	<15.8	15.8	<15.6	15.6	<16.0	16.0

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Kelsey Brooks
Project Manager



ARCADIS, Midland, TX

**Project Name: Chevron Sites** 



713.953.4841

Contact: Arti Patel
Project Location: Hobbs, NM

**Project Id:** 

**Date Received in Lab:** Sat Jun-25-16 10:30 am

**Report Date:** 21-JUL-16 **Project Manager:** Kelsey Brooks

	Lab Id:	532368-00	07	532368-0	08	532368-0	09	532368-0	10	532368-0	11	532368-0	12
Analysis Requested	Field Id:	STATEA-10-0	03 20'	STATEA-10-	03 30'	STATEA-10	-01 4'	STATEA-10-	01 10'	STATEA-10-	01 20'	STATEA-10-	01 30'
Anaiysis Requesieu	Depth:	20 ft		30 ft		4 ft		10 ft		20 ft		30 ft	
	Matrix:	SOIL			SOIL		SOIL			SOIL		SOIL	
	Sampled:	Jun-24-16 0	Jun-24-16 00:00		Jun-24-16 00:00		0:00	Jun-24-16 0	0:00	Jun-24-16 0	0:00	Jun-24-16 0	00:00
Percent Moisture	Extracted:												
	Analyzed:	Jul-01-16 17	Jul-01-16 17:05		7:05	Jul-01-16 1	7:05	Jul-01-16 1	7:05	Jul-01-16 1	7:05	Jul-01-16 1	7:05
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		9.16	1.00	6.29	1.00	4.23	1.00	2.90	1.00	3.89	1.00	6.76	1.00

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Mus fronks
Kelsey Brooks



ARCADIS, Midland, TX

**Project Name: Chevron Sites** 



Project Id: 713.953.4841 Contact: Arti Patel

Hobbs, NM

**Project Location:** 

**Date Received in Lab:** Sat Jun-25-16 10:30 am

**Report Date:** 21-JUL-16 **Project Manager:** Kelsey Brooks

	Lab Id:	532368-0	007	532368-0	08	532368-0	09	532368-0	10	532368-0	11	532368-0	12
Analysis Requested	Field Id:	STATEA-10-	03 20'	STATEA-10-0	03 30'	STATEA-10-	01 4'	STATEA-10-0	01 10'	STATEA-10-0	01 20'	STATEA-10-0	01 30'
Analysis Requesieu	Depth:	20 ft		30 ft		4 ft		10 ft		20 ft		30 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-24-16 (	00:00	Jun-24-16 0	0:00	Jun-24-16 0	00:00	Jun-24-16 0	00:00	Jun-24-16 0	0:00	Jun-24-16 0	00:00
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-06-16 1	2:00	Jul-06-16 1	2:00	Jul-06-16 1	2:00	Jul-06-16 1	2:00	Jul-06-16 1	2:00	Jul-06-16 12	2:00
	Analyzed:	Jul-06-16 2	20:25	Jul-06-16 2	0:32	Jul-07-16 0	7:29	Jul-07-16 0	7:52	Jul-07-16 0	8:00	Jul-07-16 0	8:23
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		29.5	11.0	<10.7	10.7	441	10.4	<10.3	10.3	<10.4	10.4	<10.7	10.7
Soil pH by EPA 9045C	Extracted:		25.0										
	Analyzed:	Jul-05-16 1	1:48	Jul-05-16 11:48		Jul-05-16 1	1:48	Jul-05-16 1	1:48	Jul-05-16 1	1:48	Jul-05-16 1	1:48
	Units/RL:	SU	RL	SU	RL	SU RL		SU RL		SU RL		SU	RL
pH		8.97		9.04		8.22		9.08		9.11		8.82	
TPH By SW8015B Mod	Extracted:	Jun-28-16	15:00	Jun-28-16 1	5:00	Jun-28-16 1	5:00	Jun-28-16 1	5:00	Jun-28-16 1	5:00	Jun-28-16 1	5:00
	Analyzed:	Jun-29-16 (	00:21	Jun-29-16 0	0:48	Jun-29-16 0	1:16	Jun-29-16 0	1:42	Jun-29-16 0	2:35	Jun-29-16 0	2:59
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		<16.5	16.5	<16.0	16.0	<15.6	15.6	<15.4	15.4	<15.6	15.6	<16.1	16.1
C10-C28 Diesel Range Hydrocarbons		<16.5	16.5	<16.0	16.0	<15.6	15.6	<15.4	15.4	<15.6	15.6	<16.1	16.1
Total TPH		<16.5	16.5	<16.0	16.0	<15.6	15.6	<15.4	15.4	<15.6	15.6	<16.1	16.1

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Kelsey Brooks
Project Manager



713.953.4841

Arti Patel

Hobbs, NM

**Project Id:** 

**Project Location:** 

**Contact:** 

### Certificate of Analysis Summary 532368

ARCADIS, Midland, TX



**Project Name: Chevron Sites** 

Date Received in Lab: Sat Jun-25-16 10:30 am

Report Date: 21-JUL-16 Project Manager: Kelsey Brooks

	Lab Id:	532368-01	13	532368-03	14	532368-0	15	532368-03	16	532368-0	18	532368-0	20
Analysis Requested	Field Id:	STATEA-10-	02 4'	STATEA-10-0	02 10'	STATEA-10-	02 20'	STATEA-10-0	02 30'	STATEA-10-	02 50'	STATEA-10-	02 70'
Analysis Requesieu	Depth:	4 ft		10 ft		20 ft		30 ft		50 ft		70 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-24-16 00	0:00	Jun-24-16 0	0:00	Jun-24-16 0	0:00	Jun-24-16 0	0:00	Jun-24-16 0	0:00	Jun-24-16 0	00:00
Percent Moisture	Extracted:												
	Analyzed:	Jul-01-16 17	Jul-01-16 17:05		7:05	Jul-01-16 1	7:05	Jul-01-16 17	7:05	Jul-01-16 1	7:05	Jul-01-16 1	7:05
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		9.44	1.00	9.60	1.00	12.6	1.00	5.72	1.00	9.15	1.00	6.09	1.00

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Knis Roah



ARCADIS, Midland, TX

**Project Name: Chevron Sites** 



Project Id: 713.953.4841
Contact: Arti Patel

Hobbs, NM

**Project Location:** 

n Sites

**Date Received in Lab:** Sat Jun-25-16 10:30 am **Report Date:** 21-JUL-16

Project Manager: Kelsey Brooks

	Lab Id:	532368-0	013	532368-0	14	532368-0	15	532368-0	16	532368-0	18	532368-0	020
	Field Id:	STATEA-10-	-02 4'	STATEA-10-0	02 10'	STATEA-10-0	02 20'	STATEA-10-	02 30'	STATEA-10-0	02 50'	STATEA-10-	-02 70'
Analysis Requested	Depth:	4 ft		10 ft		20 ft		30 ft		50 ft		70 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-24-16 (	00:00	Jun-24-16 0	00:00	Jun-24-16 0	00:00	Jun-24-16 0	0:00	Jun-24-16 0	0:00	Jun-24-16 (	00:00
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-06-16 1	2:00	Jul-06-16 1	2:00	Jul-06-16 1	2:00	Jul-06-16 1	2:00	Jul-18-16 14	4:00	Jul-20-16 1	2:00
	Analyzed:	Jul-07-16 0	08:31	Jul-07-16 0	8:39	Jul-07-16 0	8:47	Jul-07-16 0	8:55	Jul-18-16 20	0:11	Jul-20-16 1	6:46
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		86.4	11.0	131	55.3	316	57.2	418	53.0	1630	100	865	53.2
Soil pH by EPA 9045C	Extracted:		00.1										
	Analyzed:	Jul-05-16 1	1:48	Jul-05-16 11:48		Jul-05-16 1	1:48	Jul-05-16 1	1:48				
	Units/RL:	SU	RL	SU	RL	SU	RL	SU	RL				
pH		9.41		9.69		9.60		9.68					
TPH By SW8015B Mod	Extracted:	Jun-28-16	15:00	Jun-28-16 1	5:00	Jun-28-16 1	5:00	Jun-28-16 1	5:00				
	Analyzed:	Jun-29-16 (	03:25	Jun-29-16 0	3:51	Jun-29-16 0	4:17	Jun-29-16 0	4:44				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
C6-C10 Gasoline Range Hydrocarbons		<16.5	16.5	<16.5	16.5	<17.2	17.2	<15.9	15.9				
C10-C28 Diesel Range Hydrocarbons		<16.5	16.5	<16.5	16.5	<17.2	17.2	<15.9	15.9				
Total TPH		<16.5	16.5	<16.5	16.5	<17.2	17.2	<15.9	15.9				

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Kelsey Brooks
Project Manager



ARCADIS, Midland, TX

**Project Name: Chevron Sites** 



**Project Id:** 713.953.4841 **Contact:** Arti Patel

Hobbs, NM

**Project Location:** 

Date Received in Lab: Sat Jun-25-16 10:30 am

Report Date: 21-JUL-16 Project Manager: Kelsey Brooks

	Lab Id:	532368-02	21	532368-0	22	532368-0	23	532368-0	24	532368-025	532368-026
Analysis Requested	Field Id:	STATEA-10-	05 4'	STATEA-10-0	05 10'	STATEA-10-	05 20'	STATEA-10-	05 30'	VGWUSAT3-02 4'	VGWUSAT3-02 10'
Anaiysis Requesieu	Depth:	4 ft		10 ft		20 ft		30 ft		4 ft	10 ft
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	SOIL
	Sampled:	Jun-24-16 00	0:00	Jun-24-16 0	0:00	Jun-24-16 0	0:00	Jun-24-16 0	0:00	Jun-24-16 00:00	Jun-24-16 00:00
Percent Moisture	Extracted:										
	Analyzed:	Jul-01-16 17	Jul-01-16 17:05		7:05	Jul-01-16 1	7:05	Jul-01-16 1	7:05		
	Units/RL:	%	RL	%	RL	%	RL	%	RL		
Percent Moisture		3.84	1.00	7.45	1.00	1.61	1.00	8.11	1.00		

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Knis Roah Kelsey Brooks Project Manager



ARCADIS, Midland, TX

**Project Name: Chevron Sites** 



Project Id: 713.953.4841
Contact: Arti Patel

Hobbs, NM

**Project Location:** 

**Date Received in Lab:** Sat Jun-25-16 10:30 am

**Report Date:** 21-JUL-16 **Project Manager:** Kelsey Brooks

	Lab Id:	532368-0	21	532368-0	22	532368-0	23	532368-0	24	532368-0	25	532368-02	26
Analysis Requested	Field Id:	STATEA-10-	-05 4'	STATEA-10-0	05 10'	STATEA-10-0	05 20'	STATEA-10-0	05 30'	VGWUSAT3	-02 4'	VGWUSAT3-	-02 10'
Analysis Requested	Depth:	4 ft		10 ft		20 ft		30 ft		4 ft		10 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-24-16 (	00:00	Jun-24-16 0	0:00	Jun-24-16 0	0:00	Jun-24-16 0	0:00	Jun-24-16 0	0:00	Jun-24-16 0	0:00
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-06-16 1	2:00	Jul-06-16 1	4:00	Jul-06-16 1	4:00	Jul-06-16 1	4:00	Jul-20-16 12	2:00	Jul-20-16 12	2:00
	Analyzed:	Jul-07-16 0	9:02	Jul-07-16 0	9:57	Jul-07-16 1	0:21	Jul-07-16 1	0:28	Jul-20-16 1	7:09	Jul-20-16 17	7:17
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		47.5	10.4	<10.8	10.8	14.2	10.2	23.4	10.9	3340	200	3590	200
Soil pH by EPA 9045C	Extracted:		47.3 10.4										
	Analyzed:	Jul-05-16 1	5:52	Jul-05-16 15:52		Jul-05-16 1	5:52	Jul-05-16 1	5:52				
	Units/RL:	SU	RL	SU	RL	SU	RL	SU	RL				
pH		8.92		9.04		9.27		8.84					
TPH By SW8015B Mod	Extracted:	Jun-29-16 1	14:00	Jun-29-16 1	4:00	Jun-29-16 1	4:00	Jun-29-16 1	4:00				
	Analyzed:	Jun-29-16 1	15:39	Jun-29-16 1	6:59	Jun-29-16 1	7:26	Jun-29-16 1	7:53				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
C6-C10 Gasoline Range Hydrocarbons		<15.6	15.6	<16.2	16.2	<15.2	15.2	<16.3	16.3				
C10-C28 Diesel Range Hydrocarbons		<15.6	15.6	<16.2	16.2	<15.2	15.2	<16.3	16.3				
Total TPH		<15.6	15.6	<16.2	16.2	<15.2	15.2	<16.3	16.3				

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Kelsey Brooks
Project Manager



ARCADIS, Midland, TX

**Project Name: Chevron Sites** 



**Project Id:** 713.953.4841

Arti Patel

Hobbs, NM

**Contact:** 

**Project Location:** 

Date Received in Lab: Sat Jun-25-16 10:30 am

Report Date: 21-JUL-16 Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	532368-027		532368-028		532368-031		532368-032		532368-035		532368-036	
	Field Id:	VGWUSAT3-02 20'		VGWUSAT3-02 30'		VGWUSAT3-02 60'		VGWUSAT3-04 4'		VGWUSAT3-04 30'		VGWUSAT3-01 4'	
	Depth:	20 ft		30 ft		60 ft		4 ft		30 ft		4 ft	
	Matrix:	SOIL											
	Sampled:	Jun-24-16 00:00											
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-18-16 14:00		Jul-18-16 14:00		Jul-06-16 14:00		Jul-18-16 14:00		Jul-06-16 14:00		Jul-18-16 14:00	
	Analyzed:	Jul-18-16 20:18		Jul-18-16 20:26		Jul-07-16 10:36		Jul-18-16 20:34		Jul-07-16 10:44		Jul-18-16 20:42	
	Units/RL:	mg/kg	RL										
Chloride		546	50.0	635	50.0	22.9	10.8	58.4	10.0	72.2	10.8	681	50.0

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Knis Roah Kelsey Brooks



713.953.4841

Arti Patel

Hobbs, NM

**Project Id:** 

**Project Location:** 

**Contact:** 

### Certificate of Analysis Summary 532368

ARCADIS, Midland, TX

**Project Name: Chevron Sites** 



Date Received in Lab: Sat Jun-25-16 10:30 am

Report Date: 21-JUL-16 Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	532368-037			
	Field Id:	VGWUSAT3-01 10'			
	Depth:	10 ft			
	Matrix:	SOIL			
	Sampled:	Jun-24-16 00:00			
Inorganic Anions by EPA 300/300.1	Extracted:	Jul-06-16 14:00			
	Analyzed:	Jul-07-16 11:07			
	Units/RL:	mg/kg RL			
Chloride		54.4 10.8			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Knis Roah Kelsey Brooks Project Manager



### Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- **K** Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- **RL** Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

**DL** Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(602) 437-0330	
	(281) 240-4200 (214) 902 0300 (210) 509-3334 (432) 563-1800



**Project Name: Chevron Sites** 

Work Orders: 532368, 532368

o-Terphenyl

**Project ID:** 713.953.4841

**Lab Batch #:** 997171 Matrix: Soil **Sample:** 532368-001 / SMP Batch:

Units:	mg/kg	<b>Date Analyzed:</b> 06/28/16 20:53	SURROGATE RECOVERY STUDY					
	TPH I	By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chloroocta	ne		101	99.9	101	70-135		
o-Terphenyl			52.5	50.0	105	70-135		

**Lab Batch #:** 997171 Sample: 532368-002 / SMP Batch: 1 Matrix: Soil

**Units:** mg/kg Date Analyzed: 06/28/16 22:10 SURROGATE RECOVERY STUDY **Amount** True Control TPH By SW8015B Mod Found Limits Amount Recovery Flags [A] [B] %R %R [D] **Analytes** 1-Chlorooctane 96.5 99.9 97 70-135

46.9

50.0

94

70-135

Lab Batch #: 997171 Sample: 532368-003 / SMP Batch: Matrix: Soil

**Units:** mg/kg Date Analyzed: 06/28/16 22:35 SURROGATE RECOVERY STUDY

TPH By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.0	99.7	94	70-135	
o-Terphenyl	44.2	49.9	89	70-135	

**Lab Batch #:** 997171 Sample: 532368-004 / SMP Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 06/28/16 23:01	SURROGATE RECOVERY STUDY						
	ТРН 1	By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorood	ctane		84.2	100	84	70-135			
o-Terpheny	yl		41.0	50.0	82	70-135			

Lab Batch #: 997171 **Sample:** 532368-005 / SMP Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 06/28/16 23:27	SURROGATE RECOVERY STUDY					
	TPH 1	By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooct	ane		87.9	99.8	88	70-135		
o-Terphenyl			42.4	49.9	85	70-135		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



**Project Name: Chevron Sites** 

Work Orders: 532368, 532368 Project ID: 713.953.4841

**Lab Batch #:** 997171 **Sample:** 532368-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg Date Analyzed: 06/28/16 23:55 SURROGATE RECOVERY STUDY								
TPH By SW8015B Mod		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]			
1-Chlorooc	tane		92.0	99.8	92	70-135		
o-Terpheny	1		44.9	49.9	90	70-135		

Lab Batch #: 997171 Sample: 532368-007 / SMP Batch: 1 Matrix: Soil

**Units:** mg/kg Date Analyzed: 06/29/16 00:21 SURROGATE RECOVERY STUDY **Amount** True Control TPH By SW8015B Mod Found Limits Amount Recovery Flags [A] [B] %R %R **Analytes** [D] 1-Chlorooctane 99.7 86 70-135 86.0 o-Terphenyl 42.2 49.9 85 70-135

Units: mg/kg Date Analyzed: 06/29/16 00:48 SURROGATE RECOVERY STUDY

TPH By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.9	99.7	90	70-135	
o-Terphenyl	43.7	49.9	88	70-135	

Units:	mg/kg	<b>Date Analyzed:</b> 06/29/16 01:16	SURROGATE RECOVERY STUDY						
	TPH 1	By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooc	etane		92.3	99.7	93	70-135			
o-Terpheny	/1		45.0	49.9	90	70-135			

**Lab Batch #:** 997171 **Sample:** 532368-010 / SMP **Batch:** 1 **Matrix:** Soil

Units:	mg/kg	<b>Date Analyzed:</b> 06/29/16 01:42	SURROGATE RECOVERY STUDY					
	TPH 1	By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chloroocta	ane		85.9	99.9	86	70-135		
o-Terphenyl			41.6	50.0	83	70-135		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



T T-- 24 -- -

## Form 2 - Surrogate Recoveries

**Project Name: Chevron Sites** 

Work Orders: 532368, 532368 Project ID: 713.953.4841

Data Amalamada 06/20/16 02:25

**Lab Batch #:** 997171 **Sample:** 532368-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg Date Analyzed: 06/29/16 02:35 SURROGATE RECOVERY STUDY								
	ТРН В	y SW8015B Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
		Analytes			[D]			
1-Chloroocta	ine		92.8	99.8	93	70-135		
o-Terphenyl			45.9	49.9	92	70-135		

**Units:** mg/kg Date Analyzed: 06/29/16 02:59 SURROGATE RECOVERY STUDY **Amount** True Control TPH By SW8015B Mod Found Limits Amount Recovery Flags [A] [B] %R %R **Analytes** [D] 1-Chlorooctane 99.9 99.9 100 70-135 o-Terphenyl 50.1 50.0 100 70-135

Units: mg/kg Date Analyzed: 06/29/16 03:25 SURROGATE RECOVERY STUDY

TPH By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.4	99.9	96	70-135	
o-Terphenyl	48.3	50.0	97	70-135	

Units:	mg/kg	<b>Date Analyzed:</b> 06/29/16 03:51	SURROGATE RECOVERY STUDY						
	TPH 1	By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooc	etane		94.5	99.7	95	70-135			
o-Terpheny	/1		46.7	49.9	94	70-135			

Units:	mg/kg	<b>Date Analyzed:</b> 06/29/16 04:17	SURROGATE RECOVERY STUDY					
	TPH ]	By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chloroocta	ane		101	100	101	70-135		
o-Terphenyl			49.6	50.0	99	70-135		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



**Project Name: Chevron Sites** 

Work Orders: 532368, 532368

**Project ID:** 713.953.4841

**Lab Batch #:** 997171 Matrix: Soil **Sample:** 532368-016 / SMP Batch: 1

Units:	mg/kg	<b>Date Analyzed:</b> 06/29/16 04:44	SURROGATE RECOVERY STUDY						
	TPH 1	By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chloroocta	ine		97.7	99.8	98	70-135			
o-Terphenyl			48.7	49.9	98	70-135			

**Lab Batch #:** 997250 Sample: 532368-021 / SMP Batch: 1 Matrix: Soil

Units:	Juits: mg/kg Date Analyzed: 06/29/16 15:39 SURROGATE RECOVERY STUDY								
	TPH 1	By SW8015B Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1-Chlorooc	ctane		92.0	99.7	92	70-135			
o-Terpheny	v1		46.1	49 9	92	70-135			

Sample: 532368-022 / SMP Lab Batch #: 997250 Batch: 1 Matrix: Soil

**Units:** Date Analyzed: 06/29/16 16:59 mg/kg SURROGATE RECOVERY STUDY

TPH By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.6	99.8	92	70-135	
o-Terphenyl	45.7	49.9	92	70-135	

**Lab Batch #:** 997250 Sample: 532368-023 / SMP Batch: 1 Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 06/29/16 17:26	SURROGATE RECOVERY STUDY						
	TPH 1	By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooc	tane		92.4	99.7	93	70-135			
o-Terpheny	/1		44.7	49.9	90	70-135			

Batch: **Lab Batch #:** 997250 Sample: 532368-024 / SMP Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 06/29/16 17:53	SURROGATE RECOVERY STUDY						
	TPH 1	By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooct	ane		94.9	99.9	95	70-135			
o-Terpheny	1		47.1	50.0	94	70-135			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



**Project Name: Chevron Sites** 

Work Orders: 532368, 532368

**Project ID:** 713.953.4841

**Lab Batch #:** 997171 **Sample:** 710455-1-BLK / BLK

Matrix: Solid Batch: 1

Units:	mg/kg	<b>Date Analyzed:</b> 06/28/16 19:37	SURROGATE RECOVERY STUDY					
	TPH 1	By SW8015B Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
		Analytes			[D]			
1-Chloroocta	ane		103	100	103	70-135		
o-Terphenyl			51.6	50.0	103	70-135		

**Lab Batch #:** 997250 **Sample:** 710500-1-BLK / BLK Batch: 1 Matrix: Solid

Units:	mits: mg/kg Date Analyzed: 06/29/16 14:19 SURROGATE RECOVERY STUDY								
	TPH I	By SW8015B Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]				
1-Chlorooc	ctane		103	100	103	70-135			
o-Ternhens	71		52.2	50.0	104	70 135			

Sample: 710455-1-BKS / BKS **Lab Batch #:** 997171 Batch: 1 Matrix: Solid

**Units:** Date Analyzed: 06/28/16 20:02 mg/kg SURROGATE RECOVERY STUDY

TPH By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	56.5	50.0	113	70-135	

**Lab Batch #:** 997250 **Sample:** 710500-1-BKS / BKS Batch: 1 Matrix: Solid

Units:	mg/kg	<b>Date Analyzed:</b> 06/29/16 14:45	SURROGATE RECOVERY STUDY						
	TPH 1	By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooc	tane		124	100	124	70-135			
o-Terpheny	1		58.7	50.0	117	70-135			

**Lab Batch #:** 997171 **Sample:** 710455-1-BSD / BSD Batch: Matrix: Solid

Units:	mg/kg	<b>Date Analyzed:</b> 06/28/16 20:27	SURROGATE RECOVERY STUDY						
	TPH 1	By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chloroocta	ane		121	100	121	70-135			
o-Terphenyl			55.3	50.0	111	70-135			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



**Project Name: Chevron Sites** 

Work Orders: 532368, 532368

**Sample:** 710500-1-BSD / BSD

**Project ID:** 713.953.4841

**Lab Batch #:** 997250

Matrix: Solid Batch: 1

Units:	mg/kg	<b>Date Analyzed:</b> 06/29/16 15:12	SURROGATE RECOVERY STUDY					
	TPH ]	By SW8015B Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
		Analytes			[D]			
1-Chlorooct	ane		130	100	130	70-135		
o-Terphenyl			59.2	50.0	118	70-135		

**Lab Batch #:** 997171 **Sample:** 532368-001 S / MS Batch: 1 Matrix: Soil

**Units:** mg/kg Date Analyzed: 06/28/16 21:19 SURROGATE RECOVERY STUDY

TPH By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.9	115	70-135	
o-Terphenyl	51.1	50.0	102	70-135	

**Lab Batch #:** 997250 Sample: 532368-021 S / MS Batch: Matrix: Soil

**Units:** mg/kg Date Analyzed: 06/29/16 16:05 SURROGATE RECOVERY STUDY

TPH By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.9	110	70-135	
o-Terphenyl	45.1	50.0	90	70-135	

**Lab Batch #:** 997171 **Sample:** 532368-001 SD / MSD Batch: Matrix: Soil

Units:	<b>Inits:</b> mg/kg <b>Date Analyzed:</b> 06/28/16 21:45			SURROGATE RECOVERY STUDY							
	TPH 1	By SW8015B Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
		Analytes			[D]						
1-Chlorooc	tane		123	99.8	123	70-135					
o-Terpheny	1		54.4	49.9	109	70-135					

Lab Batch #: 997250 Sample: 532368-021 SD / MSD Batch: Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 06/29/16 16:32	SURROGATE RECOVERY STUDY							
	TPH 1	By SW8015B Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chloroocta	ane		109	99.7	109	70-135				
o-Terphenyl	:		46.1	49.9	92	70-135				

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



#### **BS / BSD Recoveries**



**Project Name: Chevron Sites** 

Work Order #: 532368, 532368 Project ID: 713.953.4841

Analyst: MNR Date Prepared: 07/06/2016 Date Analyzed: 07/06/2016

**Lab Batch ID:** 997612 **Sample:** 710654-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<10.0	250	236	94	250	228	91	3	90-110	20	

**Analyst:** MNR **Date Prepared:** 07/06/2016 **Date Analyzed:** 07/07/2016

Lab Batch ID: 997641 Sample: 710669-1-BKS Batch #: 1 Matrix: Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<10.0	250	231	92	250	233	93	1	90-110	20	

Analyst: MNR Date Prepared: 07/18/2016 Date Analyzed: 07/18/2016

Lab Batch ID: 998310 Sample: 711075-1-BKS Batch #: 1 Matrix: Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<10.0	250	246	98	250	250	100	2	90-110	20	

Relative Percent Difference RPD = 200\*|(C-F)/(C+F)|Blank Spike Recovery [D] = 100\*(C)/[B]Blank Spike Duplicate Recovery [G] = 100\*(F)/[E]All results are based on MDL and Validated for QC Purposes



mg/kg

**Units:** 

#### **BS / BSD Recoveries**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY



**Project Name: Chevron Sites** 

Work Order #: 532368, 532368 Project ID: 713.953.4841

Analyst: MNR Date Prepared: 07/20/2016 Date Analyzed: 07/20/2016

Lab Batch ID:998464Sample:711178-1-BKSBatch #:1Matrix:Solid

		DESIGNATION AND THE DESIGNATION AND STORY									
Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Chloride	<10.0	250	257	103	250	268	107	4	90-110	20	

**Analyst:** ARM **Date Prepared:** 06/28/2016 **Date Analyzed:** 06/28/2016

Lab Batch ID: 997171 Sample: 710455-1-BKS Batch #: 1 Matrix: Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015B Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	918	92	1000	899	90	2	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	965	97	1000	963	96	0	70-135	35	

**Analyst:** ARM **Date Prepared:** 06/29/2016 **Date Analyzed:** 06/29/2016

Lab Batch ID: 997250 Sample: 710500-1-BKS Batch #: 1 Matrix: Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	991	99	1000	1040	104	5	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	1100	110	1000	1080	108	2	70-135	35	

Relative Percent Difference RPD = 200\*|(C-F)/(C+F)|Blank Spike Recovery [D] = 100\*(C)/[B]Blank Spike Duplicate Recovery [G] = 100\*(F)/[E]All results are based on MDL and Validated for QC Purposes



#### Form 3 - MS Recoveries

**Project Name: Chevron Sites** 



Work Order #: 532368 Lab Batch #: 997612

**Date Prepared:** 07/06/2016

Project ID: 713.953.4841

**Date Analyzed:** 07/07/2016 **QC- Sample ID:** 532368-009 S

Batch #:

Analyst: MNR

Reporting Units: mg/kg

Matrix: Soil MATRIX / MATRIX SPIKE RECOVERY STUDY

	MAIRIA / MAIRIA SPIRE RECOVERT STUDI						
Inorganic Anions by EPA 300  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag	
Chloride	441	261	635	74	80-120	X	

Lab Batch #: 997612

**Date Analyzed:** 07/06/2016 **QC- Sample ID:** 532437-015 S

**Date Prepared:** 07/06/2016

Analyst: MNR

Reporting Units: mg/kg

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY								
Inorganic Anions by EPA 300  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag			
Chloride	529	1250	1620	87	80-120				

Lab Batch #: 997641

**Date Analyzed:** 07/07/2016

**Date Prepared:** 07/06/2016

Analyst: MNR

**QC- Sample ID:** 532368-022 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATRIX	/ MATRIX SPIKE REC	COVERY STUDY
Inaugania Aniona by EDA 200	Parent	Sniked Sample	Control

	Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
	Analytes	[A]	[B]				
(	Chloride	<10.8	270	231	86	80-120	

Lab Batch #: 997641

**Date Analyzed:** 07/07/2016 **QC- Sample ID:** 532413-005 S

**Date Prepared:** 07/06/2016

Analyst: MNR

Batch #:

Matrix: Soil

Reporting Units: mg/kg

ts: mg/kg	MATI	RIX / MA	TRIX SPIKE	RECOV	VERY STU	DY
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag

[A] [B] **Analytes** Chloride 2150 2500 4800 106 80-120

Matrix Spike Percent Recovery [D] = 100\*(C-A)/B Relative Percent Difference [E] = 200\*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



## Form 3 - MS Recoveries

**Project Name: Chevron Sites** 



**Work Order #:** 532368 Lab Batch #: 998310

**Date Prepared:** 07/18/2016

**Project ID:** 713.953.4841

**Date Analyzed:** 07/18/2016 **QC- Sample ID:** 532328-017 S

Analyst: MNR

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATI	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	28.7	250	258	92	80-120	

**Date Prepared:** 07/18/2016

Batch #:

Lab Batch #: 998310

**Date Analyzed:** 07/18/2016 **QC- Sample ID:** 533521-001 S Analyst: MNR

Matrix: Soil

Reporting Units: mg/kg

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY											
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag						
Analytes	[A]	[B]										
Chloride	<10.0	250	274	110	80-120							

Matrix Spike Percent Recovery [D] = 100\*(C-A)/B Relative Percent Difference [E] = 200\*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



#### Form 3 - MS / MSD Recoveries



Page 83 of 273

**Project Name: Chevron Sites** 

Work Order #: 532368 **Project ID:** 713.953.4841

Lab Batch ID:

998464

**QC- Sample ID:** 533505-007 S

Batch #:

Matrix: Soil

Date Analyzed:

07/20/2016

**Date Prepared:** 07/20/2016

Analyst: MNR

**Reporting Units:** 

mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Timing tell	L3	[10]		ردا	[12]		[0]				
Chloride	717	1250	2040	106	1250	2010	103	1	80-120	20	

997171 Lab Batch ID:

**QC- Sample ID:** 532368-001 S

Matrix: Soil

**Date Analyzed:** 

06/28/2016

**Date Prepared:** 06/28/2016

Analyst: ARM

Batch #:

**Reporting Units:** 

mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

1

TPH By SW8015B Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.9	1060	904	85	1060	1090	103	19	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.9	1060	977	92	1060	1080	102	10	70-135	35	

Lab Batch ID:

997250

**QC- Sample ID:** 532368-021 S

Batch #:

Matrix: Soil

Date Analyzed:

06/29/2016

**Date Prepared:** 06/29/2016

Analyst: ARM

**Reporting Units:** 

mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015B Mod	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[0]	[D]	[E]	Result [1]	[G]	70	/ <b>UK</b>	/VKI D	
C6-C10 Gasoline Range Hydrocarbons	<15.6	1040	887	85	1040	880	85	1	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.6	1040	1010	97	1040	1010	97	0	70-135	35	

Matrix Spike Percent Recovery [D] = 100\*(C-A)/B Relative Percent Difference RPD = 200\*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

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Final 1.000



# (3:14 AM Sample Duplicate Recovery



**Project Name: Chevron Sites** 

**Work Order #:** 532368

**Lab Batch #:** 997612 **Project ID:** 713.953.4841

 Date Analyzed:
 07/07/2016 07:37
 Date Prepared:
 07/06/2016
 Analyst: MNR

 QC- Sample ID:
 532368-009 D
 Batch #:
 1
 Matrix:
 Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY Reporting Units: mg/kg Sample Control **Inorganic Anions by EPA 300/300.1** Parent Sample **Duplicate RPD** Limits Result Flag Result %RPD [A] [B] Analyte Chloride 441 440 20

