

Jason Michelson Project Manager Chevron Environmental Management Company 1500 Louisiana Street, #38116 Houston, Texas 77002 Work: 832-854-5601 Cell: 281-660-8564 jmichelson@chevron.com

October 23, 2019

New Mexico Oil Conservation Division, District 1 1625 N. French Drive Hobbs, NM 88240

Re: Vacuum Glorieta West Unit O-40 Trunk Line Remedial Plan #: 1RP-3259 and 1RP-3252 2018 Site Assessment Report Lea County, New Mexico

Dear whom it concerns,

Please find enclosed for your files, copies of the following report

• Vacuum Glorieta West Unit O-40 Trunk Line 2018 Site Assessment Report

The submittal was prepared by Arcadis U.S., Inc. (Arcadis) on behalf of Chevron Environmental Management Company (CEMC).

Please do not hesitate to call Scott Foord with Arcadis at 713-953-4853 or myself at 832-854-5601, should you have any questions.

Sincerely

n ena Jason Michelson

Encl. Vacuum Glorieta West Unit O-40 Trunk Line 2018 Site Assessment Report

C.C. Amy Barnhill, Chevron/MCBU

www.arcadis.com



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

Subject:

Site Assessment Report 2018 HES Transfer Site O-40 Trunk Line from the Vacuum Glorieta West Unit Battery NMOCD Case No. 1RP-3259 and 1RP-3252 Lea County, New Mexico

Dear whom it concerns:

On behalf of Chevron Environmental Management Company (CEMC), Arcadis U.S., Inc. (Arcadis) prepared this Site Assessment Report (Report) for O-40 Trunk Line from the Chevron Mid-Continent Business Unit (MCBU) Vacuum Glorieta West Unit (VGWU) Battery located in Lea County, New Mexico (site; **Figure 1**). This Report summarizes the field activities completed and the results of samples collected during soil and groundwater investigation activities conducted on-site in October 2013, September 2016, December 2017, July 2018, and October 2018. The purpose of this Report is to present soil boring and monitoring well locations, monitoring well construction details, analytical results of samples collected, and the data evaluation performed as part of the investigations referenced above following the December 5, 2012 release of approximately 149 barrels (bbls) of produced water.

SITE DESCRIPTION AND BACKGROUND

The following site description and background section provides an overview of the site location and regional setting including geology, hydrogeology, nearby drinking water wells, surface water, and climate.

Site Location and Description

The site is located within the Vacuum Glorieta West Unit (VGWU) and is directly east of the VGWU Battery. Lovington, New Mexico (the closest town), is approximately 14 miles northeast of the site and the closest agricultural area is

Arcadis U.S., Inc. 10205 Westheimer Road Suite 800 Houston Texas 77042 Tel 713 953 4800 Fax 713 977 4620 www.arcadis.com

ENVIRONMENT

Date: October 23, 2019

Contact: Scott Foord

Phone: 713.953.4853

Email: William.Foord@arcadis.com

Our ref: B0048616.0040

ARCADIS U.S., Inc. TX Engineering License # F-533 Geoscientist License # 50158

approximately 7 miles northeast of the site. New Mexico Highway 238 is located approximately 0.4 mile east of the site.

The site is located in the western edge of the Permian Basin, a 75,000-square-mile area in 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, Chaves and Eddy County to the west, and to Texas to the south.

Nearby Water Wells and Surface Water

Based on review of satellite imagery, no surface-water bodies have been identified within a 0.6-mile radius of the site (GoogleEarth 2018). In October 2013, Arcadis staff field verified that there are no surface-water bodies located within 1,000 feet of the site.

In January 2019, Arcadis reviewed information obtained from the New Mexico Office of the State Engineer (NMOSE) online database (NMOSE 2019), which indicated that no water-supply wells were located within 1,000 feet of the site. The NMOSE online database identified 259 water-supply wells within a 5-mile radius of the site (NMOSE 2019). A domestic water-supply well, located approximately 1,440 feet northeast (i.e., hydraulically cross-gradient) of the site, was identified as the closest designated-use well to the site.

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. 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 4,001 feet above mean sea level. The site is located in the Querecho Plains immediately west 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 approximately 200 to 250 feet occurs west of the northwest-trending Mescalero Ridge. The Ogallala Formation east of the ridge 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 (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. The nearest area where the Ogallala is underlain by the Cretaceous-age Trinity Group is approximately 45 miles to the northwest (Fallin 1988).

The Querecho Plain is 80 percent covered by a moderately stable dune field (Reeves 1972) that is deposited on top of Triassic Dockum red beds. The red bed surface, which is approximately 400,000 to 500,000 years old, is relatively flat with minor erosional incisions and near-surface caliche layer ranging in thickness from 3- to 13-feet (Bachman 1980). Deposition of sand and formation of the dune field began approximately 60,000 years ago, with additional development beginning approximately 9,000 years ago (Hall 2002). The surface and interior of these dunes do not contain caliche; however, a 1-foot layer of caliche is common at the bottom of the dunes at the contact with the red bed surface. Groundwater in the area is in the Dockum Group at a depth of approximately 100 feet (Summers 1972). Compared to the Ogallala Formation to the west of the site, the Dockum Group groundwater is not a major resource in the area, with poor potential water production rates and elevated natural dissolved solids.

Water-supply wells located on the southern High Plains east of Mescalero Ridge in central Lea County and near the site, as discussed in the Nearby Water Wells and Surface Water section of this report, are completed in the High Plains Aquifer (HPA). The HPA consists primarily of the Ogallala Formation, and in localized areas, alluvial sediment of Quaternary age. Near the site, the HPA is present directly above the Triassic-age Dockum Group, which occurs at a depth of approximately 140 feet below ground surface (bgs) (Ash 1963, Fahlquist 2003, Nativ 1988, Nicholson and Clebsch 1961, Tillery 2008). The regional groundwater flow direction is generally toward the east-southeast (Tillery 2008).

INITIAL RELEASE RESPONSE

Response Actvities

A release of approximately 149 bbls of produced water occurred at the site (primarily pasture land) on December 5, 2012 due to a leak from an underground fiberglass line. Chevron personnel from the Mid-Continent Business Unit (MCBU) stopped the release and recovered approximately 35 bbls of fluids using a vacuum truck. On December 5, 2012, Chevron MCBU personnel excavated visually impacted soil in the area to a depth of approximately 2 feet bgs. Information regarding the disposal of the excavated soil was not made available to Arcadis.

Pursuant to New Mexico Oil Conservation Division (NMOCD) requirements (NMOCD 1993), Chevron MCBU submitted a Notification of Release and Correction (Form C-141) to the NMOCD, detailing the location, volume of release, and initial and planned cleanup efforts for the site. The original C-141 form is included as **Attachment 1**.

Six discrete confirmation soil samples were collected from the base of the excavation on January 22, 2013 (**Figure 2**). Soil sample containers were transported on ice, under chain of custody procedures, to Cardinal Laboratories Environmental Analytical Services in Hobbs, NM for the following analyses:

- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by United States Environmental Protection Agency (USEPA) Method 8021B
- Total petroleum hydrocarbons as gasoline range organics (TPH-GRO) and total petroleum hydrocarbons as diesel range organics (TPH-DRO) by USEPA Method 8015M
- Chloride by USEPA Method SM4500CI-B

Confirmation Soil Sample Results

The analytical results for BTEX, TPH-GRO, TPH-DRO, and chloride for the six discrete confirmation soil samples collected in January 2013 are provided in **Table 1** and summarized below:

- BTEX compounds were not detected above the laboratory reporting limits (LRLs).
- TPH-DRO and TPH-GRO were not detected above LRLs.
- Chloride was detected in all six confirmation samples, at concentrations ranging from 6,480 milligrams per kilogram (mg/kg) (VGWU #040 Sample #4) to 12,000 mg/kg (VGWU #040 Sample #6).

The complete laboratory analytical results with chain of custody documentation are included in **Attachment 2**. Chloride results from 2013 were compared to the New Mexico Administrative Code's (NMAC's) closure criteria (CC) published in 2009 (NMAC 2009). Chloride concentrations in all six confirmation soil samples were above the 2009 CC of 500 mg/kg, which prompted additional site assessment activities.

2013 SOIL INVESTIGATIONS

Site Assessment Activities

In October 2013, Arcadis conducted site assessment activities to characterize the lateral and vertical extents of potential soil impacts at the site. Soil boring locations were selected based on the results of confirmation soil sampling completed at the site in January 2013, 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.

To evaluate the potential extent of impacts to soil at the site, Arcadis advanced the following nine soil borings on October 22 and 23, 2013 (**Figure 2**):

- VGWU 40-01
- VGWU 40-02
- VGWU 40-03
- VGWU 40-04
- VGWU 40-05
- VGWU 40-06
- VGWU 40-07
- VGWU 40-08
- VGWU 40-09

Prior to conducting drilling activities, each boring location was cleared for subsurface utilities with an air knife. The air knife could not be advanced more than 2 to 3 inches bgs due to the presence of a thick caliche layer. Each soil boring was then advanced to a total depth of approximately 30 feet bgs using air rotary drilling equipment.

Soil was continuously logged for stratigraphic characteristics according to the United Soil Classification System (USCS). The soil samples were field screened for the presence of volatile organic compounds using a photo ionization detector (PID), in combination with visual and olfactory screening methods, for

evidence of petroleum hydrocarbons. Field personnel recorded PID readings, soil types, and other pertinent geologic data on boring logs (**Attachment 3**). No staining or elevated PID readings were observed. Lithologic data indicated the subsurface material consisted primarily of caliche (soil carbonate) profiles including "caprock," nodular, and sandy caliche layers from approximately 0 to 30 feet bgs.

Six soil samples were collected from each boring location beginning at a depth of 2 feet bgs (the approximate depth of the soil excavation in the initial release response activities) and continuing at 5-foot intervals from 5 to 30 feet bgs. A total of 63 samples were collected in clean, laboratory-supplied glass jars, labeled, placed in an ice-chilled cooler, and submitted under appropriate chain of custody protocols to TestAmerica Laboratories in Houston, TX. Soil samples collected from each boring were analyzed for chloride by USEPA Method 9056.

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

Soil Sample Results

The analytical results for chloride concentrations in the 63 soil assessment samples are provided in **Table 1** and summarized below. Laboratory analytical results with chain of custody documentation are provided in **Attachment 2**.

Chloride was detected in 62 of the 63 soil assessment samples at concentrations ranging from 6 mg/kg (VGWU 40- 05 at 15 feet bgs) to 5,200 mg/kg (VGWU 40- 04 at 5 feet bgs). Chloride was detected above the 2009 NMAC CC concentration of 500 mg/kg in 22 of the 63 soil assessment samples. The depth at which soil samples were collected with chloride concentration exceedances ranged from 2 feet bgs (VGWU 40-07) to 30 feet bgs (VGWU 40-02; **Figure 2**).

2016 SOIL INVESTIGATIONS

Soil Delineation Activities

In September 2016, Arcadis conducted further site assessment activities to delineate chloride-impacted soil at the site. Soil boring locations were selected based on the results of site assessment soil sampling completed at the site in October 2013, 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 borings locations were proposed in pairs such that one boring would be advanced outside of the release area. Arcadis then stepped out 20 to 30 lateral feet from the first boring, in the opposite direction of the release area, to advance a second boring.

Arcadis advanced a total 10 soil borings on September 12 and 13, 2016 (Figure 2):

- VGWU 40-10
- VGWU 40-11
- VGWU 40-12
- VGWU 40-13
- VGWU 40-14
- VGWU 40-15
- VGWU 40-16

- VGWU 40-17
- VGWU 40-18
- VGWU 40-19

In addition, VGWUO40-02 was reinstalled in its original location in order to collect additional samples from deeper depths.

Prior to conducting drilling activities, each boring location was cleared for subsurface utilities with an air knife to a depth of 4 feet bgs. Soil was logged for lithologic characteristics according to the USCS.

Soil samples were collected from each of the 10 boring locations at 2 and 4 feet bgs. Arcadis used Quantab® field screening methods to quantify chloride concentrations in soil prior to sample collection (Boyer 2004). If chloride field screenings resulted in chloride concentrations above 200 mg/kg, borings were advanced further until concentrations were below 200 mg/kg.

A total of 26 soil samples were collected in clean, laboratory-supplied glass jars, labeled, placed in an icechilled cooler, and submitted under appropriate chain of custody protocols to Xenco Laboratories (Xenco) in Midland, TX, a Texas-certified laboratory. Soil samples collected from each boring were analyzed for chloride by USEPA Method 300/300.1.

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

Soil Sample Results

The analytical results for chloride concentrations in the 26 soil assessment samples are provided in **Table 1** and summarized below. Laboratory analytical results with chain of custody documentation are provided in **Attachment 2**.

Chloride was detected in 23 of the 26 soil samples at concentrations ranging from 10.1 mg/kg (VGWU 40-13 at 10 feet bgs) to 1,980 mg/kg (VGWU 40- 10 at 2 feet bgs). Chloride was detected above the 2009 NMAC CC concentration of 500 mg/kg in 5 of the 26 soil samples. The depth at which soil samples were collected with chloride concentration exceedances ranged from 4 feet bgs (VGWU 40-13 and VGWU 40-16) to 70 feet bgs (VGWU 40-10; **Figure 2**).

2017 AND 2018 GROUNDWATER ASSESSMENT

Monitoring Well Installation and Groundwater Sampling

Soil delineation sampling conducted in 2016 and chloride field screening suggested potential impacts near groundwater at VGWU O-40. Arcadis installed groundwater monitoring well VGWUO40-MW1 on December 4, 2017 to evaluate to potential impact of groundwater (**Figure 3**)

The monitor well location was hand cleared using air knife to a minimum depth of 8 feet bgs and was advanced to a total of 150 feet bgs. The monitor well was constructed within the open borehole using nominal 4-inch outside diameter (OD) schedule 40 poly vinyl chloride (PVC) casing. The screened interval extends across the saturated thickness of the aquifer (119.26 feet to 149.26 feet bgs) and constructed 0.10-inch machine-slotted PVC casing. Depth to groundwater was measured following installation at approximately 132 feet bgs.

Soil was continuously logged for lithologic characteristics according to the USCS (**Attachment 3**). After well installation and development, one groundwater grab sample was collected from the newly installed well. In July and October 2018, additional groundwater samples were collected VGWUO40-MW1. Groundwater samples collected during each of the sampling events were placed in laboratory-supplied containers and submitted under appropriate chain of custody protocols to Xenco for the analysis for chloride in accordance with the USEPA Method 300/300.1. Laboratory analytical results with chain of custody documentation are provided in **Attachment 4**.

Groundwater Sample Results

Groundwater analytical results were compared the Human Health Standards outlined in Title 20, Chapter 6, Part 2 (20.6.2) of the New Mexico Administrative Code (NMAC) concerning environmental protection, water quality, ground and surface water protection which became effective on December 1, 1995.

Chloride was detected at a concentration of 470 micrograms per liter (mg/L) in VGWUO40-MW1 during the December 2017 sampling, 556 mg/L in July 2018, and 630 mg/L in October 2018. Detected chloride concentrations during each groundwater sampling event exceed the NMAC human heath standard value of 250 mg/L. The cumulative groundwater analytical results for chloride are provided in **Table 2**.

2018 GEOPHYSICAL SURVEY

On October 25, 2018, Arcadis performed an electromagnetic conductivity survey over accessible areas of the site covering approximately 4 acres (**Figures 4** through **6**). Two inaccessible flooded areas, from recent rainfall events, were encountered within the survey area and are depicted in blue cross-hatch in **Figures 4** through **6**. 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 feet 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 4**. In order to produce a more robust model, data from 13 discrete frequencies were collected along the two transect lines (93 kHz, 80kHz, 63kHz, 38.3kHz, 21.9kHz, 18.3kHz, 12.4 kHz, 5.3kHz, 2.9 kHz, 2.4kHz, 1.5 kHz, 0.63 kHz, and 0.45kHz). The data were inverse-modeled using the software IX1Dv3 by Interpex to produce electrical resistivity cross-sections of the subsurface. 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 6 present color-filled contour maps for:

- 63kHz GEM2 data (4 to 8-foot sensing depth)
- 18.3kHz GEM2 data (6 to 10-foot sensing depth)
- 5.3kHz GEM2 data (8 to 12-foot sensing depth), respectively.

Figures 7 and **8** present GEM-2 2D modelling results along the A-A' and B-B' profiles. Locations of metallic flow line (based on field observations and aerial photographs) and 2018 shallow soil sample locations (collected on the day of the geophysical survey October 25, 2018) are denoted in the figures.

The color scale used in **Figures 4** through **8** 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 within 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. The data output for the GEM-2 model profiles presented in **Figure 7** and **8** is in units of electrical resistivity (ohm-meters, logarithmic scale) which is the inverse quantity of electrical conductivity (mS/m). A corresponding logarithmic color scale is used in **Figure 7** and **8** to depict areas of 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 spill area surveyed with elevated EC values >100 mS/m shown in yellow to red colors (**Figures 4** through **6**). In general, the shape of the elevated EC areas correlates with buried flow lines that run east-west through the red-outlined spill area. The highest magnitude EC response (>200 mS/m) was observed in the center of the outlined spill area, immediately west of soil sample location VGWUO40-22. The 2x magnitude of the EC response in this area, relative to other elevated EC values measured throughout the survey area, suggest a greater degree of impact and/or a potential source area for the spill.

The west to east GEM-2 A-A' profile shown in **Figure 7** crossed the above mentioned central >200 mS/m EC area. The A-A' model resolves a confined "perched" high conductivity zone that extends from approximately 1 to 15 feet 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 8** intersects the western edge of the high >200 mS/m EC zone. The B-B' model resolves three discontinuous confined "perched" high conductivity zones that extend to a maximum depth of 6 feet bgs.

2018 SOIL INVESTIGATIONS

Site Assessment Activates

In conjunction with the geophysical survey, and for calibration purposes, as well as to provide site specific laboratory data, Arcadis collected 5 surface soil samples (VGWU 40-20, VGWU 40-21, VGWU 40-22, VGWU 40-23, and VGWU 40-24) on October 25, 2018, using a hand auger from a depth of half foot bgs (**Figure 2**). The samples were collected in clean, laboratory-supplied sample containers, labeled, placed on ice, cooled to approximately 4 degrees Celsius, and submitted to Xenco under chain-of-custody protocol for analysis of chloride by USEPA Method 300.1.

Soil cuttings from each boring were placed back in the borehole.