**Lab Batch #:** 997612

 Date Analyzed:
 07/06/2016 18:51
 Date Prepared:
 07/06/2016
 Analyst: MNR

 QC- Sample ID:
 532437-015 D
 Batch #:
 1
 Matrix:
 Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY Reporting Units: mg/kg Parent Sample Sample Control **Inorganic Anions by EPA 300/300.1 RPD Duplicate** Limits Result Flag Result %RPD [A] [B] Analyte 529 502 20 Chloride

**Lab Batch #:** 997641

 Date Analyzed:
 07/07/2016 10:05
 Date Prepared:
 07/06/2016
 Analyst: MNR

 QC- Sample ID:
 532368-022 D
 Batch #:
 1
 Matrix:
 Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY Reporting Units: mg/kg Sample Control Parent Sample **Inorganic Anions by EPA 300/300.1 Duplicate** RPD Limits Result Flag Result %RPD [A] [B] **Analyte** Chloride <10.8 U <10.8 0 20

**Lab Batch #:** 997641

 Date Analyzed:
 07/07/2016 11:54
 Date Prepared:
 07/06/2016
 Analyst: MNR

 OC- Sample ID:
 532413-005 D
 Batch #:
 1
 Matrix:
 Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY Reporting Units: mg/kg **Inorganic Anions by EPA 300/300.1** Parent Sample Sample Control **RPD Duplicate** Limits Result Flag Result %RPD [A] [B] Analyte 2150 2280 Chloride 6 20

Spike Relative Difference RPD 200 \* | (B-A)/(B+A) | All Results are based on MDL and validated for QC purposes. BRL - Below Reporting Limit



# (3:14 AM Sample Duplicate Recovery



**Project Name: Chevron Sites** 

**Work Order #:** 532368

**Lab Batch #:** 998310 **Project ID:** 713.953.4841

 Date Analyzed:
 07/18/2016 20:57
 Date Prepared:
 07/18/2016
 Analyst: MNR

 QC- Sample ID:
 532328-017 D
 Batch #:
 1
 Matrix:
 Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY Reporting Units: mg/kg Sample Control **Inorganic Anions by EPA 300/300.1** Parent Sample **Duplicate** RPD Result Limits Flag Result %RPD [A] [B] **Analyte** Chloride 28.7 25.5 12 20

Lab Batch #: 998310

 Date Analyzed:
 07/18/2016 19:08
 Date Prepared:
 07/18/2016
 Analyst: MNR

 QC- Sample ID:
 533521-001 D
 Batch #:
 1
 Matrix:
 Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY Reporting Units: mg/kg **Inorganic Anions by EPA 300/300.1** Parent Sample Sample Control **RPD Duplicate** Limits Result Flag Result %RPD [A] [B] Analyte <10.0 <10.0 U Chloride 20

**Lab Batch #:** 997489

 Date Analyzed:
 07/01/2016 17:05
 Date Prepared:
 07/01/2016
 Analyst:
 WRU

 QC- Sample ID:
 532368-001 D
 Batch #:
 1
 Matrix:
 Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY **Reporting Units: %** Sample Control Parent Sample **Percent Moisture Duplicate** RPD Limits Result Flag Result %RPD [A] [B] **Analyte** Percent Moisture 5.73 5.48 20

**Lab Batch #:** 997489

 Date Analyzed:
 07/01/2016 17:05
 Date Prepared:
 07/01/2016
 Analyst:
 WRU

 QC- Sample ID:
 532368-011 D
 Batch #:
 1
 Matrix:
 Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY Reporting Units: % **Percent Moisture** Sample Control Parent Sample **RPD Duplicate** Limits Result Flag Result %RPD [A] [B] Analyte Percent Moisture 3.89 3.66 6 20

Spike Relative Difference RPD 200 \* | (B-A)/(B+A) | All Results are based on MDL and validated for QC purposes. BRL - Below Reporting Limit

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Final 1.000



# 3:14 AM Sample Duplicate Recovery



**Project Name: Chevron Sites** 

**Work Order #:** 532368

**Lab Batch #:** 997493 **Project ID:** 713.953.4841

 Date Analyzed:
 07/01/2016 17:05
 Date Prepared:
 07/01/2016
 Analyst:
 WRU

 QC- Sample ID:
 532368-021 D
 Batch #:
 1
 Matrix:
 Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY **Reporting Units: %** Sample Control **Percent Moisture** Parent Sample RPD Duplicate Limits Result Flag Result %RPD [A] [B] **Analyte** Percent Moisture 3.84 3.95

**Lab Batch #:** 997530

 Date Analyzed:
 07/05/2016 11:48
 Date Prepared:
 07/05/2016
 Analyst: WRU

 QC- Sample ID:
 532585-001 D
 Batch #:
 1
 Matrix:
 Soil

Reporting Units: SU	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Soil pH by EPA 9045C  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
рН	7.78	7.77	0	20	

Spike Relative Difference RPD 200 \* | (B-A)/(B+A) | All Results are based on MDL and validated for QC purposes. BRL - Below Reporting Limit



## **XENCO Laboratories** Prelogin/Nonconformance Report- Sample Log-In



Client: ARCADIS

Work Order #: 532368

Date/ Time Received: 06/25/2016 10:30:00 AM

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

Temperature Measuring device used: R8

Sample Receipt Checklis	t	Comments
#1 *Temperature of cooler(s)?	4.5	
#2 *Shipping container in good condition?	N/A	
#3 *Samples received on ice?	Yes	
#4 *Custody Seal present on shipping container/ cooler?	N/A	
#5 *Custody Seals intact on shipping container/ cooler?	N/A	
#6 Custody Seals intact on sample bottles?	N/A	
#7 *Custody Seals Signed and dated?	N/A	
#8 *Chain of Custody present?	Yes	
#9 Sample instructions complete on Chain of Custody?	Yes	
#10 Any missing/extra samples?	No	
#11 Chain of Custody signed when relinquished/ received?	Yes	
#12 Chain of Custody agrees with sample label(s)?	Yes	
#13 Container label(s) legible and intact?	Yes	
#14 Sample matrix/ properties agree with Chain of Custody?	Yes	
#15 Samples in proper container/ bottle?	Yes	
#16 Samples properly preserved?	Yes	
#17 Sample container(s) intact?	Yes	
#18 Sufficient sample amount for indicated test(s)?	Yes	
#19 All samples received within hold time?	Yes	
#20 Subcontract of sample(s)?	No	
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A	
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A	
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A	

* <b>Must be c</b> Analyst:	ompleted for after-hours de	livery of samples prior to placing i	n the refrigerator
Allalyst.	Checklist completed by:	Mary alexa Negron  Mary Negron	Date: <u>06/27/2016</u>
	Checklist reviewed by:	Mus froak Kelsey Brooks	Date: 06/28/2016

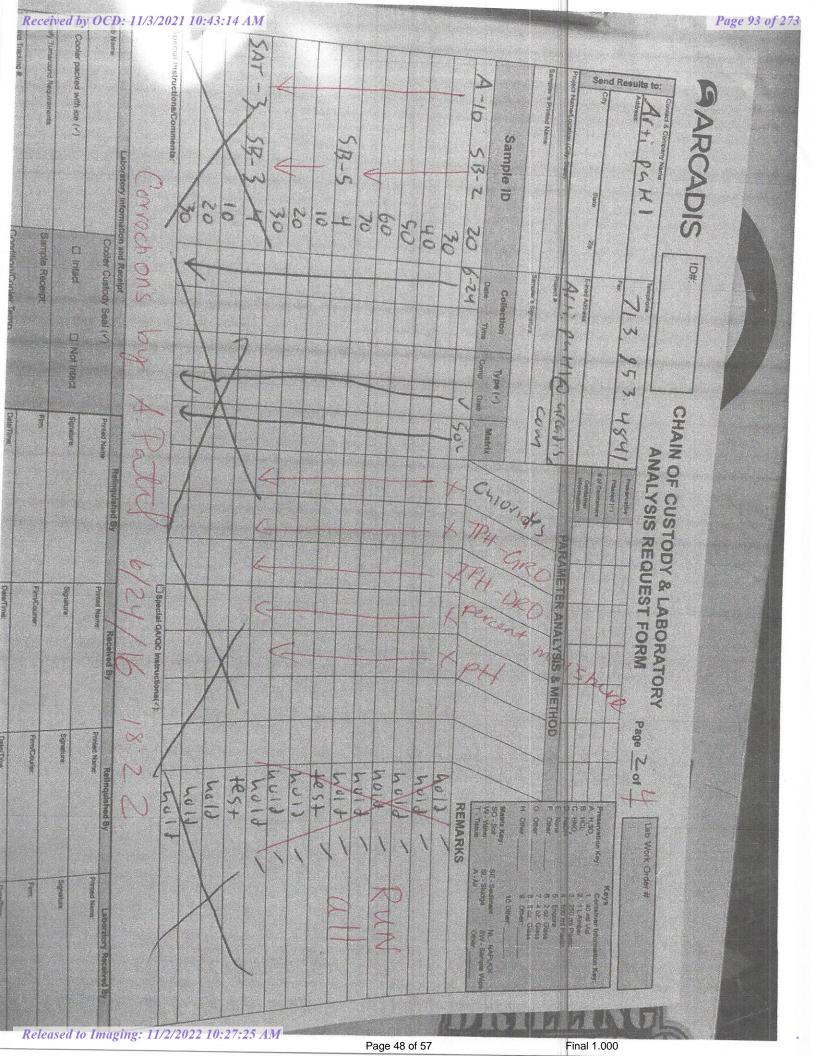
Recent 30828 CofC AR Form 08.27.2015	ived hipping Tracking #:	Decity Iumaround Requirements:	Cooler packed with ice (V)	11/3/	Cu ab Name:		9:43	Special Instructions/Comments:	35 ( 4	(0-7	200	20	1 141-46	h 14 do	36	20	0	SB-3 H	30	20	(0	H H-85 01-7	Sample ID		Sampler's Printed Name:	Project Name/I ocation (City State)	Send City State Zip	State of the	200	Contact & Company Name:	ARCADIS	e e
Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy	Condition/Cooler Temp: 43 C Date/Time: Date/Date/Date/Date/Date/Date/Date/Date/	Sample Receipt:  Firm/Courier:  Firm/Courier:	V Intact ☐ Not Intact Signature: Signature: Signature: Signature:	Printed Name: Printed Name: Printed Name	Relinquished By		☐ Special QA/QC Instructions(✓):	*														n coc	Date Time Comp Grab Matrix		can	TI, PAKIO arajis	E-mail Address:  DARAMETED ANALYSIS o	25.	128256451	2 17 1	CHAIN OF CUSTODY & LABORATORY  ANALYSIS REQUEST FORM  Page	4.7
PINK - Retained by Arcadis	20	Age of the second secon	Signature: Signature: agin	Printed Name:	Relinquished By Laboratory Received By 1/2/	2022			test hold 1	hoit.	4013	hord /	test .	2014	Pag	4010		To!	4011	4017	オンナ		T-Tissue A-Air Other:	9	Other: 8. 8 oz. Glass  Other: 9. Other:	Other: 6. 2 oz. Glass Other: 7. 4 oz. Glass	NaOH 4.	B. HCL 2. 1L Amber C. HNO, 3. 250 ml Plastic	eservation Key: Co	16	1 of Lab Work Order #	

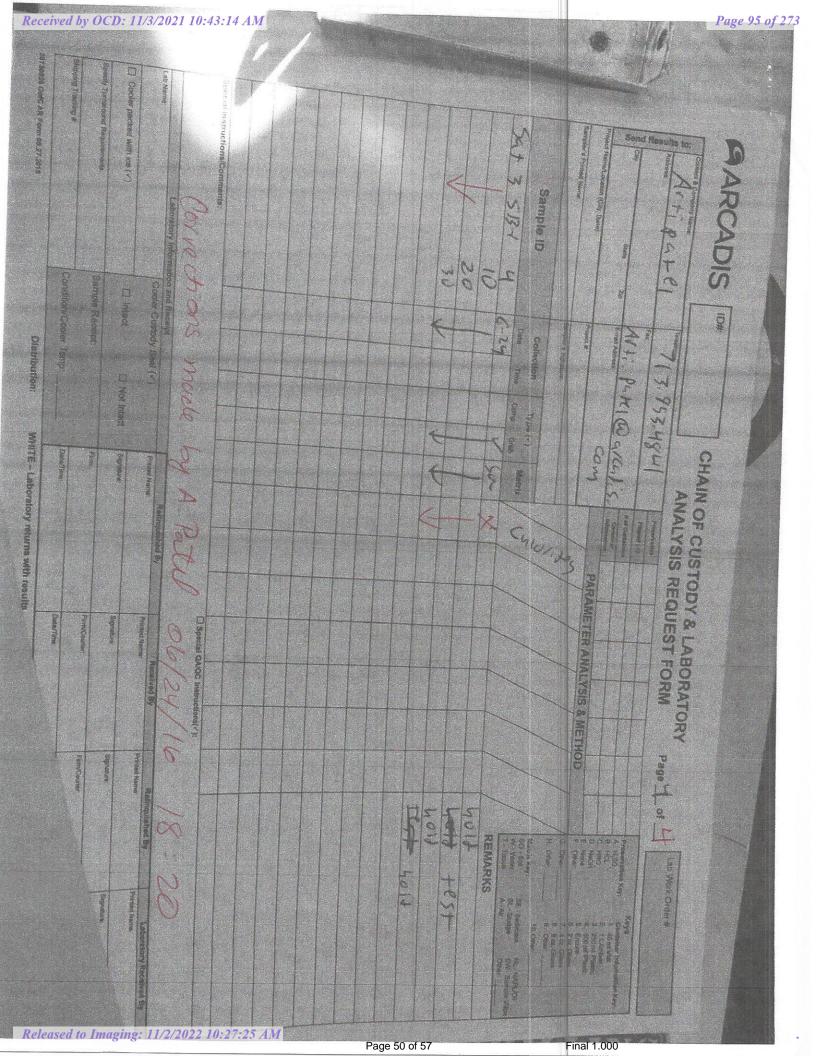
Rec	730826 CofC AR Form 08 27 2015	Shipping Tracking #	pecify Turnaround Requirements:	Cooler packed with ice (<)	3/24ab Name:	21 10	2:43 pecial instructions/Comments:	14	M		SAT-3				0						A-10	Sa	on processing value.	Sampler's Dinted Name:	S	end F	Resul	ts to:	Page 89 of 27.
č					Cooler Custo	i abotato i lafe un di	iments:		20	10	A 2 as	or	20	10	R-S 4	70	6/2	5	100	Or Or	53-2 20	Sample ID		State):		State Zip		Paki	ARCADIS ID#:
Cisui Danon:	Distribution	Condition/Cooler Town	I Not midde	□ Intact □ No+	Cooler Custody Seal (V)		اً ا	1		7											7-24 Time Comp	illection	Sampler's Signature:	Project #:	ALTO POHIO	E-mail Address:	Fax:	71395	
wHi i E − Laboratory returns with results	Configuration 1	Acs 1		282	Printed Name:		_	<	X											702		Matrix		- F	chan),s	Container Information	#	7. 4841 Preservative	CHAIN OF CUSTODY & ANALYSIS REQUE
returns with results	1700 Date/Time:	5	Signafule:	Wichs Supply	Relinquished By		Spee																OVI	des	PARAMETER A		ainers	ative	COL
YELLOW-L	0111100			2	22,935.7		☐ Special QA/QC Instructions(✓):																		ANALYSIS & METHOD				ABORATORY
Lab сору	Date∕Tīme:	Firm/Courier:	Signature:	Printed Name:	Relinquished By		/ hois	2017	hald	#84	hold	2012	いつい	+22+	hoid	7019	4100	toid	Pion	hoid	RE	T-	Mai	H G		u p o	B >	Pr	Page Z of
PINK – Retained by Arcadis	Date/Time:	Firm:	Signature:	Printed Name:	Laboratory Received By				\		\	\	1		1	1	1	1	, \	\	REMARKS	W-Water SL-Sludge T-Tissue A-Air			7.6.9	C. HNO <sub>3</sub> 3. 250 m D. NaOH 4. 500 m		~	Lab Work Order # 5 3 2 3 6
	eased	d to Ii	magi	ng:		/2022	2 10.	27:2	5 A	M				Pag	e 44	of 57				8		SW-Sample Wipe Other:		1	2 oz Glass 4 oz Glass	250 ml Plastic 500 ml Plastic	1. 40 ml Vial 2. 1 L Amber	er Information Key:	8

20730826 CofC AR Form 08,27,2015	ved property income at the second at	by Opening Initiation in requirements:	Decity Turnsmind Bowlin (ce (*)	Coolor policy with it	3/2 ab Name:	021 Laboratory Information and Receipt	<del>10:</del> 4	Special Instructions/Comments:	4 1		ž.	05.	20	io	78-4 7		200	7.00	200		000	1 1.1	5.1-2 CZ-2 H	Sample ID	THE PARTY OF THE P	Project Name/Location (City, State): Sampler's Printed Name:	5	City State Zip	Resi	Address:	Contact & Company Name:	in the state of th
oratory returns	Condition/Cooler Temp: DateTime: Dat	Sample Receipt:	Intract Not Intact Signature: Signature:		dy Seal (✓)  Printed Name:  Relinquished By		☐ Special QA															012	Time Comp Grab	Illection Type (✓) Matrix	Sampler's Signature:		AKAMETER	Information	34	71 7 753, 484) Filtered(1)		ANALYSIS REOLEGY FORM
<	Date/Time: Date/Time:	Firm/Courier: Firm:	Signature: Signature:	Printed Na	elinquished By		☐ Special QA/QC Instructions(✓):				test	Pon	NO I	-	-	がまれずし	1019	hold	4012	4012	hold	hold	REMARKS		Matrix Key:  SO - Soil SE - Sediment	H. Other: 8. 8	7.6	D. NaOH 4.	B. HCC 2. 1	_	2500	Page 3 of Lab Work Order #
Releas	sed	to In	nagir		Laboratory Received By	2/20	22 1	0:2	77:25	5 A.	M													SW - Sample Wipe Other:	t NL-NAPL/Oil Final	8 oz. Glass Other:	2 oz. Glass 4 oz. Glass	500 ml Plastic	2. 1 LAmber 3. 250 ml Plastic	ainer Information Key:	68	5

PINK – Retained by Arcadis	Lab copy	ilts YELLÓW – Lab copy	WHITE - Laboratory returns with results	Distribution: WHIT	2015 AR FORM 08:27:2015
Date/Time:	Date/Time:	Date/Time:	6/24 1760		0808 Osfo A I I
Firm:	Firm/Courier:	Firm/Obulned	AICCL:S	Tempo.	Doping Tracking #
Signature:	Signature:	oginatio.			ecify Tumaround Requirements:
Printed Name:	riined vame:	& Switz	Signature: Winds	☐ Intact ☐ Not Intact s	Cooler packed with ice (✓)
Laboratory Received By	Relinquished By	Received By	veiinquisne	dy Seal (✓)	
				on and Receipt	Laboratory Information and Receipt
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10. Other:	Matrix Key: SO - Soil		IONI	Sampler's Signature:	oampier's Printed Name:
	H. Other		des	Project #:	Project Name/Location (City, State):
1 io io		PARAMETER ANALYSIS & METHOD		Com	
	D. NaO		Container Information	E-mail Address:	end City State Zip
A. H. SO, 1. 40 ml Vial B. HCL 2. 1 L Amber	A. H.SO B. HCL		#		
	Preserv		Preservative Filtered ( </td <td>113,953,4841</td> <td>Attract Art Parte</td>	113,953,4841	Attract Art Parte
53288	Page of	<b>VEST FORM</b>	ANALYSIS REQUES	Telephone:	Contact & Company Name:
Lab Work Order #	<u>.</u>		CHAIN OF CUSTODY & L/		I AKOADIU

age 92 of 273						
	Send Results to.  ARCADIS  ARCADIS	10th 71.2 & 2.3 H	CHAIN OF CUSTODY & ANALYSIS REQUE	& LABORATORY UEST FORM Page	9	1.000
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	Cons	Condition/Cooler Temp	Danie/Trepr	Design	Date Cover	





Page 52 of 57

Final 1.000

Page 53 of 57

Final 1.000

PINK - Retained by Arca

10:4 AM  10:4 Peculial Instructions/Comments:  10: COD Turnstound Requirements.  207 Tacking #:  207 Tacking #:	Sample ID 513-1	Page 99 of 2  Contact & Company Name:  Project Name/Location (City, State):  Sampler's Printed Name:
Laboratory Information and Receipt  Cooler Custody Seal ( )  Intact  Sample Receipt:  Condition/Cooler Temp:  Distribution: W</td <td>Collection Type (/) Date Time Comp Grab C-24 C-24 TO TO Type (/)</td> <td>ID#:  Telephany 7, 757,48  Fax:  Aft. Pc, R C</td>	Collection Type (/) Date Time Comp Grab C-24 C-24 TO TO Type (/)	ID#:  Telephany 7, 757,48  Fax:  Aft. Pc, R C
Printed Name Relinquished By	Matrix You	CHAIN OF CUSTODY & LA ANALYSIS REQUEST  SUL Preservative Fillered (*)  # of Containers COM PARAMETER
Pecial QA/QC Instructions(*):  Received By  Received By  Printed Name  Signature  YELLOW - Lab copy		EST FORM Page
Relinquished By  Printed Name  Signalure:  Date/Time:	REMARKS  No. Soil W Water T Tissue REMARKS  A-Air  Other:  A-Air	Lab Work Order  Lab Work Order  S 3 3 3  Preservation Key: A. H.SO, B. H.SO, D. NaOH E. None F. Other: H. Other: H. Other:

PINK - Retained by Arcadis

Page 55 of 57

Final 1.000

Red was AR Form 00.27.2015	Laboratory Information and Receipt  Cooler Custody Seal (	structions/Commen		20	10	Sample ID		City State Zip  ct NameLocation (City, State)	ress.	contact & Company Name	ge 100
ratory returns with results	Relinquished By Pinted Name:   Value wichs	□ Special QA	+ + 130	(2,,)	V YOU VEW USUAT 3 (4 )	*	Sampler's Signature	direas.  Comp  PARAMETER ANALYSIS	T. PCHIE	Total Preservative Preservative	ODY & LA
PINK – Retained by Arcadis	Relinquished By Laboratory Received By Printed Name: Printed Name:	2/2022 10:27:25 AM	They hold	reit test	HUID	SE - Sed SL - Sluc A - All	7. 8. 9.	8. METHOD  C. HNO C. HN	Preservation Key: Container Information Key: A. H. SO, 1. 40 mt Vial	Page 1 of _ 53218	

PINK - Retained by Arcadis



#### **XENCO Laboratories** Prelogin/Nonconformance Report- Sample Log-In



Client: ARCADIS

Date/ Time Received: 06/25/2016 10:30:00 AM

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

Work Order #: 532368

Temperature Measuring device used: R8

	Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?		4.5
#2 *Shipping container in good condition?		N/A
#3 *Samples received on ice?		Yes
#4 *Custody Seal present on shipping cor	ntainer/ cooler?	N/A
#5 *Custody Seals intact on shipping cont	ainer/ cooler?	N/A
#6 Custody Seals intact on sample bottles		N/A
#7 *Custody Seals Signed and dated?		N/A
#8 *Chain of Custody present?		Yes
#9 Sample instructions complete on Chair	n of Custody?	Yes
#10 Any missing/extra samples?		No
#11 Chain of Custody signed when relinque	uished/ received?	Yes
#12 Chain of Custody agrees with sample	label(s)?	Yes
#13 Container label(s) legible and intact?		Yes
#14 Sample matrix/ properties agree with	Chain of Custody?	Yes
#15 Samples in proper container/ bottle?		Yes
#16 Samples properly preserved?		Yes
#17 Sample container(s) intact?		Yes
#18 Sufficient sample amount for indicate	d test(s)?	Yes
#19 All samples received within hold time	?	Yes
#20 Subcontract of sample(s)?		No
#21 VOC samples have zero headspace (	less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HN samples for the analysis of HEM or HEM-Sanalysts.		N/A
#23 >10 for all samples preserved with Na	aAsO2+NaOH, ZnAc+NaOH?	N/A
* Must be completed for after-hours deli Analyst:	very of samples prior to placing in	the refrigerator
Checklist completed by:	Mary Alexis Pegron  Mary Negron	Date: <u>06/27/2016</u>

Checklist reviewed by:

| March | Wash | Wash | Kelsey Brooks |

Date: 06/28/2016

## **Analytical Report 536864**

#### for

#### **Arcadis - Houston**

Project Manager: Jonathan Olsen
HES Transfer

11-OCT-16

Collected By: Client





#### 1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054) Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)

Xenco-San Antonio: Texas (T104704534)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



# **Table of Contents**

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Case Narrative	5
Certificate of Analysis Summary	6
Explanation of Qualifiers (Flags)	11
LCS / LCSD Recoveries	12
MS / MSD Recoveries	14
Chain of Custody	17
Sample Receipt Conformance Report	21





11-OCT-16

Project Manager: **Jonathan Olsen Arcadis - Houston**2929 Briarpark Dr., Ste 300
Houston, TX 77042

Reference: XENCO Report No(s): 536864

**HES Transfer** 

Project Address: Lovington NM

#### Jonathan Olsen:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 536864. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 536864 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Kelsey Brooks** 

Knus Koah

Project Manager

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## **Sample Cross Reference 536864**

# TNI 106 of 273

#### Arcadis - Houston, Houston, TX

**HES** Transfer

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
VGWUO40-12 (2')	S	09-13-16 08:50		536864-001
VGWUO40-12 (4')	S	09-13-16 08:55		536864-002
VGWUO40-17 (2')	S	09-13-16 10:30		536864-003
VGWUO40-17 (4')	S	09-13-16 10:34		536864-004
VGWUO40-16 (2')	S	09-13-16 09:58		536864-005
VGWUO40-16 (4')	S	09-13-16 10:00		536864-006
VGWUO40-16 (50')	S	09-13-16 10:48		536864-007
VGWUO40-19 (2')	S	09-13-16 11:46		536864-008
VGWUO40-19 (4')	S	09-13-16 11:50		536864-009
VGWUO40-18 (2')	S	09-13-16 12:14		536864-010
VGWUO40-18 (4')	S	09-13-16 12:16		536864-011
VGWUO40-18 (70')	S	09-13-16 13:23		536864-012
VGWU85-06 (2')	S	09-13-16 14:41		536864-013
VGWU85-06 (4')	S	09-13-16 14:42		536864-014
VGWU85-06 (10')	S	09-13-16 14:44		536864-016
VGWU85-06 (50')	S	09-13-16 15:27		536864-017
VGWU85-11 (2')	S	09-13-16 16:00		536864-018
VGWU85-11 (4')	S	09-13-16 16:01		536864-019
VGWUSAT3-03 (4')	S	09-14-16 09:49		536864-023
VGWUSAT3-03 (40')	S	09-14-16 10:40		536864-024
VGWUSAT3-05 (4')	S	09-14-16 11:11		536864-025
VGWUSAT3-05 (40')	S	09-14-16 11:55		536864-026
VGWU118-15 (2')	S	09-14-16 14:00		536864-027
VGWU118-15 (4')	S	09-14-16 14:01		536864-028
VGWU118-18 (2')	S	09-14-16 14:30		536864-031
VGWU118-18 (4')	S	09-14-16 14:31		536864-032
VGWU118-18 (7')	S	09-14-16 14:32		536864-033
VGWU118-18 (10')	S	09-14-16 14:33		536864-034
VGWU85-06 (7')	S	09-13-16 14:43		Not Analyzed
VGWU85-11 (7')	S	09-13-16 16:02		Not Analyzed
VGWU85-11 (10')	S	09-13-16 16:05		Not Analyzed
VGWU85-11 (11')	S	09-13-16 16:21		Not Analyzed
VGWU118-15 (7')	S	09-14-16 14:02		Not Analyzed
VGWU118-15 (10')	S	09-14-16 14:03		Not Analyzed



#### **CASE NARRATIVE**



Client Name: Arcadis - Houston Project Name: HES Transfer

Project ID: Report Date: 11-OCT-16
Work Order Number(s): 536864
Date Received: 09/15/2016

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



## Certificate of Analysis Summary 536864

Arcadis - Houston, Houston, TX

**Project Name: HES Transfer** 



**Project Id:** 

**Project Location:** 

**Contact:** Jonathan Olsen

Lovington NM

**Date Received in Lab:** Thu Sep-15-16 11:30 am

Report Date: 11-OCT-16 Project Manager: Kelsey Brooks

	Lab Id:	536864-0	01	536864-0	02	536864-0	03	536864-0	04	536864-0	05	536864-0	06
Analysis Requested	Field Id:	VGWUO40-	12 (2')	VGWUO40-	12 (4')	VGWUO40-	17 (2')	VGWUO40-	17 (4')	VGWUO40-	16 (2')	VGWUO40-	16 (4')
Anaiysis Kequesiea	Depth:												
	Matrix:	SOIL		SOIL									
	Sampled:	Sep-13-16 0	8:50	Sep-13-16 0	8:55	Sep-13-16 1	0:30	Sep-13-16 1	0:34	Sep-13-16 (	9:58	Sep-13-16 1	10:00
Inorganic Anions by EPA 300/300.1	<b>300/300.1</b> Extracted: Sep-20-16 08:00												
	Analyzed:	Sep-20-16 14:44		Sep-20-16 14:51		Sep-20-16 14:59		Sep-20-16 15:07		Sep-20-16 15:15		Sep-20-16 15:23	
	Units/RL:	mg/kg	RL	mg/kg	RL								
Chloride		86.6	10.0	54.0	10.0	52.8	10.0	34.8	10.0	329	10.0	881	10.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Knis Roah Kelsey Brooks



Arcadis - Houston, Houston, TX

**Project Name: HES Transfer** 



**Project Id:** 

**Project Location:** 

**Contact:** Jonathan Olsen

Lovington NM

**Date Received in Lab:** Thu Sep-15-16 11:30 am

**Report Date:** 11-OCT-16 **Project Manager:** Kelsey Brooks

	Lab Id:	536864-0	07	536864-0	08	536864-0	09	536864-0	10	536864-0	)11	536864-0	)12
Analysis Requested	Field Id:	VGWUO40-1	6 (50')	VGWUO40-	19 (2')	VGWUO40-1	9 (4')	VGWUO40-	18 (2')	VGWUO40-	18 (4')	VGWUO40-1	8 (70')
Anaiysis Kequesieu	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-13-16 1	Sep-13-16 10:48		1:46	Sep-13-16 1	1:50	Sep-13-16 1	2:14	Sep-13-16	12:16	Sep-13-16 1	13:23
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-30-16 (	Sep-30-16 09:00		Sep-21-16 10:00		0:00	Sep-21-16 1	0:00	Sep-21-16	10:00	Sep-30-16 0	9:00
	Analyzed:	Sep-30-16 1	Sep-30-16 13:18		2:10	Sep-21-16 1	2:33	Sep-21-16 1	2:41	Sep-21-16	12:49	Sep-30-16 1	13:26
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		16.4	5.00	54.2	10.0	59.6	10.0	65.3	10.0	318	10.0	142	5.00

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Kelsey Brooks
Project Manager



Arcadis - Houston, Houston, TX

**Project Name: HES Transfer** 



**Project Id: Contact:** 

**Project Location:** 

Jonathan Olsen Lovington NM

**Date Received in Lab:** Thu Sep-15-16 11:30 am

Report Date: 11-OCT-16

Project Manager: Kelsey Brooks

	Lab Id:	536864-0	13	536864-0	14	536864-0	16	536864-0	17	536864-0	018	536864-0	19
Analysis Requested	Field Id:	VGWU85-0	6 (2')	VGWU85-0	6 (4')	VGWU85-06	5 (10')	VGWU85-06	5 (50')	VGWU85-1	1 (2')	VGWU85-1	1 (4')
Anaiysis Kequesieu	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-13-16 1	Sep-13-16 14:41		14:42	Sep-13-16 1	4:44	Sep-13-16 1	5:27	Sep-13-16	16:00	Sep-13-16 1	6:01
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-21-16 1	Sep-21-16 10:00		Sep-21-16 10:00		9:00	Oct-10-16 0	9:35	Sep-21-16	10:00	Sep-21-16 1	0:00
	Analyzed:	Sep-21-16 1	Sep-21-16 12:57		Sep-21-16 17:46		3:47	Oct-10-16 1	9:19	Sep-21-16	13:28	Sep-21-16 1	3:36
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		6120	100	2540	50.0	3760	50.0	37.8	5.00	14.0	10.0	31.1	10.0

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Knis Roah Kelsey Brooks Project Manager



Arcadis - Houston, Houston, TX

**Project Name: HES Transfer** 



Project Id: Contact:

**Project Location:** 

Jonathan Olsen

Lovington NM

**Date Received in Lab:** Thu Sep-15-16 11:30 am **Report Date:** 11-OCT-16

Project Manager: Kelsey Brooks

	Lab Id:	536864-0	23	536864-0	24	536864-0	25	536864-0	26	536864-0	27	536864-02	28
Analysis Requested	Field Id:	VGWUSAT3-	03 (4')	VGWUSAT3-0	)3 (40')	VGWUSAT3-	05 (4')	VGWUSAT3-0	5 (40')	VGWU118-1	15 (2')	VGWU118-1	5 (4')
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled: Sep-14-16 09:49		Sep-14-16 1	0:40	Sep-14-16 1	1:11	Sep-14-16 1	1:55	Sep-14-16 1	4:00	Sep-14-16 1	4:01	
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-21-16 10:00		Sep-30-16 0	9:00	Sep-30-16 0	9:00	Oct-10-16 0	9:35	Sep-21-16 1	0:00	Sep-21-16 1	0:00
	Analyzed: Sep-21-16		3:44	Sep-30-16 1	3:54	Sep-30-16 1	4:01	Oct-10-16 1	9:26	Sep-21-16 1	3:51	Sep-21-16 1	3:59
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		454	10.0	12.0	5.00	943	5.00	ND	5.00	18.5	10.0	ND	10.0

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Kelsey Brooks
Project Manager



Arcadis - Houston, Houston, TX

**Project Name: HES Transfer** 



Project Id: Contact:

**Project Location:** 

Jonathan Olsen

Lovington NM

**Date Received in Lab:** Thu Sep-15-16 11:30 am

Report Date: 11-OCT-16

Project Manager: Kelsey Brooks

	Lab Id:	536864-03	31	536864-0	32	536864-03	33	536864-0	34		
Analysis Requested	Field Id:	VGWU118-1	8 (2')	VGWU118-1	8 (4')	VGWU118-1	8 (7')	VGWU118-1	8 (10')		
Anaiysis Requesieu	Depth:										
	Matrix:	SOIL		SOIL		SOIL		SOIL			
	Sampled:	Sep-14-16 1	Sep-14-16 14:30		Sep-14-16 14:31		4:32	Sep-14-16 1	4:33		
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-21-16 1	Sep-21-16 10:00		Sep-21-16 10:00		9:00	Oct-10-16 0	9:35		
	Analyzed:	Sep-21-16 1	4:23	Sep-21-16 1	4:46	Sep-30-16 1	4:08	Oct-10-16 1	9:33		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		91.4	10.0	355	10.0	307	5.00	41.3	5.00		

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Kelsey Brooks
Project Manager



# **Flagging Criteria**



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- **K** Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- **RL** Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

**DL** Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	
	(281) 240-4200 (214) 902 0300 (210) 509-3334 (432) 563-1800



mg/kg

**Units:** 

#### **BS / BSD Recoveries**

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY



**Project Name: HES Transfer** 

Work Order #: 536864 Project ID:

Analyst: MNR Date Prepared: 09/20/2016 Date Analyzed: 09/20/2016

 Lab Batch ID: 3000344
 Sample: 713949-1-BKS
 Batch #: 1
 Matrix: Solid

				JI 11111 / 1							
Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Chloride	<10.0	250	250	100	250	257	103	3	90-110	20	

Analyst: MNR Date Prepared: 09/21/2016 Date Analyzed: 09/21/2016

**Lab Batch ID:** 3000445 **Sample:** 713999-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Chloride	<10.0	250	246	98	250	250	100	2	90-110	20	

Analyst: MNR Date Prepared: 09/30/2016 Date Analyzed: 09/30/2016

 Lab Batch ID: 3001120
 Sample: 714399-1-BKS
 Batch #: 1
 Matrix: Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	< 5.00	250	233	93	250	234	94	0	90-110	20	

Relative Percent Difference RPD = 200\*|(C-F)/(C+F)|Blank Spike Recovery [D] = 100\*(C)/[B]Blank Spike Duplicate Recovery [G] = 100\*(F)/[E]All results are based on MDL and Validated for QC Purposes



## **BS / BSD Recoveries**



**Project Name: HES Transfer** 

Work Order #: 536864 Project ID:

 Analyst:
 MNR
 Date Prepared: 10/10/2016
 Date Analyzed: 10/10/2016

Lab Batch ID: 3001741Sample: 714723-1-BKSBatch #: 1Matrix: Solid

Un	its: mg/kg		BLAN	K/BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUI	ΟY	
	Inorganic Anions by EPA 300/300.1	Blank Spike Blank Spike Spike Spike Spike Spike Dup. RPD Limits Flag  [A] Result %R Duplicate %R % %R %RPD  [B] [C] [D] [F] Result [F] [C]										
	Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
	Chloride	<5.00	250	250	100	250	262	105	5	90-110	20	

Relative Percent Difference RPD = 200\*|(C-F)/(C+F)| Blank Spike Recovery [D] = 100\*(C)/[B] Blank Spike Duplicate Recovery [G] = 100\*(F)/[E] All results are based on MDL and Validated for QC Purposes



#### Form 3 - MS / MSD Recoveries



Page 116 of 273

**Project Name: HES Transfer** 

**Work Order #:** 536864

536864 3000344

**QC- Sample ID:** 536602-002 S

Batch #:

Matrix: Soil

Matrix: Soil

**Project ID:** 

Lab Batch ID: Date Analyzed:

09/20/2016

**Date Prepared:** 09/20/2016

Analyst: MNR

**Reporting Units:** 

mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	2780	1250	4000	98	1250	4030	100	1	90-110	20	

**Lab Batch ID:** 3000344 **QC- Sample ID:** 536660-002 S **Batch #:** 1

Date Analyzed: 09/20/2016 Date Prepared: 09/20/2016 Analyst: MNR

**Reporting Units:** mg/kg

#### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1970	1250	3230	101	1250	3210	99	1	90-110	20	

**Lab Batch ID:** 3000445 **QC- Sample ID:** 536864-008 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/21/2016 Date Prepared: 09/21/2016 Analyst: MNR

Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample		RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride	54.2	250	298	98	250	294	96	1	90-110	20	

Matrix Spike Percent Recovery [D] = 100\*(C-A)/B Relative Percent Difference RPD = 200\*(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E



#### Form 3 - MS / MSD Recoveries



Page 117 of 273

**Project Name: HES Transfer** 

Work Order #:

536864 3000445

**QC- Sample ID:** 536864-028 S

Batch #:

Matrix: Soil

**Project ID:** 

Lab Batch ID: Date Analyzed:

09/21/2016

**Date Prepared:** 09/21/2016

Analyst: MNR

**Reporting Units:** 

mg/kg

#### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[0]	[D]	[E]	resurt [1]	[G]	,•	7014	/VICE D	
Chloride	<10.0	250	250	100	250	244	98	2	90-110	20	

Lab Batch ID:

3001120

**QC- Sample ID:** 536657-006 S

Batch #:

Matrix: Soil

**Date Analyzed:** 

09/30/2016

**Date Prepared:** 09/30/2016

Analyst: MNR

**Reporting Units:** 

mg/kg

#### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
J. J. T.				,	,		[4]				
Chloride	920	250	1160	96	250	1150	92	1	90-110	20	

Lab Batch ID:

3001120

**QC- Sample ID:** 537439-001 S

Batch #:

Matrix: Soil

**Date Analyzed:** 

09/30/2016

**Date Prepared:** 09/30/2016

Analyst: MNR

**Reporting Units:** 

mg/kg

#### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

1

Inorganic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Sample %R	Added	Duplicate Spiked Sample Result [F]	%R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]				
Chloride	4120	2500	6760	106	2500	6650	101	2	90-110	20	

Matrix Spike Percent Recovery [D] = 100\*(C-A)/B Relative Percent Difference RPD = 200\*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E



## Form 3 - MS / MSD Recoveries



Page 118 of 273

**Project Name: HES Transfer** 

Work Order #:

536864 3001741

**QC- Sample ID:** 538189-001 S

Batch #:

Matrix: Soil

**Project ID:** 

Lab Batch ID: Date Analyzed:

10/10/2016

**Date Prepared:** 10/10/2016

Analyst: MNR

**Reporting Units:** 

mg/kg

#### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1720	250	1980	104	250	1970	100	1	90-110	20	

3001741 Lab Batch ID: **QC- Sample ID:** 538316-006 S Batch #:

Date Analyzed: 10/10/2016 Analyst: MNR

Matrix: Soil

**Date Prepared:** 10/10/2016 **Reporting Units:** mg/kg

#### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	258	250	501	97	250	493	94	2	90-110	20	

Matrix Spike Percent Recovery [D] = 100\*(C-A)/B Relative Percent Difference RPD = 200\*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

CHAIN OF CUSTODY & LABORATORY

HES transfer sites Chevion PM Rab Speer

CADIS ID#

VDIS	IO#:	CHAIN	OF CUSTODY & LA NALYSIS REQUEST	BORATORY FORM	Page Lof 2 Bowork Order #
Sontact & Company Name: Arcadis	AIS Telephone:	424			3
-	- Fee	200	AN (%) bandle		A. H.SO. 1.40 m.Vall
2 2929 Briar Park Dr			Container		C. HNO. 3. 200 ml Pleate. D. NaOH 4. 500 ml Pleate.
City 1 L-	<del></del>	777 7010	-	PARAMETER ANALYSIS & METHOD	E None
Project Name Location (Chy State):	Project #:	Concanis	7		G. Other: 7: 4 oz. Glass H. Other: 9: Other: 6. 8 oz. Glass
Sappler's Phynod Name:	Samplor's Signapue:		Pinc		<b>⊑</b>
Sample ID	Collection Typ	Type (<) Matrix	7142		WWater SLSludge SWSample Wipo
V6WU040-12(2")	058 %	X SO	X		
VGWW040-12(4')	न्।अं। ४८५	···	×		, appendix
VGWU048-17(2)	1/14/16/1030	×	×		TO COMPANY OF THE PARTY OF THE
VGWU040-17(4)	413/16/1034	So X	<b>∀</b>		THE PROPERTY OF THE PROPERTY O
NGWUCHO-16(21)	9/13/16958	X 30	×		The state of the s
19WM04B-16(4')	0001 11/21/6	× S0	×		
NGWU040-110 (5x)	9/13/16 1048	SS X	人		Chet
VGWU040-19(2')	9/13/10 1146	X 50	×		
VGWN048-19(4')	OSII MEILE	$\frac{8}{\times}$	X		
NGWU040-18(2')	9/13/w1214	& & &	7		e de la companya de l
VGWM048-18(4')	9/13/1912110	XSO	×		The state of the s
172	9/13/10/1323	oS X	X		And
VGWAO40 856 EV	1				
VGWUSS - 06 (2')	1441	os x	×		
Standard TYT				L. Special (AVQC instructions(<):	
	Laboratory Information and Receipt		Refinquished By	No. 1 Received By	Relinquished By Laboratory Received By
Lab Name:	Cooler Custody Seal (<)	Monte Name:	phism Plan	Printed Name: Printed Oxfo	Printed year
Cooler packed with ice (<)	D Intect	☐ Not Intact Signatur	7. X	_	ure: Sufrature:
Specify Turnaround Requirements:	Sample Receipt:		44:0	FirmCourier	Courier: Fint C
Shipping Tracking #:	Condition/Cooler Temp:	Date	Datorins: 4/16 1600	Detertion (14/16 4:00 Datortime	The Description of the Control of th
20730828 CofC AR Form 08,27,2015	Distribution:		WHITE - Laboratory returns with results		opy PINK – Retained by Arcadis
·	とっていて	) * •			

Chevren PM- Pap Speer HES Transfer STAS

MARCADIS INTE		CHAIN	IN OF CUSTODY & LABORAT ANALYSIS REQUEST FORM	OF CUSTODY & LABORATORY VALYSIS REQUEST FORM	Page 2 of 2 Lat	Lab Work Order # 536964
Contact & Company Name:	Tolephone:	777			Preserval	Adon Keys
Innay han Usen		70	Filtered (3)		ĽŠ.	<b>]</b>
Section Sectio	τ χ				C B HCL	<b>N</b> 66
2 Kalo Brandarkis	f mail Exploses:		Information		D.	
the same of the sa	To a the second	Pavradis	PARAM	PARAMETER ANALYSIS & METHOD	H 6	92
Project Namer Location (City, State):	Poject #:		\ 0x\		H. Other.	
	Sampler's Signature		) ) ) / (		Matrix Key:	10. Other. SE - Sediment
Sample ID	Collection Type	Type (~) Matrix			W - Water	SL-Studge SW-Sample Wipe A-Air Other
	Date Time Comp	Grab	$\searrow$		/ REMARKS	RKS
VGW/185-00(4')	ગાત્રાષ્ટ્ર	× So	×			
VGW M85-010(71)	9/13/14 JUH3	X So	×		42A	
( @ )	ભાગાષ્ટ્રીયવવ	$\propto  S_{\mathcal{O}} $	×		CY ICA	
VENVISS -00 (50')	9/13/14 (527	S 7	×		TOLY.	
	9/13/16/1600	SX	×		4	E
(4')	9/13/14kg01	$\infty X$	×			
('7')	7/13/16/1602	OS X	×		Haro	
VGWM 85- 11 (18')	9/13/14/605	× 8	×		HOUD	
1 (401)	9/13/16 1621	X So	×		THOLD	
-03(41)	<i>ज्याव</i> ीष्वक्	V So	X			
VGWUSAT3-03(40)	9/14/14/040	× &	<b>×</b>		HOLD	
-	9/14/16   1111	× S	×		HOLD	
(40,)	9/14/14/155	× S0	<b>✓</b>		Hold	
	M14/18/1300	×	×			
Standard THT	1400			L Special Court instructions (* ):		
	Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	, Laboratory Received By
Lab Namo:	Cooler Custody Seal (V)	1044	Achies Phan	MCDESSIFTOR (GDD)	Printed Nam	Printed Parties COM OR
Cooler packed with ice (<)	M intract	□ Not Intact Sign		Conduction (CO)	Signature:	(Synature:
Specify Tumaround Requirements:	Sample Receipt:	) C	Arcadis		Firm/Counter:	"XC/UCO
Shipping Tracking #:	Condition/Cooler Temp:	<u>\$</u>	1/1/1/ (POO)	Descripce 4:00 profiles	Date/Time:	15/10/13X
20730828 CofC AR Form 08.27.2015	Distribution	WHIT	- Laboratory returns with results	,	YELLOW - Lab copy	PINK Retained by Arcadis

Lab Work Order # 53COU	fon Key: Coy: Coy: Coy: Coy: Coy: Coy: Coy: Co	her 6. 2 oz. Glass 7. 4 oz. Glass her 8. 8 oz. Glass her 9. Other	SO-Soil SE-Sediment NL-NAPLOII W-Water SL-Studge SW-Sample Wee T-Tissue A-Air Other.		a								Printed Why State of Manager State of Ma	Significant	Firm: MayCe	DINK - Retained by According
ORY Page 2 of 2	¶ ≺ ≪ ⇔ ⇔ o n	PARAMETER ANALYSIS & METHOD  G. Other H. Other	SG-508 SG-508 W-Weier T-Tissue	Got	HOLD		HOLD				☐ Special QA/QC Instructions(<):	. 1	Received By Relinquished By Physical Name;  Physical Name:	Ή,	Ś	1/16 4:60 permine
SPELY CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM	Filtered (*) NA s of Container Information	8-/	Matrix (5.5)							10.000	☐ Special		Printed Name:  Printed Name:  Printed Name:  Printed Name:		Firm	
Chevron PM Rob Spect DIS [10#: CHAIN C	713,953.48'		Collection Type (*) Date Time Comp Grab	10hl 9//hi/	4)14/161403	व्यामार्थित । यह	9/14/14/32					TAT	Laboratory information and Receipt  Cooler Custody Seal ( </th <th>To Intact D Not Intact</th> <th>ں ر</th> <th>- 2</th>	To Intact D Not Intact	ں ر	- 2
	SOUTH DINATHAN OLSON FILEDAIS AGGRESS.  SOUTH SO		Sample ID	VGWUII8-15(4')	(8) 51-811 MMS/	VGWV118-18(2")	VGWM118-18(7')	VC/WV (110 101 18)			Special instructions/Comments:	Standard TAT	Laboratory Infort	Cooler packed with ice (*)	Specify Tumaround Requirements:	Shipping Tracking #:





# XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Arcadis - Houston

Date/ Time Received: 09/15/2016 11:30:00 AM

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

Comments

Work Order #: 536864

Temperature Measuring device used: R8

	Sample Necelpt Checklist	Comments
#1 *Temperature of cooler(s)?		6.3
#2 *Shipping container in good condition	?	Yes
#3 *Samples received on ice?		Yes
#4 *Custody Seal present on shipping co	ontainer/ cooler?	Yes
#5 *Custody Seals intact on shipping con	ntainer/ cooler?	Yes
#6 Custody Seals intact on sample bottle	es?	Yes
#7 *Custody Seals Signed and dated?		Yes
#8 *Chain of Custody present?		Yes
#9 Sample instructions complete on Cha	nin of Custody?	Yes
#10 Any missing/extra samples?		No
#11 Chain of Custody signed when reline	quished/ received?	Yes
#12 Chain of Custody agrees with samp	le label(s)?	Yes
#13 Container label(s) legible and intact	?	Yes
#14 Sample matrix/ properties agree with	h Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	?	Yes
#16 Samples properly preserved?		Yes
#17 Sample container(s) intact?		Yes
#18 Sufficient sample amount for indicat	ed test(s)?	Yes
#19 All samples received within hold time	e?	Yes
#20 Subcontract of sample(s)?		N/A
#21 VOC samples have zero headspace	e (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HI samples for the analysis of HEM or HEM-		N/A
analysts.	Which are vermed by the	
#23 >10 for all samples preserved with N	NaAsO2+NaOH, ZnAc+NaOH?	N/A
* Must be completed for after-hours de	elivery of samples prior to placing in	the refrigerator
Analyst	PH Device/Lot#:	
Analyst:	TTT Device/Lot#.	
	lossion Weamer	
Checklist completed by:	JOSSICH FF	Date: 09/15/2016
Checklist completed by:  Checklist reviewed by:	Jessica Kramer	
Charlist reviewed how	N = M	
Checklist reviewed by:	Mm Hoah	Date: 09/16/2016
	Kelsey Brooks	

**Sample Receipt Checklist** 

Arcadis - Roseville, CA, Roseville, CA

**Project Name: SAT-3** 

TNI

**Project Id:** 

B0048616.SAT3

Contact: Brett Krehbiel

**Project Location:** 

Date Received in Lab: Thu Oct-25-18 11:35 am

Report Date: 26-OCT-18

Project Manager: Kelsey Brooks

	Lab Id:	603504-0	01	603504-0	02	603504-0	03	603504-0	04	603504-0	05	603504-0	006
Analysis Paguastad	Field Id:	VGWUSAT3-001	-W-18102	VGWUSAT3-005	-W-181023	VGWUSAT3-001	-S-181023	VGWUSAT3-005	-S-181023	VGWUSAT3-005	-N-181023	VGWUSAT3-001	-N-181023
Analysis Requested	Depth:	0.58- f		0.45- fi	t	0.60- ft		0.30- ft		0.25- ft	t	0.65- ft	t
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-23-18 1	2:58	Oct-23-18 1	2:45	Oct-23-18 1	4:55	Oct-23-18 1	2:50	Oct-23-18 1	3:57	Oct-23-18 1	17:04
Chloride by EPA 300	Extracted:	Oct-25-18	4:30	Oct-25-18 1	4:30	Oct-25-18 1	4:30	Oct-25-18 1	4:30	Oct-25-18 1	4:30	Oct-25-18 1	14:30
	Analyzed:	Oct-25-18	7:01	Oct-25-18 1	7:16	Oct-25-18 1	7:22	Oct-25-18 1	7:27	Oct-25-18 1	7:32	Oct-25-18 1	17:48
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		15.5	4.95	150	4.98	571	4.95	12.5	4.95	66.8	4.97	66.9	4.96
TPH By SW8015 Mod	Extracted:	Oct-25-18	6:00	Oct-25-18 1	6:00	Oct-25-18 1	6:00	Oct-25-18 1	6:00	Oct-25-18 1	6:00	Oct-25-18 1	16:00
	Analyzed:	Oct-25-18 2	21:23	Oct-25-18 2	2:21	Oct-25-18 2	2:40	Oct-25-18 2	2:59	Oct-25-18 2	23:18	Oct-25-18 2	23:37
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)	·	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<14.9	14.9

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent beest judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

Knus Koah

Arcadis - Roseville, CA, Roseville, CA

**Project Name: SAT-3** 

**Project Id: Contact:** 

**Project Location:** 

B0048616.SAT3

Brett Krehbiel

Date Received in Lab: Thu Oct-25-18 11:35 am

Report Date: 26-OCT-18

Project Manager: Kelsey Brooks

	1					1	1	1
	Lab Id:	603504-0	07	603504-00	)8			
Analysis Requested	Field Id:	VGWUSAT3-001	-E-181023	VGWUSAT3-005-	E-181023			
Anaiysis Requesieu	Depth:	0.60- ft	t	0.30- ft				
	Matrix:	SOIL		SOIL				
	Sampled:	Oct-23-18 1	4:36	Oct-23-18 1	2:40			
Chloride by EPA 300	Extracted:	Oct-25-18 1	14:30	Oct-25-18 1	4:30			
	Analyzed:	Oct-25-18 1	17:54	Oct-25-18 1	7:59			
	Units/RL:	mg/kg	RL	mg/kg	RL			
Chloride		87.9	5.00	<4.95	4.95			
TPH By SW8015 Mod	Extracted:	Oct-25-18 1	6:00	Oct-25-18 1	5:00			
	Analyzed:	Oct-25-18 2	23:56	Oct-26-18 0	0:15			
	Units/RL:	mg/kg	RL	mg/kg	RL			
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<14.9	14.9			
Diesel Range Organics (DRO)		<15.0	15.0	<14.9	14.9			
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<14.9	14.9			
Total TPH		<15.0	15.0	<14.9	14.9			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

Kelsey Brooks Project Manager

# **Analytical Report 603504**

for

Arcadis - Roseville, CA

Project Manager: Brett Krehbiel SAT-3

B0048616.SAT3

26-OCT-18

Collected By: Client



#### 1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)

Xenco-Lakeland: Florida (E84098)



26-OCT-18

Project Manager: **Brett Krehbiel Arcadis - Roseville, CA**101 Creekside Ridge
CT 200
Roseville, CA 95678

Reference: XENCO Report No(s): 603504

SAT-3

Project Address:

#### **Brett Krehbiel:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 603504. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 603504 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Kelsey Brooks** 

Knus Koah

Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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# Sample Cross Reference 603504



# Arcadis - Roseville, CA, Roseville, CA SAT-3

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
VGWUSAT3-001-W-181023	S	10-23-18 12:58	0.58 ft	603504-001
VGWUSAT3-005-W-181023	S	10-23-18 12:45	0.45 ft	603504-002
VGWUSAT3-001-S-181023	S	10-23-18 14:55	0.60 ft	603504-003
VGWUSAT3-005-S-181023	S	10-23-18 12:50	0.30 ft	603504-004
VGWUSAT3-005-N-181023	S	10-23-18 13:57	0.25 ft	603504-005
VGWUSAT3-001-N-181023	S	10-23-18 17:04	0.65 ft	603504-006
VGWUSAT3-001-E-181023	S	10-23-18 14:36	0.60 ft	603504-007
VGWUSAT3-005-E-181023	S	10-23-18 12:40	0.30 ft	603504-008

#### **CASE NARRATIVE**

Client Name: Arcadis - Roseville, CA

Project Name: SAT-3

Project ID: 80048616.SAT3 Report Date: 26-OCT-18

Work Order Number(s): 603504 Date Received: 10/25/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



## Arcadis - Roseville, CA, Roseville, CA

SAT-3

Sample Id: VGWUSAT3-001-W-181023 Matrix: Soil

Date Received:10.25.18 11.35

Lab Sample Id: 603504-001

Date Collected: 10.23.18 12.58

Sample Depth: 0.58 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: Analyst: CHE CHE

Date Prep:

% Moisture:

Seq Number: 3067615

10.25.18 14.30

Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	15.5	4.95	mg/kg	10.25.18 17.01		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech:

ARM

% Moisture:

ARM Analyst:

10.25.18 16.00 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	10.25.18 21.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	10.25.18 21.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	10.25.18 21.23	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	10.25.18 21.23	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	92	%	70-135	10.25.18 21.23		
o-Terphenyl		84-15-1	97	%	70-135	10.25.18 21.23		



## Arcadis - Roseville, CA, Roseville, CA

SAT-3

Sample Id: VGWUSAT3-005-W-181023

Matrix: Soil

Date Received:10.25.18 11.35

Lab Sample Id: 603504-002

Date Collected: 10.23.18 12.45

Sample Depth: 0.45 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

CHE

% Moisture:

Analyst: CHE

Date Prep:

10.25.18 14.30

Basis:

Wet Weight

Seq Number: 3067615

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	150	4.98	mg/kg	10.25.18 17.16		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech:

ARM

% Moisture:

Analyst: ARM

Seq Number: 3067717

Date Prep: 10.25.18 16.00

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	10.25.18 22.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	10.25.18 22.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	10.25.18 22.21	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	10.25.18 22.21	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	

Surrogate	Cas Number	Recovery	Units	Limits	Analysis Date	1
1-Chlorooctane	111-85-3	92	%	70-135	10.25.18 22.21	
o-Terphenyl	84-15-1	99	%	70-135	10.25.18 22.21	



## Arcadis - Roseville, CA, Roseville, CA

SAT-3

Sample Id: VGWUSAT3-001-S-181023

Matrix: Soil

Date Received:10.25.18 11.35

Lab Sample Id: 603504-003

Date Collected: 10.23.18 14.55

Sample Depth: 0.60 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

CHE

% Moisture:

Analyst: CHE

Date Prep:

10.25.18 14.30 Basis:

Wet Weight

Seq Number: 3067615

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	571	4.95	mg/kg	10.25.18 17.22		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech:

ARM

% Moisture:

Analyst: ARM

Date Prep: 10.25.18 16.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	10.25.18 22.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	10.25.18 22.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	10.25.18 22.40	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	10.25.18 22.40	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	90	%	70-135	10.25.18 22.40		
o-Terphenyl		84-15-1	94	%	70-135	10.25.18 22.40		



## Arcadis - Roseville, CA, Roseville, CA

SAT-3

Sample Id: VGWUSAT3-005-S-181023

Matrix: Soil

Date Received:10.25.18 11.35

Lab Sample Id: 603504-004

Date Collected: 10.23.18 12.50

Sample Depth: 0.30 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CI

CHE

% Moisture:

Analyst: CHE

Date Prep: 10.25.18 14.30

Basis:

Wet Weight

Seq Number: 3067615

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.5	4.95	mø/kø	10.25.18.17.27		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech:

ARM

% Moisture:

Analyst: ARM

Date Prep: 10.25.18 16.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	10.25.18 22.59	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	10.25.18 22.59	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	10.25.18 22.59	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	10.25.18 22.59	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	92	%	70-135	10.25.18 22.59		
o-Terphenyl		84-15-1	96	%	70-135	10.25.18 22.59		



#### Arcadis - Roseville, CA, Roseville, CA

SAT-3

Sample Id: VGWUSAT3-005-N-181023

Matrix: Soil

Date Received:10.25.18 11.35

Lab Sample Id: 603504-005

Date Collected: 10.23.18 13.57

Sample Depth: 0.25 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CI

Analyst:

CHE CHE % Moisture:

Date Prep: 10.25.18 14.30

Basis: Wet Weight

Seq Number: 3067615

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	66.8	4.97	mg/kg	10.25.18 17.32		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

ARM

% Moisture:

Analyst: ARM

Seq Number: 3067717

Tech:

Date Prep: 10.25.18 16.00

Basis: Wet Weight

Flag

Result Cas Number RL**Parameter** Units **Analysis Date** Flag Dil Gasoline Range Hydrocarbons (GRO) PHC610 10.25.18 23.18 U <15.0 15.0 mg/kg 1 Diesel Range Organics (DRO) C10C28DRO <15.0 15.0 mg/kg 10.25.18 23.18 U 1 Motor Oil Range Hydrocarbons (MRO) PHCG2835 <15.0 15.0 10.25.18 23.18 U mg/kg 1 Total TPH PHC635 <15.0 15.0 mg/kg 10.25.18 23.18 U 1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date
1-Chlorooctane	111-85-3	94	%	70-135	10.25.18 23.18
o-Terphenyl	84-15-1	98	%	70-135	10.25.18 23.18



1

#### Arcadis - Roseville, CA, Roseville, CA

SAT-3

10.25.18 14.30

Sample Id: VGWUSAT3-001-N-181023

Matrix: Soil

Date Received:10.25.18 11.35

Lab Sample Id: 603504-006

Date Collected: 10.23.18 17.04

Sample Depth: 0.65 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst:

Chloride

CHE

% Moisture: Basis:

mg/kg

oisture:

Wet Weight

Seq Number: 3067615

Parameter Cas Number Result RL Units Analysis Date Flag Dil

Date Prep:

66.9

16887-00-6

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

10.25.18 17.48

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 10.25.18 16.00

4.96

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9		mg/kg	10.25.18 23.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9		mg/kg	10.25.18 23.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9		mg/kg	10.25.18 23.37	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	10.25.18 23.37	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	89	%	70-135	10.25.18 23.37		
o-Terphenyl		84-15-1	94	%	70-135	10.25.18 23.37		



## Arcadis - Roseville, CA, Roseville, CA

SAT-3

Sample Id: VGWUSAT3-001-E-181023 Matrix: Soil

Date Received:10.25.18 11.35

Lab Sample Id: 603504-007

Date Collected: 10.23.18 14.36

Sample Depth: 0.60 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE % Moisture:

CHE Analyst:

Date Prep:

Basis: 10.25.18 14.30

Wet Weight

Seq Number: 3067615

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	87.9	5.00	mø/kø	10.25.18.17.54		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

ARMTech:

% Moisture:

ARM Analyst:

10.25.18 16.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	10.25.18 23.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	10.25.18 23.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	10.25.18 23.56	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	10.25.18 23.56	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	91	%	70-135	10.25.18 23.56		
o-Terphenyl		84-15-1	97	%	70-135	10.25.18 23.56		



## Arcadis - Roseville, CA, Roseville, CA

SAT-3

10.25.18 14.30

Sample Id: **VGWUSAT3-005-E-181023** 

Matrix: Soil

Date Received:10.25.18 11.35

Lab Sample Id: 603504-008

Date Collected: 10.23.18 12.40

Sample Depth: 0.30 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

CHE

% Moisture:

Analyst: CHE

Date Prep:

Basis:

Wet Weight

Seq Number: 3067615

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	10.25.18 17.59	U	1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech:
Analyst:

ARM ARM

Date Prep: 10.25.18 16.00

Basis: W

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9		mg/kg	10.26.18 00.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9		mg/kg	10.26.18 00.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9		mg/kg	10.26.18 00.15	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	10.26.18 00.15	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	91	%	70-135	10.26.18 00.15		
o-Terphenyl		84-15-1	96	%	70-135	10.26.18 00.15		

# **Flagging Criteria**



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

**DL** Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS Matrix Spike MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

<sup>\*\*</sup> Surrogate recovered outside laboratory control limit.