Soil Sample Results

The analytical data from the soil samples collected in October 2018 are compared to the closure criteria (CC) outlined in Title 19, Chapter 15, Part 29 (19.15.29) of the NMAC concerning natural resources and wildlife, oil and gas, and releases which became effective on August 14, 2018. Since depth to groundwater at the site has been confirmed to be over 100 feet bgs, the closure criteria for chloride concentrations in the soil is 20,000 mg/kg.

Chloride was detected in 3 of the 5 surface soil samples collected in October 2018 at concentrations ranging from 27.5 mg/kg (VGWU 40- 22) to 972 mg/kg (VGWU 40- 23). Chloride concentrations detected in the surface soil samples did not exceed the 2018 NMAC CC of 20,000 mg/kg. Analytical results for chloride concentrations in the 5 soil samples are provided in Table 1

CONCLUSION

Potential migration of remaining chloride to groundwater is not expected due to the relatively small volume of unrecovered material, low precipitation (WRCC 2019a), high evapotranspiration rates (WRCC 2019b), and fine-grained nature of caliche layers present beneath the site. In addition, the geophysical survey provide data that indicate high conductivity zones at the site do not extent passed approximately 15 feet bgs which further demonstrates that the remaining soil concentrations associated with the release do not pose a significant risk to groundwater resources.

Soil data presented in this report support a conclusion that impacted soil associated with the December 5, 2012 release at the site poses no significant threat to groundwater resources or other receptors.

Although impacted soil poses little threat to the groundwater at the site, chloride concentrations detected in groundwater samples collected from VGWUO40-MW1 in December 2017, July 2018, and October 2018 exceed the NMAC human heath standard value of 250 mg/L. Chloride concentrations ranged from 459 mg/L in December 2017 to 630 mg/L in October 2018. Further investigations are needed to determine the extent of chloride-impacts in the groundwater and the source of impact.

CLOSING

Arcadis proposes installing and sampling two groundwater monitoring well to further assess chloride concentrations in groundwater at the site.

If you have any questions or comments regarding the information presented in this Report, please contact Scott Foord 713953.4853 or at William.Foord@arcadis.com.

Sincerely,

Arcadis U.S., Inc.

hot

Scott Foord **Project Manager**

Copies. Jason Michelson (CEMC)

Greg Cutshall Program Manager

Bradford Billings 07/09/2021 OCD

arcadis.com 2019 01 07 O-40 TL_Site Assessment Report_Final

Enclosures:

Tables

- 1 Soil Sampling Analytical Results
- 2 Groundwater Gauging Data and Analytical Results

Figures

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

Attachments

- 1 C-141 Form
- 2 Laboratory Analytical Results and Chain of Custody
- 3 Soil Boring Logs and Monitor Well Logs

References

- Ash, S.R. 1963. Ground-water conditions in northern Lea County, New Mexico. New Mexico Bureau of Mines and Mineral Resources, Atlas HA-62.
- Bachman, George O. 1980. Regional Geology and Cenozoic History of Pecos Region, Southeastern New Mexico, US Dept. of Interior Geological Survey, Open File Report 80-1099, 120 pp.
- Boyer, David G. 2004. Field Determination of Chloride in Salt Impacted Soils Just Add Water!. 1th Annual International Petroleum Environmental Conference, October 2004, Albuquerque, NM. 11 pp.
- Fahlquist, L. 2003. Ground-water quality of the southern High Plains Aquifer, Texas and New Mexico, 2001. U. S. Geological Survey Open-File Report 03-345, 69 p.
- Fallin, J.A. Tony. 1988. Hydrogeology of Lower Cretaceous Strata Under the Southern High Plains of New Mexico, New Mexico Geology, Vol. 10, No. 1, pp. 6-9, February 1988.
- GoogleEarth. 2018. Lovington, New Mexico, 32_46_57.76N, 103_29_26.55W, elev 3913 feet, Google Earth Imagery. December 20.
- Hall, Stephen A. 2002. Field Guide to the Geoarcaeology of the Mescalero Sands, Southeastern New Mexico, Report Submitted to the State of New Mexico Historic Preservation Division and New Mexico Bureau of Land Management, Project No. 35-00-15334.11. October 2002.
- Nativ, R. 1988. Hydrogeology and hydrochemistry of the Ogallala aquifer, Southern High Plains, Texas Panhandle and eastern New Mexico: The University of Texas at Austin, Bureau of Economic Geology Report of Investigations no. 177, 64 p.
- New Mexico Administrative Code. 1995. Title 20, Chapter 6 of the New Mexico Administrative Code for Environmental Protection, Water Quality, Ground and Surface Water Protection, 20.6.2 NMAC. December.
- New Mexico Administrative Code. 2009. Title 19, Chapter 15 of the New Mexico Administrative Code concerning pits, closed-loop systems, below grade tanks and sumps, and other alternative methods, 19.15.17 NMAC. July.
- New Mexico Administrative Code. 2018. Title 19, Chapter 15 of the New Mexico Administrative Code for Natural Resources and Wildlife, Oil and Gas, and Releases, 19.15.29 NMAC. August.
- New Mexico Office of the State Engineer. 2019. Water Information, Maps and Data, Geospatial Data, OSE Well Data, <u>http://www.ose.state.nm.us/water_info_data.html</u>, January.
- Nicholson, A., Jr., and A. Clebsch, Jr. 1961. Geology and Ground-Water Conditions in Southern Lea County, New Mexico. ERMS 241583. Ground-Water Report 6. Socorro, NM: New Mexico Bureau of Mines and Mineral Resources.
- Reeves, C.C. Jr. 1972. Tertiary-Quaternary stratigraphy and geomorphology of West Texas and southeastern New Mexico: New Mexico Geological Society, Guidebook 23, p. 108-117.
- Seni, S.J. 1980. Sand-body geometry and depositional systems, Ogallala Formation, Texas. University of Texas, Bureau of Economic Geology, Report of Investigations No.105, 40 p.

- Summers, W.K. 1972. Geology and Regional Hydrology of the Pecos River Basin, New Mexico, New Mexico Bureau of Geology and Mineral Resources, Open File Report No. 37, 393 pp. June 1972.
- Tillery, A. 2008. Current (2004-07) conditions and changes in ground-water levels from predevelopment to 2007, Southern High Plains Aquifer, Southeast New Mexico-Lea County Underground Water Basin. U.S. Geological Survey, Scientific Investigations Map 3044.
- United States Environmental Protection Agency. 1996. Multimedia Exposure Assessment Model for exposure assessment, MULTIMED 2.0 Beta. October.
- United States Environmental Protection Agency. 2010. List of Contaminants and their Maximum Contaminant Levels, List of National Secondary Drinking Water Regulations. Online at: <u>http://water.epa.gov/drink/contaminants/#List</u>. July 1.
- Western Regional Climate Center. 2019a. Hobbs, New Mexico (294026) weather station. http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?nm4026. Viewed on January 2.
- Western Regional Climate Center. 2019b. Artesia, New Mexico, monthly average pan evaporation. <u>http://www.wrcc.dri.edu/htmlfiles/westevap.final.html#NEW MEXICO</u>. Viewed on January 2.

TABLES



Table 1 Soil Analytical Results Chevron EMC Vacuum Glorieta West Unit O-40 Trunk Line Lea County, New Mexico

Boring Location ID	Sample Date	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)	Chloride (mg/kg)	% Moisture
		ure Criteria ^(a)	10				50	1,0	-	20,000	
VGWU #040 Sample #1	1/22/2013	2	< 0.050	< 0.050	<0.050	<0.150		<10.0	<10.0	11,000	
VGWU #040 Sample #2	1/22/2013	2	< 0.050	< 0.050	< 0.050	<0.150		<10.0	<10.0	9,760	
VGWU #040 Sample #3	1/22/2013	2	< 0.050	< 0.050	<0.050	<0.150		<10.0	<10.0	11,600	
VGWU #040 Sample #4	1/22/2013	2	<0.050	< 0.050	<0.050	<0.150		<10.0	<10.0	6,480	
VGWU #040 Sample #5	1/22/2013 1/22/2013	2	< 0.050	< 0.050	< 0.050	<0.150 <0.150		<10.0 <10.0	<10.0 <10.0	9,920 12,000	
VGWU #040 Sample #6	10/23/2013		<0.050	<0.050	<0.050	<0.150		< 10.0	< 10.0	1,000	5
	10/23/2013	2 5								2,100	4
	10/23/2013	5 10								400	6
VGWU 40- 01	10/23/2013	-								350	5
10100 40- 01	10/23/2013	15								33	8
	10/23/2013	20								15	4
	10/23/2013	25 30								180	3
	10/22/2013	2								2,600	6
	10/22/2013									4,300	10
	10/22/2013	5								4,300	3
	10/22/2013	10 15								3,900	6
VGWU 40- 02	10/22/2013									2,600	7
	10/22/2013	20								3,100	3
	10/23/2013	25								3,600	4
	6/23/2013	30 80								93	
	10/23/2018									3,600	5
	10/23/2013	2								,	3
VGWU 40- 03		5								910	3
	10/23/2013	10								37	
	10/23/2013 10/23/2013	15								23 14	3
	10/23/2013	20								8	2
	10/23/2013	25								° 27	2
	10/23/2013	30								1,700	6
	10/22/2013	2								5,200	9
	10/22/2013	5								360	9
VGWU 40- 04	10/22/2013	10								93	8
VGVV0 40- 04	10/22/2013	15								23	0 6
	10/22/2013	20								71	12
	10/22/2013	25 30								21	8
										54	0 1
	10/23/2013	2									8
	10/23/2013	5								53	-
VGWU 40- 05	10/23/2013 10/23/2013	10								10 6	2
v Gvv U 40- U3	10/23/2013	15								6	2
	10/23/2013	20								6	2
	10/23/2013	25								7	
h	10/23/2013	30								7 51	5
		2									
	10/23/2013 10/23/2013	5								27 7	6 4
VGWU 40- 06		10									4 9
V GVV U 40- 00	10/23/2013	15								<4.4	9 4
	10/23/2013 10/23/2013	20								6 7	4
		25									4
h	10/23/2013	30								10	
	10/23/2013 10/23/2013	2								2,400 130	4
		5									3
VGWU 40- 07	10/23/2013	10								33 96	3 5
V GVV U 40- U/	10/23/2013	15									3
	10/23/2013	20								14	
	10/23/2013	25								8	4
L	10/23/2013	30								9	3

.



Table 1 Soil Analytical Results Chevron EMC Vacuum Glorieta West Unit O-40 Trunk Line Lea County, New Mexico

	Boring Location ID	Sample Date	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)	Chloride (mg/kg)	% Moisture
		NMAC Close	ure Criteria ^(a)	10				50	1,0	000	20,000	
		10/23/2013	2								2,000	3
		10/23/2013	5								700	6
		10/23/2013	10								2,600	8
	VGWU 40- 08	10/23/2013	15								11	13
		10/23/2013	20								46	5
		10/23/2013	25								130	4
		10/23/2013	30								61	7
		10/23/2013	2								2,500	5
		10/23/2013	5								1,800	2
		10/23/2013	10								900	4
	VGWU 40- 09	10/23/2013	15								2,300	10
		10/23/2013	20								580	9
		10/23/2013	25								70	7
		10/23/2013	30								130	5
		9/12/2016	2								1,980	
	VGWUO40-10	9/12/2016	4								428	
		9/12/2016	7								259	
		9/12/2016	70								920	
	VGWUO40-11	9/12/2016	2								44.2	
		9/12/2016	4								<10.0	
		9/13/2016	2								87	
	VGWUO40-12	9/13/2016	4								54	
		9/12/2016	2								753	
	VGWUO40-13	9/12/2016	4								714	
		9/12/2016	10								10.1	
	VGWUO40-14	9/12/2016	2								87	
	VGW0040-14	9/12/2016	4						-		101	
	VGWUO40-15	9/12/2016	2								<10.0	
	VGW0040-15	9/12/2016	4								<10.0	
		9/13/2016	2								329.00	
	VGWUO40-16	9/13/2016	4								881.00	
		9/13/2016	50								16.40	
	VGWUO40-17	9/13/2016	2								52.8	
	VGW0040-17	9/13/2016	4								34.8	
		9/13/2016	2								65.30	
	VGWUO40-18	9/13/2016	4								318.00	
		9/13/2016	70						-		142.00	
	VGWUO40-19	9/13/2016	2								54.2	
	vGvv0040-19	9/13/2016	4						-		59.6	
	VGWUO40-20	10/25/2018	0.5								<4.95	
	VGWUO40-21	10/25/2018	0.5								938.0	
	VGWUO40-22	10/25/2018	0.5								27.5	
	VGWUO40-23	10/25/2018	0.5								972	
	VGWUO40-24	10/25/2018	0.5								<5.01	

Legend:

Legenu.	
%	Percent
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
TPH-DRO	Total Petroleum Hydrocarbons as Diesel Range Organics

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

.

Table 2

Groundwater Gauging Data and Analytical Results Chevron EMC Vacuum Glorieta West Unit O-40 Trunk Line Lea County, New Mexico

Monitoring V

nit O-40	Trunk Line			
Well ID	Date	DTW (ft btoc)	Chloride ¹ (mg/L)	
	NMAC Standards ²		250	1

ARCADIS Design & Consultancy for natural and built assets

	NMAC Standards ²									
	12/7/2017	149.3	470							
	12/7/2017 (DUP)		459							
VGWUO40-MW1	7/31/2018	134.8	556							
VGVV0040-IVIVVI	7/31/2018 (DUP)		526							
	10/25/2018	135.0	630							
	10/25/2018 (DUP)		628							

Notes:

1. Chloride analyzed by EPA Method 300/300.1.

2. Title 20, Chapter 6 of the NMAC for Environmental Protection, Water Quality, Ground and Surface Water Protection, 20.6.2 NMAC. December.

Legend:

###	Analytical value is greater than or equal to NMAC closure criteria
	Not applicable or not measured
NMAC	New Mexico Administrative Code
DUP	Field duplicate sample
DTW	Depth to Water
mg/L	Miligram(s) per liter
BTOC	Below top of casing
ft	Feet

FIGURES

```
Received by OCD: 10/28/2019 8:04:07 AM
```





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

C:\Users\PAI01041\OneDrive - ARCADIS\BIM 360 Docs\CHEVRON CORPORATION\HES-0-40 TL/2018\B0048611.1701\01-DWG1701-GWAR-Fig3.dwg LAYOUT: 3 SAVED: 12/21/2018 4:25 PM ACADVER: 21.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 12/21/2018 4:27 PM BY: ANJANEYAKUMAR, PAVAN KUMAR



Released to Imaging: 7/9/2021 2:17:22 PM

CITY: MANCHESTER DIV/GROUP: ENVCAD DB: B.SMALL PM: TM C:\Users\PAI01041\OneDrive - ARCADIS\BIM 360 Docs\CHEVRON CORPORATION\HES-0-40 TL\2018\B0048611.1701\01-DWG\1701-GWAR-Fig2.dwg LAYOUT: 2 SAVED: 12/21/2018 4:25 PM ACADVER: 21.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 12/21/2018 4:26 PM BY: ANJANEYAKUMAR, PAVAN KUMAR



Released to Imaging: 7/9/2021 2:17:22 PM



VGWU O-40 TRUNK LINE CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY **VGWU BATTERY** LEA COUNTY, NEW MEXICO





Released to Imaging: 7/9/2021 2:17:22 PM

VGWU BATTERY LEA COUNTY, NEW MEXICO





VGWU BATTERY LEA COUNTY, NEW MEXICO

Released to Imaging: 7/9/2021 2:17:22 PM



Received by OCD: 10/28/2019 8:04:07 AM



ARCADIS Design & Consultancy for natural and built assets

VGWU O-40 TRUNK LINE CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY **VGWU BATTERY** LEA COUNTY, NEW MEXICO

FIGURE 7

Received by OCD: 10/28/2019 8:04:07 AM



ATTACHMENT 1.

C-141 Form

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

Form C-141 Revised August 8, 2011

Page 29 of 210

Oil Conservation Division 1220 South St. Francis Dr.