E300P

E300P

TX1005P

Prep Method:

#### **QC Summary** 603504

#### Arcadis - Roseville, CA

SAT-3

Analytical Method: Chloride by EPA 300

Prep Method: Seq Number: 3067615 Matrix: Solid Date Prep: 10.25.18

LCS Sample Id: 7664859-1-BKS LCSD Sample Id: 7664859-1-BSD MB Sample Id: 7664859-1-BLK

MR Spike LCS LCS Limits %RPD RPD Limit Units LCSD LCSD Analysis Flag **Parameter** Result Amount Result %Rec Date %Rec Result 10.25.18 16:50 Chloride < 5.00 250 272 109 274 110 90-110 20 mg/kg

Analytical Method: Chloride by EPA 300 E300P Prep Method:

Seq Number: 3067615 Matrix: Soil Date Prep: 10.25.18

Parent Sample Id: 603504-001 MS Sample Id: 603504-001 S MSD Sample Id: 603504-001 SD

Spike MS MS %RPD RPD Limit Units Parent **MSD MSD** Limits Analysis Flag **Parameter** Result %Rec Date Result Amount Result %Rec Chloride 15.5 248 280 107 282 107 90-110 20 mg/kg 10.25.18 17:06

Analytical Method: Chloride by EPA 300 Prep Method:

3067615 Matrix: Soil Seq Number: Date Prep: 10.25.18

MS Sample Id: 603552-003 S MSD Sample Id: 603552-003 SD 603552-003 Parent Sample Id:

MS %RPD RPD Limit Units Parent Spike MS **MSD MSD** Limits Analysis Flag **Parameter** Result Date Result %Rec Amount Result %Rec Chloride < 0.850 248 262 106 262 90-110 0 20 10.25.18 18:20 106 mg/kg

Analytical Method: TPH By SW8015 Mod

Seq Number: 3067717 Matrix: Solid Date Prep: 10.25.18

7664894-1-BKS LCSD Sample Id: 7664894-1-BSD LCS Sample Id: MB Sample Id: 7664894-1-BLK

%RPD RPD Limit Units MB Spike LCS LCS LCSD Limits Analysis LCSD Flag **Parameter** Result %Rec Date Result Amount Result %Rec Gasoline Range Hydrocarbons (GRO) 991 99 1040 70-135 5 20 10.25.18 20:45 < 8.00 1000 104 mg/kg 10.25.18 20:45 992 99 1070 70-135 8 20 Diesel Range Organics (DRO) 1000 107 < 8.13 mg/kg

LCS LCSD MB MB LCS LCSD Limits Units Analysis **Surrogate** %Rec Flag %Rec Flag %Rec Flag Date 1-Chlorooctane 95 129 122 70-135 % 10.25.18 20:45 102 10.25.18 20:45 o-Terphenyl 103 109 70-135 %

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample

A = Parent Result = MS/LCS Result

= MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

## QC Summary 603504

#### Arcadis - Roseville, CA SAT-3

Analytical Method: TPH By SW8015 Mod

Matrix: Soil

Prep Method: TX1005P

Seq Number: 3067717

/1/ Matrix: 50

Date Prep: 10.25.18

Parent Sample Id: 603504-001

Parenter Pa

MS Sample Id: 603504-001 S

MSD Sample Id: 603504-001 SD

RPD RPD Limit Units Analysis

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPI	RPD Lim	it Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	< 7.99	999	1090	109	1020	102	70-135	7	20	mg/kg	10.25.18 21:42	
Diesel Range Organics (DRO)	< 8.12	999	1130	113	1060	106	70-135	6	20	mg/kg	10.25.18 21:42	
Surrogate			N	MS :	MS	MSE	) MS	D :	Limits	Units	Analysis	

Surrogate Flag %Rec Flag Date %Rec 10.25.18 21:42 1-Chlorooctane 122 118 70-135 % o-Terphenyl 118 100 70-135 10.25.18 21:42

Received by OCD: 11/3/2021 10:43:14 AM



# **Chain of Custody**

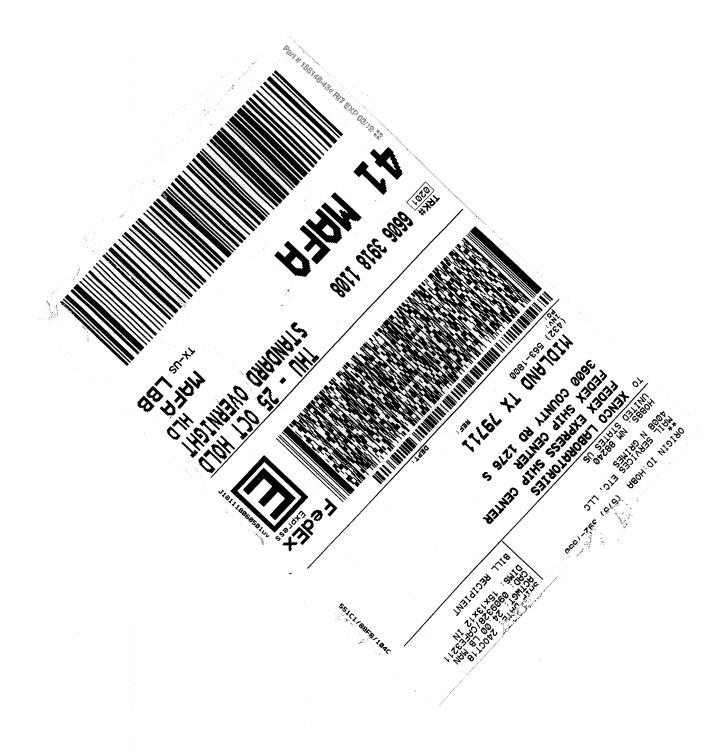
Work Order No: 603504

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334 Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296

Project Manager:	Bratt Krah	bix1			Bill to: (if differ	ent)			VA							Work (	Order	Comments		
Company Name:	Arcadig			·····	Company Na	me:			NA				Program: UST/PST PRP Brownfields RRC Superfund							
Address:	101 Crankside	Ridge C	curts sui	+ 200	Address:	dress:		NA					State of Project:							
City, State ZIP:	Roseville,	CAS	75678		City, State Z	P:			NA				Reporting:Level II							
Phone:	(916) 786-9	382		Email:	Brattok	rahl	irel 6	Arca	dis.	iom			Delive	rables:	EDD [	]	ADaP	T Other:		
Project Name:	SAT-3			Tu	rn Around					A۱	IALYSI	S REQU	EST					Work Order Notes		
Project Number:	B0048616	SAT	3	Rout	ine 🗌							The state of the s			200000000000000000000000000000000000000					
P.O. Number:	N			Rush	:24-61		53 8,													
Sampler's Name:	Kyan Na	enny		Due	Date:	1	<u>OKO (8015M)</u> v,o)													
SAMPLE RECE		p Blank:	Yes (No)	Wet Ice:	(Yes) No	]	ું હ													
Temperature (°C):		3		hermomete		ers	0, 3								ł					
Received Intact:	(es	No			<del>30</del>	Contain	DX0,													
Cooler Custody Sea	ls: Yes No	, N/A	Corre	ction Factor:	00	1 5	6.0													
Sample Custody Sea	als: Yes No	الا N/A	Tota	Containers:		] <u>p</u>	6.5											TAT starts the day recevied by the lab, if received by 4:30pm		
Sample Ider	ntification	Matrix	Date Sampled	Time Sampled	Depth	Numbe	TPH- Chlec											Sample Comments		
VGWUSAT3-001	1-W-181023	50	10-23-18	1258	0.58'	ı	1						1				-			
VGWU SAT3-00			10-23-18		0.45	1	)													
VGWU SAT3-001	-5-181023	50	10-23-18	1455	0.60	l	1													
VGWUSAT3-00	5-5-181023	50	10-23-18	1250	0.30'	į	1													
VGWUSAT3-0	x5-N-181023	50	10-23-18	1357	0.25'	1	1													
164USAT3-0	01-N-181023	50	10-23-18	1407	0,65'	Ĺ	1													
VGWUSAT3-0	01-E-181023	50	10-23-18	1436	0.60'	(	Ì													
UGWUSAT3-0	05-E-181023	40	10-23-18	1240	0,30'	l	1													
Total 200.7 / 6	<b>601</b> 0 <b>200.8</b> / 6(s) and Metal(s)		8R0 alvzed	RA 13PP	M Texas 11	Al	Sb As	Ba Be	B Cd	Ca C	r Co C	u Fe P	Mg N	/In Mo	Ni K	Se Ag	SiO2	Na Sr Tl Sn U V Zn		

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (S)gnature)	,Date/Time
My T	Espera Good 1.2	10/24/18 1-37	2 Eng Good	Madil	10/25/19
3			4		1717135
5			6		



#### **XENCO Laboratories**





Client: Arcadis - Roseville, CA

Date/ Time Received: 10/25/2018 11:35:00 AM

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

Work Order #: 603504

Temperature Measuring device used: R8

	Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?		.3
#2 *Shipping container in good condition	n?	Yes
#3 *Samples received on ice?		N/A
#4 *Custody Seals intact on shipping co	ntainer/ cooler?	N/A
#5 Custody Seals intact on sample bottle	es?	N/A
#6*Custody Seals Signed and dated?		N/A
#7 *Chain of Custody present?		Yes
#8 Any missing/extra samples?		No
#9 Chain of Custody signed when reling	uished/ received?	Yes
#10 Chain of Custody agrees with samp	le labels/matrix?	Yes
#11 Container label(s) legible and intact	?	Yes
#12 Samples in proper container/ bottle	?	Yes
#13 Samples properly preserved?		Yes
#14 Sample container(s) intact?		Yes
#15 Sufficient sample amount for indicat	ed test(s)?	Yes
#16 All samples received within hold tim	e?	Yes
#17 Subcontract of sample(s)?		N/A
#18 Water VOC samples have zero hea	dspace?	N/A
* Must be completed for after-hours de Analyst:	elivery of samples prior to placing in	the refrigerator
Checklist completed by:	Brianna 1001	Date: 10/25/2018
Checklist reviewed by:	Knus Koah	Date: 10/25/2018

Kelsey Brooks

Arcadis - Roseville, CA, Roseville, CA

**Project Name: SAT-3** 

Page 144 of 27.

Project Id: Contact: B0048616.SAT3

Brett Krehbiel

**Project Location:** 

**Date Received in Lab:** Tue Oct-30-18 10:53 am

Report Date: 01-NOV-18

Project Manager: Kelsey Brooks

	Lab Id:	603875-001		603875-0	02	603875-0	603875-003		04	603875-0	05	603875-0	06
Analysis Requested	Field Id:	VGWUSAT3-Larg	e- #1-1810	VGWUSAT3-Larg	e- #2-1810	VGWUSAT3-Larg	e- #3-1810	VGWUSAT3-Larg	e- #4-1810	VGWUSAT3-Larg	e- #5-1810	VGWUSAT3-Larg	ge-#10-181
mulysis Requesicu	Depth:	0.50- ft		0.67- ft		1.40- ft		0.75- ft		0.60- ft		3.20- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-25-18 09:40		Oct-25-18 09:50 Oct-2		Oct-25-18 0	Oct-25-18 09:55 Oct-25-18 1		1:00	1:00 Oct-25-18 13:40		Oct-25-18 18:00	
Chloride by EPA 300	Extracted:	Oct-30-18 1	4:00	Oct-30-18 14:00		Oct-30-18 14:00		Oct-30-18 14:00		Oct-30-18 14:00		Oct-30-18 14:00	
	Analyzed:	Oct-30-18 15:50		Oct-30-18 1	5:55	Oct-30-18 16:17		Oct-30-18 16:22		Oct-30-18 16:43		Oct-30-18 16:	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		67.5	4.99	404	4.95	159	5.00	974	25.0	137	4.99	137	5.00

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Kelsey Brooks
Project Manager

Arcadis - Roseville, CA, Roseville, CA

**Project Name: SAT-3** 

**Project Id: Contact:** 

B0048616.SAT3

Brett Krehbiel

**Project Location:** 

Date Received in Lab: Tue Oct-30-18 10:53 am

Report Date: 01-NOV-18

Project Manager: Kelsey Brooks

	Lab Id:	603875-0	01	603875-00	02	603875-0	03	603875-00	04	603875-00	)5	603875-0	06
Analysis Requested	Field Id:	VGWUSAT3-Larg	e- #1-1810	VGWUSAT3-Larg	e- #2-1810	VGWUSAT3-Larg	e- #3-1810	VGWUSAT3-Large	e- #4-1810	VGWUSAT3-Larg	e- #5-1810	VGWUSAT3-Large-#10-1	
Anaiysis Requesieu	Depth:	0.50- ft		0.67- ft		1.40- ft		0.75- ft		0.60- ft		3.20- ft	t
	Matrix:	SOIL	SOIL		SOIL		SOIL		SOIL		SOIL		
	Sampled:	Oct-25-18 0	Oct-25-18 09:40		Oct-25-18 09:50		9:55	Oct-25-18 1	1:00	Oct-25-18 13:40		Oct-25-18 1	8:00
TPH By SW8015 Mod	Extracted:	Oct-30-18 1	Oct-30-18 11:00		1:00	Oct-30-18 1	1:00	Oct-30-18 1	1:00	Oct-30-18 1	1:00	Oct-30-18 1	1:00
	Analyzed:	Oct-30-18 1	Oct-30-18 12:19		3:17	Oct-30-18 1	3:37	Oct-30-18 1	3:57	Oct-30-18 1	4:16	Oct-30-18 1	4:36
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	83.8	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	<15.0 15.0		15.0	40.5	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	<15.0 15.0		15.0	124	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

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Arcadis - Roseville, CA, Roseville, CA

**Project Name: SAT-3** 

**Project Id:** 

**Contact:** 

B0048616.SAT3 Brett Krehbiel

Date Received in Lab: Tue Oct-30-18 10:53 am

**Project Location:** 

Report Date: 01-NOV-18 Project Manager: Kelsey Brooks

	Lab Id:	603875-0	07	603875-0	08	603875-0	09	603875-0	10	603875-0	011	603875-0	12
Analysis Requested	Field Id:	VGWUSAT3-Larg	ge-#11-181	VGWUSAT3-Larg	ge-#8-1810	VGWUSAT3-Larg	ge-#8Stepo	VGWUSAT3-Larg	ge-#9Stepo	VGWUSAT3-Larg	ge #9 1810	VGWUSAT3-Larg	e #6 18102
Anaiysis Requesieu	Depth:	2.40- ft		2.30- ft		1.30- ft		2.30- ft		2.20- fi	t	0.68- ft	
	Matrix:	SOIL	SOIL			SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-25-18 1	8:40	Oct-26-18 1	0:52	Oct-26-18 1	1:55	Oct-26-18 1	5:21	Oct-25-18 1	15:31	Oct-26-18 1	5:36
Chloride by EPA 300	Extracted:	Oct-30-18 1	4:00	Oct-30-18 14:00		Oct-30-18 1	4:00	Oct-30-18 1	4:00	Oct-30-18 1	4:00	Oct-31-18 0	8:30
	Analyzed:	Oct-30-18 1	Oct-30-18 16:54		6:59	Oct-30-18 1	7:04	Oct-30-18 1	7:10	Oct-30-18 1	7:15	Oct-31-18 0	9:29
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		643	5.00	3560	25.0	1140	25.0	1320	25.0	1460	25.0	1020	4.95

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Arcadis - Roseville, CA, Roseville, CA

**Project Name: SAT-3** 

**Project Id:** 

**Contact:** 

B0048616.SAT3

Brett Krehbiel

**Project Location:** 

Date Received in Lab: Tue Oct-30-18 10:53 am

Report Date: 01-NOV-18 Project Manager: Kelsey Brooks

	Lab Id:	603875-0	07	603875-0	08	603875-0	)9	603875-0	10	603875-0	11	603875-03	12
Analysis Requested	Field Id:	VGWUSAT3-Larg	e-#11-181	VGWUSAT3-Large-#8-1810		VGWUSAT3-Larg	e-#8Stepo	VGWUSAT3-Larg	e-#9Stepo	VGWUSAT3-Larg	e #9 1810	VGWUSAT3-Large	e #6 1810í
Anaiysis Requesieu	Depth:	2.40- ft		2.30- ft		1.30- ft		2.30- ft		2.20- ft		0.68- ft	
	Matrix:	SOIL			SOIL SOIL		SOIL		SOIL		SOIL		
	Sampled:	Oct-25-18 1	Oct-25-18 18:40		Oct-26-18 10:52		Oct-26-18 11:55		5:21	Oct-25-18 15:31		Oct-26-18 1	5:36
TPH By SW8015 Mod	Extracted:	Oct-30-18 1	Oct-30-18 11:00		1:00	Oct-30-18 1	1:00	Oct-30-18 1	1:00	Oct-30-18 1	1:00	Oct-30-18 1	1:00
	Analyzed:	Oct-30-18 1	4:56	Oct-30-18 15:15		Oct-30-18 1	5:35	Oct-30-18 1	5:55	Oct-30-18 1	6:54	Oct-30-18 1	7:13
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<14.9	<14.9 14.9		15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<14.9 14.9		<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<14.9	<14.9 14.9		15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0

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Knus Roah Kelsey Brooks Project Manager

Arcadis - Roseville, CA, Roseville, CA

**Project Name: SAT-3** 

**Project Id: Contact:** 

**Project Location:** 

B0048616.SAT3

Brett Krehbiel

Date Received in Lab: Tue Oct-30-18 10:53 am

Report Date: 01-NOV-18 Project Manager: Kelsey Brooks

					1	
	Lab Id:	603875-013				
Analysis Requested	Field Id:	GWUSAT3-Large-#6	6stepoi			
Anaiysis Requesieu	Depth:	0.55- ft				
	Matrix:	SOIL				
	Sampled:	Oct-26-18 16:0	00			
Chloride by EPA 300	Extracted:	Oct-31-18 08:3	30			
	Analyzed:	Oct-31-18 09:3	34			
	Units/RL:	mg/kg	RL			
Chloride		260	5.00			
TPH By SW8015 Mod	Extracted:	Oct-30-18 11:0	00			
	Analyzed:	Oct-30-18 17:3	32			
	Units/RL:	mg/kg	RL			
Gasoline Range Hydrocarbons (GRO)	·	<15.0	15.0			
Diesel Range Organics (DRO)		<15.0	15.0			
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0			
Total TPH		<15.0	15.0			

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Kelsey Brooks Project Manager

# **Analytical Report 603875**

for

Arcadis - Roseville, CA

Project Manager: Brett Krehbiel SAT-3

B0048616.SAT3

01-NOV-18

Collected By: Client



#### 1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)



01-NOV-18

Project Manager: **Brett Krehbiel Arcadis - Roseville, CA**101 Creekside Ridge
CT 200
Roseville, CA 95678

Reference: XENCO Report No(s): 603875

SAT-3

Project Address:

#### **Brett Krehbiel:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 603875. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 603875 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Kelsey Brooks** 

Knus Koah

Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

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

# **Sample Cross Reference 603875**



# Arcadis - Roseville, CA, Roseville, CA

SAT-3

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
VGWUSAT3-Large- #1-181025	S	10-25-18 09:40	0.50 ft	603875-001
VGWUSAT3-Large- #2-181025	S	10-25-18 09:50	0.67 ft	603875-002
VGWUSAT3-Large- #3-181025	S	10-25-18 09:55	1.40 ft	603875-003
VGWUSAT3-Large- #4-181025	S	10-25-18 11:00	0.75 ft	603875-004
VGWUSAT3-Large- #5-181025	S	10-25-18 13:40	0.60 ft	603875-005
VGWUSAT3-Large-#10-181025	S	10-25-18 18:00	3.20 ft	603875-006
VGWUSAT3-Large-#11-181025	S	10-25-18 18:40	2.40 ft	603875-007
VGWUSAT3-Large-#8-181026	S	10-26-18 10:52	2.30 ft	603875-008
VGWUSAT3-Large-#8Stepout- 1810256	S	10-26-18 11:55	1.30 ft	603875-009
VGWUSAT3-Large-#9Stepout- 181026	S	10-26-18 15:21	2.30 ft	603875-010
VGWUSAT3-Large #9 181026	S	10-25-18 15:31	2.20 ft	603875-011
VGWUSAT3-Large #6 181026	S	10-26-18 15:36	0.68 ft	603875-012
VGWUSAT3-Large-#6stepout-181026	S	10-26-18 16:00	0.55 ft	603875-013

#### **CASE NARRATIVE**

Client Name: Arcadis - Roseville, CA

Project Name: SAT-3

Project ID: *B0048616.SAT3* Report Date: *01-NOV-18* 

Work Order Number(s): 603875 Date Received: 10/30/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



### Arcadis - Roseville, CA, Roseville, CA

SAT-3

10.30.18 14.00

Sample Id: VGWUSAT3-Large-#1-181025

Matrix: Soil

Date Received:10.30.18 10.53

Lab Sample Id: 603875-001

Date Collected: 10.25.18 09.40

Sample Depth: 0.50 ft

Analytical Method: Chloride by EPA 300

CHE

Prep Method: E300P

Tech: CHE

Analyst:

Date Prep:

% Moisture:

Basis:

Wet Weight

Seq Number: 3068092

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	67.5	4.99	mg/kg	10.30.18 15.50		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech:
Analyst:

ARM ARM

Date Prep: 10.30.18 11.00

Basis: V

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	10.30.18 12.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	10.30.18 12.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	10.30.18 12.19	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	10.30.18 12.19	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	90	%	70-135	10.30.18 12.19		
o-Terphenyl		84-15-1	93	%	70-135	10.30.18 12.19		



### Arcadis - Roseville, CA, Roseville, CA

SAT-3

Sample Id: **VGWUSAT3-Large-#2-181025**  Matrix: Soil

Date Received:10.30.18 10.53

Lab Sample Id: 603875-002

Date Collected: 10.25.18 09.50

Sample Depth: 0.67 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

CHE

% Moisture:

CHE Analyst:

Date Prep:

10.30.18 14.00

Basis:

Wet Weight

Seq Number: 3068092

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	404	4.95	mg/kg	10.30.18 15.55		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

ARM

% Moisture:

ARM Analyst:

Tech:

10.30.18 11.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	10.30.18 13.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	10.30.18 13.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	10.30.18 13.17	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	10.30.18 13.17	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	95	%	70-135	10.30.18 13.17		
o-Terphenyl		84-15-1	99	%	70-135	10.30.18 13.17		



### Arcadis - Roseville, CA, Roseville, CA

SAT-3

Sample Id: VGWUSAT3-Large-#3-181025

Matrix: Soil

Date Received:10.30.18 10.53

Lab Sample Id: 603875-003

Date Collected: 10.25.18 09.55

Sample Depth: 1.40 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P % Moisture:

Tech: Cl

Analyst:

CHE CHE

Date Prep: 10.30.18 14.00

Basis:

Wet Weight

Seq Number: 3068092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	159	5.00	mg/kg	10.30.18 16.17		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 10.30.18 11.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	10.30.18 13.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	83.8	15.0		mg/kg	10.30.18 13.37		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	40.5	15.0		mg/kg	10.30.18 13.37		1
Total TPH	PHC635	124	15.0		mg/kg	10.30.18 13.37		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	92	%	70-135	10.30.18 13.37		
o-Terphenyl		84-15-1	97	%	70-135	10.30.18 13.37		



### Arcadis - Roseville, CA, Roseville, CA

SAT-3

Sample Id: **VGWUSAT3-Large-#4-181025**  Matrix: Soil

Date Received:10.30.18 10.53

Lab Sample Id: 603875-004

Date Collected: 10.25.18 11.00

Sample Depth: 0.75 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture:

Analyst:

CHE

Date Prep: 10.30.18 14.00 Basis:

Wet Weight

Seq Number: 3068092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	974	25.0	mg/kg	10.30.18 16.22		5

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech:

ARM

% Moisture:

ARM Analyst:

10.30.18 11.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	10.30.18 13.57	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	10.30.18 13.57	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	10.30.18 13.57	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	10.30.18 13.57	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	94	%	70-135	10.30.18 13.57		
o-Terphenyl		84-15-1	98	%	70-135	10.30.18 13.57		



### Arcadis - Roseville, CA, Roseville, CA

SAT-3

10.30.18 14.00

Sample Id: VGWUSAT3-Large-#5-181025

Matrix: Soil

Date Received:10.30.18 10.53

Lab Sample Id: 603875-005

Date Collected: 10.25.18 13.40

Sample Depth: 0.60 ft

Analytical Method: Chloride by EPA 300

CHE

Prep Method: E300P

Tech: CHE

Analyst:

Date Prep:

% Moisture: Basis:

Wet Weight

Seq Number: 3068092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	137	4.99	mg/kg	10.30.18 16.43		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARM ARM

Date Prep: 10.30.18 11.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	10.30.18 14.16	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	10.30.18 14.16	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	10.30.18 14.16	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	10.30.18 14.16	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	95	%	70-135	10.30.18 14.16		
o-Terphenyl		84-15-1	99	%	70-135	10.30.18 14.16		



### Arcadis - Roseville, CA, Roseville, CA

SAT-3

10.30.18 14.00

Sample Id: **VGWUSAT3-Large-#10-181025**  Matrix: Soil Date Received:10.30.18 10.53

Lab Sample Id: 603875-006

Date Collected: 10.25.18 18.00

Sample Depth: 3.20 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

Analyst:

CHE

% Moisture:

Basis:

Wet Weight

Seq Number: 3068092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	137	5.00	mg/kg	10.30.18 16.48		1

Date Prep:

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARMARM

10.30.18 11.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	10.30.18 14.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	10.30.18 14.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	10.30.18 14.36	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	10.30.18 14.36	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	92	%	70-135	10.30.18 14.36		
o-Terphenyl		84-15-1	96	%	70-135	10.30.18 14.36		



### Arcadis - Roseville, CA, Roseville, CA

SAT-3

Sample Id: **VGWUSAT3-Large-#11-181025**  Matrix: Soil Date Received:10.30.18 10.53

Lab Sample Id: 603875-007

Date Collected: 10.25.18 18.40

Sample Depth: 2.40 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

CHE

% Moisture:

CHE Analyst:

Date Prep:

10.30.18 14.00

Basis:

Wet Weight

Seq Number: 3068092

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	643	5.00	mg/kg	10.30.18 16.54		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech: Analyst: ARMARM

10.30.18 11.00 Date Prep:

Basis:

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9		mg/kg	10.30.18 14.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9		mg/kg	10.30.18 14.56	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9		mg/kg	10.30.18 14.56	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	10.30.18 14.56	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	91	%	70-135	10.30.18 14.56		
o-Terphenyl		84-15-1	96	%	70-135	10.30.18 14.56		



### Arcadis - Roseville, CA, Roseville, CA

SAT-3

Sample Id: VGWUSAT3-Large-#8-181026

Matrix: Soil

Date Received:10.30.18 10.53

Lab Sample Id: 603875-008

Date Collected: 10.26.18 10.52

Sample Depth: 2.30 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech:

Analyst:

CHE CHE

Date Prep: 10.30.18 14.00

% Moisture: Basis:

Wet Weight

Seq Number: 3068092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3560	25.0	mg/kg	10.30.18 16.59		5

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech:
Analyst:

ARM ARM

Date Prep: 10.30.18 11.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	10.30.18 15.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	10.30.18 15.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	10.30.18 15.15	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	10.30.18 15.15	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	91	%	70-135	10.30.18 15.15		
o-Terphenyl		84-15-1	95	%	70-135	10.30.18 15.15		



### Arcadis - Roseville, CA, Roseville, CA

SAT-3

Sample Id: VGWUSAT3-Large-#8Stepout- 1810256 Matrix:

Soil

Date Received:10.30.18 10.53

Lab Sample Id: 603875-009

Date Collected: 10.26.18 11.55

Sample Depth: 1.30 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

CHE

% Moisture:

Analyst: CHI

CHE

Date Prep: 10.30.18 14.00

Basis:

Wet Weight

Seq Number: 3068092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1140	25.0	mg/kg	10.30.18 17.04		5

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture:

Analyst: ARM

Date Prep: 10.30.18 11.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9		mg/kg	10.30.18 15.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<14.9	14.9		mg/kg	10.30.18 15.35	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9		mg/kg	10.30.18 15.35	U	1
Total TPH	PHC635	<14.9	14.9		mg/kg	10.30.18 15.35	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	90	%	70-135	10.30.18 15.35		
o-Terphenyl		84-15-1	94	%	70-135	10.30.18 15.35		



### Arcadis - Roseville, CA, Roseville, CA

SAT-3

10.30.18 14.00

Sample Id: VGWUSAT3-Large-#9Stepout- 181026 Matrix: Soil Date Received:10.30.18 10.53

Lab Sample Id: 603875-010

Date Collected: 10.26.18 15.21

Sample Depth: 2.30 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

CHE

% Moisture:

Tech:

Analyst:

CHE Date Prep: Basis:

Wet Weight

Seq Number: 3068092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1320	25.0	mg/kg	10.30.18 17.10		

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

ARMTech:

% Moisture:

ARM Analyst:

10.30.18 11.00 Date Prep:

Basis: Wet Weight

Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
PHC610	<15.0	15.0		mg/kg	10.30.18 15.55	U	1
C10C28DRO	<15.0	15.0		mg/kg	10.30.18 15.55	U	1
PHCG2835	<15.0	15.0		mg/kg	10.30.18 15.55	U	1
PHC635	<15.0	15.0		mg/kg	10.30.18 15.55	U	1
	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
	111-85-3	88	%	70-135	10.30.18 15.55		
	84-15-1	92	%	70-135	10.30.18 15.55		
	PHC610 C10C28DRO PHCG2835	PHC610 <15.0 C10C28DRO <15.0 PHCG2835 <15.0 PHC635 <15.0  Cas Number 111-85-3	PHC610 <15.0 15.0 C10C28DRO <15.0 15.0 PHCG2835 <15.0 15.0 PHC635 <15.0 15.0 15.0 PHC635 <15.0 15.0 9% Recovery 111-85-3 88	PHC610 <15.0 15.0 C10C28DRO <15.0 15.0 PHCG2835 <15.0 15.0 PHC635 <15.0 15.0  Cas Number Recovery Units 111-85-3 88 %	PHC610 <15.0 15.0 mg/kg C10C28DRO <15.0 15.0 mg/kg PHCG2835 <15.0 15.0 mg/kg PHC635 <15.0 15.0 mg/kg  Cas Number Recovery Units Limits 111-85-3 88 % 70-135	PHC610	PHC610



### Arcadis - Roseville, CA, Roseville, CA

SAT-3

10.30.18 14.00

Sample Id: VGWUSAT3-Large #9 181026

Matrix: Soil

Date Received:10.30.18 10.53

Lab Sample Id: 603875-011

Date Collected: 10.25.18 15.31

Sample Depth: 2.20 ft

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: Analyst: CHE CHE

Date Prep:

% Moisture: Basis:

Wet Weight

Seq Number: 3068092

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1460	25.0	mg/kg	10.30.18 17.15		

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech:
Analyst:

ARM ARM

Date Prep: 10.30.18 11.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	10.30.18 16.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	10.30.18 16.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	10.30.18 16.54	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	10.30.18 16.54	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	93	%	70-135	10.30.18 16.54		
o-Terphenyl		84-15-1	98	%	70-135	10.30.18 16.54		



### Arcadis - Roseville, CA, Roseville, CA

SAT-3

Sample Id: VGWUSAT3-Large #6 181026

Matrix: Soil

Date Received:10.30.18 10.53

Lab Sample Id: 603875-012

Date Collected: 10.26.18 15.36

Sample Depth: 0.68 ft

Analytical Method: Chloride by EPA 300

CHE

Prep Method: E300P

Tech: CHE

Analyst:

Date Prep:

% Moisture:

% Moistur
Basis:

Wet Weight

Seq Number: 3068104

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1020	4.95	mg/kg	10.31.18 09.29		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Q

% Moisture:

Basis:

Tech: Analyst: ARM ARM

Date Prep:

10.30.18 11.00

10.31.18 08.30

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	10.30.18 17.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	10.30.18 17.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	10.30.18 17.13	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	10.30.18 17.13	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	92	%	70-135	10.30.18 17.13		
o-Terphenyl		84-15-1	97	%	70-135	10.30.18 17.13		



### Arcadis - Roseville, CA, Roseville, CA

SAT-3

Sample Id: VGWUSAT3-Large-#6stepout-181026

Matrix: Soil

Date Received:10.30.18 10.53

Lab Sample Id: 603875-013

Date Collected: 10.26.18 16.00

10.31.18 08.30

Sample Depth: 0.55 ft

Analytical Method: Chloride by EPA 300

CHE

Prep Method: E300P

Tech: CHE

Analyst:

Date Prep:

% Moisture:

Basis:

Wet Weight

Seq Number: 3068104

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	260	5.00	mg/kg	10.31.18 09.34		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech:
Analyst:

ARM ARM

Date Prep: 10.30.18 11.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	10.30.18 17.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	10.30.18 17.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	10.30.18 17.32	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	10.30.18 17.32	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	93	%	70-135	10.30.18 17.32		
o-Terphenyl		84-15-1	99	%	70-135	10.30.18 17.32		

### Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS Matrix Spike MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

<sup>\*\*</sup> Surrogate recovered outside laboratory control limit.

E300P

#### **QC Summary** 603875

#### Arcadis - Roseville, CA

SAT-3

Analytical Method: Chloride by EPA 300

MR

Prep Method: Seq Number: 3068092 Matrix: Solid Date Prep: 10.30.18

LCS Sample Id: 7665156-1-BKS LCSD Sample Id: 7665156-1-BSD MB Sample Id: 7665156-1-BLK

Spike LCS LCS Limits %RPD RPD Limit Units LCSD LCSD Analysis Flag **Parameter** Result Amount Result %Rec Date %Rec Result 10.30.18 14:36 Chloride < 5.00 250 248 99 249 100 90-110 0 20 mg/kg

Analytical Method: Chloride by EPA 300 E300P Prep Method:

Seq Number: 3068104 Matrix: Solid Date Prep: 10.31.18

MB Sample Id: 7665180-1-BLK LCS Sample Id: 7665180-1-BKS LCSD Sample Id: 7665180-1-BSD

MB Spike LCS LCS %RPD RPD Limit Units LCSD LCSD Limits Analysis Flag **Parameter** Result %Rec Date Result Amount Result %Rec

Chloride < 5.00 250 248 99 247 99 90-110 0 20 mg/kg 10.31.18 08:57

Analytical Method: Chloride by EPA 300 Prep Method: E300P

3068092 Matrix: Soil Seq Number: Date Prep: 10.30.18

MS Sample Id: 603861-002 S MSD Sample Id: 603861-002 SD Parent Sample Id: 603861-002

MS %RPD RPD Limit Units Parent Spike MS **MSD MSD** Limits Analysis Flag **Parameter** Result Date Result %Rec Amount Result %Rec

Chloride 778 251 1020 96 1030 100 90-110 20 10.30.18 14:52 mg/kg

Analytical Method: Chloride by EPA 300 E300P Prep Method:

3068092 Matrix: Soil Seq Number: Date Prep: 10.30.18 603861-003 S MSD Sample Id: 603861-003 SD 603861-003 MS Sample Id: Parent Sample Id:

MS %RPD RPD Limit Units Parent Spike MS **MSD MSD** Limits Analysis Flag **Parameter** Amount Result %Rec Date Result Result %Rec Chloride 965 1160 79 1160 79 90-110 0 20 10.30.18 16:06 248 X mg/kg

Analytical Method: Chloride by EPA 300 E300P Prep Method: 3068104 Matrix: Soil Seq Number: Date Prep: 10.31.18

603879-001 S Parent Sample Id: 603879-001 MS Sample Id: MSD Sample Id: 603879-001 SD

Parent Spike MS MS Limits %RPD RPD Limit Units Analysis **MSD MSD** Flag **Parameter** Result Date Result Amount %Rec Result %Rec

Chloride 27.9 248 281 102 282 102 90-110 0 20 mg/kg 10.31.18 09:18

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery

Log Difference

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result

= MS/LCS Result = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

Flag

Flag

10.30.18 12:39

#### **QC Summary** 603875

#### Arcadis - Roseville, CA SAT-3

Analytical Method: Chloride by EPA 300

Matrix: Soil

E300P Prep Method:

Seq Number: 3068104 Date Prep: 10.31.18 MS Sample Id: 603879-002 S MSD Sample Id: 603879-002 SD Parent Sample Id: 603879-002

Spike MS MS Limits %RPD RPD Limit Units Parent **MSD MSD** Analysis Flag **Parameter** Result Amount Result Date %Rec %Rec Result 90-110 10.31.18 10:42 Chloride 73.2 248 327 102 330 104 20 mg/kg

Analytical Method: TPH By SW8015 Mod TX1005P Prep Method:

Seq Number: 3068063 Matrix: Solid Date Prep: 10.30.18

MB Sample Id: 7665163-1-BLK LCS Sample Id: 7665163-1-BKS LCSD Sample Id: 7665163-1-BSD

MB Spike LCS LCS %RPD RPD Limit Units LCSD LCSD Limits Analysis **Parameter** Result %Rec Date Result Amount Result %Rec Gasoline Range Hydrocarbons (GRO) < 8.00 1000 957 96 957 96 70-135 0 20 10.30.18 11:40 mg/kg Diesel Range Organics (DRO) 1000 996 100 998 100 70-135 0 20 10.30.18 11:40 < 8.13 mg/kg

MB MB LCS LCS LCSD LCSD Limits Units Analysis Surrogate %Rec %Rec Flag Flag %Rec Flag Date 10.30.18 11:40 1-Chlorooctane 95 122 122 70-135 % 102 111 104 70-135 10.30.18 11:40 o-Terphenyl %

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P Seq Number: 3068063 Matrix: Soil Date Prep: 10.30.18

996

997

< 8.10

MS Sample Id: 603875-001 S MSD Sample Id: 603875-001 SD Parent Sample Id: 603875-001

MS MS %RPD RPD Limit Units Analysis Parent Spike **MSD** MSD Limits **Parameter** Result Amount Result %Rec Date Result %Rec Gasoline Range Hydrocarbons (GRO) 997 958 10.30.18 12:39 < 7.98 96 933 93 70-135 3 20 mg/kg

959

70-135

96

4

20

mg/kg

MS MS **MSD** Limits Units Analysis **MSD Surrogate** %Rec Flag %Rec Flag Date 10.30.18 12:39 128 124 1-Chlorooctane 70-135 % 10.30.18 12:39 o-Terphenyl 100 101 70-135 %

100

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

Diesel Range Organics (DRO)

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result

= MS/LCS Result

= MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

Received by OCD: 11/3/2021 10:43:14 AM



# **Chain of Custody**

Work Order No: USSTS

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334 Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296

HODDS,NM (5/5-392-/	7550) Phoenix,AZ	(480-355-0	0900) Atlanta,GA (77)	)-449-8800) Tampa,Fl	_ (813-620-2000)	www.xenco	o.com Page of				
Project Manager: Bratt Krehbiel	Bill to: (if differen	ıt)	NA			Work O	der Comments				
Company Name: Acadis	Company Nam	ne:	NA		Program: U	ST/PST PRP	Brownfields RRC Superfund				
Address: 101 Crackside Ridge Court, Suite 200	Address:		NA		State of	State of Project:					
City, State ZIP: Koseville (A 95678	City, State ZIP	;	NA		Reporting:Le	evel II  Level III [	PST/UST TRRP Level IV				
Phone: (916) 786 -5382 Email:	Brott. Krel	hbiel @	Arcadis, Co	m	Deliverables	: EDD 🗌 💮	ADaPT Other:				
Project Name: SAT-3 Tu	ırn Around		A POST PERMIT	ANALYSIS RE	QUEST		Work Order Notes				
Project Number: Boo 48616, SAT3 Rout	ine 🗌										
	24-61										
	Date:	(BOISM)									
SAMPLE RECEIPT Temp Blank: Yes No Wet Ice:	(Yes) No	128									
Temperature (°C): Thermomete		sis So									
Received Intact: Yes No	199	重 2%	<u> </u>								
Cooler Custody Seals: Yes NA Correction Factor:	00	Cont Cont									
Sample Custody Seals: Yes No N/A Total Containers:		er of					TAT starts the day recevied by the lab, if received by 4:30pm				
Sample Identification Matrix Date Sampled Sampled	Depth	Number of Containers TPH-DRO,ORO,CRA Chle::de(Eff)シのの					Sample Comments				
VGWUSAT3-Large-#1-181025 40 10-25-18 0940	0.50'										
VGWUSAT3-Large-#2-181625 SO 10-25-18 0950		IX									
VGWU SAT3-LAIGE-#3-181025 SO 10-25-18 0955	1.40'	1 >									
VGWUSAT3-Large-#4-181025 SO 10-25-18 1100	0.75										
V6WU SAT3-Large-#5-18625 50 10-25-18 1340	0.60'	IX									
Wowu SAT3-Large #6 18425 SO 10-25 18 1350	0.681	+><					RV 10-25-18				
46445473-619e-1110-181025 50 10-25-18 1800	3,20'	IX									
VGWUSAT3-Large-#11-18625 50 10-25-18 1840	2.40'	$\perp$			. 20						
VGWUSAT3-Large-#8-181026 So 10-26-18 1052	2,301	$\perp \!\!\! \! \!\!\! \!$									
V6WUSAT3-Large-#85TzpOuT-181026 SD 10-26-18 1155	1.30'	$\perp \!$									
Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PP Circle Method(s) and Metal(s) to be analyzed TCLP / SP	M Texas 11 <b>LP 6010</b> : 8RC	Al Sb A CRA Sb	As Ba Be B Cd As Ba Be Cd (	Ca Cr Co Cu Fe Cr Co Cu Pb Mn	e Pb Mg Mn M Mo Ni Se Ag	o Ni K Se Ag TI U	SiO2 Na Sr Tl Sn U V Zn 1631 / 245.1 / 7470 / 7471 : Hg				
Notice: Signature of this document and relinquishment of samples constitutes a valid of service. Xenco will be liable only for the cost of samples and shall not assume any of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$75.00 will be applied to each project and \$75.00 will be	v responsibility for	any incese	or evaposes incurred b	the client if cush lesse.	a ara diia ta aleeiimata		is rol				
Relinquished by: (Signature) Received by: (Signat	ure)	Dat	te/Time R	elinquished by: (Si	gnature) n	Received by (Si	ignature) , Date/Time				

Released to Imaging: 11/2/2022 10:27:25 AM



# **Chain of Custody**

Work Order No: W3675

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334 Midland,TX (432-704-5440) EL Paso,TX (915)585-3443 Lubbock,TX (806)794-1296

	10			Hobbs,I	NM (575-392-7	7550) Phoenix,/	4Z (48	30-355-09	900) A	tlanta,C	A (770	-449-88	800) Ta	ampa,FL	(813-6	20-2000)		www	.xenc	o.com	Page	<u> </u>	_ of
Project Manager:	Birt Ko	- hbiz				Bill to: (if differ	ent)				VA							N	lork O	rder (	Commer	its	
Company Name:	Accadi 101 Erontisio	5	,			Company Na	ame:			/	NA				_	rogran	: UST/P	ът∐	PRP[]	Brow	nfields _	RRC S	uperfund
Address:	101 44 12510	z Kidg	re con	suite	200	Address:					NA			State of Project:									
City, State ZIP:	Roseville			78		City, State ZIP:					Reporting:Level II Level III PST/UST TRRP Level IV												
Phone:	(916)786	-5380	2		Email	BrettoKra	retto Krahbiel @ Ajcadis, com							Deliveral	oles: ED	D 🗌		ADaP	г 🗆 -	Other:			
Project Name:	SAT-	3			Tu	ırn Around						ΑN	NALYS	SIS RE	QUES	T					W	ork Orde	r Notes
Project Number:	Boo 486	16.5	AT	3	Rout	ine 🗌				T											1-12-2		
P.O. Number:		NA			Rush	1: 24-hr	1	_															
Sampler's Name:	Ryan No	inny			Due	Date:		(W)			į												
SAMPLE REC	EIPT	Temp B	Blank:	Yes (No)	Wet Ice	Yes No	1	(3015m)					p										
Temperature (°C):		2.3			Thermomete		ers	0000	•				~										
Received Intact:	R	es )No	)			100	of Containers	0%															
Cooler Custody Sea	0.000.000.000.00	No	N/A	Corre	ection Factor:	0.0	]	BB													TAT eta	do the devi	ecevied by the
Sample Custody Se	als: Yes	No	N/A	Tota	l Containers:		10000000	32													lab,	if received	by 4:30pm
Sample Ide	ntification	Ma	atrix	Date Sampled	Time Sampled	Depth	Number	TPH-				-									Sa	mple Coi	nments
VovalATT - Lage - al	H-pat 181621	<u> </u>	0	10-26-18	1320	1.0'	1	X	1	<b> </b>	<b> </b>				_								
VGWUSAT3-Large	# 9st-pout-18k	26 5	0	10-26-18	1521	2.30	1	X							$\neg \uparrow$				1	İ			
VEWUSAT3-Large	-#9-181021	5 5	0	10-26-18	1531	2.20		$\mathbf{X}$															
UGWU SAT 3-large-1		50	0	10-26-18	1536	0.68'	)	$\bot$															
VEWUSATZ-Large-	#69tepact -18	026 5	0	10-26-18	1600	0.55'		$\perp \times$															
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Total 200.7 / Circle Method		<b>3 / 6020</b> (s) to b		8R0 alyzed	CRA 13PP TCLP/SP	M Texas 11 <b>LP 6010</b> : 8F	RCRA	Sb As	s Ba As B	Be B a Be	Cd C	Ca C r Co	r Co Cu F	Cu Fe b Mn	Pb Mo I	Mg Mr Vi Se	Mo N Ag Ti l	i K S J	e Ag				V Zn / <b>7471</b> : Hg
Notice: Signature of the of service. Xenco will of Xenco. A minimum																				ns trol			
Relinquished b	y: (Signa <del>ture)</del>			Received	by: (Signat	ure)		Date	/Time	9	Re	linqui	shed I	oy: (Sig	natu	e)	Rec	eived	by: (S	ignatu	ıre)	Da	te/Time
1/1/	$\geq$		E	ya Gre	al.	2.2	10/	29/18	2:	19	2 8	na	(.	7000	1		Me	7(1)	U			1/20	108
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#### **XENCO Laboratories**





Client: Arcadis - Roseville, CA

Date/ Time Received: 10/30/2018 10:53:00 AM

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

Work Order #: 603875

Temperature Measuring device used: R8

	Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?		.2
#2 *Shipping container in good condition	?	Yes
#3 *Samples received on ice?		Yes
#4 *Custody Seals intact on shipping cor	ntainer/ cooler?	N/A
#5 Custody Seals intact on sample bottle	es?	N/A
#6*Custody Seals Signed and dated?		N/A
#7 *Chain of Custody present?		Yes
#8 Any missing/extra samples?		No
#9 Chain of Custody signed when relinqu	uished/ received?	Yes
#10 Chain of Custody agrees with sampl	e labels/matrix?	Yes
#11 Container label(s) legible and intact?	?	Yes
#12 Samples in proper container/ bottle?		Yes
#13 Samples properly preserved?		Yes
#14 Sample container(s) intact?		Yes
#15 Sufficient sample amount for indicate	ed test(s)?	Yes
#16 All samples received within hold time	e?	Yes
#17 Subcontract of sample(s)?		N/A
#18 Water VOC samples have zero head	dspace?	N/A
* Must be completed for after-hours de Analyst:	livery of samples prior to placing in	the refrigerator
Checklist completed by: Checklist reviewed by:	Brianna Teel  Muss Avah  Kelsey Brooks	Date: 10/30/2018  Date: 10/31/2018

Arcadis - Roseville, CA, Roseville, CA

**Project Id:** 

**Project Location:** 

B0048616.sat3

**Contact:** 

Brett Krehbiel Lea County, NM **Project Name: VGWU SAT 3** 

Date Received in Lab: Fri Nov-02-18 10:20 am

**Report Date:** 05-NOV-18

Project Manager: Kelsey Brooks

	Lab Id:	604294-001			
Analusis Dogwood	Field Id:	VGWUSAT3-Large-#7 18	10		
Analysis Requested	Depth:				
	Matrix:	SOIL			
	Sampled:	Oct-25-18 15:16			
Chloride by EPA 300	Extracted:	Nov-03-18 11:00			
	Analyzed:	Nov-03-18 17:16			
	Units/RL:	mg/kg RL			
Chloride		44.7 4.95			
TPH By SW8015 Mod	Extracted:	Nov-02-18 13:00			
	Analyzed:	Nov-02-18 21:24			
	Units/RL:	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0			
Diesel Range Organics (DRO)		<15.0 15.0			
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0			
Total TPH		<15.0 15.0			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

Version: 1.%

Kelsey Brooks Project Manager

# **Analytical Report 604294**

for Arcadis - Roseville, CA

Project Manager: Brett Krehbiel
VGWU SAT 3
B0048616.sat3
05-NOV-18

Collected By: Client



#### 1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)



05-NOV-18

Project Manager: **Brett Krehbiel Arcadis - Roseville, CA**101 Creekside Ridge
CT 200
Roseville, CA 95678

Reference: XENCO Report No(s): 604294

**VGWU SAT 3** 

Project Address: Lea County, NM

#### **Brett Krehbiel:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 604294. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 604294 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Kelsey Brooks** 

Kuns Roah

Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

# **Sample Cross Reference 604294**



### Arcadis - Roseville, CA, Roseville, CA

VGWU SAT 3

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
VGWUSAT3-Large-#7 181025	S	10-25-18 15:16		604294-001

Version: 1.%

#### **CASE NARRATIVE**

Client Name: Arcadis - Roseville, CA

Project Name: VGWU SAT 3

 Project ID:
 B0048616.sat3
 Report Date:
 05-NOV-18

 Work Order Number(s):
 604294
 Date Received:
 11/02/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



#### Arcadis - Roseville, CA, Roseville, CA

VGWU SAT 3

Sample Id: VGWUSAT3-Large-#7 181025 Matrix: Soil Date Received:11.02.18 10.20

Lab Sample Id: 604294-001

Date Collected: 10.25.18 15.16

Analytical Method: Chloride by EPA 300

Prep Method: E300P

CHE CHE

% Moisture:

Seq Number: 3068464

Tech:

Analyst:

Date Prep: 11.03.18 11.00 Basis: Wet Weight

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	44.7	4.95	mg/kg	11.03.18 17.16		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

ARMTech:

% Moisture:

ARM Analyst:

11.02.18 13.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	11.02.18 21.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0		mg/kg	11.02.18 21.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	11.02.18 21.24	U	1
Total TPH	PHC635	<15.0	15.0		mg/kg	11.02.18 21.24	U	1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	93	%	70-135	11.02.18 21.24		
o-Terphenyl		84-15-1	96	%	70-135	11.02.18 21.24		

# Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- **K** Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS Matrix Spike MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Final 1.000

<sup>\*\*</sup> Surrogate recovered outside laboratory control limit.

Flag

#### **QC Summary** 604294

### Arcadis - Roseville, CA

VGWU SAT 3

Analytical Method: Chloride by EPA 300

Seq Number: 3068464 Matrix: Solid

LCS Sample Id: MB Sample Id: 7665432-1-BLK

7665432-1-BKS

Prep Method: Date Prep: 11.03.18

LCSD Sample Id: 7665432-1-BSD

E300P

MR Spike LCS LCS Limits %RPD RPD Limit Units LCSD LCSD Analysis **Parameter** Result Amount Result %Rec Date %Rec Result

11.03.18 14:53 Chloride < 5.00 250 273 109 240 96 90-110 13 20 mg/kg

Analytical Method: Chloride by EPA 300

Seq Number: 3068464 Matrix: Soil

E300P Prep Method: 11.03.18 Date Prep:

Parent Sample Id: 604276-082 MS Sample Id: 604276-082 S MSD Sample Id: 604276-082 SD

Spike MS MS %RPD RPD Limit Units Parent **MSD MSD** Limits Analysis Flag **Parameter** Result Date Result Amount %Rec Result %Rec Chloride 712 248 926 86 928 87 90-110 0 20 mg/kg 11.03.18 15:09 X

Analytical Method: Chloride by EPA 300

Prep Method: E300P 3068464 Matrix: Soil Seq Number: Date Prep: 11.03.18

MSD Sample Id: 604276-084 SD MS Sample Id: 604276-084 S 604276-084 Parent Sample Id:

MS %RPD RPD Limit Units Parent Spike MS **MSD MSD** Limits Analysis Flag **Parameter** Result Date Result %Rec Amount Result %Rec 11.03.18 16:23 Chloride 246 249 492 99 499 102 90-110 20 mg/kg

Analytical Method: TPH By SW8015 Mod

TX1005P Prep Method: Seq Number: 3068439 Matrix: Solid Date Prep: 11.02.18

7665416-1-BKS LCSD Sample Id: 7665416-1-BSD LCS Sample Id: MB Sample Id: 7665416-1-BLK

%RPD RPD Limit Units MB Spike LCS LCS LCSD Limits Analysis **LCSD** Flag **Parameter** Result %Rec Date Result Amount Result %Rec Gasoline Range Hydrocarbons (GRO) 993 99 70-135 2 20 11.02.18 20:46 < 8.00 1000 1010 101 mg/kg 1070 11.02.18 20:46 1060 70-135 1 20 Diesel Range Organics (DRO) 1000 106 107 < 8.13 mg/kg

LCS LCSD MB MB LCS LCSD Limits Units Analysis **Surrogate** %Rec Flag %Rec Flag %Rec Flag Date 1-Chlorooctane 103 127 128 70-135 % 11.02.18 20:46 11.02.18 20:46 o-Terphenyl 107 112 115 70-135 %

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample

A = Parent Result = MS/LCS Result

= MSD/LCSD Result

MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

### QC Summary 604294

#### Arcadis - Roseville, CA VGWU SAT 3

Analytical Method: TPH By SW8015 Mod

Matrix: Soil

Prep Method: TX1005P

Seq Number: 3068439 Parent Sample Id: 604294-001

MS Sample Id: 604294-001 S

Date Prep: 11.02.18 MSD Sample Id: 604294-001 SD

%RPD RPD Limit Units Spike MS MSLimits **Parent MSD** MSD Analysis Flag **Parameter** Result Amount Result Date %Rec %Rec Result Gasoline Range Hydrocarbons (GRO) 9.62 999 1020 101 932 93 70-135 9 20 11.02.18 21:42 mg/kg Diesel Range Organics (DRO) < 8.12 999 1080 108 1060 106 70-135 2 20 11.02.18 21:42 mg/kg

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		109		70-135	%	11.02.18 21:42
o-Ternhenyl	104		95		70-135	0/0	11.02.18 21:42

Received by OCD: 11/3/2021 10:43:14 AM

MARCADIS	#:			CF	MIAI 1A	OF CU IALYS	JST SIS	TOI RE	DY & EQUE	LAB(	ORAT ORM	ORY	Page _	⊥ of _	Lab We	ork Order #
Contact & Company Name:  Brett Krehbiel (Arcadis)	Telephone: 916-786	3-5382				Preservati	Sing-World	E			1					Keys
Address: 101 Creekside Ridge Court, Suite 200 City State Zip Roseville CA 95678	Fax:					Filtered (= # of Contain	ers	<u></u>							Preservation I A. H.SO. B. HCL C. HNO.	Key: Container Information Key 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic
City State Zip	E-mail Addre					Informatio	n	7 PAI	RAME	TER AN	NI VOIC	9 METI	IOD		D. NaOH E. None	4. 500 ml Plastic 5. Encore
Project Name/Location (City State):		nbiel@arc				]	7 <del>,</del> '	<u>. 7</u>	7		<u> </u>	O IVIE I F	/ /	,	F. Other:	6. 2 oz. Glass 7. 4 oz. Glass 8. 8 oz. Glass
VGWU SAT 3, Lea County, NM		B00486	516.SA	T3			გ. გ. ₩	\$ \\ \\	š/		/	′ /			H. Other:	9. Other:
Lyan Vanny	Sampler's S	gnature;	5				28 S								Matrix Key: SO - Soil	10. Other: SE - Sediment NL - NAPL/Oil
Sample ID	Coll	ection	Typ Comp	e (√) Grab	Matrix	Contraction Contra									W - Water T - Tissue	SL - Sludge SW - Sample Wij A - Air Other:
V6wusAT3-Leige-#7-181025	1025-18	15/6		V	50	X									NEWARK	
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Special instructions/Comments:																
										☐ Special Q	A/QC Instru	ctions(<):				
Laboratory Informat						Relin	quished	l By			Received B	v	l Pa	linguished	IFO 1	
Kenco	Cooler Cu	stody Sea	al (*/)		Printed					Drinted Name:			T		Rri	Laboratory Received By
☐ Cooler packed with ice (✔)	☐ Intac	at .	□ No	t Intact	Signate	Nan	7		<del></del>	Signature:	Conza (	nove fel	Signature:	1000	Onzale 7	MICHAEL STATES
Specify Turnaround Requirements: 24-HOUR TAT	Sample R	eceipt:		,4	Firm.	1:/		<del></del>		Firm Courier:	<		Firm/Contrier	n Upo	SQV Fin	William Control
Shipping Tracking #:	Condition/	Cooler Tei	mp: <u>() . i</u>	5/0S	Date/Tin	(40/19)	311	59	***************************************	Date/Tinje:	<u> </u>	(9 pm)	Date/Time:	DONVI	. Da	te(Tirpe: 1 ) (1)
0730826 CofC AR Form 08.27.2015		Dist	ribution:	U	WHITE -	Laboratory	<u> </u>		th results	ris lig		YELLOW -	<i>[/⊘ / 5/ <sub> </sub></i> Lab copy	18	1:13	PINK Retained by Arcadis



### **XENCO Laboratories**





Client: Arcadis - Roseville, CA

Acceptable Temperature Range: 0 - 6 degC

Date/ Time Received: 11/02/2018 10:20:00 AM

Air and Metal samples Acceptable Range: Ambient

Work Order #: 604294

Temperature Measuring device used: R8

	Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?		.3
#2 *Shipping container in good condition	?	Yes
#3 *Samples received on ice?		Yes
#4 *Custody Seals intact on shipping co	ntainer/ cooler?	N/A
#5 Custody Seals intact on sample bottle	es?	N/A
#6*Custody Seals Signed and dated?		N/A
#7 *Chain of Custody present?		Yes
#8 Any missing/extra samples?		No
#9 Chain of Custody signed when relinq	uished/ received?	Yes
#10 Chain of Custody agrees with samp	le labels/matrix?	Yes
#11 Container label(s) legible and intact	?	Yes
#12 Samples in proper container/ bottle?	?	Yes
#13 Samples properly preserved?		Yes
#14 Sample container(s) intact?		Yes
#15 Sufficient sample amount for indicat	ed test(s)?	Yes
#16 All samples received within hold tim	e?	Yes
#17 Subcontract of sample(s)?		N/A
#18 Water VOC samples have zero hea	dspace?	N/A
* Must be completed for after-hours de Analyst:	elivery of samples prior to placing in PH Device/Lot#:	the refrigerator
Checklist completed by:	Brianna Teel	Date: 11/02/2018
Checklist reviewed by:	Kelsey Brooks	Date: 11/02/2018

## **Certificate of Analysis Summary 604296**

Arcadis - Roseville, CA, Roseville, CA

**Project Name: VGWU Sat 3** 

S BORATORY

Project Id: Contact:

**Project Location:** 

B0048616.SAT3

Brett Krehbiel Lea County, NM Tunie. VGVV e But e

Date Received in Lab: Fri Nov-02-18 10:20 am

**Report Date:** 05-NOV-18

**Project Manager:** Kelsey Brooks

	Lab Id:	604296-0	01	604296-0	02	604296-0	03	604296-0	04		
A supliming Domes and of	Field Id:	GWUSAT3-Larg	e-N Wall (	VGWUSAT3-Larg	ge-W Wall	VGWUSAT3-Large	e-E Wall (	VGWUSAT3-Larg	e-S Wall (		
Analysis Requested	Depth:										
	Matrix:	SOIL		SOIL		SOIL		SOIL			
	Sampled:	Nov-01-18	08:00	Nov-01-18 (	08:45	Nov-01-18 0	08:20	Nov-01-18 (	9:00		
Chloride by EPA 300	Extracted:	Nov-03-18	11:00	Nov-03-18 1	11:00	Nov-03-18 1	1:30	Nov-03-18 1	1:30		
	Analyzed:	Nov-03-18	17:21	Nov-03-18 1	17:26	Nov-03-18 1	8:14	Nov-03-18 1	8:19		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		1140	24.8	3930	24.8	634	4.99	1170	24.9		
TPH By SW8015 Mod	Extracted:	Nov-02-18	13:00	Nov-02-18 1	13:00	Nov-02-18 1	3:00	Nov-02-18 1	3:00		
	Analyzed:	Nov-03-18	00:55	Nov-03-18 (	)1:52	Nov-03-18 0	2:12	Nov-03-18 (	2:31		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0		
Diesel Range Organics (DRO)		19.8	15.0	38.5	15.0	21.8	14.9	17.8	15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0		
Total TPH		19.8	15.0	38.5	15.0	21.8	14.9	17.8	15.0		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent beest judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

Kelsey Brooks Project Manager

## **Analytical Report 604296**

for

Arcadis - Roseville, CA

Project Manager: Brett Krehbiel
VGWU Sat 3
B0048616.SAT3
05-NOV-18

Collected By: Client



### 1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

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

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)



05-NOV-18

Project Manager: **Brett Krehbiel Arcadis - Roseville, CA**101 Creekside Ridge
CT 200
Roseville, CA 95678

Reference: XENCO Report No(s): 604296

VGWU Sat 3

Project Address: Lea County, NM

#### **Brett Krehbiel:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 604296. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 604296 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Kelsey Brooks** 

Knus Koah

Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

## Sample Cross Reference 604296



## Arcadis - Roseville, CA, Roseville, CA

VGWU Sat 3

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
VGWUSAT3-Large-N Wall Comp. 181101	S	11-01-18 08:00		604296-001
VGWUSAT3-Large-W Wall Comp. 181101	S	11-01-18 08:45		604296-002
VGWUSAT3-Large-E Wall Comp. 181101	S	11-01-18 08:20		604296-003
VGWUSAT3-Large-S Wall Comp. 181101	S	11-01-18 09:00		604296-004

### **CASE NARRATIVE**

Client Name: Arcadis - Roseville, CA

Project Name: VGWU Sat 3

Project ID: 80048616.SAT3 Report Date: 05-NOV-18

Work Order Number(s): 604296 Date Received: 11/02/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



## Arcadis - Roseville, CA, Roseville, CA

VGWU Sat 3

VGWUSAT3-Large-N Wall Comp. 181101Matrix: Sample Id:

Soil

11.03.18 11.00

Date Received:11.02.18 10.20

Lab Sample Id: 604296-001

Date Collected: 11.01.18 08.00

Analytical Method: Chloride by EPA 300

CHE

Prep Method: E300P

Tech: CHE

Analyst:

% Moisture:

Basis: Wet Weight

Seq Number: 3068464

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1140	24.8	mg/kg	11.03.18 17.21		5

Date Prep:

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

Tech:

ARM

% Moisture:

Analyst:

ARM

11.02.18 13.00 Date Prep:

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	11.03.18 00.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	19.8	15.0		mg/kg	11.03.18 00.55		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	11.03.18 00.55	U	1
Total TPH	PHC635	19.8	15.0		mg/kg	11.03.18 00.55		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	92	%	70-135	11.03.18 00.55		
o-Terphenyl		84-15-1	94	%	70-135	11.03.18 00.55		



## Arcadis - Roseville, CA, Roseville, CA

VGWU Sat 3

Sample Id: VGWUSAT3-Large-W Wall Comp. 18110 Matrix: Soi

Soil

Date Received:11.02.18 10.20

Lab Sample Id: 604296-002 Date Collected: 11.01.18 08.45

Analytical Method: Chloride by EPA 300

CHE

Prep Method: E300P

% Moisture:

Tech: CHE

Analyst:

Date Prep: 11.03.18 11.00

Basis: Wet Weight

Seq Number: 3068464

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3930	24.8	mg/kg	11.03.18 17.26		5

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech:

Analyst:

ARM ARM

Date Prep: 11.02.18 13.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	11.03.18 01.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	38.5	15.0		mg/kg	11.03.18 01.52		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	11.03.18 01.52	U	1
Total TPH	PHC635	38.5	15.0		mg/kg	11.03.18 01.52		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	95	%	70-135	11.03.18 01.52		
o-Terphenyl		84-15-1	97	%	70-135	11.03.18 01.52		



## Arcadis - Roseville, CA, Roseville, CA

VGWU Sat 3

Sample Id: VGWUSAT3-Large-E Wall Comp. 181101Matrix: Soil

Soil

Date Received:11.02.18 10.20

Lab Sample Id: 604296-003 Date Collected: 11.01.18 08.20

Analytical Method: Chloride by EPA 300

CHE

Prep Method: E300P

% Moisture:

Tech: CHE

Analyst:

Date Prep: 11.03.18 11.30

Basis: Wet Weight

Seq Number: 3068465

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	634	4.99	mg/kg	11.03.18 18.14		1

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech:
Analyst:

ARM ARM

Date Prep: 11.02.18 13.00

Basis: Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9		mg/kg	11.03.18 02.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	21.8	14.9		mg/kg	11.03.18 02.12		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<14.9	14.9		mg/kg	11.03.18 02.12	U	1
Total TPH	PHC635	21.8	14.9		mg/kg	11.03.18 02.12		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	107	%	70-135	11.03.18 02.12		
o-Terphenyl		84-15-1	110	%	70-135	11.03.18 02.12		



## Arcadis - Roseville, CA, Roseville, CA

VGWU Sat 3

Sample Id: VGWUSAT3-Large-S Wall Comp. 181101 Matrix: Soil

Soil

11.03.18 11.30

Date Received:11.02.18 10.20

Lab Sample Id: 604296-004 Date Collected: 11.01.18 09.00

Analytical Method: Chloride by EPA 300

Prep Method: E300P

% Moisture:

Tech: CHE

Analyst:

CHE Date Prep:

Basis:

Wet Weight

Seq Number: 3068465

Parameter	Cas Number	Result	RL	Units	<b>Analysis Date</b>	Flag	Dil
Chloride	16887-00-6	1170	24.9	mg/kg	11.03.18 18.19		5

Analytical Method: TPH By SW8015 Mod

Prep Method: TX1005P

% Moisture:

Tech:
Analyst:

ARM ARM

Date Prep: 11.02.18 13.00

Basis: We

Wet Weight

Parameter	Cas Number	Result	RL		Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0		mg/kg	11.03.18 02.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	17.8	15.0		mg/kg	11.03.18 02.31		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0		mg/kg	11.03.18 02.31	U	1
Total TPH	PHC635	17.8	15.0		mg/kg	11.03.18 02.31		1
Surrogate		Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane		111-85-3	89	%	70-135	11.03.18 02.31		
o-Terphenyl		84-15-1	92	%	70-135	11.03.18 02.31		

## **Flagging Criteria**



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit SDL Sample Detection Limit LOD Limit of Detection

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample BLK Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample BKSD/LCSD Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate MS Matrix Spike MSD: Matrix Spike Duplicate

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Final 1.000

<sup>\*\*</sup> Surrogate recovered outside laboratory control limit.