1220 S. St. Ffall	Santa Fe, NM 87505											
			Rele	ease Notific	cation	n and Co	orrective A	ction				
						OPERA	ΓOR	\triangleright	🛛 Initia	al Report		Final Report
Name of Co	ompany CH	IEVRON U	.S.A Inc.			Contact Day	vid Pagano			-		
Address 5	56 Texas C	Camp Road, I	Lovingto	n, NM 88260		Telephone I	No. Office: 575-	-396-4414	ext 275	Cellular: 50)5-787	-9816
Facility Nar trunk line	me Vacu	um Gloriett	a West U	nit Battery SW	D	Facility Typ	e Production '	Tank Batte	ery			
Surface Ow	mer Stat	e of New Mo	exico	Mineral O	Owner	State of N	ew Mexico		API No	. OGRI	D No.	B-155
				LOCA	ATIO	N OF RE	LEASE					
Unit Letter	Section	Township	Range	Feet from the		South Line	Feet from the	East/We	est Line	County	-	
G	36	17.0S	34.0E								Lea	l
		Latit	ude 32	2.795081		Longitud	e103.51175	56				
NATURE OF RELEASE												
Type of Rele	ase Spill	to Land			UKE	Volume of		bls of V	Volume R	Recovered 3	5bbls	of Produced
						Produced V			Water			
Source of Re	lease Wa	ter Injection S	Station Pu	mp		Date and F 12/5/12 04	Iour of Occurrent		Date and 1 (12/5/12 0)	Hour of Dis	covery	r
Was Immedia	ate Notice (liven?				If YES, To		1	12/3/12 00	0.00AM		
			Yes] No 🗌 Not R	equired	Geoffrey I						
By Whom?	David Paga	ino				Date and H 11/5/12 2:2						
Was a Water	course Read	hed?					olume Impacting	the Water	course			
trub u trutor	course recu		Yes 🗵	No		II ILD, IV	statile impacting	the watere	ourse.			
If a Watercou	urse was Im	pacted, Descr	ibe Fully. ³	*								
N/A												
Describe Cau	use of Proble	em and Reme	dial Actio	n Taken.*								
6" buried fibe	erglass trun	k line from V	GWU Bat	tery to the O-40S	WD leal	ked undergrou	und approx 700 fe	eet west/so	uthwest o	of the batter	v. Cau	se of leak
		line is excava			i D Iou	ieu unuergrot	ing approve to the		uni i obt c	in the sutter.	. cuu	Se of feat
Describe Are	Affected :	and Cleanup A	Action Tal	ken *								
		-										
				orth of CVU 457 v								
feet and sent			ered liquid	s placed hauled o	ff to disj	posal. Next s	teps are for the vi	isually con	taminated	d soil to be o	excava	ted up to 2
feet and sent	on for disp	0541.										
				e is true and comp								
				nd/or file certain i								
				ce of a C-141 report investigate and r								
				otance of a C-141								
		ws and/or regu			report a		e alle operation of	responsion		sinpinanee (iiii uii) outer
	OIL CONSERVATION DIVISION											
Signature:												
Signatule.						Annround k-	Environmental S	magialist				
Printed Name	e: David	Pagano				Approved by	Environmental S					
Title: Heal	lth & Enviro	onmental Spec	cialist			Approval Da	te:	Ex	piration l	Date:		
E-mail Addre	ess: david	l.pagano@che	evron.com			Conditions of	f Approval:				_	

Phone: 505-787-9816 Date: 12/12/12 * Attach Additional Sheets If Necessary

Attached

State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Page 30 of 210

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Santa Fe, NM 8/505											
Release Notification and Corrective Action											
						OPERA	ΓOR	Init	al Report	Final Report	
		HEVRON U				Contact: Lu	ke Welch		*	*	
		mp Road, Lo				Telephone No.: Office: (713) 372-0292 Mobile: (832) 627-9171					
Facility Nat Trunk Line	me: Vacuu	m Glorietta	West Uni	t Battery SWD		Facility Typ	e: Production T	ank Battery			
Surface Ow	ner: State	of New Mex	ico	Mineral C	wner:	State of Nev	v Mexico	API N	o. OGRID	No. B-155	
				LOCA	ATIO	N OF REI	LEASE				
Unit Letter	Section	Township	Range	Feet from the	North	/South Line	Feet from the	East/West Line	County		
В	1	17.0S	36E						Lea		
	1		Latitu	de 32 795081°		Longitude	-103 511756°		•		
Latitude <u>32.795081°</u> Longitude <u>-103.511756°</u> NATURE OF RELEASE											
Type of Rele	Type of Release: Spill to Land Volume of Release: 149 bbls of Volume Recovered: 35 bbls of Produced										
						Produced W	ater	Water			
Source of Re	lease: Wate	r Injection Sta	ation Pum	р		Date and Ho 12/5/12 04:0	our of Occurrence		Hour of Dis 08:00 AM	covery:	
Was Immedi	ate Notice (Given?				If YES, To		12/3/12	56.00 AM		
Yes No Not Required				uired	Geoffrey Le	king					
By Whom? Was a Water							our: 11/5/12 2:20	- W/-4			
was a water	course Read		Yes 🖂 🛛	No		II YES, VOI	ume Impacting th	e watercourse.			
If a Waterco	If a Watercourse was Impacted, Describe Fully.*										
N/A											
Describe Cau	use of Probl	em and Reme	dial Actio	n Taken.*							
6" buried fib	erglass trun	k line from V	GWU Bat	tery to the O-40S	WD lea	ked undergrou	ind approx. 700 fe	eet west/southwes	t of the batter	y.	
Describe Are	a Affected	and Cleanup A	Action Tal	ken.*							
Dalaasa aaay	und in post	umo omoo iust 1	00 faat me	with of CVII 457 v		diagonami va	anne tenale acetta	cted and vacuume	d up the stor	ding fluide	
								oil was excavated		allig fluids.	
		ation samples	were coll	ected from the bas	se of th	e excavation.	An additional site	assessment was c	onducted to	confirm the extent	
of soil impac	ts.										
		additional ass									
								inderstand that pur tive actions for re			
public health	or the envi	ronment. The	acceptant	ce of a C-141 repo	ort by tl	ne NMOCD m	arked as "Final R	eport" does not re	lieve the ope	rator of liability	
										ter, human health	
		ws and/or regu		otance of a C-141	report	does not reliev	e the operator of	responsibility for	compliance v	any other	
							OIL CON	SERVATION	DIVISIO	<u>DN</u>	
Signature:											
	Approved by Environmental Specialist:										
Printed Name	e: Luke We	lch						•			
Title: Project	Manager					Approval Dat	e:	Expiration	Date:		
E-mail Addre	ess: LWelch	@chevron.co	m			Conditions of	Approval:		Attached		
Date:			Phone	: (713) 372-0292						_	

Date: Ph * Attach Additional Sheets If Necessary ATTACHMENT 2.

Laboratory Analytical Results and Chain of Custody



January 29, 2013

DAVID PAGANO 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 01/22/13 16:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/ga/lab_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.

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,

Celez D. Keine

Celey D. Keene Lab Director/Quality Manager



		Chevron - DAVID PA HCR 60 Bo Lovington	GANO		
		Fax To:	None		
Received:	01/22/2013			Sampling Date:	01/22/2013
Reported:	01/29/2013			Sampling Type:	Soil
Project Name:	SOIL SAMPLES			Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN			Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN				

Sample ID: VGWU #040 SAMPLE #1 (H300179-05)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/29/2013	ND	1.81	90.3	2.00	13.2	
Toluene*	<0.050	0.050	01/29/2013	ND	1.92	96.0	2.00	13.2	
Ethylbenzene*	<0.050	0.050	01/29/2013	ND	1.99	99.7	2.00	13.4	
Total Xylenes*	<0.150	0.150	01/29/2013	ND	6.04	101	6.00	13.5	
Total BTEX	<0.300	0.300	01/29/2013	ND					
Surrogate: 4-Bromofluorobenzene (PID	101 9	6 89.4-12	6						
Chloride, SM4500Cl-B	mg/	kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	11000	16.0	01/25/2013	ND	400	100	400	0.00	
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	01/26/2013	ND	205	103	200	19.4	
DRO >C10-C28	<10.0	10.0	01/26/2013	ND	198	99.0	200	15.1	
Surrogate: 1-Chlorooctane	90.1	65.2-14	0						
Surrogate: 1-Chlorooctadecane	96.4	63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of 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. Keine

Celey D. Keene, Lab Director/Quality Manager



		Chevron - DAVID PA HCR 60 Bo Lovington	GANO		
		Fax To:	None		
Received:	01/22/2013			Sampling Date:	01/22/2013
Reported:	01/29/2013			Sampling Type:	Soil
Project Name:	SOIL SAMPLES			Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN			Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN				

Sample ID: VGWU #040 SAMPLE #2 (H300179-06)

BTEX 8021B	mg/kg		Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/26/2013	ND	1.81	90.3	2.00	13.2	
Toluene*	<0.050	0.050	01/26/2013	ND	1.92	96.0	2.00	13.2	
Ethylbenzene*	<0.050	0.050	01/26/2013	ND	1.99	99.7	2.00	13.4	
Total Xylenes*	<0.150	0.150	01/26/2013	ND	6.04	101	6.00	13.5	
Total BTEX	<0.300	0.300	01/26/2013	ND					
Surrogate: 4-Bromofluorobenzene (PID	102 9	6 89.4-12	6						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	9760	16.0	01/25/2013	ND	400	100	400	0.00	
TPH 8015M	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/24/2013	ND	205	103	200	19.4	
DRO >C10-C28	<10.0	10.0	01/24/2013	ND	198	99.0	200	15.1	
Surrogate: 1-Chlorooctane	65.6	65.2-14	0						
Surrogate: 1-Chlorooctadecane	80.1	63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of 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. Keine

Celey D. Keene, Lab Director/Quality Manager



		Chevron - DAVID PA HCR 60 Bo Lovington	GANO		
		Fax To:	None		
Received:	01/22/2013			Sampling Date:	01/22/2013
Reported:	01/29/2013			Sampling Type:	Soil
Project Name:	SOIL SAMPLES			Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN			Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN				

Sample ID: VGWU #040 SAMPLE #3 (H300179-07)

BTEX 8021B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/26/2013	ND	1.81	90.3	2.00	13.2	
Toluene*	<0.050	0.050	01/26/2013	ND	1.92	96.0	2.00	13.2	
Ethylbenzene*	<0.050	0.050	01/26/2013	ND	1.99	99.7	2.00	13.4	
Total Xylenes*	<0.150	0.150	01/26/2013	ND	6.04	101	6.00	13.5	
Total BTEX	<0.300	0.300	01/26/2013	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 %	6 89.4-12	6						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	11600	16.0	01/25/2013	ND	400	100	400	0.00	
TPH 8015M	mg/	kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/24/2013	ND	205	103	200	19.4	
DRO >C10-C28	<10.0	10.0	01/24/2013	ND	198	99.0	200	15.1	
Surrogate: 1-Chlorooctane	82.1 9	65.2-14	0						
Surrogate: 1-Chlorooctadecane	97.2 9	63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of 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. Keine

Celey D. Keene, Lab Director/Quality Manager



		Chevron - DAVID PA HCR 60 Bo Lovington	GANO		
		Fax To:	None		
Received:	01/22/2013			Sampling Date:	01/22/2013
Reported:	01/29/2013			Sampling Type:	Soil
Project Name:	SOIL SAMPLES			Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN			Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN				

Sample ID: VGWU #040 SAMPLE #4 (H300179-08)

BTEX 8021B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/26/2013	ND	1.81	90.3	2.00	13.2	
Toluene*	<0.050	0.050	01/26/2013	ND	1.92	96.0	2.00	13.2	
Ethylbenzene*	<0.050	0.050	01/26/2013	ND	1.99	99.7	2.00	13.4	
Total Xylenes*	<0.150	0.150	01/26/2013	ND	6.04	101	6.00	13.5	
Total BTEX	<0.300	0.300	01/26/2013	ND					
Surrogate: 4-Bromofluorobenzene (PID	103 9	6 89.4-12	6						
Chloride, SM4500Cl-B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6480	16.0	01/25/2013	ND	400	100	400	0.00	
TPH 8015M	mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/26/2013	ND	205	103	200	19.4	
DRO >C10-C28	<10.0	10.0	01/26/2013	ND	198	99.0	200	15.1	
Surrogate: 1-Chlorooctane	89.8	65.2-14	0						
Surrogate: 1-Chlorooctadecane	103 9	63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims beaded 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. Keine

Celey D. Keene, Lab Director/Quality Manager


Analytical Results For:

		DAVID PA HCR 60 Bo			
		Fax To:	None		
Received:	01/22/2013			Sampling Date:	01/22/2013
Reported:	01/29/2013			Sampling Type:	Soil
Project Name:	SOIL SAMPLES			Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN			Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN				

Sample ID: VGWU #040 SAMPLE #5 (H300179-09)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/26/2013	ND	1.81	90.3	2.00	13.2	
Toluene*	<0.050	0.050	01/26/2013	ND	1.92	96.0	2.00	13.2	
Ethylbenzene*	<0.050	0.050	01/26/2013	ND	1.99	99.7	2.00	13.4	
Total Xylenes*	<0.150	0.150	01/26/2013	ND	6.04	101	6.00	13.5	
Total BTEX	<0.300	0.300	01/26/2013	ND					
Surrogate: 4-Bromofluorobenzene (PID	101 9	6 89.4-12	6						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	9920	16.0	01/25/2013	ND	400	100	400	0.00	
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	01/24/2013	ND	205	103	200	19.4	
DRO >C10-C28	<10.0	10.0	01/24/2013	ND	198	99.0	200	15.1	
Surrogate: 1-Chlorooctane	68.8	65.2-14	0						
Surrogate: 1-Chlorooctadecane	77.8	63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the sample identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



Analytical Results For:

		Chevron - DAVID PA HCR 60 Bo Lovington	GANO		
		Fax To:	None		
Received:	01/22/2013			Sampling Date:	01/22/2013
Reported:	01/29/2013			Sampling Type:	Soil
Project Name:	SOIL SAMPLES			Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN			Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN				

Sample ID: VGWU #040 SAMPLE #6 (H300179-10)

BTEX 8021B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/26/2013	ND	1.81	90.3	2.00	13.2	
Toluene*	<0.050	0.050	01/26/2013	ND	1.92	96.0	2.00	13.2	
Ethylbenzene*	<0.050	0.050	01/26/2013	ND	1.99	99.7	2.00	13.4	
Total Xylenes*	<0.150	0.150	01/26/2013	ND	6.04	101	6.00	13.5	
Total BTEX	<0.300	0.300	01/26/2013	ND					
Surrogate: 4-Bromofluorobenzene (PID	102 %	6 89.4-12	6						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	12000	16.0	01/25/2013	ND	400	100	400	0.00	
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	01/26/2013	ND	205	103	200	19.4	
DRO >C10-C28	<10.0	10.0	01/26/2013	ND	198	99.0	200	15.1	
Surrogate: 1-Chlorooctane	92.8 9	65.2-14	0						
Surrogate: 1-Chlorooctadecane	100 %	63.6-15	4						

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claims beaded upon any of the above stated reasons or otherwise. Results relate only to the sample identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C

Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the sample identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

S. IDedocata (film)

SERVICE SECONDARY OF CONTRACTOR ESCIPERIE

Of Service and An Anna MOR OF SER contany Remote and the of 4×84 - 7-ANULA VIAL RECIDEST Region managers and the second second F 14 0 Additions of the standard of 1500, 5300 - 00 - 1 and there dealed by per-- 636 M 43 - 41 - 12 - 1 and Leader for Phonoral Erry 7.5 0.8.1 \$108.98 ADDRESS HALL OF THE CAP I HIDIPALNE and have applied 100000 SING MAL TIN TY AL In fual the me: PHITE & EXEMPTING VOID 100 Preservi Loudiborr N COST Sancylly' + mms MAUSPIELAGE OPERATION FOR ON TIM POF SERVI mil Gul. Lab.D. Samule 1.0. 201 (87 西日 HEL ABH 8800FF -- (v) :-DATE 伯赦化 正法 WI WAR WAR DAMILORI 610 Ň 15 65 YA STRAFES SA WAY & SPA ç 1-40 33 VI - UNIT as a lead 19 16 VOLIM 455 SUB. D. W.Y. 1305 Set. 111. 24 Neulli #11 - 50 17:02 11 - Sard of Si glic 62 3 ada 23 1814-15 7 P.A.A. 6 - 2-SHINESTER a handles and 15-15 ġ, 81-1011 5= 14-1- #5F 14 Sam 2 1445 1423 ni mile to Int I with the last 9.0 10 S 11 C 1 100 C 1 1 10 1 000 Reling inner Oy Dale Plash. Diane Franke = 10) Vala (Protoce) Math. So. 93 Serpicad Ra 6am. for Current 1.000 1.000 8.13 1 Kill AUDIO SER. tekehned (19 Rolling min-Theo: I administration of the second stratest they wanted STR NUL 11 A nuch le 1 taraphe 11%, an unce Harry for tabethere and the state of the Page 13 of 13

Page 40 of 2

Received by OCD: 10/28/2019 8:04:07 AM



THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Houston 6310 Rothway Street Houston, TX 77040 Tel: (713)690-4444

TestAmerica Job ID: 600-81631-1 Client Project/Site: HES Transfer Sites, Lea County NM

For: ARCADIS U.S., Inc. 2929 Briarpark Drive Suite 300

Attn: Mr. Jonathan Olsen

Houston, Texas 77042

Authorized for release by: 11/5/2013 2:16:31 PM Cathy Upton, Data Delivery Analyst (713)690-4444 cathy.upton@testamericainc.com

Designee for

Sachin Kudchadkar, Senior Project Manager (713)690-4444 sachin.kudchadkar@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Have a Question? Ask The Expert Visit us at: www.testamericainc.com

Released to Imaging: 7/9/2021 2:17:22 PM

.....LINKS

Review your project results through

Total Access

Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Method Summary	4
Sample Summary	5
Client Sample Results	7
Definitions/Glossary	23
QC Sample Results	24
QC Association Summary	29
Lab Chronicle	35
Certification Summary	48
Chain of Custody	49
Receipt Checklists	59

Page 42 of 210

Case Narrative

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

Job ID: 600-81631-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative 600-81631-1

Comments

No additional comments.

Receipt

The samples were received on 10/25/2013 9:57 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.2° C and 5.6° C.

General Chemistry

Method(s) 9056: The matrix spike (MS) recovery for batch 119258 was outside control limits for Chloride. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 9056: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 119258 were outside control limits for Chloride. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Method(s) 9056: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 119606 were outside control limits for Chloride. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other analytical or quality issues were noted.

Industrial Hygiene

No analytical or quality issues were noted.

3 5

TestAmerica Job ID: 600-81631-1

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

lethod	Method Description	Protocol	Laboratory	
056	Anions, Ion Chromatography	SW846	TAL HOU	
oisture	Percent Moisture	EPA	TAL HOU	ŝ
Protocol Re	ferences:			
EPA = L	S Environmental Protection Agency			
SW846	= "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Ed	dition, November 1986 And Its Updates.		
Laboratory	References:			
TAL HO	J = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)69	0-4444		
				1

Protocol References:

Laboratory References:

TestAmerica Houston

Page 44 of 210

Sample Summary

TestAmerica Job ID: 600-81631-1

5

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-81631-15	VGWU 040-04 (102213) 2'	Solid	10/22/13 15:36	10/25/13 09:5
00-81631-16	VGWU 040-04 (102213) 5'	Solid	10/22/13 15:38	10/25/13 09:5
00-81631-17	VGWU 040-04 (102213) 10'	Solid	10/22/13 15:42	10/25/13 09:5
00-81631-18	VGWU 040-04 (102213) 15'	Solid	10/22/13 15:45	10/25/13 09:5
00-81631-19	VGWU 040-04 (102213) 20'	Solid	10/22/13 15:48	10/25/13 09:5
00-81631-20	VGWU 040-04 (102213) 25'	Solid	10/22/13 15:50	10/25/13 09:5
00-81631-21	VGWU 040-04 (102213) 30'	Solid	10/22/13 15:55	10/25/13 09:5
00-81631-22	VGWU 040-02 (102213) 2'	Solid	10/22/13 16:06	10/25/13 09:5
00-81631-23	VGWU 040-02 (102213) 5'	Solid	10/22/13 16:07	10/25/13 09:5
00-81631-24	VGWU 040-02 (102213) 10'	Solid	10/22/13 16:10	10/25/13 09:5
00-81631-25	VGWU 040-02 (102213) 15'	Solid	10/22/13 16:14	10/25/13 09:5
00-81631-26	VGWU 040-02 (102213) 20'	Solid	10/22/13 16:18	10/25/13 09:5
00-81631-27	VGWU 040-02 (102313) 25'	Solid	10/23/13 09:57	10/25/13 09:5
00-81631-28	VGWU 040-02 (102313) 30'	Solid	10/23/13 10:20	10/25/13 09:5
00-81631-29	VGWU 040-01 (102313) 2'	Solid	10/23/13 10:29	10/25/13 09:5
00-81631-30	VGWU 040-01 (102313) 5'	Solid	10/23/13 10:31	10/25/13 09:5
00-81631-31	VGWU 040-01 (102313) 10'	Solid	10/23/13 10:33	10/25/13 09:5
00-81631-32	VGWU 040-01 (102313) 15'	Solid	10/23/13 10:36	10/25/13 09:5
00-81631-33	VGWU 040-01 (102313) 20'	Solid	10/23/13 10:38	10/25/13 09:5
00-81631-34	VGWU 040-01 (102313) 25'	Solid	10/23/13 10:41	10/25/13 09:5
00-81631-35	VGWU 040-01 (102313) 30'	Solid	10/23/13 10:45	10/25/13 09:5
00-81631-36	VGWU 040-03 (102313) 2'	Solid	10/23/13 10:59	10/25/13 09:5
00-81631-37	VGWU 040-03 (102313) 5'	Solid	10/23/13 11:01	10/25/13 09:5
00-81631-38	VGWU 040-03 (102313) 10'	Solid	10/23/13 11:03	10/25/13 09:5
00-81631-39	VGWU 040-03 (102313) 15'	Solid	10/23/13 11:07	10/25/13 09:5
00-81631-40		Solid	10/23/13 11:10	10/25/13 09:5
	VGWU 040-03 (102313) 20'			
00-81631-41	VGWU 040-03 (102313) 25'	Solid	10/23/13 11:15	10/25/13 09:5
00-81631-42	VGWU 040-03 (102313) 30'	Solid	10/23/13 11:18	10/25/13 09:5
00-81631-50	VGWU 040-06 (102313) 2'	Solid	10/23/13 12:13	10/25/13 09:5
00-81631-51	VGWU 040-06 (102313) 5'	Solid	10/23/13 12:15	10/25/13 09:5
00-81631-52	VGWU 040-06 (102313) 10'	Solid	10/23/13 12:18	10/25/13 09:5
00-81631-53	VGWU 040-06 (102313) 15'	Solid	10/23/13 12:24	10/25/13 09:5
00-81631-54	VGWU 040-06 (102313) 20'	Solid	10/23/13 12:26	10/25/13 09:5
00-81631-55	VGWU 040-06 (102313) 25'	Solid	10/23/13 12:28	10/25/13 09:5
00-81631-56	VGWU 040-06 (102313) 30'	Solid	10/23/13 12:30	10/25/13 09:5
00-81631-57	VGWU 040-05 (102313) 2'	Solid	10/23/13 12:46	10/25/13 09:5
00-81631-58	VGWU 040-05 (102313) 5'	Solid	10/23/13 12:47	10/25/13 09:5
00-81631-59	VGWU 040-05 (102313) 10'	Solid	10/23/13 12:49	10/25/13 09:5
00-81631-60	VGWU 040-05 (102313) 15'	Solid	10/23/13 12:53	10/25/13 09:5
00-81631-61	VGWU 040-05 (102313) 20'	Solid	10/23/13 12:55	10/25/13 09:5
00-81631-62	VGWU 040-05 (102313) 25'	Solid	10/23/13 12:56	10/25/13 09:5
00-81631-63	VGWU 040-05 (102313) 30'	Solid	10/23/13 12:58	10/25/13 09:5
00-81631-64	VGWU 040-07 (102313) 2'	Solid	10/23/13 13:14	10/25/13 09:5
00-81631-65	VGWU 040-07 (102313) 5'	Solid	10/23/13 13:16	10/25/13 09:5
00-81631-66	VGWU 040-07 (102313) 10'	Solid	10/23/13 13:17	10/25/13 09:5
00-81631-67	VGWU 040-07 (102313) 15'	Solid	10/23/13 13:18	10/25/13 09:5
00-81631-68	VGWU 040-07 (102313) 20'	Solid	10/23/13 13:20	10/25/13 09:5
00-81631-69	VGWU 040-07 (102313) 25'	Solid	10/23/13 13:24	10/25/13 09:5
00-81631-70	VGWU 040-07 (102313) 30'	Solid	10/23/13 13:27	10/25/13 09:5
00-81631-85	VGWU 040-08 (102313) 2'	Solid	10/23/13 14:43	10/25/13 09:5
00-81631-86	VGWU 040-08 (102313) 5'	Solid	10/23/13 14:44	10/25/13 09:5
00-81631-87	VGWU 040-08 (102313) 10'	Solid	10/23/13 14:48	10/25/13 09:5
00-81631-88	VGWU 040-08 (102313) 15'	Solid	10/23/13 14:50	10/25/13 09:5

TestAmerica Houston

Released to Imaging: 7/9/2021 2:17:22 PM

Sample Summary

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

_ab Sample ID	Client Sample ID	Matrix	Collected	Received
600-81631-89	VGWU 040-08 (102313) 20'	Solid	10/23/13 14:54	10/25/13 09:57
600-81631-90	VGWU 040-08 (102313) 25'	Solid	10/23/13 14:57	10/25/13 09:57
600-81631-91	VGWU 040-08 (102313) 30'	Solid	10/23/13 14:58	10/25/13 09:57
600-81631-99	VGWU 040-09 (102313) 2'	Solid	10/23/13 15:47	10/25/13 09:57
600-81631-100	VGWU 040-09 (102313) 5'	Solid	10/23/13 15:48	10/25/13 09:57
600-81631-101	VGWU 040-09 (102313) 10'	Solid	10/23/13 15:50	10/25/13 09:57
600-81631-102	VGWU 040-09 (102313) 15'	Solid	10/23/13 15:53	10/25/13 09:57
600-81631-103	VGWU 040-09 (102313) 20'	Solid	10/23/13 15:56	10/25/13 09:57
600-81631-104	VGWU 040-09 (102313) 25'	Solid	10/23/13 15:58	10/25/13 09:57
600-81631-105	VGWU 040-09 (102313) 30'	Solid	10/23/13 16:00	10/25/13 09:57

TestAmerica Houston

TestAmerica Job ID: 600-81631-1

Client Sample Results

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM TestAmerica Job ID: 600-81631-1

Date Collected: 10/22/13 15:36 Date Received: 10/25/13 09:57	04 (102213)) 2'					Lab Sam	ole ID: 600-81 Matri	631-15 x: Solic
General Chemistry		o 117				_			
Analyte		Qualifier	RL	RL	Unit %	D	Prepared	Analyzed	Dil Fac
Percent Moisture Percent Solids	6.0 94		1.0 1.0		%			10/28/13 08:43 10/28/13 08:43	1
General Chemistry - Soluble Analyte	Popult	Qualifier	RL	MDI	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	1700		43		mg/Kg	— <u> </u>	riepaieu	10/29/13 23:49	10
	1700		-10		mg/rtg			10/20/10 20.40	
Client Sample ID: VGWU 040-	04 (102213) 5'					Lab Sam	ole ID: 600-81	631-16
Date Collected: 10/22/13 15:38								Matri	x: Solic
Date Received: 10/25/13 09:57									
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.9		1.0		%	·		10/28/13 08:43	
Percent Solids	91		1.0		%			10/28/13 08:43	
_									
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	5200		440		mg/Kg	\		10/30/13 00:44	100
Date Collected: 10/22/13 15:42									v. Calia
_								Matri	x: Solic
Date Received: 10/25/13 09:57 – General Chemistry Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared		x: Solid
General Chemistry Analyte		Qualifier	RL	RL	Unit %	<u>D</u>	Prepared	Analyzed	Dil Fac
General Chemistry Analyte Percent Moisture	Result 5.9 94	Qualifier	RL 1.0	RL	Unit %	D	Prepared		Dil Fa
General Chemistry Analyte	5.9	Qualifier	1.0	RL	%	D	Prepared	Analyzed	Dil Fac
General Chemistry Analyte Percent Moisture	5.9	Qualifier	1.0	RL	%	<u>D</u>	Prepared	Analyzed	Dil Fac
General Chemistry Analyte Percent Moisture Percent Solids	5.9 94	Qualifier	1.0 1.0 RL		%	D	Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed	Dil Fac
General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	5.9 94		1.0 1.0		% %			Analyzed 10/28/13 08:43 10/28/13 08:43	Dil Fac
General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride	5.9 94 <u>Result</u> 360	Qualifier	1.0 1.0 RL		% % Unit	D	Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 10/30/13 01:02	Dil Fac
General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0	5.9 94 <u>Result</u> 360	Qualifier	1.0 1.0 RL		% % Unit	D	Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 10/30/13 01:02 Die ID: 600-81	Dil Fac
General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/22/13 15:45	5.9 94 <u>Result</u> 360	Qualifier	1.0 1.0 RL		% % Unit	D	Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 10/30/13 01:02 Die ID: 600-81	Dil Fac Dil Fac
General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/22/13 15:45 Date Received: 10/25/13 09:57	5.9 94 <u>Result</u> 360	Qualifier	1.0 1.0 RL		% % Unit	D	Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 10/30/13 01:02 Die ID: 600-81	Dil Fac Dil Fac
General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/22/13 15:45	5.9 94 <u>Result</u> 360 04 (102213)	Qualifier	1.0 1.0 RL	MDL	% % Unit	D	Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 10/30/13 01:02 Die ID: 600-81	Dil Fac Dil Fac 631-18 x: Solic
General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/22/13 15:45 Date Received: 10/25/13 09:57 General Chemistry	5.9 94 <u>Result</u> 360 04 (102213)	Qualifier	1.0 1.0 RL 4.3	MDL	% % <u>Unit</u> mg/Kg	D	Prepared Lab Sam	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 Analyzed 10/30/13 01:02 Die ID: 600-810 Matri	Dil Fac Dil Fac 631-18 x: Solic Dil Fac
General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/22/13 15:45 Date Received: 10/25/13 09:57 General Chemistry Analyte	5.9 94 <u>Result</u> 360 04 (102213 <u>Result</u>	Qualifier	1.0 1.0 RL 4.3	MDL	% % <u>Unit</u> mg/Kg	D	Prepared Lab Sam	Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 10/30/13 01:02 Die ID: 600-81 Matri Analyzed	Dil Fa Dil Fa 631-18 x: Solic Dil Fa
General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/22/13 15:45 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	5.9 94 <u>Result</u> 360 04 (102213) <u>Result</u> 7.5	Qualifier	1.0 1.0 RL 4.3 RL 1.0	MDL	% % Unit mg/Kg	D	Prepared Lab Sam	Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 10/30/13 01:02 Die ID: 600-81 Matri Analyzed 10/28/13 08:43	Dil Fa Dil Fa 631-18 x: Solic Dil Fa
General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-4 Date Collected: 10/22/13 15:45 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	5.9 94 <u>Result</u> 360 04 (102213) <u>Result</u> 7.5 92	Qualifier	1.0 1.0 RL 4.3 RL 1.0 1.0 1.0 1.0	MDL	% Unit mg/Kg	D D	Prepared Lab Sam	Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 10/30/13 01:02 Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43	Dil Fac Dil Fac 631-18 x: Solic
General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-4 Date Collected: 10/22/13 15:45 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids	5.9 94 <u>Result</u> 360 04 (102213) <u>Result</u> 7.5 92	Qualifier	1.0 1.0 RL 4.3 RL 1.0	MDL	% % Unit mg/Kg	D	Prepared Lab Sam	Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 10/30/13 01:02 Die ID: 600-81 Matri Analyzed 10/28/13 08:43	Dil Fac

5 6

Client Sample ID: VGWU 040-04 (102213) 20'

Client: ARCADIS U.S., Inc.

Client Sample Results

Page 48 of 210

TestAmerica Job ID: 600-81631-1

Lab Sample ID: 600-81631-19

5 6 7

Date Received: 10/25/13 09:57									
_ General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	6.3		1.0		%			10/28/13 08:43	
Percent Solids	94		1.0		%			10/28/13 08:43	
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	23		4.3		mg/Kg	<u></u>		10/30/13 01:38	
Client Sample ID: VGWU 040- Date Collected: 10/22/13 15:50 Date Received: 10/25/13 09:57	04 (102213)	25'					Lab Sam	ole ID: 600-81 Matri	631-2 x: Soli
_ General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	12		1.0		%			10/28/13 08:43	
Percent Solids	88		1.0		%			10/28/13 08:43	
General Chemistry - Soluble									
	Desult								
Analyte		Qualifier	RI	MDI	Unit	р	Prenared	Analyzed	DILES
Date Collected: 10/22/13 15:55	71	Qualifier	<u>RL</u>	MDL	Unit mg/Kg	<u> </u>	Prepared	- Analyzed 10/30/13 01:57 Die ID: 600-81 Matri	631-2
Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 15:55 Date Received: 10/25/13 09:57	71			<u>MDL</u>				10/30/13 01:57	631-2
Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 15:55	71 04 (102213)							10/30/13 01:57	631-2 x: Soli
Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 15:55 Date Received: 10/25/13 09:57 General Chemistry	71 04 (102213)) 30'	4.5		mg/Kg	<u>~</u> .	Lab Sam	10/30/13 01:57	631-2 x: Soli Dil Fa
Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 15:55 Date Received: 10/25/13 09:57 General Chemistry Analyte	71 04 (102213) Result) 30'	4.5		mg/Kg	<u>~</u> .	Lab Sam	10/30/13 01:57 Die ID: 600-81 Matri Analyzed	631-2 x: Soli Dil Fa
Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 15:55 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	71 04 (102213)) 30'	4.5 		Unit	<u>~</u> .	Lab Sam	10/30/13 01:57 Die ID: 600-81 Matri Analyzed 10/28/13 08:43	631-2 x: Soli Dil Fa
Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 15:55 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids	71 04 (102213) Result 7.6 92) 30'	4.5 RL 1.0 1.0 RL	RL	Unit	<u> </u>	Lab Sam	10/30/13 01:57 Die ID: 600-81 Matri Analyzed 10/28/13 08:43	Dil Fa
Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 15:55 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	71 04 (102213) Result 7.6 92	Qualifier	4.5 RL 1.0 1.0	RL	Unit % %	<u> </u>	Lab Samp	10/30/13 01:57 Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43	631-2 x: Soli Dil Fa
Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 15:55 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride	71 04 (102213) Result 7.6 92 <u>Result</u> 21	Qualifier	4.5 RL 1.0 1.0 RL	RL	Unit % Unit	<u> </u>	Lab Samp Prepared Prepared	10/30/13 01:57 Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 Malyzed	631-2 x: Soli Dil Fa
Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 15:55 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 16:06	71 04 (102213) Result 7.6 92 <u>Result</u> 21	Qualifier	4.5 RL 1.0 1.0 RL	RL	Unit % Unit	<u> </u>	Lab Samp Prepared Prepared	Analyzed 10/30/13 01:57 Die ID: 600-81 Matri - Analyzed 10/28/13 08:43 10/28/13 08:43 10/30/13 02:51 Die ID: 600-81	631-2 x: Soli Dil Fa Dil Fa
Chloride Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 15:55 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 16:06	71 04 (102213) Result 7.6 92 <u>Result</u> 21	Qualifier	4.5 RL 1.0 1.0 RL	RL	Unit % Unit	<u> </u>	Lab Samp Prepared Prepared	Analyzed 10/30/13 01:57 Die ID: 600-81 Matri - Analyzed 10/28/13 08:43 10/28/13 08:43 10/30/13 02:51 Die ID: 600-81	631-2 x: Soli Dil Fa Dil Fa
Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 15:55 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 16:06 Date Received: 10/25/13 09:57	71 04 (102213) Result 7.6 92 <u>Result</u> 21 02 (102213)	Qualifier	4.5 RL 1.0 1.0 RL 4.3 RL	RL	Unit % % Unit mg/Kg Unit	<u> </u>	Lab Samp Prepared Prepared	Analyzed 10/30/13 01:57 Die ID: 600-81 Matri - Analyzed 10/28/13 08:43 10/28/13 08:43 10/30/13 02:51 Die ID: 600-81	631-2 x: Soli Dil Fa Dil Fa 631-2 x: Soli
Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 15:55 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 16:06 Date Received: 10/25/13 09:57 General Chemistry	71 04 (102213) Result 7.6 92 <u>Result</u> 21 02 (102213)	Qualifier	4.5 RL 1.0 1.0 RL 4.3	RL	Unit % % Unit mg/Kg	<u> </u>	Lab Samp Prepared Prepared	Analyzed 10/30/13 01:57 Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/30/13 02:51 Die ID: 600-81 Matri	631-2 x: Soli Dil Fa Dil Fa 631-2 x: Soli Dil Fa
Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 15:55 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 16:06 Date Received: 10/25/13 09:57 General Chemistry Analyte	71 04 (102213) Result 7.6 92 <u>Result</u> 02 (102213) Result	Qualifier	4.5 RL 1.0 1.0 RL 4.3 RL	RL	Unit % % Unit mg/Kg Unit	<u> </u>	Lab Samp Prepared Prepared	Analyzed 10/30/13 01:57 Die ID: 600-81 Matri 4 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/30/13 02:51 Die ID: 600-81 Matri	631-2 x: Soli Dil Fa Dil Fa 631-2: x: Soli Dil Fa
Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 15:55 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 16:06 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Moisture	71 04 (102213) Result 7.6 92 Result 21 02 (102213) Result 5.6 94	Qualifier	4.5 RL 1.0 1.0 4.3 RL 4.3	RL MDL	Unit % % Unit mg/Kg Unit % %	<u> </u>	Lab Samp Prepared Prepared Prepared	Analyzed 10/30/13 01:57 Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 0/28/13 08:43 10/30/13 02:51 0le ID: 600-81 Matri Analyzed 10/30/13 02:51 0le ID: 600-81 Matri Analyzed 10/28/13 08:43	631-2 x: Soli Dil Fa Dil Fa 631-2 x: Soli Dil Fa
Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 15:55 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/22/13 16:06 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids	71 04 (102213) Result 7.6 92 Result 21 02 (102213) Result 5.6 94	Qualifier	4.5 RL 1.0 1.0 RL 4.3 RL 1.0	RL MDL	Unit % % Unit mg/Kg	<u> </u>	Lab Samp Prepared Prepared	Analyzed 10/30/13 01:57 Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 0/28/13 08:43 10/30/13 02:51 0le ID: 600-81 Matri Analyzed 10/30/13 02:51 0le ID: 600-81 Matri Analyzed 10/28/13 08:43	631-2 x: Soli Dil Fa Dil Fa 631-2 x: Soli Dil Fa

TestAmerica Houston

Client Sample ID: VGWU 040-02 (102213) 5'

Client: ARCADIS U.S., Inc.