E300P

E300P

E300P

E300P

11.03.18

Prep Method:

Prep Method:

Prep Method:

Date Prep:

#### **QC Summary** 604296

#### Arcadis - Roseville, CA

VGWU Sat 3

Analytical Method: Chloride by EPA 300

Seq Number: 3068464 Matrix: Solid

LCS Sample Id: 7665432-1-BKS LCSD Sample Id: 7665432-1-BSD MB Sample Id: 7665432-1-BLK

MR Spike LCS LCS Limits %RPD RPD Limit Units LCSD LCSD Analysis Flag **Parameter** Result Amount Result %Rec Date %Rec Result

11.03.18 14:53 Chloride < 5.00 250 273 109 240 96 90-110 13 20 mg/kg

Analytical Method: Chloride by EPA 300

Seq Number: 3068465 Matrix: Solid Date Prep: 11.03.18

MB Sample Id: 7665433-1-BLK LCS Sample Id: 7665433-1-BKS LCSD Sample Id: 7665433-1-BSD

MB Spike LCS LCS %RPD RPD Limit Units LCSD LCSD Limits Analysis Flag **Parameter** Result %Rec Date Result Amount Result %Rec

Chloride < 5.00 250 248 99 256 102 90-110 3 20 mg/kg 11.03.18 17:48

Analytical Method: Chloride by EPA 300

Prep Method: 3068464 Matrix: Soil Seq Number: Date Prep: 11.03.18

MS Sample Id: 604276-082 S MSD Sample Id: 604276-082 SD Parent Sample Id: 604276-082

MS %RPD RPD Limit Units Parent Spike MS **MSD MSD** Limits Analysis Flag **Parameter** Result Date Result %Rec Amount Result %Rec

Chloride 712 248 926 86 928 87 90-110 0 20 11.03.18 15:09 X mg/kg

Analytical Method: Chloride by EPA 300

3068464 Matrix: Soil Seq Number: Date Prep: 11.03.18

604276-084 S MSD Sample Id: 604276-084 SD 604276-084 MS Sample Id: Parent Sample Id:

MS %RPD RPD Limit Units Parent Spike MS **MSD MSD** Limits Analysis Flag **Parameter** Result %Rec Date Result Amount Result %Rec Chloride 246 249 492 99 499 90-110 20 11.03.18 16:23 102 mg/kg

Analytical Method: Chloride by EPA 300

E300P Prep Method: 3068465 Matrix: Soil Seq Number: Date Prep: 11.03.18

Parent Sample Id: 604389-001 MS Sample Id: 604389-001 S MSD Sample Id: 604389-001 SD

Parent Spike MS MS Limits %RPD RPD Limit Units Analysis **MSD MSD** Flag **Parameter** Result Date Result Amount %Rec Result %Rec

Chloride < 0.850 248 272 110 267 108 90-110 2 20 mg/kg 11.03.18 18:03

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference

[D] = 100\*(C-A) / BRPD = 200\* | (C-E) / (C+E) |[D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result

= MS/LCS Result = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

Flag

E300P

11.03.18

Prep Method:

## QC Summary 604296

#### Arcadis - Roseville, CA

VGWU Sat 3

Analytical Method: Chloride by EPA 300

Seq Number: 3068465 Matrix: Soil Date Prep:

Parent Sample Id: 604389-006 MS Sample Id: 604389-006 S MSD Sample Id: 604389-006 SD

Spike MS MS Limits %RPD RPD Limit Units Parent **MSD MSD** Analysis Flag **Parameter** Result Amount Result Date %Rec %Rec Result Chloride 11.03.18 19:18 134 249 427 118 431 119 90-110 20 mg/kg X

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P

Seq Number: 3068439 Matrix: Solid Date Prep: 11.02.18

MB Sample Id: 7665416-1-BLK LCS Sample Id: 7665416-1-BKS LCSD Sample Id: 7665416-1-BSD

MB Spike LCS LCS %RPD RPD Limit Units LCSD LCSD Limits Analysis Flag **Parameter** Result %Rec Date Result Amount Result %Rec Gasoline Range Hydrocarbons (GRO) < 8.00 1000 993 99 1010 101 70-135 2 20 11.02.18 20:46 mg/kg Diesel Range Organics (DRO) 1000 1060 106 1070 70-135 1 20 11.02.18 20:46 < 8.13 107 mg/kg

MB MB LCS LCS LCSD LCSD Limits Units Analysis Surrogate %Rec %Rec Flag Flag %Rec Flag Date 11.02.18 20:46 1-Chlorooctane 103 127 128 70-135 % 107 112 70-135 11.02.18 20:46 o-Terphenyl 115 %

Analytical Method: TPH By SW8015 Mod Prep Method: TX1005P

Seq Number: 3068439 Matrix: Soil Date Prep: 11.02.18

Parent Sample Id: 604294-001 MS Sample Id: 604294-001 S MSD Sample Id: 604294-001 SD

MS MS %RPD RPD Limit Units Analysis Parent Spike **MSD** MSD Limits **Parameter** Result Amount Result %Rec Date Result %Rec Gasoline Range Hydrocarbons (GRO) 932 11.02.18 21:42 9.62 999 1020 101 93 70-135 20 mg/kg 999 1080 108 1060 70-135 2 20 11.02.18 21:42 Diesel Range Organics (DRO) < 8.12 106 mg/kg

MS MS **MSD** Limits Units Analysis **MSD Surrogate** %Rec Flag %Rec Flag Date 11.02.18 21:42 124 109 1-Chlorooctane 70-135 % 11.02.18 21:42 o-Terphenyl 104 95 70-135 %

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference [D] = 100\*(C-A) / B RPD = 200\* | (C-E) / (C+E) | [D] = 100 \* (C) / [B]

Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result

A = Parent Result C = MS/LCS Result

E = MS/LCS ResultE = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

Received by OCD: 11/3/2021 10:43:14 AM

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ARCADIS DE		CHAIN (	OF CUS IALYSIS					Page _	_ of Lab Work Order #	04296
Contact & Company Name:	Telephone:		Preservative	E	I	-	:	1	Keys	
Brett Krehbiel (Arcadis)	916-786-5382		Filtered (*)			1	1		Preservation Key: Cont	tainer information Key: 0 ml Vial
Brett Krehbiel (Arcadis)  Address: 101 Creekside Ridge Court, Suite 200  City State Zip  Control of the Control	Fax: NH	2	# of Containers  Container	4					B. HCL 2, 1 C. HNO <sub>3</sub> 3, 20	L Amber 50 ml Plastic 00 ml Plastic
City State Zip	E-mail Address:		Information	PARAME	TER ANA	LYSIS	R METH	OD.		ncore oz. Glass
Roseville CA 95678	brett.krehbiel@arcadis.co	om	7.	-//	7 7	/	7	7	G Other 7. 4	oz, Glass oz, Glass
Project Name/Location (City, State): VGWU SAT 3, Lea County, NM	Project #: B0048616.	SAT3			/ /	/		/	H. Other 9. O	other:
Sampler's Printed Name: Lyan Nan - 7	Sample Signature:		0.5						Matrix Key: SO - Soil SE - Sedimer W - Water SL - Sludge	
Sample ID	Collection 7  Date Time Con	Type (✓)  Matrix  mp Grab	174 Sep. 180						T - Tissue A - Air  REMARKS	Other:
VGWUSAT3-Luga-Numil Comp. 181101	11-1-18 0800 4	1. 50							,	
VowuSAT3-large-Www.11 Comp. 181101	11-1-18 0845 2	/ 50								
VanisAt3-Large-Englicon, 181101	11-1-18 0820 "									
Kuusats-large-W well comp. 181101 Vlunsats-large-Ewall comp. 181101 Kuusats-large-Swalloop, 181101	11-1-18 0900 4									
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Special Instructions/Comments:										
		3	2 COOI	A.C.	□ Special Q	A/QC Instru	ctions(√):			
Laboratory Informati-	Control to the control of the contro		Relinquis			Received By	1	R	Hinquished By Laborato	ry Received By
Xenco	Cooler Custody Seal (✔)	Printe	d Name: uun Mann	7	Printed Name:	ine St	DONTER	Printed Name	ine Shearon DYI ar	mai Fel
☐ Cooler packed with ice (✔)	☐ Intact ☐	Not Intact Signal		5	Signature	2000	O A	Signature:	au Signature:	
Specify Turnaround Requirements: 24-HOUR TAT	Sample Receipt:	Firm	24/11	:	Firm/Courier:	5		rirm/Courier:	Firm.	
Shipping Tracking #:	Condition/Cooler Temp:	5.3 (90) Date/	inno.	3:35	Date/Time:		<u>as</u> :35	Date/Time:	Services XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	1000
20730826 CofC AR Form 08.27.2015	Distribut	ion: WHITE	- Laboratory re		ts	W	YELLOW -	<u> </u>	<u> </u>	ned by Arcadis



### **XENCO Laboratories**





Client: Arcadis - Roseville, CA

Date/ Time Received: 11/02/2018 10:20:00 AM

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

Work Order #: 604296

Temperature Measuring device used: R8

	Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?		.3
#2 *Shipping container in good condition	?	Yes
#3 *Samples received on ice?		Yes
#4 *Custody Seals intact on shipping col	ntainer/ cooler?	N/A
#5 Custody Seals intact on sample bottle	es?	N/A
#6*Custody Seals Signed and dated?		N/A
#7 *Chain of Custody present?		Yes
#8 Any missing/extra samples?		No
#9 Chain of Custody signed when relinque	uished/ received?	Yes
#10 Chain of Custody agrees with samp	le labels/matrix?	Yes
#11 Container label(s) legible and intact	?	Yes
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?		Yes
#15 Sufficient sample amount for indicat	ed test(s)?	Yes
#16 All samples received within hold tim	e?	Yes
#17 Subcontract of sample(s)?		N/A
#18 Water VOC samples have zero head	dspace?	N/A
* Must be completed for after-hours de Analyst:	elivery of samples prior to placing in	the refrigerator
Checklist completed by:  Checklist reviewed by:	Brianna Teel	Date: 11/02/2018
Checklist reviewed by:	Knur Koah	Date: 11/02/2018

Kelsey Brooks

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

## State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-138 Revised March 12, 2007 \*Surface Waste Management Facility Operator and Generator shall maintain and make this

\*Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE
<ol> <li>Generator Name and Address:</li> <li>Chevron Environmental Management Waste Company 1400 St. Pl. Houston, TX 77001 Jason Michelson 281.660.8564</li> <li>JMichelson@chevron.com</li> </ol>
2. Originating Site: HES Transfer Site: Vacuum Glorietta West Unit SAT 3 (VGWU SAT 3)
3. Location of Material (Street Address, City, State or ULSTR): 56 Texas Camp Road Lovington, NM 88260
4. Source and Description of Waste:
Soil excavation
Estimated Volume 700 yd3/bbls Known Volume (to be entered by the operator at the end of the haul) yd3/bbls  5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS
. Jason Michelson Chevron Environmental Management Co. do hereby
regulatory determination, the above described waste is: (Check the appropriate classification)
RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)
☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)
GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS
I
5. Transporter: Diamondback Disposal Services, Inc. DOT# 1141543
OCD Permitted Surface Waste Management Facility
Name and Facility Permit #: Sundance Services ParaboFacility #NM-01-0003
Address of Facility:42 Sundance Lane Eunice, NM 88231
Method of Treatment and/or Disposal:
☐ Evaporation ☐ Injection ☐ Treating Plant ☐ Landfarm ☑ Landfill ☐ Other
Waste Acceptance Status:  APPROVED  DENIED (Must Be Maintained As Permanent Record)
PRINT NAME: Dow Telle TITLE: Sales DATE: 10/29/18  SIGNATURE: TELEPHONE NO.: 575-408-2606

## **Analytical Report 560294**

## for

## **Arcadis - Houston**

Project Manager: Jonathan Olsen HES Transfer Sites

14-SEP-17

Collected By: Client





### 1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054) Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)

Xenco-San Antonio: Texas (T104704534)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)





14-SEP-17

Project Manager: **Jonathan Olsen Arcadis - Houston**10205 Westheimer Rd., Suite 800
Houston, TX 77042

Reference: XENCO Report No(s): 560294

**HES Transfer Sites** 

Project Address: Buckeye NM

#### Jonathan Olsen:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 560294. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

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

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 560294 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Mus Hoah

Kelsey Brooks

Project Manager

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## **Sample Cross Reference 560294**



## Arcadis - Houston, Houston, TX

**HES Transfer Sites** 

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
VGWUSAT3-07(4')	S	08-14-17 13:56		560294-001
VGWUSAT3-07(10')	S	08-14-17 14:00		560294-002
VGWUSAT3-07(20')	S	08-14-17 14:13		560294-003
VGWUSAT3-07(30')	S	08-14-17 14:20		560294-004
VGWUSAT3-07(60')	S	08-14-17 15:55		560294-005
VGWUSAT3-06(4')	S	08-15-17 08:25		560294-006
VGWUSAT3-06(10')	S	08-15-17 08:30		560294-007
VGWUSAT3-07(40')	S	08-15-17 15:04		560294-010
VGWUSAT3-07(50')	S	08-15-17 15:30		560294-011
VGWUSAT3-06(20')	S	08-15-17 08:36		Not Analyzed
VGWUSAT3-06(30')	S	08-15-17 08:44		Not Analyzed

## **CASE NARRATIVE**

Client Name: Arcadis - Houston Project Name: HES Transfer Sites

Project ID: Report Date: 14-SEP-17
Work Order Number(s): 560294

Report Date: 08/16/2017

### Sample receipt non conformances and comments:

Samples 560294-007 and 560294-010 released from hold per Melisa Darrow e-mail 08/24/17-- KB

VGWUSAT3-07 (50') released from hold 09/05/17 per Melisa Darrow E-mail-- KB VGWUSAT3-07 (60') released from hold 09/12/17 per Melisa Darrow E-mail-- KB

Sample receipt non conformances and comments per sample:

None



## Certificate of Analysis Summary 560294

**Arcadis - Houston, Houston, TX** 

**Project Name: HES Transfer Sites** 



Project Id:

**Project Location:** 

Contact: Jonathan Olsen

Buckeye NM

**Date Received in Lab:** Wed Aug-16-17 10:00 am

**Report Date:** 14-SEP-17 **Project Manager:** Kelsey Brooks

	Lab Id:	560294-0	01	560294-0	02	560294-0	03	560294-0	04	560294-0	05	560294-0	006
Analysis Requested	Field Id:	VGWUSAT3	-07(4')	VGWUSAT3-07(10')		VGWUSAT3-07(20')		VGWUSAT3-07(30')		VGWUSAT3-07(60')		VGWUSAT3-06(4')	
Anaiysis Kequesieu	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-14-17 13:56		Aug-14-17 14:00		Aug-14-17 14:13		Aug-14-17 14:20		Aug-14-17 15:55		Aug-15-17 08:25	
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-22-17	10:30	Aug-22-17 10:30		Aug-22-17 10:30		Aug-22-17 10:30		Sep-12-17 17:15		Aug-22-17 10:30	
	Analyzed:	Aug-22-17	Aug-22-17 18:55		19:03	Aug-22-17 19:10		Aug-22-17 19:18		Sep-13-17 00:45		Aug-22-17 19:33	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		68.7	4.99	36.8	5.00	64.9	4.87	427	4.98	140	4.91	279	4.94

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent beest judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Kelsey Brooks



## Certificate of Analysis Summary 560294

**Arcadis - Houston, Houston, TX Project Name: HES Transfer Sites** 



Project Id:

**Project Location:** 

**Contact:** Jonathan Olsen

Buckeye NM

Date Received in Lab: Wed Aug-16-17 10:00 am

**Report Date:** 14-SEP-17 **Project Manager:** Kelsey Brooks

	Lab Id:	560294-0	07	560294-0	10	560294-0	11			
Analysis Pagyastad	Field Id:	VGWUSAT3-0	06(10')	VGWUSAT3-	07(40')	VGWUSAT3-07(50')				
Analysis Requested	Depth:									
	Matrix:	SOIL		SOIL	SOIL					
	Sampled:	Aug-15-17 (	Aug-15-17 08:30		Aug-15-17 15:04		15:30			
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-30-17	Aug-30-17 14:25		Aug-30-17 14:25		4:15			
	Analyzed:	Aug-30-17 1	Aug-30-17 18:22		18:53	Sep-11-17 21:45				
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			
Chloride		27.8	5.00	489	5.00	607	4.99			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Kelsey Brooks Project Manager





## **Flagging Criteria**



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- **H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- **K** Sample analyzed outside of recommended hold time.
- **JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- **RL** Reporting Limit

PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation

**DL** Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(432) 563-1800	(432) 563-1713
(602) 437-0330	
	(281) 240-4200 (214) 902 0300 (210) 509-3334 (432) 563-1800



## **BS / BSD Recoveries**



Page 207 of 273

**Project Name: HES Transfer Sites** 

Work Order #: 560294 Project ID:

Analyst: MGO Date Prepared: 08/22/2017 Date Analyzed: 08/22/2017

**Lab Batch ID:** 3025725 **Sample:** 729750-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<4.90	245	228	93	248	236	95	3	90-110	20	

**Analyst:** MNV **Date Prepared:** 08/30/2017 **Date Analyzed:** 08/30/2017

**Lab Batch ID:** 3026341 **Sample:** 730135-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	< 5.00	250	241	96	250	241	96	0	90-110	20	

Analyst: MNV Date Prepared: 09/11/2017 Date Analyzed: 09/11/2017

Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	< 5.00	250	246	98	250	246	98	0	90-110	20	

Relative Percent Difference RPD = 200\*|(C-F)/(C+F)|Blank Spike Recovery [D] = 100\*(C)/[B]Blank Spike Duplicate Recovery [G] = 100\*(F)/[E]All results are based on MDL and Validated for QC Purposes



## **BS / BSD Recoveries**



Page 208 of 273

**Project Name: HES Transfer Sites** 

Work Order #: 560294 **Project ID:** 

**Date Prepared:** 09/12/2017 **Date Analyzed:** 09/12/2017 Analyst: MNV

**Lab Batch ID:** 3027464 **Sample:** 730807-1-BKS **Batch #:** 1 Matrix: Solid

Units: mg/kg		BLAN	K/BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUL	ΟY	
Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Chloride	< 5.00	250	254	102	250	253	101	0	90-110	20	

Relative Percent Difference RPD = 200\*|(C-F)/(C+F)| Blank Spike Recovery [D] = 100\*(C)/[B]Blank Spike Duplicate Recovery [G] = 100\*(F)/[E]All results are based on MDL and Validated for QC Purposes



### Form 3 - MS / MSD Recoveries



Page 209 of 273

**Project Name: HES Transfer Sites** 

**Work Order #:** 560294

560294 3025725

**QC- Sample ID:** 560112-001 S

Batch #:

Matrix: Soil

**Project ID:** 

Lab Batch ID: Date Analyzed:

08/22/2017

**Date Prepared:** 08/22/2017

Analyst: MGO

**Reporting Units:** 

mg/kg

·

#### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	%R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]				
Chloride	697	246	924	92	246	917	89	1	90-110	20	X

**Lab Batch ID:** 3025725 **QC- Sample ID:** 560113-004 S

Batch #: 1 Matrix: Soil

08/22/2017 **Date Prepared:** 08/22/2017

Analyst: MGO

yst. MOO

**Reporting Units:** mg/kg

#### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	14.2	246	279	108	246	277	107	1	90-110	20	

Lab Batch ID:

**Date Analyzed:** 

3026341

**QC- Sample ID:** 561557-003 S

Batch #:

Matrix: Soil

Date Analyzed:

08/30/2017

**Date Prepared:** 08/30/2017

Analyst: MNV

**Reporting Units:** 

mg/kg

#### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

1

Inorganic Anions by EPA 300/300.1	Parent Sample	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample	. 1	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride	265	250	529	106	250	529	106	0	90-110	20	

Matrix Spike Percent Recovery [D] = 100\*(C-A)/B Relative Percent Difference RPD = 200\*(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E



### Form 3 - MS / MSD Recoveries



Page 210 of 273

**Project Name: HES Transfer Sites** 

Work Order #: 560294

**QC- Sample ID:** 562386-013 S

Batch #:

Matrix: Soil

**Project ID:** 

Lab Batch ID: Date Analyzed: 3027337 09/11/2017

**Date Prepared:** 09/11/2017

Analyst: MNV

**Reporting Units:** 

mg/kg

#### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	24.4	250	258	93	250	258	93	0	90-110	20	

3027337 Lab Batch ID: **QC- Sample ID:** 562386-023 S Batch #: Matrix: Soil

09/11/2017

**Date Prepared:** 09/11/2017

Analyst: MNV

**Reporting Units:** mg/kg

#### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	12000	249	11800	0	250	11900	0	1	90-110	20	X

Lab Batch ID:

**Date Analyzed:** 

3027464

**QC- Sample ID:** 562543-001 S

Batch #:

Matrix: Soil

**Date Analyzed:** 

09/13/2017

**Date Prepared:** 09/12/2017

Analyst: MNV

**Reporting Units:** 

mg/kg

#### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

1

Inorganic Anions by EPA 300/300.1  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	4270	250	4380	44	250	4370	40	0	90-110	20	X

Matrix Spike Percent Recovery [D] = 100\*(C-A)/B Relative Percent Difference RPD = 200\*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E



## Form 3 - MS / MSD Recoveries



Page 211 of 273

**Project Name: HES Transfer Sites** 

**Work Order #:** 560294

560294 3027464

**QC- Sample ID:** 562543-011 S

Batch #:

Matrix: Soil

**Project ID:** 

Lab Batch ID: Date Analyzed:

09/13/2017

**Date Prepared:** 09/12/2017

Analyst: MNV

**Reporting Units:** mg/kg

Alialyst: Min

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	[E]		[G]				
Chloride	7440	249	7550	44	249	7530	36	0	90-110	20	X

,	9	ARCADIS	
---	---	---------	--

ID#:			

## **CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM**

Page	of	1

Lab	Work Order #	
	5(00294	

5 Jonathan Olsen Accadis	713 -	953-	4879	1		Preservativ	-	-	-					Preservation		ys ontainer Infor 40 ml Vial	rmation Key:	
Address: 10205 westhermer Road	I da.			# of Contain	ers							B. HCL	2.	1 LAmber		ı		
2 Suite 800	NA			Container								C. HNO <sub>3</sub> D. NaOH		250 ml Plast 500 ml Plast				
Address: 10205 westhermer kond Suite 800 City State Zip	E-mail Addre	ess:				momuto	-	RAMET	FR ANA	I YSIS &	METH	OD		E. None F. Other:		Encore 2 oz. Glass		
Project Name/Location (City, State):	Project #:	nen o DIS:	enOric	udis.	om.		/	/ /		/	/	/	/ /	G. Other:	7. 8.	4 oz. Glass 8 oz. Glass Other:		
HES Transfer Sites Buckeye NM Sample's Printed Name: Kyan Nunny	Bcc 48626.1701 Sampler's Signature:				- /	25							Matrix Key:	10	0. Other:		2	
Ryan Nanny	1	-		)	Г	1/2/	' /							SO - Soil W - Water	SE - Sedii SL - Sludg		NAPL/Oil - Sample Wipe	] 3
Sample ID	Colle	ection Time	Typ Comp	e (✓) Grab	Matrix	Chloris								T - Tissue	A - Air	Othe		ا ا
VGWUSAT3-07(4')	8-14-17	1356		V	50	ŀ					/				2 (0.0000000)			
	8-14-17	1400		V	50	1												
VGWUSAT3-07(20')	8-14-17	1413		V	50	1.												
VGWUSAT3-07(30')	8-14-17	1420		V	50	1												
VGWUSAT3-07(60')	8-14-17	1555		V	50	1							Hold	Sample	a			] ,
VGWUSAT3-06(4')	8-15-17	0825		V	50	1												] 3
VGWUSAT3-06 (10')	8-15-17	0830		V	50								Hold	59-01	۲,			1 6
VGWUSAT3-06 (20')	8-15-17 0836 V 50			1	1						Hold Sample.  Hold Sample.  Hold Sample.  Hold Sample.					2		
	8-15-17	0844		V	50								Hold	Samply	٠.			
VGWUSAT3-07(40')	8-14-17	1504		/	50	1							Hold	Sandl	r 1	~		
V6wusAT3-07(50')	8-14-17	1530		V	50	j.							Hold	Sample				
																	-	1
								1/2	/				Temp:	( U ::-0.2°C)	IR ID	:R-8		3.4
														,				
Special Instructions/Comments:  □ Special QA/QC Instructions(✓):  Corrected Temp:																		
Laboratory Information							quished By		F	Received By		F	Relinquished	Ву	Labora	atory Receive	d Bv	17
Lab Name: Xen Co	Cooler Custody Seal (✓) Printed						Printed Name:			Printed Name:			Printed Name:	UNRE	D -12	111		
© Cooler packed with ice (✓)	☐ Inta	ict	□ No	ot Intact	Signati	ure)	1	of the party and the same of t	Signature:	Lev Ju	mg	Signature:	wy	my	Signature:	STIFEE	o A.	.Su
Specify Turnaround Requirements:	Sample R	Receipt:		-	Firm:	-			Firm/Courier:			Firm/Courier:			SMULL	rely	Dur	Tag
Standard TAT			0	CA	A	readi	5								VO	MD		F
Shipping Tracking #:	Condition/Cooler Temp: O Date/Tir							Date/Time: Date/Time:				Date/Time: 8-10-17 10:00			ed to			
20730826 CofC AR Form 08.27.2015		Dis	tribution	:	WHITE -			with results		V	/FLLOW -	Lab conv				oined by A	The second name of the second	g



# XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Arcadis - Houston

Date/ Time Received: 08/16/2017 10:00:00 AM

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

Work Order #: 560294

Temperature Measuring device used: R8

	Sample Receipt Checklist	Comments							
#1 *Temperature of cooler(s)?		1.2							
#2 *Shipping container in good condition	?	Yes							
#3 *Samples received on ice?		Yes							
#4 *Custody Seal present on shipping co	ontainer/ cooler?	N/A							
#5 *Custody Seals intact on shipping cor		N/A							
#6 Custody Seals intact on sample bottle	es?	N/A							
#7 *Custody Seals Signed and dated?		N/A							
#8 *Chain of Custody present?		Yes							
#9 Sample instructions complete on Cha	in of Custody?	Yes							
#10 Any missing/extra samples?		No							
#11 Chain of Custody signed when relind	quished/ received?	Yes							
#12 Chain of Custody agrees with sampl	e label(s)?	Yes							
#13 Container label(s) legible and intact	?	Yes							
#14 Sample matrix/ properties agree with	n Chain of Custody?	Yes							
#15 Samples in proper container/ bottle?	•	Yes							
#16 Samples properly preserved?		Yes							
#17 Sample container(s) intact?		Yes							
#18 Sufficient sample amount for indicat	ed test(s)?	Yes							
#19 All samples received within hold time	e?	Yes							
#20 Subcontract of sample(s)?		No							
#21 VOC samples have zero headspace	?	N/A							
* Must be completed for after-hours delivery of samples prior to placing in the refrigerator  Analyst: PH Device/Lot#:									
Checklist completed by:		Date: 08/16/2017							
Checklist reviewed by:	Kelsey Brooks	Date: <u>08/16/2017</u>							

## **ATTACHMENT 4**

**Soil Boring Logs** 

ARCA						Chevron		Boring N	lo.:_VGWUSat3	-01
Soil Boring Log  Sheet: 1 of 1										
Project Name		evron EMC			_	Date Started: <u>09/14/2016</u>	_Logger:		cks	
Project Numb					_ Da	ate Completed: <u>09/14/2016</u>	_ Editor:			
Project Locat	tion: <u>HE</u>	S Transfer	Sites		_	Weather Co	onditions:	NA		
	Sample nterval	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description			Construction Details	Well
1						SAND, fine; some silt; well graded; dry; graded; dry; graded; dry; fine; some silt; dry; tan.  SAND, fine, some coarse sand; some silt; dry  SAND, fine, some coarse sand; some silt; dry	y; tan.		Borehole backfilled with — Native material	
						End of boring at 30.0 ft bgs.				
Drilling Co.:	HC	I Drilling				Sampling Method <u>:Shovel</u>			<u></u>	
Driller: Kenny Cooper Sampling Interval: NA										
			1				۱۰ NI۸			
Drilling Method: Air Rotary Water Level Start (ft. bgs.): NA										
Drilling Fluid: None Water Level Finish (ft. btoc.):NA										
Remarks: '/ ft = feet; " / in = inch; bgs = below ground surface; Converted to Well: Yes X No										
	ppm = parts per million; NA = not available or not applicable. Quantab Surface Elev.:NA									
Reading- 30' :	0.6 unit =	Reading be	elow scale.			North Coor: NA				
						East Coor: NA				

ARCADI Soil Boring					Chevron  Boring No.: VGWUSat3-0					
Project Name:	Chevron FM				Date Started: 09/14/2016 Logger: Ken Wicks	2				
Project Number:				_ _ Da	ate Completed: 09/14/2016 Editor: NA					
Project Location:	: HES Transfe			_	Weather Conditions: NA					
Depth Samp (feet) Interv		Sample ID	PID (ppm)	USCS Class	Description Construction Details	Well				
1					SAND, fine, some coarse sand; some silt; poorly graded; dry; tan.  SAND, fine, some coarse sand; some silt; poorly graded; dry; tan.  Borehole backfilled with—Native material  SAND, fine; few gravel; some silt; dry; tan.					
Drilling Co.:	HCI Drilling				Sampling Method <u>:Shovel</u>					
Driller:	Kenny Coope	er			Sampling Interval:NA					
Drilling Method:						Water Level Start (ft. bgs.): NA				
Drilling Fluid:	None	a distriction of the				Water Level Finish (ft. btoc.):NA				
Remarks:		n = inch; bgs = below				Converted to Well: Yes X No				
		vailable or not applica	ible. Qua	Surface Elev.:NA						
Reading- 30' : 0.6 เ	unit = Reading b	elow scale.			_ North Coor: NA					
5			East Coor: NA							

ARCADIS					Chevron		Boring	No.:_VGWUSat3	i-02
Soil Boring L Project Name: Che	og				D-4- 04-4-4- 00/44/0040		17 1	Sheet: 2 of	2
Project Name: Che				– Da	Date Started: 09/14/2016 ate Completed: 09/14/2016	_Logger: _ Editor:		VICKS	
Project Location: HES					Weather Co				
Depth Sample (feet) Interval	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description			Construction Details	Well
31					SAND, fine; some silt; dry; tan.  SAND, fine; some silt; moist; tan.			Borehole backfilled with — Native material	
62									
Remarks:									

ARCADI	S Design & Consultancy for natural and built assets					Chevron		Boring	No.:_VGWUSat3	-03
Soil Borin	g Log							S	Sheet: 1 of	1
Project Name:	Chevron EMO			_		09/14/2016	_Logger:	<u>Mphar</u>		
Project Number:				_ D	ate Completed		_ Editor:			
Project Location	: <u>HES Transfe</u>	r Sites		_		Weather C	onditions:	<u>NA</u>		
Depth Sam (feet) Inter		Sample ID	PID (ppm)	USCS Class		Description			Construction Details	Well
1		VGWUSAT3-03(4') @			90% SAND, very weak reaction to	ine to medium grained; 10 Cl; pink (7.5YR 8/3).			Borehole backfilled with — Native material	
41		1070			End of boring at 4					
Drilling Co.:	HCI Drilling					ing Method:Shovel				
Driller:	Kenny Coope					ing Interval <u>: NA</u>				
Drilling Method:	-					Level Start (ft. bgs.				
Drilling Fluid:	None					Level Finish (ft. bto		Γ	7 N.L.	
Remarks:		n = inch; bgs = below				rted to Well:	Yes	X	] No	
		vailable or not applica	ble. Qua	ntab		e Elev.:NA				
Reading- 30' : 0.6	unit = Reading b	elow scale.				Coor: NA				
					East (	coor: NA				

ARCAI Cail Davi						Chevron		Boring N	lo.:_VGWUSat3	-04
Soil Bori	ng L	.og						Sh	neet: 1 of	1
Project Name		evron EMC				Date Started: 08/14/2017	_Logger:		•	
1 -			.T3		_ Da	te Completed: <u>08/14/2017</u>				
Project Locati	on: <u>HE</u>	S Transfer	Sites		_	Weather Co	onditions:	<u>NA</u>		
	ample terval	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description			Construction Details	Well
1						SAND, fine; some silt; poorly graded; dry; tar  SAND, fine to medium; some silt; poorly graded; dry; tar  SAND, fine; some silt; poorly graded; dry; tar	led; dry; tan.		Borehole backfilled with — Native material	
31										
Drilling Co.:		ite Drilling				Sampling Method <u>:Shovel</u>				
Driller:		Atkins				Sampling Interval <u>:NA</u>				
Drilling Metho	d: <u>Air</u>	Rotary				Water Level Start (ft. bgs.)	): NA			
Drilling Fluid:	Noi	-				Water Level Finish (ft. bto				
Remarks:			= inch; bgs = below	ground s	surface:		Yes	×	No	
			/ailable or not applica			Surface Elev.:NA				
Reading- 30' : 0				Que		North Coor: NA				
r toaumy- 50 . 0	.o uillt =	r toauriy De	NOW GOOIG.			East Coor: NA				
						East Cool. INA				