Date Collected: 10/22/13 16:07

Date Received: 10/25/13 09:57

Client Sample Results

Page 49 of 210

Matrix: Solid

TestAmerica Job ID: 600-81631-1

Lab Sample ID: 600-81631-23

5 6 7

General Chemistry Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.6		1.0		%			10/28/13 08:43	1
Percent Solids	90		1.0		%			10/28/13 08:43	1
ercent oonus	50		1.0		70			10/20/10 00:10	
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4300		440		mg/Kg	<u></u>		10/30/13 03:28	100
lient Sample ID: VGWU 040-	02 (102213)) 10'					Lab Sam	ole ID: 600-81	631-24
ate Collected: 10/22/13 16:10		, ,							x: Solic
ate Received: 10/25/13 09:57									
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	2.7		1.0		%			10/28/13 08:43	
Percent Solids	97		1.0		%			10/28/13 08:43	
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
						— ~ -		10/30/13 03:46	100
lient Sample ID: VGWU 040- ate Collected: 10/22/13 16:14	4700 02 (102213)) 15'	410		mg/Kg	¥.	Lab Sam	ole ID: 600-81	631-25
Client Sample ID: VGWU 040- Pate Collected: 10/22/13 16:14 Pate Received: 10/25/13 09:57) 15'	410		mg/Kg	λ¢ 	Lab Samp	ole ID: 600-81	631-25
Client Sample ID: VGWU 040- ate Collected: 10/22/13 16:14 ate Received: 10/25/13 09:57 General Chemistry	02 (102213)) 15' Qualifier	410 	RL	Unit	D	Lab Sam	ole ID: 600-81	631-25 x: Solic
Client Sample ID: VGWU 040- ate Collected: 10/22/13 16:14 ate Received: 10/25/13 09:57 General Chemistry Analyte	02 (102213)			RL				ole ID: 600-81 Matri	631-25 x: Solic
Client Sample ID: VGWU 040- ate Collected: 10/22/13 16:14 ate Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	02 (102213) 		RL	RL	Unit			Die ID: 600-81 Matri Analyzed	631-25 x: Solic
Client Sample ID: VGWU 040- bate Collected: 10/22/13 16:14 bate Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids	02 (102213) 		RL 1.0	RL	Unit %			Die ID: 600-81 Matri - <u>Analyzed</u> 10/28/13 08:43	631-25 x: Solic
Client Sample ID: VGWU 040- ate Collected: 10/22/13 16:14 ate Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	02 (102213) 		RL 1.0		Unit %	D		Die ID: 600-81 Matri - <u>Analyzed</u> 10/28/13 08:43	
Client Sample ID: VGWU 040- ate Collected: 10/22/13 16:14 ate Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte	02 (102213) 	Qualifier	RL 1.0 1.0		Unit %	D	Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43	631-25 x: Solic Dil Fac
Client Sample ID: VGWU 040- ate Collected: 10/22/13 16:14 ate Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride	02 (102213) 	Qualifier	RL 1.0 1.0 RL		Unit % % Unit	D	Prepared Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43	631-28 x: Solic Dil Fac
Client Sample ID: VGWU 040- ate Collected: 10/22/13 16:14 ate Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-	02 (102213) 	Qualifier	RL 1.0 1.0 RL		Unit % % Unit	D	Prepared Prepared	Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 - Analyzed 10/30/13 04:04	631-25 x: Solic Dil Fac Dil Fac
Client Sample ID: VGWU 040- ate Collected: 10/22/13 16:14 ate Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Chloride Chloride	02 (102213) 	Qualifier	RL 1.0 1.0 RL		Unit % % Unit	D	Prepared Prepared	Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 - Analyzed 10/30/13 04:04	631-25 x: Solic Dil Fac Dil Fac
Client Sample ID: VGWU 040- Pate Collected: 10/22/13 16:14 Pate Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Pate Collected: 10/22/13 16:18 Pate Received: 10/25/13 09:57	02 (102213) 	Qualifier	RL 1.0 1.0 RL		Unit % % Unit	D	Prepared Prepared	Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 - Analyzed 10/30/13 04:04	631-25 x: Solic Dil Fac Dil Fac
Client Sample ID: VGWU 040- ate Collected: 10/22/13 16:14 ate Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Chloride Chloride Chloride Chloride Chloride Chloride 10/22/13 16:18 ate Received: 10/25/13 09:57 General Chemistry	02 (102213) 	Qualifier	RL 1.0 1.0 RL	MDL	Unit % % Unit	D	Prepared Prepared	Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 - Analyzed 10/30/13 04:04	631-25 x: Solic Dil Fac 100 631-26 x: Solic
Client Sample ID: VGWU 040- ate Collected: 10/22/13 16:14 ate Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- ate Collected: 10/22/13 16:18 ate Received: 10/25/13 09:57 General Chemistry Analyte	02 (102213) 	Qualifier	RL 1.0 1.0 RL 420	MDL	Unit % % Unit mg/Kg	D .	Prepared Prepared	Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/30/13 04:04 Die ID: 600-81 Matri	631-25 x: Solic Dil Fac
Client Sample ID: VGWU 040- ate Collected: 10/22/13 16:14 ate Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- ate Collected: 10/22/13 16:18 ate Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	02 (102213) Result 5.7 94 Result 3900 02 (102213) Result	Qualifier	RL 1.0 1.0 1.0 RL 420	MDL	Unit % % Unit mg/Kg	D .	Prepared Prepared	Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/30/13 04:04 Die ID: 600-81 Matri Analyzed	631-25 x: Solic Dil Fac 100 631-26 x: Solic Dil Fac
Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/22/13 16:14 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/22/13 16:18 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	02 (102213) Result 5.7 94 Result 3900 02 (102213) Result 6.6	Qualifier	RL 1.0 1.0 420	MDL	Unit % % Unit mg/Kg	D .	Prepared Prepared	Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 0/28/13 08:43 Analyzed 10/30/13 04:04 Die ID: 600-81 Matri Analyzed 10/28/13 08:43	631-28 x: Solid Dil Fa 10 631-26 x: Solid Dil Fa

TestAmerica Houston

Analyzed

10/30/13 04:59

Chlori

Released to Imaging: 7/9/2021 2:17:22 PM

Analyte

Chloride

RL

43

MDL Unit

mg/Kg

D

₽

Prepared

Result Qualifier

2600

Dil Fac

10

Client: ARCADIS U.S., Inc.

Client Sample Results

TestAmerica Job ID: 600-81631-1

Client Cample ID: VCM/II 040	02 (402242)	25'					Lab Com		624 27
Client Sample ID: VGWU 040- Date Collected: 10/23/13 09:57	02 (102313)	25					Lab Samp	ble ID: 600-81 Matri	x: Solid
Date Received: 10/25/13 09:57									
 General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	3.5		1.0		%			10/28/13 08:43	1
Percent Solids	97		1.0		%			10/28/13 08:43	1
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3100		210		mg/Kg	<u>Å</u>		10/30/13 05:17	50
Client Sample ID: VGWU 040-	02 (102313)	30'					Lab Sam	ole ID: 600-81	631-28
Date Collected: 10/23/13 10:20	`	, ,							x: Solid
Date Received: 10/25/13 09:57									
_ General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	3.9		1.0		%			10/28/13 08:43	1
Percent Solids	96		1.0		%			10/28/13 08:43	1
_ General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	мы	Unit	D	Prepared	Analyzed	Dil Fac
Allalyte	rtoount	Quaimer	RL		0				
Chloride	3600		210		mg/Kg	<u></u>	Tiopulou	10/30/13 05:35	50
Chloride	3600							10/30/13 05:35	
Chloride	3600							10/30/13 05:35	631-29
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:29	3600							10/30/13 05:35	
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:29 Date Received: 10/25/13 09:57	3600							10/30/13 05:35	631-29
	3600 01 (102313)							10/30/13 05:35	631-29
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:29 Date Received: 10/25/13 09:57 General Chemistry	3600 01 (102313)) 2'	210		mg/Kg	<u>~</u> .	Lab Samp	10/30/13 05:35	631-29 x: Solid
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:29 Date Received: 10/25/13 09:57 General Chemistry Analyte	3600 01 (102313) Result) 2'	210		mg/Kg	<u>~</u> .	Lab Samp	10/30/13 05:35 Die ID: 600-81 Matri Analyzed	631-29 x: Solid Dil Fac
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:29 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids	3600 01 (102313)) 2'	210 		Unit	<u>~</u> .	Lab Samp	10/30/13 05:35 Die ID: 600-81 Matri Analyzed 10/28/13 08:43	631-29 x: Solid
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:29 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	3600 01 (102313)) 2'	210 	RL	Unit	<u>~</u> .	Lab Samp	10/30/13 05:35 Die ID: 600-81 Matri Analyzed 10/28/13 08:43	631-29 x: Solid Dil Fac
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:29 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	3600 01 (102313) 	Qualifier	210 RL 1.0 1.0	RL	Unit % %	<u> </u>	Lab Samp	10/30/13 05:35 Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43	631-29 x: Solid
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:29 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride	3600 01 (102313) 	Qualifier	210 RL 1.0 1.0 RL	RL	Unit % Unit	<u> </u>	Lab Samp Prepared Prepared	IO/30/13 05:35 Die ID: 600-81 Matri Malyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43	631-29 x: Solid Dil Fac 1 1 Dil Fac 5
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:29 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-	3600 01 (102313) 	Qualifier	210 RL 1.0 1.0 RL	RL	Unit % Unit	<u> </u>	Lab Samp Prepared Prepared	Analyzed 10/30/13 05:35 Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/30/13 06:30 Die ID: 600-81	631-29 x: Solid Dil Fac 1 1 Dil Fac 5 631-30
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:29 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride	3600 01 (102313) 	Qualifier	210 RL 1.0 1.0 RL	RL	Unit % Unit	<u> </u>	Lab Samp Prepared Prepared	Analyzed 10/30/13 05:35 Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/30/13 06:30 Die ID: 600-81	631-29 x: Solid Dil Fac 1 1 Dil Fac 5
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:29 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:31 Date Received: 10/25/13 09:57	3600 01 (102313) 	Qualifier	210 RL 1.0 1.0 RL	RL	Unit % Unit	<u> </u>	Lab Samp Prepared Prepared	Analyzed 10/30/13 05:35 Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/30/13 06:30 Die ID: 600-81	631-29 x: Solid Dil Fac 1 1 Dil Fac 5 631-30
Chloride Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:29 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:31	3600 01 (102313) 	Qualifier	210 RL 1.0 1.0 RL	RL	Unit % Unit	<u> </u>	Lab Samp Prepared Prepared	Analyzed 10/30/13 05:35 Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/30/13 06:30 Die ID: 600-81	631-29 x: Solid Dil Fac 1 1 Dil Fac 5 631-30
Chloride Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:29 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:31 Date Received: 10/25/13 09:57 General Chemistry	3600 01 (102313) Result 4.9 95 Result 1000 01 (102313) Result	Qualifier	210 RL 1.0 1.0 RL 21	RL	Unit % % Unit mg/Kg	<u> </u>	Lab Samp Prepared Prepared	IO/30/13 05:35 Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 Malyzed 10/30/13 06:30 Die ID: 600-81 Matri	631-29 x: Solid Dil Fac 1 Dil Fac 5 631-30 x: Solid Dil Fac
Chloride Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:29 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:31 Date Received: 10/25/13 09:57 General Chemistry Analyte	3600 01 (102313) 	Qualifier	210 RL 1.0 1.0 RL 21 RL	RL	Unit Wnit Unit Unit	<u> </u>	Lab Samp Prepared Prepared	Analyzed 10/30/13 05:35 Die ID: 600-81 Matri 4 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/30/13 06:30 Die ID: 600-81 Matri Analyzed 10/30/13 06:30 Die ID: 600-81 Matri	631-29 x: Solid 1 1 Dil Fac 5 631-30 x: Solid Dil Fac 1
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:29 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:31 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Moisture Percent Solids	3600 01 (102313) Result 4.9 95 Result 1000 01 (102313) Result 4.0	Qualifier	210 RL 1.0 1.0 RL 21 RL 1.0	RL	Unit % % Unit mg/Kg	<u> </u>	Lab Samp Prepared Prepared	Analyzed 10/30/13 05:35 Die ID: 600-81 Matri 4 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/30/13 06:30 Die ID: 600-81 Matri 4 10/30/13 06:30 Die ID: 600-81 Matri 4 10/28/13 08:43	631-29 x: Solid 1 1 Dil Fac 5 631-30 x: Solid Dil Fac 1
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:29 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:31 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Moisture	3600 01 (102313) Result 4.9 95 Result 1000 01 (102313) 01 (102313) Result 4.0 96	Qualifier	210 RL 1.0 1.0 RL 21 RL 1.0	RL MDL	Unit % % Unit mg/Kg	<u> </u>	Lab Samp Prepared Prepared	Analyzed 10/30/13 05:35 Die ID: 600-81 Matri 4 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/30/13 06:30 Die ID: 600-81 Matri 4 10/30/13 06:30 Die ID: 600-81 Matri 4 10/28/13 08:43	631-29 x: Solid

Client: ARCADIS U.S., Inc.

Client Sample Results

Page 51 of 210

TestAmerica Job ID: 600-81631-1

Date Collected: 10/23/13 10:33 Date Received: 10/25/13 09:57	-01 (102313)) 10'					Lab Samp	ble ID: 600-81 Matri	531-31 x: Solic
General Chemistry						_			
Analyte		Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.3		1.0		%			10/28/13 08:43	
Percent Solids	94		1.0		%			10/28/13 08:43	
_ General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	400		8.5		mg/Kg	<u></u>		10/30/13 07:06	
Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:36 Date Received: 10/25/13 09:57	-01 (102313)) 15'					Lab Samp	ole ID: 600-81 Matri	631-32 x: Solie
_									
General Chemistry	.	0		- -	11	-	D	A	D
Analyte		Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	5.3		1.0		%			10/28/13 08:43	
Percent Solids	95		1.0		%			10/28/13 08:43	
Over the local state of the local states									
General Chemistry - Soluble							– .	A	Dil Fa
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DirFa
Analyte Chloride Client Sample ID: VGWU 040-	350		<u>RL</u> 4.2	MDL	mg/Kg	<u> </u>		10/30/13 07:24	631-33
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:38 Date Received: 10/25/13 09:57	350			MDL				10/30/13 07:24	631-33
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:38	350 -01 (102313)						-	10/30/13 07:24	631-33 x: Solic
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:38 Date Received: 10/25/13 09:57 General Chemistry	350 -01 (102313)) 20'	4.2		mg/Kg	× ·	Lab Samp	10/30/13 07:24	631-3; x: Solic
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:38 Date Received: 10/25/13 09:57 General Chemistry Analyte	350 -01 (102313)) 20'	4.2 RL		mg/Kg	× ·	Lab Samp	10/30/13 07:24	631-33 x: Solid
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:38 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids	350 -01 (102313)) 20'	4.2 RL 1.0		Unit	× ·	Lab Samp	10/30/13 07:24 Die ID: 600-81 Matri Analyzed 10/28/13 08:43	631-33 x: Solid
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:38 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	350 -01 (102313) 	Qualifier	4.2 RL 1.0 1.0	RL	Unit %	<u> </u>	Lab Samp	10/30/13 07:24 Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43	631-33 x: Solio
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:38 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte	350 -01 (102313)) 20'	4.2 RL 1.0 1.0 RL	RL	Unit % Vnit	× ·	Lab Samp	10/30/13 07:24 Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 Malyzed	·
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:38 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	350 -01 (102313) 	Qualifier	4.2 RL 1.0 1.0	RL	Unit %	<u>x</u> .	Lab Samp	10/30/13 07:24 Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43	631-33 x: Solic Dil Fa
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:38 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte	350 -01 (102313) 	Qualifier	4.2 RL 1.0 1.0 RL	RL	Unit % Vnit	<u>x</u> .	Lab Samp Prepared Prepared	10/30/13 07:24 Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 Malyzed	631-33 x: Solic Dil Fa
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:38 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride	350 -01 (102313) 	Qualifier	4.2 RL 1.0 1.0 RL	RL	Unit % Vnit	<u>x</u> .	Lab Samp Prepared Prepared	Analyzed 10/30/13 07:24 Die ID: 600-81 Matri 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/30/13 07:42 Die ID: 600-81	631-33 x: Solic Dil Fa
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:38 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:41	350 -01 (102313) 	Qualifier	4.2 RL 1.0 1.0 RL	RL	Unit % Vnit	<u>x</u> .	Lab Samp Prepared Prepared	Analyzed 10/30/13 07:24 Die ID: 600-81 Matri 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/30/13 07:42 Die ID: 600-81	631-33 x: Solic Dil Fa Dil Fa
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:38 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:41 Date Received: 10/25/13 09:57	350 -01 (102313) -01 (102313) -01 (102313)	Qualifier	4.2 RL 1.0 1.0 RL	RL	Unit % Vnit	<u>x</u> .	Lab Samp Prepared Prepared	Analyzed 10/30/13 07:24 Die ID: 600-81 Matri 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/30/13 07:42 Die ID: 600-81	631-33 x: Solic Dil Fa Dil Fa
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:38 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:41 Date Received: 10/25/13 09:57 General Chemistry	350 -01 (102313) -01 (102313) -01 (102313)	Qualifier	4.2 RL 1.0 1.0 RL 4.3	RL	Unit % % Unit mg/Kg	<u>D</u>	Prepared Prepared	Analyzed 10/30/13 07:24 Die ID: 600-81 Matri 4 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/30/13 07:42 Die ID: 600-81 Matri	631-33 x: Solid Dil Fa Dil Fa 631-34 x: Solid Dil Fa
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:38 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:41 Date Received: 10/25/13 09:57 General Chemistry Analyte	350 -01 (102313) -01 (102313) -01 (102313) -01 (102313) -01 (Result	Qualifier	4.2 RL 1.0 1.0 RL 4.3 RL	RL	Unit Mg/Kg	<u>D</u>	Prepared Prepared	Analyzed 10/30/13 07:24 Die ID: 600-81 Matri 4 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/30/13 07:42 Die ID: 600-81 Matri	631-33 x: Solid Dil Fa Dil Fa 631-34 x: Solid
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:38 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:41 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Moisture Percent Solids	350 -01 (102313) -01 (102313) -01 (102313) -01 (102313) -01 (102313)	Qualifier	4.2 RL 1.0 1.0 RL 4.3 RL 1.0	RL	Unit % % Unit mg/Kg	<u>D</u>	Prepared Prepared	Analyzed 10/30/13 07:24 ble ID: 600-81 Matri 4 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/30/13 07:42 ble ID: 600-81 Matri 4 10/30/13 07:42 ble ID: 600-81 Matri 4 10/28/13 08:43	631-3 x: Solid Dil Fa Dil Fa 631-34 x: Solid Dil Fa
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:38 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 10:41 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	350 -01 (102313) -01 (102313) -01 (102313) -01 (102313) -01 (102313) -01 (102313) -01 (102313)	Qualifier	4.2 RL 1.0 1.0 RL 4.3 RL 1.0	RL MDL	Unit % % Unit mg/Kg	<u>D</u>	Prepared Prepared	Analyzed 10/30/13 07:24 ble ID: 600-81 Matri 4 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/30/13 07:42 ble ID: 600-81 Matri 4 10/30/13 07:42 ble ID: 600-81 Matri 4 10/28/13 08:43	631-33 x: Solid Dil Fa Dil Fa 631-34 x: Solid Dil Fa

Client Sample ID: VGWU 040-01 (102313) 30'

Client: ARCADIS U.S., Inc.

Date Collected: 10/23/13 10:45

Date Received: 10/25/13 09:57

General Chemistry

Analyte

Client Sample Results

RL

RL Unit

D

Result Qualifier

Page 52 of 210

Matrix: Solid

TestAmerica Job ID: 600-81631-1

Lab Sample ID: 600-81631-35

Prepared Analyzed Dil Fac 10/28/13 08:43 1 6

Analyte	Result	Quaimer	RL.		Unit	U	Flepaleu	Analyzeu	Dirrat
Percent Moisture	3.5		1.0		%			10/28/13 08:43	
Percent Solids	97		1.0		%			10/28/13 08:43	
-									
General Chemistry - Soluble		0.117	-			_	_ .		
Analyte		Qualifier	RL	MDL	Unit	— <u>D</u>	Prepared	Analyzed	Dil Fa
Chloride	180		4.1		mg/Kg	ф.		10/30/13 08:55	
Client Sample ID: VGWU 040-0	03 (102313)	2'					Lab Sam	ole ID: 600-81	631-3
Date Collected: 10/23/13 10:59									x: Soli
Date Received: 10/25/13 09:57									
General Chemistry	Decult	Qualifier	RL		11		Dramanad	Analyzad	
Analyte		Qualifier		RL	Unit %	D	Prepared	Analyzed	Dil Fa
Percent Moisture	4.8							10/28/13 08:43	
Percent Solids	95		1.0		%			10/28/13 08:43	
_ General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
	3600		210		mg/Kg	<u> </u>		10/30/13 10:26	5
Date Collected: 10/23/13 11:01) 5'					Lab Samp	ole ID: 600-81 Matri	
Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57 General Chemistry) 5'					Lab Samp		
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57 General Chemistry Analyte	03 (102313) 	Qualifier	RL	RL	Unit	D	Lab Samp	Matri	x: Soli Dil Fa
- Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57 - General Chemistry)3 (102313)		1.0	RL	%	<u>D</u>		Matri	x: Soli Dil Fa
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57 General Chemistry Analyte	03 (102313) 			RL		<u>D</u>		Matri	x: Soli
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	03 (102313) 		1.0	RL	%	D		Matri Analyzed 10/28/13 08:43	x: Solic
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids	03 (102313) 		1.0 1.0 RL		%			Matri Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed	X: Soli Dil Fa
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	03 (102313) 	Qualifier	1.0 1.0		% %		Prepared	Matri Analyzed 10/28/13 08:43 10/28/13 08:43	X: Solie Dil Fa
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride	03 (102313) Result 2.7 97 Result 910	Qualifier	1.0 1.0 RL		% % Unit		Prepared	Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 Analyzed 10/30/13 10:45	X: Solie
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0	03 (102313) Result 2.7 97 Result 910	Qualifier	1.0 1.0 RL		% % Unit		Prepared	Matri Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 10/30/13 10:45 Die ID: 600-81	x: Soli Dil Fa Dil Fa
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:03	03 (102313) Result 2.7 97 Result 910	Qualifier	1.0 1.0 RL		% % Unit		Prepared	Matri Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 10/30/13 10:45 Die ID: 600-81	x: Soli Dil Fa Dil Fa
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:03 Date Received: 10/25/13 09:57	03 (102313) Result 2.7 97 Result 910	Qualifier	1.0 1.0 RL		% % Unit		Prepared	Matri Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 10/30/13 10:45 Die ID: 600-81	x: Soli Dil Fa Dil Fa
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:03 Date Received: 10/25/13 09:57 General Chemistry	03 (102313) 	Qualifier	1.0 1.0 RL	MDL	% % Unit		Prepared Prepared	Matri Analyzed 10/28/13 08:43 10/28/13 08:43 - Analyzed 10/30/13 10:45 Die ID: 600-81 Matri	x: Soli Dil Fa Dil Fa 631-3 x: Soli
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:03 Date Received: 10/25/13 09:57 General Chemistry Analyte	03 (102313) Result 2.7 97 Result 910 03 (102313) Result	Qualifier	1.0 1.0 RL 8.2	MDL	% % Unit mg/Kg Unit	<u>D</u>	Prepared	Matri Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 10/30/13 10:45 Die ID: 600-81 Matri Analyzed	x: Soli Dil Fa Dil Fa 631-3 x: Soli Dil Fa
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:03 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	03 (102313) Result 2.7 97 Result 910 03 (102313) Result 2.7	Qualifier	1.0 1.0 RL 8.2 RL 1.0	MDL	% % Unit mg/Kg	<u>D</u>	Prepared Prepared	Matri - Analyzed 10/28/13 08:43 10/28/13 08:43 - Analyzed 10/30/13 10:45 Die ID: 600-81 Matri - Analyzed 10/28/13 08:43	x: Soli Dil Fa Dil Fa 631-3 x: Soli Dil Fa
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:03 Date Received: 10/25/13 09:57 General Chemistry Analyte	03 (102313) Result 2.7 97 Result 910 03 (102313) Result	Qualifier	1.0 1.0 RL 8.2	MDL	% % Unit mg/Kg Unit	<u>D</u>	Prepared Prepared	Matri Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 10/30/13 10:45 Die ID: 600-81 Matri Analyzed	x: Soli Dil Fa Dil Fa 631-3 x: Soli Dil Fa
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:03 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Moisture Percent Solids General Chemistry - Soluble	03 (102313) Result 2.7 97 Result 910 03 (102313) Result 2.7 97	Qualifier	1.0 1.0 RL 8.2 RL 1.0 1.0 1.0 1.0	MDL	% % Unit mg/Kg	D	Prepared Prepared Lab Samp	Matri Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 10/30/13 10:45 Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43	x: Solid Dil Fa Dil Fa 631-38 x: Solid Dil Fa
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 11:03 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Moisture Percent Solids	03 (102313) Result 2.7 97 Result 910 03 (102313) Result 2.7 97	Qualifier	1.0 1.0 RL 8.2 RL 1.0	MDL	% % Unit mg/Kg	<u>D</u>	Prepared Prepared	Matri - Analyzed 10/28/13 08:43 10/28/13 08:43 - Analyzed 10/30/13 10:45 Die ID: 600-81 Matri - Analyzed 10/28/13 08:43	X: Solic

Client: ARCADIS U.S., Inc.

Client Sample Results

Page 53 of 210

TestAmerica Job ID: 600-81631-1

Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:07 Date Received: 10/25/13 09:57	03 (102313)	15						ole ID: 600-81 Matri	x: Solid
General Chemistry									
Analyte		Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	2.8		1.0		%			10/28/13 08:43	1
Percent Solids	97		1.0		%			10/28/13 08:43	
General Chemistry - Soluble		•				_	_ .		
Analyte Chloride	Result	Qualifier	RL 4.1	MDL	Unit mg/Kg	— D	Prepared	Analyzed 10/31/13 21:21	Dil Fac
		0.01							004 44
Client Sample ID: VGWU 040-	03 (102313)	20					Lab Sam	ole ID: 600-81	
Date Collected: 10/23/13 11:10 Date Received: 10/25/13 09:57								Matri	x: Solid
General Chemistry Analyte	Pocult	Qualifier	RL	DI	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	1.4	<u></u>			01111 %	Ľ	riepaieu	10/28/13 08:43	
Percent Solids	99		1.0		%			10/28/13 08:43	1
-	55		1.0		70			10/20/13 00.40	
_ General Chemistry - Soluble									
			RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
	Result	Qualifier	RL.						
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:15	14	Qualifier	<u>4.1</u>		mg/Kg	<u> </u>		10/31/13 22:16 Die ID: 600-81 Matri	631-4 1
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:15	14 03 (102313)) 25'	4.1					ole ID: 600-81	631-41
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:15 Date Received: 10/25/13 09:57	14 03 (102313)		4.1		mg/Kg			ole ID: 600-81 Matri Analyzed	631-41 x: Solic
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:15 Date Received: 10/25/13 09:57 General Chemistry	14 03 (102313)) 25'	4.1		mg/Kg		Lab Samı	ole ID: 600-81 Matri	631-41 x: Solic
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:15 Date Received: 10/25/13 09:57 General Chemistry Analyte	14 03 (102313)) 25'	4.1		mg/Kg		Lab Samı	ole ID: 600-81 Matri Analyzed	631-41 x: Solic
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:15 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids	14 03 (102313)) 25'	4.1 RL 1.0		Unit		Lab Samı	Die ID: 600-81 Matri - <u>Analyzed</u> 10/28/13 08:43	631-41 x: Solic
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:15 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	14 03 (102313)) 25'	4.1 RL 1.0	RL	Unit		Lab Samı	Die ID: 600-81 Matri - <u>Analyzed</u> 10/28/13 08:43	631-41 x: Solid
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:15 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	14 03 (102313) 	Qualifier	4.1 RL 1.0 1.0	RL	Unit %	<u> </u>	Lab Sam	Analyzed 10/28/13 08:43 10/28/13 08:43	631-41 x: Solic Dil Fac
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:15 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte	14 03 (102313) Result 2.0 98 <u>Result</u> 7.5	Qualifier	4.1 RL 1.0 1.0 RL	RL	Unit % Unit	<u>D</u>	Lab Samp Prepared Prepared	Die ID: 600-81 Matri - Analyzed 10/28/13 08:43 10/28/13 08:43 - Analyzed 10/31/13 22:34 Die ID: 600-81	631-41 x: Solic Dil Fac
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:15 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:18	14 03 (102313) Result 2.0 98 <u>Result</u> 7.5	Qualifier	4.1 RL 1.0 1.0 RL	RL	Unit % Unit	<u>D</u>	Lab Samp Prepared Prepared	Die ID: 600-81 Matri - <u>Analyzed</u> 10/28/13 08:43 10/28/13 08:43 - <u>Analyzed</u> 10/31/13 22:34 Die ID: 600-81	631-41 x: Solic Dil Fac
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:15 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:18 Date Received: 10/25/13 09:57	14 03 (102313) Result 2.0 98 <u>Result</u> 7.5 03 (102313)	Qualifier	4.1 RL 1.0 1.0 RL	RL	Unit % Unit	<u>D</u>	Lab Samp Prepared Prepared	Die ID: 600-81 Matri - <u>Analyzed</u> 10/28/13 08:43 10/28/13 08:43 - <u>Analyzed</u> 10/31/13 22:34 Die ID: 600-81	631-41 x: Solid Dil Fac
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:15 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:18 Date Received: 10/25/13 09:57 General Chemistry	14 03 (102313) Result 2.0 98 <u>Result</u> 7.5 03 (102313)	Qualifier	4.1 RL 1.0 1.0 RL 4.1	RL	Unit % % Unit mg/Kg	D	Lab Sam	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 0/28/13 08:43 10/31/13 22:34 ole ID: 600-81 Matri	631-41 x: Solic Dil Fac 631-42 x: Solic Dil Fac
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:15 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:18 Date Received: 10/25/13 09:57 General Chemistry Analyte	14 03 (102313) Result 2.0 98 <u>Result</u> 7.5 03 (102313) Result	Qualifier	4.1 RL 1.0 1.0 RL 4.1	RL	Unit Wnit Unit Unit	D	Lab Sam	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 0/28/13 08:43 10/31/13 22:34 Ole ID: 600-81 Matri	631-41 x: Solid Dil Fac 1 Dil Fac 631-42 x: Solid Dil Fac
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:15 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:18 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	14 03 (102313) Result 2.0 98 Result 7.5 03 (102313) Result 1.8 98	Qualifier	4.1 RL 1.0 1.0 4.1 4.1 RL 4.1	RL MDL	Unit % % Unit mg/Kg Unit % %	D	Lab Sam	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 Malyzed 10/31/13 22:34 Ole ID: 600-81 Matri 10/28/13 08:43	631-41 x: Solid 1 Dil Fac 1 1 631-42 x: Solid 1 Dil Fac
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:15 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 11:18 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Moisture Percent Solids	14 03 (102313) Result 2.0 98 Result 7.5 03 (102313) Result 1.8 98	Qualifier	4.1 RL 1.0 1.0 RL 4.1 .1 .1 .1 .1 .1 .1 .1 .1 .1	RL MDL	Unit % % Unit mg/Kg Unit g/Kg	D	Lab Sam	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 Malyzed 10/31/13 22:34 Ole ID: 600-81 Matri 10/28/13 08:43	x: Solid

Client: ARCADIS U.S., Inc.

Client Sample Results

Page 54 of 210

TestAmerica Job ID: 600-81631-1

5 6

Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:13 Date Received: 10/25/13 09:57	06 (102313)	2'					Lab Samı	ole ID: 600-81 Matri	631-50 x: Solid
General Chemistry Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	2.2		1.0				Tioparoa	10/28/13 08:43	1
Percent Solids	98		1.0		%			10/28/13 08:43	1
General Chemistry - Soluble									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Chloride	51		4.1		mg/Kg	<u>\$</u>		10/31/13 23:10	1
Client Sample ID: VGWU 040-	06 (102313)	5'					Lab Sam	ole ID: 600-81	631-51
Date Collected: 10/23/13 12:15 Date Received: 10/25/13 09:57								Matri	x: Solid
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.8		1.0		%			10/28/13 08:43	1
Percent Solids	94		1.0		%			10/28/13 08:43	1
General Chemistry - Soluble									
			RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	Result	Qualifier							
Chloride Client Sample ID: VGWU 040-	27		<u>8.5</u>		mg/Kg	<u>-</u> :		10/31/13 23:28	
Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 12:18 Date Received: 10/25/13 09:57	27 06 (102313)) 10'	8.5		mg/Kg	<u>~</u> .	Lab Samı	10/31/13 23:28	631-52 x: Solid
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:18 Date Received: 10/25/13 09:57 General Chemistry Analyte	27 06 (102313) 		8.5 RL		mg/Kg			10/31/13 23:28 Die ID: 600-81 Matri Analyzed	631-52 x: Solid Dil Fac
Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 12:18 Date Received: 10/25/13 09:57	27 06 (102313)) 10'	8.5		mg/Kg	<u>~</u> .	Lab Samı	10/31/13 23:28	631-52 x: Solid
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:18 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	27 06 (102313) 	Qualifier	8.5 RL 1.0 1.0	RL	Unit %	<u> </u>	Lab Samp	10/31/13 23:28 Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43	631-52 x: Solid
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:18 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids	27 06 (102313)) 10'	8.5 RL 1.0		Unit %	<u>~</u> .	Lab Samı	10/31/13 23:28 Die ID: 600-81 Matri Analyzed 10/28/13 08:43	631-52 x: Solid
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:18 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-	27 06 (102313) Result 3.8 96 Result 6.9	Qualifier	8.5 RL 1.0 1.0 RL	RL	Unit % Unit	<u>x</u> ,	Lab Samp Prepared Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43	631-52 x: Solid Dil Fac 1 1 Dil Fac 1 631-53
Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 12:18 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 12:24	27 06 (102313) Result 3.8 96 Result 6.9	Qualifier	8.5 RL 1.0 1.0 RL	RL	Unit % Unit	<u>x</u> ,	Lab Samp Prepared Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43	631-52 x: Solid
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:18 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:24 Date Received: 10/25/13 09:57 General Chemistry	27 06 (102313) Result 3.8 96 <u>Result</u> 6.9 06 (102313)	Qualifier	8.5 RL 1.0 1.0 RL 4.2	RL	Unit % % Unit mg/Kg	<u>D</u>	Lab Samp Prepared Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 01/28/13 08:43 10/28/13 08:43 01/28/13 08:43 10/28/13 08:43 01/28/13 08:43 01/28/13 08:43 01/28/13 08:43 01/28/13 08:43 01/28/13 08:43 01/28/13 08:43 01/28/13 08:43 01/28/13 08:43 01/28/13 08:43 01/28/13 08:43 01/28/13 08:43 01/28/13 08:43 01/28/13 08:43 01/28/13 08:43 01/28/13 08:43 01/28/14 00:23 01/28/15 000-81 01/28/15 000-81 01/28/15 000-81	631-52 x: Solid
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:18 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:24 Date Received: 10/25/13 09:57 General Chemistry Analyte	27 06 (102313) Result 3.8 96 <u>Result</u> 6.9 06 (102313)	Qualifier	8.5 RL 1.0 1.0 RL 4.2 RL	RL	Unit % % Unit mg/Kg	<u>x</u> ,	Lab Samp Prepared Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 11/01/13 00:23 Die ID: 600-81 Matri Analyzed Analyzed	631-52 x: Solid Dil Fac 1 1 Dil Fac 1 631-53
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:18 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:24 Date Received: 10/25/13 09:57 General Chemistry	27 06 (102313) Result 3.8 96 <u>Result</u> 6.9 06 (102313)	Qualifier	8.5 RL 1.0 1.0 RL 4.2 RL 1.0	RL	Unit % % Unit mg/Kg	<u>D</u>	Lab Samp Prepared Prepared	Analyzed 10/31/13 23:28 Die ID: 600-81 Matri - Analyzed 10/28/13 08:43 10/28/13 08:43 - Analyzed 11/01/13 00:23 Die ID: 600-81 Matri - Analyzed 11/01/13 00:23 Die ID: 600-81 Matri - - -	631-52 x: Solid
Chloride Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:18 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:24 Date Received: 10/25/13 09:57 General Chemistry Analyte	27 06 (102313) 	Qualifier	8.5 RL 1.0 1.0 RL 4.2 RL	RL	Unit % % Unit mg/Kg	<u>D</u>	Lab Samp Prepared Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 11/01/13 00:23 Die ID: 600-81 Matri Analyzed Analyzed	631-52 x: Solid
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:18 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:24 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Moisture	27 06 (102313) Result 3.8 96 Result 6.9 06 (102313) 06 (102313) Result 8.9 91	Qualifier	8.5 RL 1.0 1.0 RL 4.2 RL 1.0	RL MDL	Unit % % Unit mg/Kg	<u>D</u>	Lab Samp Prepared Prepared	Analyzed 10/31/13 23:28 Die ID: 600-81 Matri - Analyzed 10/28/13 08:43 10/28/13 08:43 - Analyzed 11/01/13 00:23 Die ID: 600-81 Matri - Analyzed 11/01/13 00:23 Die ID: 600-81 Matri - - -	631-52 x: Solid Dil Fac 1 1 0il Fac 1 631-53 x: Solid Dil Fac 1

TestAmerica Houston

Released to Imaging: 7/9/2021 2:17:22 PM

Client: ARCADIS U.S., Inc.