ARCAL	DIS Design & Consultancy for natural and built assets				Chevron Boring No.: VGWUSat3-05	
Soil Bori					Sheet: 1 of 1	
Project Name:					Date Started: 09/14/2016 Logger: Mphan	
	er: <u>B0048616.S</u> on: <u>HES Transf</u>			_ Da	ate Completed: 09/14/2016 Editor: NA  Weather Conditions: NA	
				_		
	mple Recovery cerval (in.)	Sample ID	PID (ppm)	USCS Class	Description Construction Details	Well
1		VGWUSAT3-05(4') @ 1111			90% SILT, non plastic; 5% SAND, fine to medium grained; dry; nigh reaction to HCl; pink (7.5YR 8/3).  Borehole backfilled with—Native material  90% SAND, very fine to medium grained; 10% SILT, non plastic; weak reaction to HCl; dry; pink (7.5YR 7/3).	
Drilling Co.:	HCI Drilling	1155			End of boring at 40.0 ft bgs.  Sampling Method:Shovel	
Driller:	Kenny Coop	er				
Drilling Method		<u> </u>				
Drilling Fluid:	None				Water Level Finish (ft. btoc.):NA	
Remarks:		in = inch; bgs = below	_			
	million; NA = not .6 unit = Reading	available or not applica below scale.	DIE. QU	anta0	Surface Elev.:NA  North Coor: NA	
Todding- 50 . U.	.o unii – Neauniy	ociow scale.			East Coor: NA	
· L					Last Goot. Till	

ARCA	DIS	esign & Consultancy r natural and uilt assets				Chevron	Boring	No.: VGWUSAT	3-06
Soil Bor	ing L	og						Sheet: 1 of	1
Project Name	e: <u>Ch</u>	evron EMC			_	Date Started: <u>08/15/2017</u>	Logger: R. Na	nny	
			.T3		_ Da	te Completed: <u>08/15/2017</u>			
Project Locat	tion: <u>HE</u>	S Transfer	Sites		_	Weather C	onditions: NA		
	Sample nterval	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description		Construction Details	Well
1				0.0	1	CLAYEY SAND; brown (10YR 4/3); fine gramoderately sorted; firm; friable; containing sclay; dry; roots; trace in sample. Formation also contains trace Caprock Calic laminated with pale yellow (2.5Y 8/2); hard (fragments; dry.  CAPROCK CALICHE; White (2.5Y 8/1) lens (2.5Y 8/2); hard; fractured; formation contains subrounded; poorly sorted; dry.  NODULAR CALICHE; pink (7.5YR 8/3); mocontaining punky matrix; trace very fine and subrounded; moderately sorted in matrix.  SILICEOUS CALICHE; light yellowish brown indurated; dry.  SANDY CALICHE; very pale brown (10YR 8 dry; containing some very fine and fine graingrains in sample; subrounded; poorly sorted.  SANDSTONE; pink (7.5YR 8/3); fine graine grained; subrounded; poorly sorted; weakly calcareous; dry.	che; white (2.5Y 8/1); 0.05' to 0.30' in size sed with pale yellow ans trace fine grains;  derately firm; dry; fine grains;  of (10YR 6/4); flinty;  of (10YR 6/4); fine grains;  distrace medium  distrace medium	Borehole backfilled with — Native material	
Drilling Co.:	Wh	nite Drilling				Sampling Method <u>:Shovel</u>			
Driller:		Atkins				Sampling Interval <u>:NA</u>			
Drilling Metho		Rotary				Water Level Start (ft. bgs	. <u>): NA</u>		
Drilling Fluid:	No	ne				Water Level Finish (ft. bto			
Remarks:			n = inch; bgs = below g			Converted to Well:	Yes 🗵	No	
			vailable or not applica			Surface Elev.:NA			
Reading- 30' :	0.6 unit =	Reading be	elow scale. <29mg/L (	<116m	g/kg C1-)				
						East Coor: NA			

9ARC4						Chevron	Boring	No.:_VGWUSAT	3-07
Soil Bo	ring L	_og						Sheet: 1 of	2
Project Nam		evron EMC				Date Started: 08/14/2017	_Logger: R. Na	nny	
			\T3		Da	te Completed: <u>08/14/2017</u>	_ Editor: <u>NA</u> _		
Project Loca	ition: HE	:S Transfer	Sites			vveatner Co	onditions: <u>NA</u>		
	Sample Interval	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description		Construction Details	Well
1						SANDY CLAY; brown (7.5YR 4/2); very firm; little sand; fine grained; trace medium grains sorted; dry; trace roots in sample.	in sample; poorly		
3	X			0.0		CLAYEY SAND; yellowish brown (10YR 5/6) grained; subrounded; poorly sorted; friable; s	; very fine to fine soft; dry.		
4 5						CLAYEY SAND; brown (10YR 5/3); fine grain poorly sorted; dry; firm; friable; formation corcaliche; white (2.5Y 8/1) laminated with pale hard; nodules & fragments; little 0.05' to 0.5'	ntains caprock yellow (2.5Y 8/2);		
- 6				0.0	A P A P A P A P A P A P A P A P A P A P	SANDY CALICHE; very pale brown (10YR 8/containing some fine grains; subrounded; po			
10					Parter by				
15 16 17 18 /				0.0	Day Day Day Day Day Bay Day Day Day Day Day Day Day Day Day Day Day Day	SILICEOUS CALICHE; light yellowish brown indurated; dry; high silica content.	(10YR 6/4); flinty;	Borehole backfilled with — Native material	
20					1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SANDY CALICHE; very pale brown (10YR 8/ containing little fine and medium grains; trace sample; subrounded; poorly sorted.	e coarse grains in		
25 26 27 28 29/				0.0		SANDSTONE; very pale brown (10YR 7/4); f subrounded; poorly sorted; weakly cemented Formation became slightly lighter in color and blocky; showing trace medium sand grains b Formation began showing Caliche-Nodules; cm to 0.2 cm in size at 50'.	l; calcareous; dry. d moderately firm; eginning at 47'.		
30 / Drilling Co.:	۱۸/۱	nite Drilling	I	I		Sampling Method <u>:Shovel</u>		<u> </u>	
Driller:		A (1 '				0 " 1 1 1 1 1 1 1 1			
Drilling Meth						100 100	): NA		
Drilling Fluid		-				Water Level Start (it. bgs Water Level Finish (ft. bto	•		
Remarks:			n = inch; bgs = below	ground	surface:	Converted to Well:		☑ No	
			vailable or not applica			Surface Elev.:NA	_		
Reading- 30' :						North Coor: NA			
J						East Coor: NA			

ARCADIS Design & Consultancy for natural and built assets

Project Name: Chevron EMC

Soil Boring Log

Chevron

Boring No.: VGWUSAT3-07

Sheet: 2 of 2

Date Started: 08/14/2017 Logger: R. Nanny

Project Number: <u>B0048616.SAT3</u> Date Completed: <u>08/14/2017</u> Editor: <u>NA</u>
Project Location: <u>HES Transfer Sites</u> Weather Conditions: <u>NA</u>

	rval	(in.) ´		(ppm)	Class	Description	Details	Well
31 32 33 34 35 36 37 38 39				0.0		SANDSTONE; very pale brown (10YR 7/4); fine grained; subrounded; poorly sorted; weakly cemented; calcareous; dry. Formation became slightly lighter in color and moderately firm; blocky; showing trace medium sand grains beginning at 47'. Formation began showing Caliche-Nodules; white; silty; firm 0.1 cm to 0.2 cm in size at 50'.		
40				0.0			Borehole backfilled with — Native material	
51 52 53 54 55 56 57 58 59 60				0.0		SAND; brownish yellow (10YR 6/6); fine grained; trace medium grains in sample; subrounded; moderately sorted; slight moisture; loose.  End of boring at 60.0 ft bgs.		
61 62 emarks:	Ou	antab Read	lings:					

40 mg/Lx4 = 160 mg/kg CI

## **ATTACHMENT 5**

**Photographic Log** 



#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No.

B0048616.SAT3

Photo No.

**Date:** Oct. 2018

#### Description:

IPS Hydrovacing Perimeter of SAT3-005 Proposed Excavation.





### **PHOTOGRAPHIC LOG**

Photo No.

**Date:** Oct. 2018

#### **Description:**

Perimeter of SAT3-005 Hydrovaced Down to Caprock Caliche.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No. B0048616.SAT3

Photo No.

**Date:** Oct. 2018

#### Description:

IPS Hydrovacing Perimeter of SAT3-001 Proposed Excavation.





Date:

Oct. 2018

### **PHOTOGRAPHIC LOG**

# Description:

Photo No.

Perimeter of SAT3-001 Hydrovaced Down to Caprock Caliche.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No. B0048616.SAT3

Photo No. **5** 

**Date:** Oct. 2018

#### **Description:**

6mil. Plastic Excavated Soil Containment.





### **PHOTOGRAPHIC LOG**

# Photo No.

**Date:** Oct. 2018

#### Description:

IPS Emptying Hydrovaced Soil onto Containment.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No. B0048616.SAT3

Photo No. **7** 

**Date:** Oct. 2018

#### **Description:**

Diamondback Excavating Contaminated Soil at SAT3-005.





#### **PHOTOGRAPHIC LOG**

Photo No.

**Date:** Oct. 2018

#### **Description:**

Diamondback Excavating Contaminated Soil at SAT3-001.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No.

B0048616.SAT3

Photo No. **9** 

**Date:** Oct. 2018

#### **Description:**

SAT3-005 Excavated Down to Caprock Caliche and Secured Using Snow Fencing.





Date:

Oct. 2018

#### PHOTOGRAPHIC LOG

# 10 Description:

Photo No.

SAT3-001 Excavated Down to Caprock Caliche and Secured Using Snow Fencing.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No. B0048616.SAT3

Photo No. 11

**Date:** Oct. 2018

#### **Description:**

Diamondback Delivering Caliche Fill to SAT3.





#### **PHOTOGRAPHIC LOG**

Photo No. 12

**Date:** Oct. 2018

#### Description:

Diamondback Offloading Top Soil at SAT3.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No.

B0048616.SAT3

Photo No. 13

**Date:** Oct. 2018

#### **Description:**

IPS Hydrovacing SAT3 Large Excavation Perimeter Down to Caprock Caliche.





Date:

Oct. 2018

#### PHOTOGRAPHIC LOG

# 14 Description:

Photo No.

Two IPS Rigs Hydrovacing SAT3 Large Excavation Perimeter Down to Caprock Caliche.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No. B0048616.SAT3

Photo No. 15

**Date:** Oct. 2018

#### **Description:**

Exposed Electric Line with Tracer Wire at Northwest Corner of SAT3 Large Excavation.





Date:

Oct. 2018

#### PHOTOGRAPHIC LOG

# 16 Description:

Photo No.

Old Abandoned Flow Line Exposed at The Northwest Corner of SAT3 Large Excavation.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No.

B0048616.SAT3

Photo No. 17

**Date:** Oct. 2018

#### **Description:**

Diamondback Excavating Northeast Section of SAT3 Large Excavation Using a John Deere Backhoe and Utilizing a Line Spotter.





Date:

Oct. 2018

#### PHOTOGRAPHIC LOG

# 18 Description:

Photo No.

Diamondback
Excavating East Section
of SAT3 Large
Excavation Using a John
Deere Backhoe and
Utilizing a Line Spotter.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No. B0048616.SAT3

Photo No. 19

**Date:** Oct. 2018

#### **Description:**

Diamondback Excavating Northeast Center Section of SAT3 Large Excavation Using a John Deere Backhoe and Utilizing a Line Spotter.





Date:

Oct. 2018

#### PHOTOGRAPHIC LOG

# 20 Description:

Photo No.

Diamondback
Excavating Center
Section of SAT3 Large
Excavation Using a John
Deere Backhoe.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No. B0048616.SAT3

Photo No. 21

**Date:** Oct. 2018

#### **Description:**

Northeast Section of SAT3 Large Excavation Excavated Down to Caprock Caliche.





Date:

Oct. 2018

#### PHOTOGRAPHIC LOG

# 22 Description:

Photo No.

East Section of SAT3 Large Excavation Excavated Down to Caprock Caliche Encroaching on Previously Excavation Indicated by Change in Soil Type at South End of East Excavation.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No.

B0048616.SAT3

Photo No. 23

**Date:** Oct. 2018

#### **Description:**

Center Section of SAT3 Large Excavation Excavated Down to Caprock Caliche.





Date:

Oct. 2018

#### PHOTOGRAPHIC LOG

# 24 Description:

Photo No.

Excavated
Contaminated Soil
Placed on Plastic Liner
Containment.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No.

B0048616.SAT3

Photo No. 25

**Date:** Oct. 2018

#### **Description:**

Excavated Contaminated Soil Placed on Plastic Liner Containment.





### PHOTOGRAPHIC LOG

### 26

Photo No.

**Date:** Oct. 2018

#### Description:

Loading Excavated Soil Into 12 Yard Dump Trucks.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No.

B0048616.SAT3

Photo No. 27

Date: Oct. 2018

#### **Description:**

Diamondback Leveling Topsoil Placed in SAT3-001 and SAT3-005.





#### PHOTOGRAPHIC LOG

28

Photo No.

Date: Oct. 2018

#### Description:

Topsoil Leveled and Lightly Compacted at SAT3-001 and SAT3-005.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No.

B0048616.SAT3

Photo No. 29

**Date:** Oct. 2018

#### Description:

Diamondback Installing Caliche Fill Inside SAT3 Large Excavation.





Date:

### PHOTOGRAPHIC LOG

# 30 Description:

Photo No.

Oct. 2018

Diamondback Using John Deere Backhoe to Level and Compact Caliche Fill in SAT3 Large Excavation.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No.

B0048616.SAT3

Photo No. 31

Date: Oct. 2018

#### **Description:**

Diamondback Leveling and Compacting Topsoil Added to The Containment Area After All Contaminated Soil was Removed.





#### PHOTOGRAPHIC LOG

32

Photo No.

Date: Oct. 2018

#### Description:

Diamondback Laying **Down Native Grass** Seed at Containment Area.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No.

B0048616.SAT3

Photo No. 33

**Date:** Oct. 2018

#### **Description:**

Diamondback Laying Down Native Grass Seed on East Side of SAT3 Large Excavation Area.





#### PHOTOGRAPHIC LOG

34

Photo No.

**Date:** Oct. 2018

#### Description:

Native Grass Seed Laid Down on Northeast End of SAT3 Large Excavation Area.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No.

B0048616.SAT3

Photo No. 35

Date: Oct. 2018

#### **Description:**

Completed View of SAT3-001. SAT3-005 and Containment Area.





#### PHOTOGRAPHIC LOG

36

Photo No.

Date: Oct. 2018

#### Description:

Completed View of The Northeast End of SAT3 Large Excavation Area.





#### **Property Name:**

Vacuum Glorieta West Unit Satellite 3

#### Location:

Chevron U.S.A. Inc. VGWU Sat 3 Lea County, New Mexico Project No.

B0048616.SAT3

Photo No. 37

Date: Oct. 2018

#### **Description:**

Completed Center View of SAT3 Large Excavation Area.





#### PHOTOGRAPHIC LOG

38 Description:

Photo No.

Date: Oct. 2018

Completed Center View of SAT3 Large Excavation Area.



# **ATTACHMENT 6**

**Non-Hazardous Waste Manifests** 

NON-HAZAR		E MANIFE	5 1 1. PA				
3. COMPANY NAME  CHEVRON Em l  PHONE NO. 575-396-4414  Jason Michelson 281-660-8564	4. ADDRESS 56 Texas Car CITY Lovington	mp Rd. STATE NM	88	ZIP 260	PICK-UP	DATE:	3
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## **VACUUM FMT**

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RIMY ALVARADO - PHONE: (575) 396-441 X223 • FAX: (575) 396-6913 • EMAIL: RIMYALVARADO@CHEVRON.COM

### **VACUUM FMT**

)	3. COMPANY NAME	4. ADDRESS 56 Texas Cam		1. PA	5.	PICK-UP	DATE:	
G	CHEVRON PHONE NO. 575-396-4414	CITY Lovington	STATE NM	-	260	10-25-		
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### **VACUUM FMT**

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PRINTED TYPED NAME Ryan Nanny on behalf of		SIGNATURE DATE  On behalf of CEMC 10-29						
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EMERGENCY PHONE: 575-631-99	586 EMER	EMERGENCY PHONE:						
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DISPOSAL FACILITY: Sundance Disposal FACILITY: Sundance Disposarior	Coste D	DDRESS: 42	20. COMMENT	'S NI	A, C-	138 Form	a.ua.m.u.		
SIGNATURE July DISPOSAL FACILITY: Sundance 0,4	Coste D  Posal A  1-0003  SCERTIFICAT	DDRESS: 42 :	20. COMMENT	S NI	A, C-	138 Form	011 - SFH lity, that the facil		

	VACUUN	I FMT							
	NON-HAZARDOUS WASTE N	MANIFES	T 1. PAG	E OF	2. Truck N	ю.			
	PHONE NO. 575-396-4414 CITY	56 Texas Camp Rd. CITY STATE			5. PICK-UP DATE: 10-29-18				
	7. NAME OR DESCRIPTION OF WASTE SHIPPED:	44.	8. CON'	TAINERS Type	9. TOTAL QUANTITY	10. UNIT			
-	a. RCRA Exempt oil Field Soil Waste		1	OT	12cu yards				
L	C.								
L	2. NAME OF LEASE:								
	Buckeye SAT 3 Location Ja 4. IN CASE OF EMERGEN	CY OR SPI	LL. CO	uw,	och- mu	011 - SFA	4		
	HES SPECIALIST 10-29-18 Chamber 1-800-424-9300	24	4-HOUR I	EMERGE	TOWNO IN	0-29-18			
11/10	5. Chevron Representative: Hereby declare that the contents of this consig	nment are fully and a	accurately des	cribed above.					
	PRINTED TYPED NAME	SIGNATUR		- h.14	of CEr		DATE		
	16. TRANSPORTER (1) TRUCKING COMPANY NAME:	TRUCKI	TF	RANSPO	RTER (2) Y NAME:				
١	IN CASE OF EMERGENCY CONTACT: Justin Roberts	IN CASE OF EMERGENCY CONTACT:							
1	EMERGENCY PHONE: 575-631-9586	EMERGENCY PHONE:							
	18. TRANSPORTER (1): Acknowledgment of receipt of material PRINTED/TYPED NAME Baldemar Taria	18. TRANSPORTER (2): Acknowledgment of receipt of material PRINTED/TYPED NAME					naterial		
	SIGNATURE B. TARIN DATE 10-29-18	SIGNATUR	Е		-	DATE			
	DISPOSAL FACILITY: Sundance Disposal Services  ADDRESS: 42  Eun.	sundand	s 23	1	9HON	e: -394-	251,		
7 1 2 1		20. COMMENTS NIA, C-138 Form  Juston Michalson UWDCP-MGO11-SF							
1	Nm-01	Tuesa	mich		Mark.				
CILLI	21. DISPOSAL FACILITY'S CERTIFICATION: I Hereby certi	Tuson fy that the above of	Mr.ch lescribed wa	stes were de	elivered to this fa	cility, that the	facility		

COMPANY NAME HEVRON EMC HONE NO. 575-396-4414  Pron Michalson 231-660-856	4 Lovington	Rd. STATE NM	578.30	ZIP 260	PICK-UP	9-1	
NAME OR DESCRIPTION OF WAST	E SHIPPED:		8. CON No.	TAINERS    Type	9. TOTAL QUANTITY	10. UNIT WT/Vol.	
RCRA Exempt Oil	F-11/50114	inst.		DT	12cu yards		
. Hay on	11712 7011 00	47.6		2 /	7-12-1		
		1100					
d.							
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	CASE OF EMERGEN	NCY OR SPI	LL. CO	NTACT	uwocf-		
HES SPECIALIST		24	-HOUR E	MERGEN	ICYNO. P	10.29-	18
15. Chevron Representative: Here			Almoone Stories	TOTAL ST.	DIAL 1 AF	TERM	<b>O</b>
15. Chevron Representative, had	by deciare that the contents of this const	gillient are fully and a	ccuratery desc	nocu above.			
	AND THE RESERVE AND THE PARTY OF THE PARTY O	ALCOHOLD TO			Colonia de la co		
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Ryan Nonny on beha 16. TRANSPORTER TRUCKING COMPANY NAM	IE:	SIGNATURE	TR.	ANSPOR	RTER (2)		
Ryan Normy on behander  16. TRANSPORTER  TRUCKING COMPANY NAM  P. TRUCK IN C	ie:	TRUCKI	TR.	ANSPOI MPANY	RTER (2) NAME:		
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Ryan Nonny on behander  16. TRANSPORTER  TRUCKING COMPANY NAM  J. P. TRUE CL( 1 W)  IN CASE OF EMERGENCY CONTACT  EMERGENCY PHONE: 575-631	E: Tuston Loburts -9586	TRUCKING IN CASE OF EMERGENCE	TRANG COM	ANSPORMINANY ENCY CO	RTER (2) NAME: NTACT:	lemc	16.
Ryan Nanny on beha 16. TRANSPORTER TRUCKING COMPANY NAM JP. TRUCCIC I WE IN CASE OF EMERGENCY CONTACT EMERGENCY PHONE: 575-631 18. TRANSPORTER (1): Acknowledge	E:  Tuston Lobusts  - 9586  ment of receipt of material	IN CASE OF EMERGENCE 18. TRANS	TRANG COM	ANSPORMINANY ENCY CO E: R (2): Ack	RTER (2) NAME:	lemc	16.
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In case of emergency contact emergency phone: 575-631  18. TRANSPORTER (1): Acknowledge PRINTED/TYPED NAME  SIGNATURE  SIGNATURE  16. TRANSPORTER (1): Acknowledge PRINTED/TYPED NAME  SIGNATURE  SIGNATURE  SIGNATURE  16. TRANSPORTER (1): Acknowledge PRINTED/TYPED NAME  SIGNATURE  SIGNATURE  SIGNATURE  16. TRANSPORTER (1): Acknowledge PRINTED/TYPED NAME  SIGNATURE  SIGNATURE  SIGNATURE  SIGNATURE  16. TRANSPORTER (1): Acknowledge PRINTED/TYPED NAME  SIGNATURE   TE:  Tuston Lobusts  - 9586  ment of receipt of material  DATE 10-29-18	IN CASE OF EMERGENCE  18. TRANS  PRINTED/T  SIGNATURE	TRANG COM EMERGINE EM	ANSPORMPANY ENCY CO  3: R (2): Aci	RTER (2) NAME: NTACT:	lemc	16	
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2 COMPANYA (T	LARDOUS WASTE I	.2111111110					-
3. COMPANY NAME  CHEVRON FOR CHEVRON 575-396-4414  The state of the st		Rd. STATE NM	88	ZIP 3260	10 - 30-		
7. NAME OR DESCRIPTION OF WA	STE SHIPPED:		8. CON No.	TAINERS Type	9. TOTAL QUANTITY		
a. RIXA Exampto	11 F 18 50: 1 NO	aste	1	07	1214 year		
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15. Chevron Representative: H	424 - 7300 tereby declare that the contents of this consistence		33777	to measure the	DIAL 1A	LLEKT	OUR
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CHEVRON Epol PHONE NO. 575-396-4414	Lovington	Rd. STATE NM		ZIP 260	10 · 3e	- 18
NAME OR DESCRIPTION OF WASTI	SHIPPED:		8. CON No.	TAINER:   Type	9. TOTAL QUANTITY	
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5. Chevron Representative: Hereby d	9300	54 Inment are fully and ac	75-396- ccurately desc	4414 (	DIAL I AI	TER HO
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6. TRANSPORTER (1)		17.	TR	ANSPO	RTER (2)	10-30
TRUCKING COMPANY NAME:		TRUCKIN	NG CON	MPANY	NAME:	
TRUCKING COMPANY NAME:  JC Dump Trucking  IN CASE OF EMERGENCY CONTACT: 5	#2 wdo kebyt	IN CASE OF EMERGENCE	EMERGE	ENCY CO		
TRUCKING COMPANY NAME:  JC DUMP TYPE A 119  IN CASE OF EMERGENCY CONTACT: 7  EMERGENCY PHONE: 575 - (31 - 9)  8. TRANSPORTER (1): Acknowledgmen	# 2 wed. o. keb. 1 1586 t of receipt of material	IN CASE OF EMERGENC 18. TRANS	EMERGE Y PHONE	ENCY CO 3: R (2): Acl	NTACT:	receipt of materia
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G	3. COMPANY NAME  CHEVRON PHONE NO. 575-396-4414	4. ADDRESS 56 Texas Campair CITY Lovington			5.	PICK-UP	DATE:	
E	7. NAME OR DESCRIPTION OF WAST	E SHIPPED:		8. CON No.	TAINER:		10. UNIT WT/Vol.	
N	a. RCKHIxmyt C.17 b.	11/ Se. 1 W	24,40	1	OT	Ein Your		
E	c.							
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	VACUUN	M FMT						
NON-HAZARI	OOUS WASTE	MANIFES	T 1. PA	GE_OF	2 2. Truck	NO.		
3. COMPANY NAME  CHEVRON Em  PHONE NO. 575-396-4414	4. ADDRESS 56 Texas Camp			ZIP		DATE:		
7. NAME OR DESCRIPTION OF WASTE SI	HIPPED:		and the second			10. UNIT		
a. RCRATX-011	11/9/1 h	uet.	No.	Type	Tru wate	W1/Vol.		
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c.								
12. NAME OF LEASE:	t.3 Loudin	4						
	AND DESCRIPTION OF THE PARTY OF	Jedge P				Cett-SFH		
HES SPECIALIST	9	24-	HOUR E	MERGEN	ICY NO.	TER HOLDS		
15. Chevron Representative: Hereby decla	re that the contents of this consig							
PRINTED TYPED NAME	4.1	SIGNATURE	er to	1-16	6 12-1	DATE		
TRANSPORTER (1) TRUCKING COMPANY NAME:  J C Dump Trucken  IN CASE OF EMERGENCY CONTACT: Fun	g It 2	TRANSPORTER (2) TRUCKING COMPANY NAME:  IN CASE OF EMERGENCY CONTACT:						
		PRINTED/TY	PED NA	ME	snowledgment of	receipt of material  DATE		
DISPOSAL FACILITY:	ADDRESS: 42				PHONE 5 >5-	394-2511		
PERMIT NO.  Nm - 01 - 2003								
21. <b>DISPOSAL FACILITY'S CERTIFIC</b> authorezed and permitted to receive such wastes.	CATION: I Hereby certif							
AUTHORIZED SIGNATURE		CELL NO.		DATE		TIME		
	3. COMPANY NAME CHEVRON PHONE NO. 575-396-4414  7. NAME OR DESCRIPTION OF WASTE S  a.  LEASE: Buck yellow b.  c.  d.  12. NAME OF LEASE: Buck yellow 14. IN CASE  15. Chevron Representative: Hereby declar  PRINTED TYPED NAME  16. TRANSPORTER (1) TRUCKING COMPANY NAME: IN CASE OF EMERGENCY CONTACT: EMERGENCY PHONE: 575-631-958  18. TRANSPORTER (1): Acknowledgment of PRINTED/TYPED NAME  SIGNATURE  DISPOSAL FACILITY:  PERMIT NO.  PURPLEMENT OF THE PROPERTY OF THE PR	NON-HAZARDOUS WASTE  3. COMPANY NAME CHEVRON PHONE NO. 575-396-4414  TO NAME OR DESCRIPTION OF WASTE SHIPPED:  a. LEAR LEAR LEASE: Buckey Leave: Buckey Lease: Buckey Leave: Buckey Leav	NON-HAZARDOUS WASTE MANIFES  3. COMPANY NAME CHEVRON PHONE NO. 575-396-4414  TO NAME OR DESCRIPTION OF WASTE SHIPPED:  a. CKR I Lovington NM  7. NAME OF LEASE: Buck - 4 ADRESS 56 Texas Camp Rd. CITY STATE Lovington NM  7. NAME OF LEASE: Buck - 4 ADRESS  14. IN CASE OF EMERGENCY OR SPII  HES SPECIALIST  15. Chevron Representative: Hereby declare that the contents of this consignment are fully and accompany name:  16. TRANSPORTER (1) TRUCKING COMPANY NAME:  17. IN CASE OF EMERGENCY CONTACT:  18. TRANSPORTER (1): Acknowledgment of receipt of material PRINTED/TYPED NAME  18. TRANSPORTER (1): Acknowledgment of receipt of material PRINTED/TYPED NAME  DISPOSAL FACILITY:  DISPOSAL FACILITY:  20. COMMEN  21. DISPOSAL FACILITY'S CERTIFICATION: 1 Hereby certify that the above desauthorezed and permitted to receive such wastes.	3. COMPANY NAME CHEVRON PHONE NO. 575-396-4414  7. NAME OR DESCRIPTION OF WASTE SHIPPED:  8. CON No.  a. LCRR 1  10.  11.  12. NAME OF LEASE:  Buck y	NON-HAZARDOUS WASTE MANIFEST 1. PAGE OR  3. COMPANY NAME CHEVRON FOR STATE STATE STATE LOVINGTON NM 88260  7. NAME OR DESCRIPTION OF WASTE SHIPPED:  8. CARP STATE SIMPRONE NO. Type  8. CARP STATE SIMPRONE NM 88260  12. NAME OF LEASE: Buck STATE SIMPRONE NM 88260  14. IN CASE OF EMERGENCY OR SPILL, CONTACT STATE STATE STATE STATE STATE STATE STATE SIMPRONE NO. Type  14. IN CASE OF EMERGENCY OR SPILL, CONTACT STATE STATE STATE STATE STATE STATE STATE STATE STATE SIMPRONE STATE STATE STATE SIMPRONE STATE STATE SIMPRONE STATE	NON-HAZARDOUS WASTE MANIFEST 1. PAGE_OF_ 2. Truck 3. COMPANY NAME CHEVRON		

PLEASE REMIT COMPLETED MANIFEST VIA MAIL, EMAIL OR FAX TO THE BELOW LISTED CONTACT: RIMY ALVARADO - PHONE: (575) 396-441 X223 • FAX: (575) 396-6913 • EMAIL: RIMYALVARADO@CHEVRON.COM

	OUS WASTE	WATTE ES	1 I. FA				
3. COMPANY NAME  CHEVRON Emb  PHONE NO. 575-396-4414  Tagon Michilem 281-66-8569	4. ADDRESS  56 Texas Camp  CITY  Lovington	Rd. STATE NM	88	ZIP 260	PICK-UP		
7. NAME OR DESCRIPTION OF WASTE SH	HIPPED:		8. CON No.	TAINER:	9. TOTAL QUANTITY	10. UNIT WT/Vol.	
a. RURAExemptoil	Field Soil w	aste	1	DT	17cu yard		
c.			1				
d.							11
12. NAME OF LEASE: Buckzyz SAT		265011			IW OCP- P	16011-9	SFA
	SE OF EMERGEN	The second secon				~	
HES SPECIALIST 10-30-1				MERGEN	DIAL 1 AT	30-18 TER H	ОТ
15. Chevron Representative: Hereby declar	re that the contents of this consis				DINE I AI	TEKI	
PRINTED TYPED NAME		SIGNATURE					DATI
16. TRANSPORTER (1)	mc /	17			of LEML	10-3	30-
TRUCKING COMPANY NAME:		1			RTER (2) NAME:		
BJ TRUCK ?	#4	TRUCKIN					
IN CASE OF EMERGENCY CONTACT: 549	ton Roberts	IN CASE OF	EMERG		NTACT:		
IN CASE OF EMERGENCY CONTACT: 5.49 EMERGENCY PHONE: 575-631-953	tin Roberts 86	IN CASE OF	EMERG	E:			
IN CASE OF EMERGENCY CONTACT: 5.49 EMERGENCY PHONE: 575-631-953 18. TRANSPORTER (1): Acknowledgment of	ton Roberts  86  receipt of material	IN CASE OF EMERGENC 18. TRANS	EMERG Y PHON PORTE	E: <b>R (2):</b> Ac	ONTACT: knowledgment of	receipt of m	ateria
IN CASE OF EMERGENCY CONTACT: 5.49 EMERGENCY PHONE: 575-631-953	ton Roberts  86  receipt of material	IN CASE OF	EMERGI Y PHONI PORTE	E: <b>R (2):</b> Ac		receipt of m	ateria
IN CASE OF EMERGENCY CONTACT: 549 EMERGENCY PHONE: 575-631-953 18. TRANSPORTER (1): Acknowledgment of PRINTED/TYPED NAME BALLETT AC	receipt of material  TARIX  DATE 10-30-18  ADDRESS: YZ	IN CASE OF EMERGENC  18. TRANS PRINTED/TY SIGNATURE	EMERGI Y PHONI PORTE (PED NA	E:  R (2): Ac	knowledgment of	DATE	
IN CASE OF EMERGENCY CONTACT: 349 EMERGENCY PHONE: 575-631-959 18. TRANSPORTER (1): Acknowledgment of PRINTED/TYPED NAME BALLING SIGNATURE Boodings Topin DISPOSAL FACILITY: Sundance Orapogal	receipt of material  TARIX  DATE 10-30-18  ADDRESS: YZ	IN CASE OF EMERGENC  18. TRANSI PRINTED/TY SIGNATURE Gundane Micz, N/M  20. COMMEN	PORTE PED NA	E:  R (2): Ac  ME	PHONE: 575-	DATE: 394-2	511
IN CASE OF EMERGENCY CONTACT: 349  EMERGENCY PHONE: 575-631-953  18. TRANSPORTER (1): Acknowledgment of PRINTED/TYPED NAME BALLETT ACCIONATION  SIGNATURE BALLETY: 54000000000000000000000000000000000000	Hon Roberts  86  Teceipt of material  R TARIN  DATE 10-30-18  ADDRESS: YZ  Eu	IN CASE OF EMERGENCE  18. TRANSI PRINTED/TY SIGNATURE Sundance price, Nome  20. COMMEN	PORTE PORTE PORTE PED NA PED N	E:  R (2): Ac  ME  TA,	PHONE: 575- C-138 F	DATE: 394-2	511 FH