Client Sample Results

Page 55 of 210

TestAmerica Job ID: 600-81631-1

5

ac	Ę
1	6
ac	
1	8
55 lid	
ac	
1	

Date Collected: 10/23/13 12:26 Date Received: 10/25/13 09:57	06 (102313)) 20'					Lab Sam	ole ID: 600-81 Matri	631-54 x: Solid
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	3.8		1.0		%			10/28/13 08:43	1
Percent Solids	96		1.0		%			10/28/13 08:43	1
General Chemistry - Soluble Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.0		4.2		mg/Kg	<u></u>		11/01/13 00:59	1
Client Sample ID: VGWU 040-	06 (102313)) 25'					Lab Sam	ole ID: 600-81	631-55
Date Collected: 10/23/13 12:28	· · · ·	, ,							x: Solid
Date Received: 10/25/13 09:57									
_ General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.3		1.0		%			10/28/13 08:43	1
Percent Solids	96		1.0		%			10/28/13 08:43	1
General Chemistry - Soluble									
	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Analyte	Robult								
Client Sample ID: VGWU 040-	7.1) 30'	4.2		mg/Kg	<u></u>	Lab Sam	11/01/13 01:18	
Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 12:30 Date Received: 10/25/13 09:57 General Chemistry	7.1 06 (102313)							ole ID: 600-81 Matri	631-56 x: Solid
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:30 Date Received: 10/25/13 09:57 General Chemistry Analyte	7.1 06 (102313) 	Qualifier	RL	RL	Unit	<u>D</u>	Lab Sam	Die ID: 600-81 Matri Analyzed	631-56 x: Solid Dil Fac
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:30 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	7.1 06 (102313) 		RL 1.0	RL	Unit %			Die ID: 600-81 Matri - <u>Analyzed</u> 10/28/13 08:43	631-56 x: Solid
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:30 Date Received: 10/25/13 09:57 General Chemistry Analyte	7.1 06 (102313) 		RL	RL	Unit			Die ID: 600-81 Matri Analyzed	631-56 x: Solid Dil Fac
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:30 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	7.1 06 (102313) 		RL 1.0		Unit %			Die ID: 600-81 Matri - <u>Analyzed</u> 10/28/13 08:43	631-56 x: Solid Dil Fac
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:30 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids	7.1 06 (102313) 		RL 1.0 1.0 RL	RL	Unit % % Unit	D 		Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 Mnalyzed	631-56 x: Solid Dil Fac
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:30 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	7.1 06 (102313) 	Qualifier	RL 1.0 1.0		Unit %	D	Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43	631-56 x: Solid Dil Fac
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:30 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-	7.1 06 (102313) 	Qualifier	RL 1.0 1.0 RL		Unit % % Unit	D 	Prepared	Die ID: 600-81 Matri - <u>Analyzed</u> 10/28/13 08:43 10/28/13 08:43 - <u>Analyzed</u> 11/01/13 01:36 Die ID: 600-81	631-56 x: Solid Dil Fac 1 Dil Fac 1 631-57
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:30 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:46	7.1 06 (102313) 	Qualifier	RL 1.0 1.0 RL		Unit % % Unit	D 	Prepared	Die ID: 600-81 Matri - <u>Analyzed</u> 10/28/13 08:43 10/28/13 08:43 - <u>Analyzed</u> 11/01/13 01:36 Die ID: 600-81	631-56 x: Solid 1 1 Dil Fac 1 1 5 1 631-57
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:30 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:46	7.1 06 (102313) 	Qualifier	RL 1.0 1.0 RL		Unit % % Unit	D 	Prepared	Die ID: 600-81 Matri - <u>Analyzed</u> 10/28/13 08:43 10/28/13 08:43 - <u>Analyzed</u> 11/01/13 01:36 Die ID: 600-81	631-56 x: Solid Dil Fac 1 Dil Fac 1 631-57
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:30 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 12:46 Date Received: 10/25/13 09:57	7.1 06 (102313) Result 3.8 96 <u>Result</u> 10 05 (102313)	Qualifier	RL 1.0 1.0 RL 4.2	MDL	Unit % % Unit mg/Kg	D 	Prepared	Die ID: 600-81 Matri - <u>Analyzed</u> 10/28/13 08:43 10/28/13 08:43 - <u>Analyzed</u> 11/01/13 01:36 Die ID: 600-81	631-56 x: Solid Dil Fac 1 Dil Fac 1
Chloride Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 12:30 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 12:46 Date Received: 10/25/13 09:57 General Chemistry	7.1 06 (102313) Result 3.8 96 <u>Result</u> 10 05 (102313)	Qualifier	RL 1.0 1.0 4.2	MDL	Unit % % Unit mg/Kg	D	Prepared Prepared	Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 01:36	631-56 x: Solid Dil Fac 1 Dil Fac 1 631-57 x: Solid Dil Fac
Chloride Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 12:30 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 12:46 Date Received: 10/25/13 09:57 General Chemistry Analyte	7.1 06 (102313) 	Qualifier	RL 1.0 1.0 RL 4.2	MDL	Unit % % Unit mg/Kg	D	Prepared Prepared	Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 11/01/13 01:36	631-56 x: Solid 1 1 Dil Fac 1 631-57 x: Solid Dil Fac
Chloride Client Sample ID: VGWU 040- Client Sample ID: VGWU 040- Client Sample 10/23/13 12:30 Client Sample ID: VGWU 040- Chloride Client Sample ID: VGWU 040- Client Samp	7.1 06 (102313) Result 3.8 96 Result 10 05 (102313) Result 1.0 99	Qualifier	RL 1.0 1.0 4.2 4.2 RL 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	MDL	Unit % % Wnit mg/Kg	D D D	Prepared Prepared Lab Samp	Die ID: 600-81 Matri Matri - <u>Analyzed</u> 10/28/13 08:43 10/28/13 08:43 - <u>Analyzed</u> 11/01/13 01:36 Die ID: 600-81 Matri - <u>Analyzed</u> 10/28/13 08:43 10/28/13 08:43	631-56 x: Solid Dil Fac 1 631-57 x: Solid Dil Fac 1 1
Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 12:30 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 12:46 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Moisture Percent Solids	7.1 06 (102313) Result 3.8 96 Result 10 05 (102313) Result 1.0 99	Qualifier	RL 1.0 1.0 4.2	MDL	Unit % % Unit mg/Kg	D	Prepared Prepared	Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 0/28/13 08:43 Analyzed 11/01/13 01:36 Die ID: 600-81 Matri Analyzed 10/28/13 08:43	631-56 x: Solid Dil Fac 1 631-57 x: Solid Dil Fac 1

Client Sample ID: VGWU 040-05 (102313) 5'

Client: ARCADIS U.S., Inc.

Client Sample Results

Page 56 of 210

TestAmerica Job ID: 600-81631-1

Lab Sample ID: 600-81631-58

	5	
	6	5
	8	3
)

Date Collected: 10/23/13 12:47 Date Received: 10/25/13 09:57								Matri	x: Solid
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.8		1.0		%			10/28/13 08:43	1
Percent Solids	92		1.0		%			10/28/13 08:43	1
General Chemistry - Soluble	Decult	Qualifier		MDI	11-14		Drenewood	Analyzed	
Analyte		Qualifier	RL	MDL	Unit	— <u>D</u>	Prepared	Analyzed	Dil Fac
Chloride	53		4.3		mg/Kg	246		11/01/13 02:49	1
Client Sample ID: VGWU 040-	05 (102313)) 10'					Lab Sam	ple ID: 600-81	631-59
Date Collected: 10/23/13 12:49 Date Received: 10/25/13 09:57								Matri	x: Solid
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	2.5		1.0		%			10/28/13 08:43	1
Percent Solids	98		1.0		%			10/28/13 08:43	1
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.5		4.1		mg/Kg	₩ ₩		11/01/13 03:07	1
Date Collected: 10/23/13 12:53									
Date Received: 10/25/13 09:57								Matri	x: Solid
									x: Solia
Date Received: 10/25/13 09:57	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Date Received: 10/25/13 09:57 General Chemistry	Result	Qualifier	RL 1.0	RL	Unit %	D	Prepared		
Date Received: 10/25/13 09:57 General Chemistry Analyte		Qualifier		RL		<u>D</u>	Prepared	Analyzed	Dil Fac
Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	1.4	Qualifier	1.0	RL	%	D	Prepared	Analyzed	Dil Fac
Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids	1.4 99	Qualifier	1.0		%		Prepared	Analyzed	Dil Fac
Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	1.4 99		1.0 1.0		% %			Analyzed 10/28/13 08:43 10/28/13 08:43	Dil Fac 1
Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-4 Date Collected: 10/23/13 12:55	1.4 99 <u>Result</u> 5.7	Qualifier	1.0 1.0 RL		% % Unit		Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 - Analyzed 11/01/13 04:02 ple ID: 600-81	Dil Fac 1 1 Dil Fac 1
Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-4	1.4 99 <u>Result</u> 5.7	Qualifier	1.0 1.0 RL		% % Unit		Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 - Analyzed 11/01/13 04:02 ple ID: 600-81	Dil Fac 1 1 2 1 1 0il Fac 1 6 31-61
Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 12:55 Date Received: 10/25/13 09:57 General Chemistry	1.4 99 <u>Result</u> 5.7 05 (102313)	Qualifier	1.0 1.0 RL 4.1	MDL	% % Unit mg/Kg	<u>D</u>	Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 - Analyzed 11/01/13 04:02 ple ID: 600-81 Matri	Dil Fac 1 1 1 1 1 1 1 1 631-61 1 x: Solid
Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 12:55 Date Received: 10/25/13 09:57 General Chemistry Analyte	1.4 99 <u>Result</u> 5.7 05 (102313) <u>Result</u>	Qualifier	1.0 1.0 RL 4.1	MDL	% % Unit mg/Kg Unit		Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 11/01/13 04:02 ple ID: 600-81 Matri Analyzed	Dil Fac 1 1 0il Fac 1 631-61 x: Solid Dil Fac
Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 12:55 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	1.4 99 <u>Result</u> 5.7 05 (102313) <u>Result</u> 2.2	Qualifier	1.0 1.0 RL 4.1 RL 1.0	MDL	% Wnit mg/Kg	<u>D</u>	Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 11/01/13 04:02 ple ID: 600-81 Matri Analyzed 10/28/13 08:43	Dil Fac 1 1 1 1 1 1 1 1 631-61 1 x: Solid
Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-4 Date Collected: 10/23/13 12:55 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids	1.4 99 <u>Result</u> 5.7 05 (102313) <u>Result</u>	Qualifier	1.0 1.0 RL 4.1	MDL	% % Unit mg/Kg Unit	<u>D</u>	Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 11/01/13 04:02 ple ID: 600-81 Matri Analyzed	Dil Fac 1 1 0il Fac 1 631-61 x: Solid Dil Fac 1
Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-I Date Collected: 10/23/13 12:55 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	1.4 99 <u>Result</u> 5.7 05 (102313) <u>Result</u> 2.2 98	Qualifier	1.0 1.0 RL 4.1 1.0 RL 1.0 1.0 1.0	MDL	% Wnit mg/Kg	D	Prepared Lab Sam	Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 11/01/13 04:02 ple ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43	Dil Fac 1 1 0il Fac 1 631-61 x: Solid Dil Fac 1 1
Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-4 Date Collected: 10/23/13 12:55 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids	1.4 99 <u>Result</u> 5.7 05 (102313) <u>Result</u> 2.2 98	Qualifier	1.0 1.0 RL 4.1 RL 1.0	MDL	% Wnit mg/Kg	<u>D</u>	Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed 11/01/13 04:02 ple ID: 600-81 Matri Analyzed 10/28/13 08:43	Dil Fac 1 1 Dil Fac 1 631-61 x: Solid Dil Fac

Client Sample ID: VGWU 040-05 (102313) 25'

Client Sample ID: VGWU 040-05 (102313) 30'

Client Sample ID: VGWU 040-07 (102313) 2'

Client Sample ID: VGWU 040-07 (102313) 5'

Client: ARCADIS U.S., Inc.

General Chemistry

Percent Moisture

Percent Solids

Analyte

Analyte

Chloride

Analyte

Analyte

Chloride

Analyte

Analyte

Chloride

Analyte

Analyte

Chloride

Date Collected: 10/23/13 12:56 Date Received: 10/25/13 09:57

General Chemistry - Soluble

Date Collected: 10/23/13 12:58 Date Received: 10/25/13 09:57

General Chemistry - Soluble

Date Collected: 10/23/13 13:14 Date Received: 10/25/13 09:57

General Chemistry - Soluble

Date Collected: 10/23/13 13:16

Date Received: 10/25/13 09:57

General Chemistry - Soluble

General Chemistry

Percent Moisture

Percent Solids

General Chemistry

Percent Moisture

Percent Solids

General Chemistry

Percent Moisture

Percent Solids

Client Sample Results

RL

1.0

1.0

RL 4.1

RL

1.0

1.0

RL

4.2

RL 1.0

1.0

RL

21

RL

1.0

1.0

RL

4.1

N

RL Unit

%

%

mg/Kg

MDL Unit D

D

☆

Prepared

Prepared

Result Qualifier

Qualifier

1.6

98

Result

130

4.2

96

2400

4.9

95

6.8

3.5

97

7.1

Page 57 of 210

TestAmerica Job ID: 600-81631-1

Lab Cample ID: 600 94624 62

	631-62 x: Solid	ole ID: 600-810	Lab Samp			
	x. 3011u	Watri				
5	Dil Fac	Analyzed	Prepared	D	Unit	RL
	1	10/28/13 08:43	-		%	
6	1	10/28/13 08:43			%	
	Dil Fac	Analyzed	Prepared	D	Unit	MDL
8	1	11/01/13 04:38			mg/Kg	
0	631-63	ole ID: 600-81	Lab Samp			
9	x: Solid	Matri				
	Dil Fac	Analyzed	Prepared	D	Unit	RL
	1	10/28/13 08:43			%	
	1	10/28/13 08:43			%	
13	Dil Fac	Analyzed	Prepared	D	Unit	MDL
	1	11/01/13 04:56		<u></u>	mg/Kg	
	631-64	ole ID: 600-810	Lab Samp			
	x: Solid	Matri				
	Dil Fac	Analyzed	Prepared	D	Unit	RL
	1	10/28/13 08:43			%	
	1	10/28/13 08:43			%	
	Dil Fac	Analyzed	Prepared	D	Unit	MDL
	5	11/01/13 05:14		<u></u>	mg/Kg	

TestAmerica Houston

Lab Sample ID: 600-81631-65

Analyzed

10/28/13 08:43

10/28/13 08:43

Analyzed

11/01/13 05:51

Matrix: Solid

Dil Fac

Dil Fac

1

1

1

Client Sample ID: VGWU 040-07 (102313) 10'

Client: ARCADIS U.S., Inc.