0	NON-HAZARI	DOUS WASTI	E MANIFES	ST 1. PA	GE_/OF	2. Truck	NO.	
100	3. COMPANY NAME  CHEVRON Enc  PHONE NO. 575-396-4414  Tagen Michalton 281-660-8564	4. ADDRESS 56 Texas Can CITY Lovington	np Rd. STATE NM	88	ZIP 3260	PICK-UP 10-3	DATE:	
	7. NAME OR DESCRIPTION OF WASTE S	HIPPED:		8. CON No.	Type	4	10. UNIT WT/Vol.	
N	a. RCRA Exampt 0:1)	E; 1850:1 L	valste	1	DT	12 cu year de		
r	b. c.				1,545.01			
R	d.						- 100	
	12. NAME OF LEASE: Buctings Sh	15-2 100	The					
1		SE OF EMERGI		1,4134		son uw.	OCP- MG	011-5FH
r	Chamtra 1-800-4	8	2	24-HOUR I	EMERGE	NCY NO. R	FTER I	IOUR
)	15. Chevron Representative: Hereby deci		onsignment are fully and	accurately des	scribed above.			
3	PRINTED TYPED NAME	-S IFM!	SIGNATUR	F. Britis	he 14	of lev	1 16	DATE - 30-
r R	16. TRANSPORTER (1) TRUCKING COMPANY NAME:		TRUCK	TF	RANSPO	PRTER (2) Y NAME:		
45	Morales Trackin	0						
N S P	IN CASE OF EMERGENCY CONTACT: 5	estin Roberts	IN CASE O			ONTACT:		
N S P O R		estin Roberts 1586	EMERGEN	OCY PHON	NE:	ONTACT:	of receipt of	material
N S P O R T E	IN CASE OF EMERGENCY CONTACT: Jacker Contact:	1586 of receipt of material	EMERGEN 18. TRAN	SPORTE	NE: E <b>R (2):</b> A		of receipt of	material
N S P O R T E R S	IN CASE OF EMERGENCY CONTACT: Jacker Contact:	15 86 of receipt of material by More las	EMERGEN  18. TRAN  PRINTED/  SIGNATUR	NCY PHONI SPORTE TYPED N.	NE: ER (2): A AME		of receipt of DATE	
O R T E R S D F I A S C	IN CASE OF EMERGENCY CONTACT: Jan EMERGENCY PHONE: 575-631-9  18. TRANSPORTER (1): Acknowledgment of PRINTED/TYPED NAME Guedleft SIGNATURE DESCRIPTION SIGNATURE DISPOSAL FACILITY: Sundance Disposal	estin Robers 1586 of receipt of material	EMERGEN  18. TRAN  PRINTED/  SIGNATUR	NCY PHONI SPORTE TYPED N.	NE: ER (2): A AME	cknowledgment of	DATE	
N S P O R T E R S O F I A S C P I L S I	IN CASE OF EMERGENCY CONTACT: Jan EMERGENCY PHONE: 575-631-9  18. TRANSPORTER (1): Acknowledgment of PRINTED/TYPED NAME Guedleft SIGNATURE DISPOSAL FACILITY: Guedleft Frivic-5  PERMIT NO.  NM-01-000	Set in Roberts  15 86  of receipt of material  Refflore les  DATE 60-30-15  ADDRESS: 42	EMERGEN  18. TRAN  PRINTED/  SIGNATUR  2 Sundance  Lun; 2 , N  20. COMMI	ISPORTE TYPED N. RE TYPE N. RE	NE: ER (2): A AME	PHONISTS	DATE E: - 394-	25//
N S P O R T E R S O F A S C P L	IN CASE OF EMERGENCY CONTACT: Jan EMERGENCY PHONE: 575-631-9  18. TRANSPORTER (1): Acknowledgment of PRINTED/TYPED NAME Guedleft SIGNATURE DISPOSAL FACILITY: Gundance Discipled General Sciences	ADDRESS: 42	EMERGEN  18. TRAN  PRINTED/  SIGNATUR  Contact  Lun; Contact  20. COMMI	SPORTE TYPED N.  RE TYPE N.  RE TYPE N.	NE: ER (2): A AME	PHONISTS	DATE E: - 394-	2511

21. **DISPOSAL FACILITY'S CERTIFICATION:** 1 Hereby certify that the above described wastes were delivered to this facility, that the facility is authorezed and permitted to receive such wastes.

AUTHORIZED SIGNATURE

CELL NO.

DATE

TIME

PLEASE REMIT COMPLETED MANIFEST VIA MAIL, EMAIL OR FAX TO THE BELOW LISTED CONTACT: RIMY ALVARADO - PHONE: (575) 396-441 X223 • FAX: (575) 396-6913 • EMAIL: RIMYALVARADO@CHEVRON.COM

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<b>CHEVRON</b>
<b>MCBU</b>

		VACUU	M FM7	Γ				
NO	NON-HAZAF	RDOUS WASTE	MANIFE	ST 1. PA	GE I OF	7 1 2. Truck	NO.	-
G E	3. COMPANY NAME  CHEVRON Emc  PHONE NO. 575-396-4414  Sasse 21-66-8569	4. ADDRESS 56 Texas Cam CITY Lovington				PICK-UP	DATE:	
	7. NAME OR DESCRIPTION OF WASTE	SHIPPED:		8. CON No.	TAINERS   Type	9. TOTAL QUANTITY	10. UNIT	
N	a. RCRA Exampto:	1 Fi-18 50:1 L	vaste	1	DT	12 cm yords	WI/VOL	
E	C.	and the same						
R	d.  12. NAME OF LEASE:	7-						
A	Buchaya 9		-	ason A	nichola	son uwpe	1- M6011.	· 5FH
T	HES SPECIALIST 10-30- Chantra 1-800- 424-	ASE OF EMERGE	2	24-HOUR E	MERGEN	CYNO. QA		
o	15. Chevron Representative: Hereby de	eclare that the contents of this con	signment are fully and	accurately desc	cribed above.	DIAL I AI	TEXTIC	UKS
R	PRINTED TYPED NAME  Ryan Warry on brhalf	of IEM	SIGNATUR		1 6	If dien		TE
T R A N S	16. TRANSPORTER (1) TRUCKING COMPANY NAME:  Morales Trucking IN CASE OF EMERGENCY CONTACT:	#4	TRUCKI	ING CO	MPANY	NAME:	10° )	0-17
P	EMERGENCY PHONE: 575-631-9	586	EMERGEN	CY PHON	E:			
R T E R S	18. TRANSPORTER (1): Acknowledgment PRINTED/TYPED NAME Guesdy SIGNATURE	th of receipt of material  y  March  DATE 10-31-13	PRINTED/	TYPED NA		knowledgment of	receipt of mater	rial
D F I A S C	DISPOSAL FACILITY:	ADDRESS: 42	Sundani unice, un	- lan	<u> </u>	PHONE 575	-394-	2511
PIOL SI AT	PERMIT NO.  NM-01-0003	,		ENTS N		1-138 Fa	m - M6011-	<fu< td=""></fu<>
L Y I	21. DISPOSAL FACILITY'S CERTIF authorezed and permitted to receive such wastes.	ICATION: I Hereby cer						
		and the second second	The second second		DATE			

C	H	EV	R	ON
	M	C	B	U
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	NON-HAZARI	DOUS WASTE	MANIFES	ST 1. PA	GEOF	1 2. Truck	NO.	
	3. COMPANY NAME CHEVRON Emc PHONE NO. 575-396-4414	4. ADDRESS 56 Texas Camp CITY			5.	PICK-UP 10-30	DATE:	200
	7. NAME OR DESCRIPTION OF WASTE SI	HIPPED:		8. CON No.	TAINERS Type	9. TOTAL QUANTITY	10. UNIT WT/Vol.	
	a. RCRA Exampt Oil Find	1 50:1 was	ta	ı	DT	12cu york		
	c.							
	d.							
	12. NAME OF LEASE: Buck-yy SAT-3	3 location	Jagon M	ichale	es u	voct-m	sod1-5	FR
A STATE OF THE STA	14. IN CA  HES SPECIALIST 10-30  Chantles 1-800-424	SE OF EMERGEN	ICY OR SPI	LL, CO. 4-HOUR E	NTACT EMERGEN	ICY NO LA	10-30-	18
	15. Chevron Representative: Hereby deck		gnment are fully and a	iccurately desc	cribed above.			
	PRINTED TYPED NAME		SIGNATURI		1. 1. 14	of (Emi		DATE
A STATE OF THE PARTY OF THE PAR	Ryan Nyun y on beholf of 16. TRANSPORTER (1) TRUCKING COMPANY NAME:  BT TRUCK		TRUCKI	TR	ANSPOR	RTER (2)	10	
	IN CASE OF EMERGENCY CONTACT: 54 EMERGENCY PHONE: 575 - 631-9	istia Roberts	IN CASE OF			NTACT:		
	18. TRANSPORTER (1): Acknowledgment of	of receipt of material			3 (5)	tnowledgment of	receipt of m	aterial
	PRINTED/TYPED NAME BAIDEM SIGNATURE BADDAPO Ton		PRINTED/T		.ME		DATE	
7	DISPOSAL FACILITY: Sundance Disposal Selvices	ADDRESS: 42	Sundance Eunice , 1	Vm 8	8231		- 394-	2511
	PERMIT NO.  NM- 01- 0003		20. COMME			C-138 Fo		60H - \$1
ā.	21. DISPOSAL FACILITY'S CERTIFIC authorezed and permitted to receive such wastes.	CATION: I Hereby certi	fy that the above d					
[ [					DATE	7= -175	TIM	

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	V	ACUUN	м ғмт					
10	NON-HAZARDOU	S WASTE	MANIFES	ST 1. PA	GEOI	F_ 2. True	k NO.	
G	CHEVRON EMC 56 PHONE NO. 575-396-4414 CIT	DDRESS Texas Camp Y vington	Rd. STATE NM	88	ZIP 260	10-3		
E	7. NAME OR DESCRIPTION OF WASTE SHIPPE	ED:		8. CON No.	TAINERS Type	9. TOTAL QUANTITY		
N	a. RCRA Exampt Oil Firld	150:1 h	144tz	)	DT	12 cu yard		
E	c.							
R	d.							
T	HES SPECIALIST 10-31-18 Chantrac 1-800-424		24	4-HOUR E	MERGEN	NCY NO. POT DIAL 1 AI	0-31-12 TER I	OURS)
o	15. Chevron Representative: Hereby declare that to	the contents of this consi	ignment are fully and a	ccurately desc	ribed above.			
O R			SIGNATURI	В		f of le		DATE 0-31-18
R T R A N	PRINTED TYPED NAME  Ryan Wanny on Wholf of LE  16. TRANSPORTER (1)  TRUCKING COMPANY NAME:  BT TRUCK # 4	inc (	SIGNATURI VI. TRUCKI	TR.	de hole Anspoi MPANY	RTER (2) NAME:		
R T R A N S P	PRINTED TYPED NAME  Ryan Wanny on behalf of LE  16. TRANSPORTER (1)  TRUCKING COMPANY NAME:  BT TRUCK # 4  IN CASE OF EMERGENCY CONTACT: Tusting	inc (	SIGNATURI	TR. NG COM	ANSPOR MPANY ENCY CO	RTER (2) NAME:		
R T R A N S P O R T E	PRINTED TYPED NAME  Ryan Wanny on Wholf of LE  16. TRANSPORTER (1)  TRUCKING COMPANY NAME:  BT TRUCK # 4	Roberts t of material	SIGNATURI TRUCKII IN CASE OF EMERGENO 18. TRANS	TR. NG COM FEMERGICY PHONE FEMERTE	ANSPOR MPANY ENCY CO E: R (2): Aci	RTER (2) NAME:	ne l	b-31-18
R T R A N S P O R T E R	PRINTED TYPED NAME  Lyan Wanny on Whalf of LE  16. TRANSPORTER (1)  TRUCKING COMPANY NAME:  BTTEUCH # H  IN CASE OF EMERGENCY CONTACT: Tu4+) m  EMERGENCY PHONE: 575-631-9586  18. TRANSPORTER (1): Acknowledgment of receipt	Roberts t of material	SIGNATURI  TRUCKII  IN CASE OF EMERGENO  18. TRANS	TR. NG COM FEMERGIA CY PHONIC SPORTE YPED NA	ANSPOR MPANY ENCY CO E: R (2): Aci	RTER (2) Y NAME: ONTACT:	ne l	b-31-18
R TRANSPORTERS FACC	PRINTED TYPED NAME  Lyan Wanny on Whalf of CF  16. TRANSPORTER (1)  TRUCKING COMPANY NAME:  BT TRUCK # H  IN CASE OF EMERGENCY CONTACT: Tu44) n  EMERGENCY PHONE: 575-631-9586  18. TRANSPORTER (1): Acknowledgment of receipt  PRINTED/TYPED NAME By/16 m p R  SIGNATURE BALLMAN TAME DAY  SIGNATURE BALLMAN TAME DAY  SIGNATURE BALLMAN TAME DAY  PRINTED TYPED NAME BALLMAN TAME DAY  SIGNATURE BALLMAN	t of material  TE 10-31-18  DRESS: 42	SIGNATURI TRUCKII IN CASE OF EMERGENO 18. TRANS PRINTED/T SIGNATURI	TR. NG COM FEMERGIA SPORTE YPED NA	ANSPOR MPANY ENCY CO E: R (2): Acl	RTER (2) Y NAME: ONTACT: knowledgment of	f receipt of n	5-31-/8
R TRANSPOORTERS FACILI	PRINTED TYPED NAME  Lyan Wanny on Whalf of CF  16. TRANSPORTER (1)  TRUCKING COMPANY NAME:  B T TRUCK # 4  IN CASE OF EMERGENCY CONTACT: Tu44) n  EMERGENCY PHONE: 5 75 - 631 - 9586  18. TRANSPORTER (1): Acknowledgment of receipt  PRINTED/TYPED NAME B p/ 15 m p k  SIGNATURE BALLINGS FALL DA  DISPOSAL FACILITY:  Sundance Visiosal	t of material  TE 10-31-18  DRESS: 42	SIGNATURI TRUCKII IN CASE OF EMERGENO 18. TRANS PRINTED/T SIGNATURI SUMMERCE LUNICE, M	TR. NG COM FEMERGIA SPORTE YPED NA E Lone Um 8	ENCY COE:  R (2): Act	PHONE	DATE 3: 3: 5-394	5-31-18 naterial
R TRANSPORTERS FACCILITY	PRINTED TYPED NAME  Ryan Wanny on Whalf of CF  16. TRANSPORTER (1)  TRUCKING COMPANY NAME:  B T TRUCK # H  IN CASE OF EMERGENCY CONTACT: Tuston  EMERGENCY PHONE: 5 75-631-9586  18. TRANSPORTER (1): Acknowledgment of receipt  PRINTED/TYPED NAME B p/de m a R  SIGNATURE BALANCE FAMIL DA  DISPOSAL FACILITY: Sundance Vistosal Selvices  PERMIT NO.	t of material  THEIN  TE 10-31-18  DRESS: 42	SIGNATURI  TRUCKII  IN CASE OF EMERGENO  18. TRANS PRINTED/T SIGNATURI SUNCANCE Eunice, M  20. COMME	TR. NG COM FEMERGIA SPORTE YPED NA E Lone Um 8 ONTS M	ENCY COE:  R (2): Add  R 231	PHONE  7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	DATE  S:  - 394  - M601	5-31-18  naterial  - 2511

21. DISPOSAL FACILITY'S CERTIFICATION: 1 Hereby certify that the above described wastes were delivered to this facility, that the facility is

PLEASE REMIT COMPLETED MANIFEST VIA MAIL, EMAIL OR FAX TO THE BELOW LISTED CONTACT: RIMY ALVARADO - PHONE: (575) 396-441 X223 • FAX: (575) 396-6913 • EMAIL: RIMYALVARADO@CHEVRON.COM

CELL NO.

Jugar Michalson UWDIS-MOII-SFH

DATE

TIME

**AUTHORIZED SIGNATURE** 

NM- DI- 8003

authorezed and permitted to receive such wastes.

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NON-HAZARI	OUS WAST	E MANIFE	ST 1. PA	GE_LO	F_/ 2. Trucl	NO.
3. COMPANY NAME  CHEVRON EML  PHONE NO. 575-396-4414	4. ADDRESS 56 Texas Car CITY Lovington	np Rd. STATE NM	88		. PICK-UP 10-31-	
7. NAME OR DESCRIPTION OF WASTES				4.00	9. TOTAL QUANTITY	10. UNIT WT/Vol.
a. RCRA Exampt oil Fire	ld soil u	easte	1	or	12 Lu yards	
c. d.						
12. NAME OF LEASE: Buckeye GAT-					uwach	Mboll- SF
HES SPECIALIST Pro- Chemtrel 1-800-4 15. Chevron Representative: Hereby dec	24-9300	2. 5	4-HOUR E <b>75-396-</b>	MERGEN 4414 (1	CYNO. R	~ 10 - 31-1 FER HOU
PRINTED TYPED NAME Ryun Namay On baholf	of IEMC	SIGNATUR	-	b-he	If of IEm	DATE
16. TRANSPORTER (1) TRUCKING COMPANY NAME:  Novu Les Trucking		TRUCKI	TRA	ANSPOR	TER (2)	
IN CASE OF EMERGENCY CONTACT: 74 EMERGENCY PHONE: 575-631-9		IN CASE OF			NTACT:	
18. TRANSPORTER (1): Acknowledgment of PRINTED/TYPED NAME	of receipt of material	18. TRANS PRINTED/T			nowledgment of re	eceipt of material
SIGNATURE GET MALE	DATE 10-31-19	SIGNATUR	Е			DATE
DISPOSAL FACILITY: Sundance Disposal  471Vives	ADDRESS: 4	2 Gundance unic-NM	1882	3/	PHONE: 575-	394-25
PERMIT NO. NM 01-0003		5040	- price	nkon	1-138 For	M6-011-51
21. <b>DISPOSAL FACILITY'S CERTIFIC</b> authorezed and permitted to receive such wastes.	CATION: I Hereby of					
AUTHORIZED SIGNATURE		CELL NO.		DATE		TIME

RIMY ALVARADO - PHONE: (575) 396-441 X223 • FAX: (575) 396-6913 • EMAIL: RIMYALVARADO@CHEVRON.COM

Released to Imaging: 11/2/2022 10:27:25 4M

		ARDOUS WAST	E WIANIFES	1. PA				
CH PHOT	OMPANY NAME (EVRON EMC) NE NO. 575-396-4414	4. ADDRESS 56 Texas Car CITY Lovington	mp Rd. STATE NM		ZIP 260	/8-31-	- 18	
7. NA	AME OR DESCRIPTION OF WAST	TE SHIPPED:		8. CON No.	TAINER Type		10. UNIT WT/Vol.	
a. b.	RCRA Exampto	): I Firld was	+c (sil)	1	OT	12eu yund		
c.								
d.								
	NAME OF LEASE:		2446			is ywa	P. Mool	1-4
14.	HES SPECIALIST 10-3 bant/70 1-800-	CASE OF EMERGI 41–18 474 - 9300	24-		MERGE	r ncyno. <i>Ry</i> ( <del>DIAL 1 AI</del>	75-19 TER 1	i <del>OI</del>
	Chevron Representative: Hereby		nsignment are fully and ac	curately desc	ribed above.			
PRI	NTED TYPED NAME	If of IFm.	SIGNATURE	y	m - 1	behole o		
16. TR	TRANSPORTER (1) UCKING COMPANY NAME	) 2:	SIGNATURE  17.  TRUCKIN	TRA	ANSPO	or half of RTER (2) Y NAME:		
16. TR	TRANSPORTER (1)  UCKING COMPANY NAME  DUMP Trucking  CASE OF EMERGENCY CONTACT:	Sistem Roberts	11.0	TRAIG COM	ANSPO	RTER (2) Y NAME:		DATE
In C. EME	TRANSPORTER (1)  UCKING COMPANY NAME  DUMP Trucking	2: 29 # 2 Sustin Roberts - 9586 ent of receipt of material	IN CASE OF I	TRANG COM	MPANY ENCY CO	RTER (2) Y NAME:	(EM	10-
IN C. EME 18. T	TRANSPORTER (1)  TRANSPORTER (1)  TRANSPORTER (1)  TRANSPORTER (1): Acknowledgment	2: 9 # 2 541 n Rob + 1+5 9586 ent of receipt of material	IN CASE OF I EMERGENCY  18. TRANSP	TRAIG COM EMERGE Y PHONE PORTER	MPANY ENCY CO	RTER (2) Y NAME:  DNTACT:	(EM	10-
16. TR TR IN C. EME 18. T PRIN SIGN DIS	TRANSPORTER (1)  UCKING COMPANY NAME  DUMP Trucking  CASE OF EMERGENCY CONTACT:  ERGENCY PHONE: 575-631-  TRANSPORTER (1): Acknowledgment  TED/TYPED NAME Jub encir	2: 29 # 2 Tust in Rob = 1+5 986 ent of receipt of material 16 Cost/// 0 DATE 16-31-18 ADDRESS: 43	IN CASE OF I EMERGENCY  18. TRANSP PRINTED/TY	TRAIG COM EMERGE Y PHONE PORTER TPED NAM	ENCY CO  R (2): Acl  ME	PHONE:	receipt of ma	/D-
In C. EME 18. T PRIN DIS	TRANSPORTER (1)  UCKING COMPANY NAME  DUMP Trucking  CASE OF EMERGENCY CONTACT:  ERGENCY PHONE: 575-631-  TRANSPORTER (1): Acknowledgme  POSAL FACILITY:  Sundancy 0: 490501	2: 29 # 2 Tust in Rob = 1+5 986 ent of receipt of material 16 Cost/// 0 DATE 16-31-18 ADDRESS: 43	IN CASE OF I EMERGENCY  18. TRANSP PRINTED/TY SIGNATURE  Sundance 20. COMMENT	TRAIG COM EMERGE Y PHONE PED NAM PED NAM 8 8 2 3	ENCY CO	PHONE:  975-	receipt of ma	10-
In C. IN C. EME  18. T PRIN  DIS  PER  21. I	TRANSPORTER (1)  UCKING COMPANY NAME  DUMP Trucking  CASE OF EMERGENCY CONTACT:  ERGENCY PHONE: 575-631-  TRANSPORTER (1): Acknowledgme  PATURE JULIUS (1): Acknowledgme  ATURE JULIUS (1): Acknowledgme  POSAL FACILITY:  Sundanc + 0: 4905a)  STIV: C-C  MIT NO.	2: 29 # 2 2041 n Rob = 1+5 986 ent of receipt of material 26 Cost/// 0 2 DATE 16-31-18 ADDRESS: 42 Ed	IN CASE OF I EMERGENCY  18. TRANSP PRINTED/TY SIGNATURE  Sundance 20. COMMENT	TRAIG COM EMERGE Y PHONE PORTER PED NAM 8 8 2 3	ENCY CO  ENC	PHONE:  975-	DATE  Source  Teceipt of ma	10- aterial

	VACUUM	FMT					
NON-HAZARD	OUS WASTE M	IANIFEST	[ 1. PAC	GELOF_	2. Truck	10.	
COMPANY NAME CHEVRON FM C HONE NO. 575-396-4414		Rd. TATE NM			PICK-UP 1		
NAME OR DESCRIPTION OF WASTE SH	IPPED:	Total Control	8. CON No.	TAINERS Type	9. TOTAL QUANTITY	10. UNIT WT/Vol.	
RIRA Examptoil Find	1d 50:1 Was	ste	1	DT	12cu yard		
<b>b.</b>							
d.	-						
12. NAME OF LEASE:							4
HES SPECIALIST 10-31-18 Chamtere 1-800-424-	. 700		BRED STOLEN	· · · · · · · · · · · · · · · · · · ·	(DIAL 1A	1000	HEAT T
15. Chevron Representative: Hereby declar PRINTED TYPED NAME	re that the contents of this consign		ccurately de	scribed above			DATE
PRINTED TYPED NAME  Lyan Namy on behalf of trucking company NAME:	that the contents of this consign	SIGNATURI	E Po	b-ha			DATE
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}	3. COMPANY NAME CHEVRON Eml PHONE NO. 575-396-4414	4. ADDRESS 56 Texas Can CITY			5.	PICK-UP  0-3/-	DATE:	
E	7. NAME OR DESCRIPTION OF WASTES	HIPPED:		8. CON No.	TAINERS Type	9. TOTAL QUANTITY	10. UNIT WT/Vol.	
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CHEVRON EMC	56 Texas Camp	Rd.		٥.	TICK-01	DATE	RN
PHONE NO. 575-396-4414	CITY	STATE		ZIP	10-31-	18	19-1-1
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7. NAME OR DESCRIPTION OF WASTE S	HIPPED:		Step Ship W.	TAINERS		10. UNI	
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15. Chevron Representative: Hereby de	clare that the contents of this con-	signment are fully and ac	curately desc	ribed above.			
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G \	3. COMPANY NAME  CHEVRON EMC  PHONE NO. 575-396-4414  Tuyon M: h-1900 781-660-8564	4. ADDRESS  56 Texas Cam  CITY  Lovington	p Rd. STATE NM		ZIP <b>260</b>	. PICK-UI   - -	18	
E	7. NAME OR DESCRIPTION OF WASTE SI	HIPPED		8. CON No.	TAINERS Type	9. TOTAL QUANTITY	10. UNIT WT/Vol.	
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o	15. Chevron Representative: Hereby declar	e that the contents of this cons	ignment are fully and acc	urately descr	ibed above.			
R	PRINTED TYPED NAME Ryan Wanny on bahalt of		SIGNATURE	5	4-6	alfof (		DATE
- 1	16. TRANSPORTER (1) TRUCKING COMPANY NAME:  TO YEAR STARK  IN CASE OF EMERGENCY CONTACT: 7444  EMERGENCY PHONE: 575-631-95	in Roberts	IN CASE OF I	G CON	IPANY			
1	8. TRANSPORTER (1): Acknowledgment of re		18. <b>TRANSP</b> PRINTED/TY			knowledgment o	f receipt of n	naterial
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NON-HA	ZARDOUS WASTE	MANIFES	I I. PAG				
3. COMPANY NAME  CHEVRON EMC  PHONE NO. 575-396-4414	4. ADDRESS 56 Texas Cam CITY Lovington	p Rd. STATE NM	882	ZIP 260	PICK-UP	-18	
7. NAME OR DESCRIPTION OF WA	709		8. CON' No.	TAINERS Type	9. TOTAL QUANTITY	10. UNIT WT/Vol.	
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12. NAME OF LEASE: Buckeye SAT3	Location	Jason Mid	hzkon	UWDO	(P-m6011	-SFH	
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HES SPECIALIST 10-2 Chantle 1-800-4		# 3/1/g/h	The state of the s		DIAL 1 A	FIER	00.
15. Chevron Representative: Heat	reby declare that the contents of this com-	ignment are 141-7					
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PRINTED TYPED NAME		SIGNATURE		/			DATE 4-18
Ryan Nanny on behalf	ot lEmi	gray on	TRA	<i>lf of C</i>	RTER (2)	16-29	
	(1)		TRA	ANSPOR	RTER (2)		
Ryan Nanny on h-half of transporter trucking company nan IPS.  In case of emergency contact	ME:  T: Jessie Dombywez	17. TRUCKING IN CASE OF E	TRAIG COM	ANSPOR MPANY ENCY COI	RTER (2) NAME:		
Ryan Venny on behalf of transporter trucking company name of the company name of the company name of the company in case of emergency contact emergency phone (575) 63	ME: TESSIC Pombyuez  1-9/29	TRUCKING IN CASE OF E EMERGENCY	TRA IG COM EMERGE Y PHONE	ANSPOR MPANY ENCY COI	RTER (2) NAME: NTACT:	16-29	<u>4-18</u>
Ryan Venny on behalf  16. TRANSPORTER  TRUCKING COMPANY NAM  TPS  IN CASE OF EMERGENCY CONTACT  EMERGENCY PHONE (575) 63  18. TRANSPORTER (1): Acknowledge	ME: TESSIC Pombyuez  1-9/29	17. TRUCKING IN CASE OF E	TRAIG COM EMERGE Y PHONE PORTER	ANSPORMINANY ENCY COM	RTER (2) NAME: NTACT:	16-29	4-18
Ryan Venny en behelf 16.  TRANSPORTER TRUCKING COMPANY NAM IPS.  IN CASE OF EMERGENCY CONTACTEMERGENCY PHONE 575 69  18. TRANSPORTER (1): Acknowledges	ME:  The Street Dombywes  1-9/29  Igment of receipt of material  10 than Tapie  DATE 1024-16	IN CASE OF E EMERGENCY 18. TRANSP PRINTED/TYPE SIGNATURE	TRAIG COM EMERGE Y PHONE PORTER PED NAM	ANSPORMIPANY ENCY COM E:  R (2): Acknowled ME	NAME:  NTACT:  nowledgment of	76-29	4-18
In case of emergency contacted acknowledge of the state o	ME:  The state por logues  The figure of receipt of material  The Tapic  DATE 1024-16  ADDRESS: 450	IN CASE OF E EMERGENCY 18. TRANSP PRINTED/TYPE SIGNATURE	TRAIG COM EMERGE Y PHONE PORTER PED NAM	ANSPORMIPANY ENCY COM E:  R (2): Acknowled ME	NAME:  NTACT:  mowledgment of	76-29	y-18
In case of emergency contacted transporter (1): Acknowledge Printed/Typed Name  Signature  DISPOSAL FACILITY: R 36	ME:  The state of	IN CASE OF E EMERGENCY  18. TRANSP PRINTED/TYPE SIGNATURE  7. W. Carls	TRAIG COM EMERGE Y PHONE PORTER PED NAM	ANSPORMIPANY ENCY COL	NAME:  NTACT:  mowledgment of	16-29 Freceipt of man  DATE  393-1	terial
Ryan Venny enhable 16. TRANSPORTER TRUCKING COMPANY NAM IPS.  IN CASE OF EMERGENCY CONTACT EMERGENCY PHONE 575 63  18. TRANSPORTER (1): Acknowled PRINTED/TYPED NAME  SIGNATURE  DISPOSAL FACILITY: R 36  Environm and of Solutions Controlled Recovery INC, the Libebs 7  PERMIT NO.	ME:  The Still portugues  I - 9/29  Igment of receipt of material  Out the Tapic  DATE 1024/16  ADDRESS: 4507  Hobb  RTIFICATION: 1 Hereby certification	IN CASE OF E EMERGENCY  18. TRANSP PRINTED/TYE SIGNATURE  7. W. Carls 7. W. Ca	TRAIG COM EMERGE Y PHONE PORTER PED NAM  bad h	ANSPORMIPANY ENCY COM E: R (2): Acknowledge ME Hwy	RTER (2) NAME:  NTACT:  nowledgment of  PHONE:  575-	16-29 Freceipt of materials  DATE  393-1	terial

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

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

CONDITIONS

Action 59876

#### **CONDITIONS**

Operator:	OGRID:
CHEVRON U S A INC	4323
6301 Deauville Blvd	Action Number:
Midland, TX 79706	59876
	Action Type:
	[C-141] Release Corrective Action (C-141)

#### CONDITIONS

Created By	Condition	Condition Date
bbillings	DEFFERAL is APPROVED. Incident is not closed. Open until Section 13 of 29 is done when opportunity happens of at location P&A	11/2/2022