Date Collected: 10/23/13 13:17

Client Sample Results

Page 58 of 210

Matrix: Solid

TestAmerica Job ID: 600-81631-1

Lab Sample ID: 600-81631-66

General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	3.5		1.0		%			10/28/13 08:43	
Percent Solids	97		1.0		%			10/28/13 08:43	
- General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	33		4.1		mg/Kg	<u> </u>		11/01/13 06:45	
Client Sample ID: VGWU 040-(07 (102313)	15'					Lab Samp	ole ID: 600-81	631-6
Date Collected: 10/23/13 13:18 Date Received: 10/25/13 09:57								Matri	x: Solid
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	5.4		1.0		%			10/28/13 08:43	
Percent Solids	95		1.0		%			10/28/13 08:43	
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	96		4.2		mg/Kg	— <u> </u>		11/01/13 08:16	
Client Sample ID: VGWU 040-(Date Collected: 10/23/13 13:20 Date Received: 10/25/13 09:57		20'	τ.2				Lab Samp	ole ID: 600-81	631-6
- Client Sample ID: VGWU 040-(Date Collected: 10/23/13 13:20		20'	T.2				Lab Samp	ole ID: 600-81	631-68
- Client Sample ID: VGWU 040-(Date Collected: 10/23/13 13:20 Date Received: 10/25/13 09:57	07 (102313)	20' Qualifier	RL	RL	Unit	D	Lab Samp	Die ID: 600-81 Matri Analyzed	631-68 x: Solid
Client Sample ID: VGWU 040-(Date Collected: 10/23/13 13:20 Date Received: 10/25/13 09:57 General Chemistry	07 (102313)			RL		D		ole ID: 600-81 Matri	631-68 x: Solic
Client Sample ID: VGWU 040-(Date Collected: 10/23/13 13:20 Date Received: 10/25/13 09:57 General Chemistry Analyte	07 (102313) 		RL	RL	Unit	D		Die ID: 600-81 Matri Analyzed	631-68 x: Solic
Client Sample ID: VGWU 040-(Date Collected: 10/23/13 13:20 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	07 (102313) 		RL 1.0	RL	Unit %	D		Die ID: 600-81 Matri Analyzed 10/28/13 08:43	631-68 x: Solic
Client Sample ID: VGWU 040-(Date Collected: 10/23/13 13:20 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids	07 (102313) 		RL 1.0 1.0 RL	RL	Unit % % Unit			Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed	631-68 x: Solic
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 13:20 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	07 (102313) 	Qualifier	RL 1.0 1.0		Unit % %		Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43	
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 13:20 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0	07 (102313) Result 3.1 97 Result 14	Qualifier	RL 1.0 1.0 RL		Unit % % Unit		Prepared	Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 Analyzed 11/01/13 08:35 Die ID: 600-81	631-68 x: Solic Dil Fac
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 13:20 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride	07 (102313) Result 3.1 97 Result 14	Qualifier	RL 1.0 1.0 RL		Unit % % Unit		Prepared	Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 Analyzed 11/01/13 08:35 Die ID: 600-81	631-68 x: Solic Dil Fa Dil Fa
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 13:20 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 13:24 Date Received: 10/25/13 09:57 General Chemistry	07 (102313) 	Qualifier	RL 1.0 1.0 4.1	MDL	Unit % % Unit mg/Kg	D	Prepared Prepared	Die ID: 600-81 Matri Matri 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 <u>Analyzed</u> 11/01/13 08:35 Die ID: 600-81 Matri	631-68 x: Solic Dil Fa Dil Fa 631-69 x: Solic
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 13:20 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 13:24 Date Received: 10/25/13 09:57 General Chemistry Analyte	07 (102313) Result 3.1 97 Result 14 07 (102313) Result	Qualifier	RL 1.0 1.0 RL 4.1	MDL	Unit % % Unit mg/Kg		Prepared	Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 11/01/13 08:35 Die ID: 600-81 Matri Analyzed	631-68 x: Solic Dil Fa Dil Fa 631-69 x: Solic Dil Fa
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 13:20 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 13:24 Date Received: 10/25/13 09:57 General Chemistry	07 (102313) 	Qualifier	RL 1.0 1.0 4.1 RL 4.1	MDL	Unit % % Unit mg/Kg	D	Prepared Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 Malyzed 11/01/13 08:35 Die ID: 600-81 Matri Analyzed 11/01/13 08:35 Die ID: 600-81 Matri 10/28/13 08:43	631-68 x: Solic Dil Fa Dil Fa 631-69 x: Solic Dil Fa
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 13:20 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 13:24 Date Received: 10/25/13 09:57 General Chemistry Analyte	07 (102313) Result 3.1 97 Result 14 07 (102313) Result	Qualifier	RL 1.0 1.0 RL 4.1	MDL	Unit % % Unit mg/Kg	D	Prepared Prepared	Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 11/01/13 08:35 Die ID: 600-81 Matri Analyzed	631-68 x: Solic Dil Fa Dil Fa 631-69 x: Solic Dil Fa
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 13:20 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 13:24 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Moisture Percent Solids General Chemistry - Soluble	07 (102313) Result 3.1 97 Result 14 07 (102313) Result 3.9 96	Qualifier	RL 1.0 1.0 1.0 RL 4.1	MDL	Unit % % Wnit mg/Kg	D	Prepared Prepared Lab Samp	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 Malyzed 11/01/13 08:35 Die ID: 600-81 Matri Malyzed 10/28/13 08:43 10/28/13 08:43	631-68 x: Solic Dil Fa Dil Fa 631-69 x: Solic Dil Fa
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 13:20 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 13:24 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Moisture Percent Solids General Chemistry - Soluble Analyte	07 (102313) Result 3.1 97 Result 14 07 (102313) Result 3.9 96 Result	Qualifier	RL 1.0 1.0 1.0 RL 4.1	MDL	Unit Witi Market Unit Unit Unit	D D D	Prepared Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 11/01/13 08:35 Ole ID: 600-81 Matri 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43	631-68 x: Solic Dil Fac 631-69 x: Solic Dil Fac
Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 13:20 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 13:24 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Moisture Percent Solids General Chemistry - Soluble	07 (102313) Result 3.1 97 Result 14 07 (102313) Result 3.9 96	Qualifier	RL 1.0 1.0 1.0 RL 4.1	MDL	Unit % % Wnit mg/Kg	D	Prepared Prepared Lab Samp	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 Malyzed 11/01/13 08:35 Die ID: 600-81 Matri Malyzed 10/28/13 08:43 10/28/13 08:43	631-68 x: Solic Dil Fa Dil Fa 631-69 x: Solic Dil Fa

Client Sample Results

5 6

TestAmerica Job ID: 600-81631-1

Volle. The Transfer Siles, Lea County NM	
ARCADIS U.S., Inc. t/Site: HES Transfer Sites, Lea County NM	

Lab Sample ID: 600-81631-70

Date Collected: 10/23/13 13:27 Date Received: 10/25/13 09:57									
General Chemistry									
Analyte		Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	3.3		1.0		%			10/28/13 08:43	1
Percent Solids	97		1.0		%			10/28/13 08:43	1
General Chemistry - Soluble									
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Chloride	9.3		4.1		mg/Kg	<u></u>		11/02/13 00:33	1
Client Sample ID: VGWU 040-	08 (102313)) 2'					Lab Sam	ole ID: 600-81	631-85
Date Collected: 10/23/13 14:43								Matri	x: Solid
Date Received: 10/25/13 09:57									
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	3.3		1.0		%			10/28/13 08:43	1
Percent Solids	97		1.0		%			10/28/13 08:43	1
– General Chemistry - Soluble									
		0		MDI	11	D	Drevered	Analyzed	Dil Fac
Analyte	Result	Qualifier	RL	WDL	Unit	U	Prepared	Analyzea	Diriao
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:44	2000		21		mg/Kg	<u> </u>		11/02/13 01:28	5 631-86
Chloride Client Sample ID: VGWU 040-	2000							11/02/13 01:28	5 631-86
Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 14:44 Date Received: 10/25/13 09:57 General Chemistry	2000 08 (102313)) 5'	21		mg/Kg		Lab Samı	11/02/13 01:28	5 631-86 x: Solid
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:44 Date Received: 10/25/13 09:57	2000 D8 (102313) 		21 		mg/Kg			11/02/13 01:28 Die ID: 600-81 Matri Analyzed	5 631-86 x: Solid Dil Fac
Chloride Client Sample ID: VGWU 040-0 Date Collected: 10/23/13 14:44 Date Received: 10/25/13 09:57 General Chemistry	2000 08 (102313)) 5'	21		Unit		Lab Samı	11/02/13 01:28	5 631-86 x: Solid Dil Fac
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:44 Date Received: 10/25/13 09:57 General Chemistry Analyte	2000 D8 (102313)) 5'	21 		mg/Kg		Lab Samı	11/02/13 01:28 Die ID: 600-81 Matri Analyzed	5 631-86 x: Solid Dil Fac
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:44 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	2000 08 (102313) 	Qualifier	21 RL 1.0 1.0	RL	Unit % %	<u> </u>	Lab Samp	11/02/13 01:28 11/02/13 01:28 Die ID: 600-81 Matri Matri 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43	5 631-86 x: Solid Dil Fac
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:44 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte	2000 08 (102313)) 5'	21 	RL	Unit % Unit	<u>D</u>	Lab Samı	11/02/13 01:28 Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 Malyzed	5 631-86 x: Solid 1 1 1 Dil Fac
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:44 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	2000 08 (102313) 	Qualifier	21 RL 1.0 1.0	RL	Unit % %	<u> </u>	Lab Samp	11/02/13 01:28 11/02/13 01:28 Die ID: 600-81 Matri Matri 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43	5 631-86 x: Solid Dil Fac
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:44 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride	2000 08 (102313) 	Qualifier	21 	RL	Unit % Unit	<u>D</u>	Lab Samp Prepared Prepared	11/02/13 01:28 Die ID: 600-81 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 Malyzed	5 631-86 x: Solid Dil Fac 1 1 Dil Fac 2
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:44 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-	2000 08 (102313) 	Qualifier	21 	RL	Unit % Unit	<u>D</u>	Lab Samp Prepared Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 0 Analyzed 11/02/13 01:46	5 631-86 x: Solid Dil Fac 1 1 Dil Fac 2
Chloride Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:44 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:48	2000 08 (102313) 	Qualifier	21 	RL	Unit % Unit	<u>D</u>	Lab Samp Prepared Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 0 Analyzed 11/02/13 01:46	5 631-86 x: Solid Dil Fac 1 1 Dil Fac 2 631-87
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:44 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:48	2000 08 (102313) 	Qualifier	21 	RL	Unit % Unit	<u>D</u>	Lab Samp Prepared Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 0 Analyzed 11/02/13 01:46	5 631-86 x: Solid Dil Fac 1 1 Dil Fac 2 631-87
Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:44 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:48 Date Received: 10/25/13 09:57	2000 08 (102313) 	Qualifier	21 	RL	Unit % % Unit mg/Kg	<u>D</u>	Lab Samp Prepared Prepared	Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 0 Analyzed 11/02/13 01:46	5 631-86 x: Solid Dil Fac 1 1 Dil Fac 2 631-87
Chloride Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:44 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:48 Date Received: 10/25/13 09:57 General Chemistry	2000 08 (102313) 	Qualifier	21 RL 1.0 1.0 RL 8.5	RL	Unit % % Unit mg/Kg	D	Lab Samp Prepared Prepared	Analyzed 10/28/13 01:28 Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 0 Analyzed 11/02/13 01:46 Die ID: 600-81 Matri	5 631-86 x: Solid Dil Fac 2 631-87 x: Solid
Chloride Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:44 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:48 Date Received: 10/25/13 09:57 General Chemistry Analyte	2000 08 (102313) 	Qualifier	21 RL 1.0 1.0 RL 8.5	RL	Unit % % Unit mg/Kg	D	Lab Samp Prepared Prepared	11/02/13 01:28 11/02/13 01:28 Die ID: 600-81 Matri 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 01/28/13 08:43 11/02/13 01:46 Die ID: 600-81 Matri	5 631-86 x: Solid Dil Fac 1 1 1 Dil Fac 2 631-87 x: Solid
Chloride Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:44 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:48 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Moisture	2000 08 (102313) Result 6.1 94 Result 700 08 (102313) Result 8.3	Qualifier	21 RL 1.0 1.0 RL 8.5 RL 1.0	RL	Unit % % Unit mg/Kg	D	Lab Samp Prepared Prepared	11/02/13 01:28 11/02/13 01:28 Die ID: 600-81 Matri 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 11/02/13 01:46 Die ID: 600-81 Matri Analyzed 11/02/13 01:46 Die ID: 600-81 Matri 10/28/13 08:43	5 631-86 x: Solid 1 1 Dil Fac 2 631-87 x: Solid Dil Fac 1 1
Chloride Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:44 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:48 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Moisture Percent Solids	2000 08 (102313) Result 6.1 94 Result 700 08 (102313) Result 8.3 92	Qualifier	21 RL 1.0 1.0 RL 8.5 RL 1.0	RL MDL	Unit % % Unit mg/Kg	D	Lab Samp Prepared Prepared	11/02/13 01:28 11/02/13 01:28 Die ID: 600-81 Matri 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 11/02/13 01:46 Die ID: 600-81 Matri Analyzed 11/02/13 01:46 Die ID: 600-81 Matri 10/28/13 08:43	5 631-86 x: Solid 1 1 Dil Fac 2 631-87 x: Solid Dil Fac 1 1

Client: ARCADIS U.S., Inc.

Client Sample Results

Page 60 of 210

TestAmerica Job ID: 600-81631-1

5 6

Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:50 Date Received: 10/25/13 09:57	08 (102313)	15'					Lab Samı	ple ID: 600-81 Matri	631-88 x: Solid
_ General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	13		1.0		%			10/28/13 08:43	1
Percent Solids	87		1.0		%			10/28/13 08:43	
General Chemistry - Soluble									
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	11		4.6		mg/Kg	<u></u>		11/02/13 02:23	~
Client Sample ID: VGWU 040-	08 (102313)	20'					Lab Sam	ple ID: 600-81	631-89
Date Collected: 10/23/13 14:54 Date Received: 10/25/13 09:57								Matri	x: Solic
_ General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	4.7		1.0		%			10/28/13 08:43	
Percent Solids	95		1.0		%			10/28/13 08:43	
_ General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	46		4.2		mg/Kg	\$		11/02/13 02:41	
Date Collected: 10/23/13 14:57	08 (102313)	25'					Lab Sam	ple ID: 600-81 Matri	631-90 x: Solic
Date Collected: 10/23/13 14:57 Date Received: 10/25/13 09:57 General Chemistry Analyte	Result	Qualifier	RL	RL		D	Lab Sam	Matri	x: Solic
Date Collected: 10/23/13 14:57 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	Result		1.0	RL	%	D		Matri Analyzed 10/28/13 08:43	x: Solic
Date Collected: 10/23/13 14:57 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids	Result			RL		<u> </u>		Matri	x: Solic
Date Collected: 10/23/13 14:57 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	Result 4.5 96		1.0		%	D		Matri Analyzed 10/28/13 08:43 10/28/13 08:43	x: Solic
Analyte Percent Moisture Percent Solids General Chemistry - Soluble	Result 4.5 96	Qualifier	1.0 1.0		% %		Prepared	Matri Analyzed 10/28/13 08:43	Dil Fac
Date Collected: 10/23/13 14:57 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride	Result 4.5 96 <u>Result</u> 130	Qualifier	1.0 1.0 RL		% % Unit	D	Prepared	Matri Analyzed 10/28/13 08:43 10/28/13 08:43 Analyzed	X: Solic
Date Collected: 10/23/13 14:57 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:58	Result 4.5 96 <u>Result</u> 130	Qualifier	1.0 1.0 RL		% % Unit	D	Prepared	Matri - Analyzed 10/28/13 08:43 10/28/13 08:43 - Analyzed 11/02/13 03:35 ple ID: 600-81	X: Solic Dil Fa Dil Fa
Date Collected: 10/23/13 14:57 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:58	Result 4.5 96 <u>Result</u> 130	Qualifier	1.0 1.0 RL		% % Unit	D	Prepared	Matri - Analyzed 10/28/13 08:43 10/28/13 08:43 - Analyzed 11/02/13 03:35 ple ID: 600-81	X: Solic Dil Fac Dil Fac
Date Collected: 10/23/13 14:57 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:58 Date Received: 10/25/13 09:57	Result 4.5 96 Result 130 08 (102313)	Qualifier	1.0 1.0 RL	MDL	% % Unit mg/Kg Unit	D	Prepared	Matri - Analyzed 10/28/13 08:43 10/28/13 08:43 - Analyzed 11/02/13 03:35 ple ID: 600-81	2011 Fau Dil Fau Dil Fau 631-91 x: Solic
Date Collected: 10/23/13 14:57 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:58 Date Received: 10/25/13 09:57 General Chemistry	Result 4.5 96 Result 130 08 (102313)	Qualifier	1.0 1.0 RL 4.2	MDL	% % <u>Unit</u> mg/Kg	D	Prepared Prepared	Matri - Analyzed 10/28/13 08:43 10/28/13 08:43 - Analyzed 11/02/13 03:35 ple ID: 600-81 Matri	x: Solic Dil Fa Dil Fa 631-9' x: Solic Dil Fa
Date Collected: 10/23/13 14:57 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:58 Date Received: 10/25/13 09:57 General Chemistry Analyte	Result 4.5 96 Result 130 08 (102313) Result	Qualifier	1.0 1.0 RL 4.2	MDL	% % Unit mg/Kg Unit	D	Prepared Prepared	Matri - Analyzed 10/28/13 08:43 10/28/13 08:43 - Analyzed - 11/02/13 03:35 - Die ID: 600-81 Matri Analyzed	x: Solic Dil Fac 631-91 x: Solic Dil Fac
Date Collected: 10/23/13 14:57 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:58 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	Result 4.5 96 Result 130 08 (102313) 08 (102313) Result 7.4 93	Qualifier	1.0 1.0 RL 4.2 1.0 1.0 1.0 1.0 1.0	MDL	% % Unit mg/Kg	D D	Prepared Prepared Lab Samp	Matri	x: Solic Dil Fac Dil Fac 631-91 x: Solic Dil Fac
Date Collected: 10/23/13 14:57 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 14:58 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Moisture Percent Solids	Result 4.5 96 Result 130 08 (102313) 08 (102313) Result 7.4 93	Qualifier	1.0 1.0 RL 4.2 RL 1.0	MDL	% % <u>Unit</u> mg/Kg <u>Unit</u>	D	Prepared Prepared	Matri	x: Solic Dil Fa Dil Fa 631-9' x: Solic Dil Fa

Client: ARCADIS U.S., Inc.

Client Sample Results

Page 61 of 210

TestAmerica Job ID: 600-81631-1

5 6 7

Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:47 Date Received: 10/25/13 09:57	.09 (102313)	2					Lab Samp	le ID: 600-81 Matri	x: Solid
_ General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.5		1.0		%			10/28/13 08:43	1
Percent Solids	95		1.0		%			10/28/13 08:43	
General Chemistry - Soluble Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	2500		42		mg/Kg	<u>Å</u>		11/02/13 04:12	10
Client Sample ID: VGWU 040-	-09 (102313)	5'					Lab Sample	e ID: 600-816	31-100
Date Collected: 10/23/13 15:48 Date Received: 10/25/13 09:57	. ,							Matri	x: Solid
_ General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Percent Moisture	2.3		1.0		%			10/28/13 08:43	1
Percent Solids	98		1.0		%			10/28/13 08:43	
_ General Chemistry - Soluble				MDI	Unit	D	Prepared	Analyzed	Dil Fa
	Result	Qualifier	RL						
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:50	1800	Qualifier	<u>20</u>		mg/Kg			11/02/13 04:30	3 1-10 1
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:50 Date Received: 10/25/13 09:57 General Chemistry	-09 (102313)) 10'	20		mg/Kg	x	Lab Sample	11/02/13 04:30 DI: 600-816 Matri	31-101 x: Solic
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:50 Date Received: 10/25/13 09:57 General Chemistry Analyte	1800 -09 (102313) 		20 		mg/Kg Unit			11/02/13 04:30 DI: 600-816 Matri Analyzed	31-101 x: Solic
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:50 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	-09 (102313) -Result) 10'	20 		Unit %	x	Lab Sample	11/02/13 04:30 iD: 600-816 Matri Analyzed 10/28/13 08:43	31-101 x: Solic
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:50 Date Received: 10/25/13 09:57 General Chemistry Analyte	1800 -09 (102313)) 10'	20 		mg/Kg Unit	x	Lab Sample	11/02/13 04:30 DI: 600-816 Matri Analyzed	31-101 x: Solic Dil Fa
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:50 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	-09 (102313) -Result) 10'	20 		Unit %	x	Lab Sample	11/02/13 04:30 iD: 600-816 Matri Analyzed 10/28/13 08:43	31-101 x: Solic Dil Fa
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:50 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids	-09 (102313) -09 (102313) - Result 4.3 96) 10'	20 RL 1.0 1.0 RL	RL	Unit %	D	Lab Sample	11/02/13 04:30 D: 600-816 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43	31-101 x: Solic
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:50 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble	-09 (102313) -09 (102313) - Result 4.3 96	Qualifier	20 RL 1.0 1.0	RL	Unit %	<u>P</u>	Lab Sample	11/02/13 04:30 ID: 600-816 Matri Analyzed 10/28/13 08:43 10/28/13 08:43	31-101 x: Solic
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:50 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040-	1800 -09 (102313) 	Qualifier	20 RL 1.0 1.0 RL	RL	Unit % Unit	D	Prepared Prepared	11/02/13 04:30 D: 600-816 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43	31-101 x: Solic Dil Fac
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:50 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride	1800 -09 (102313) 	Qualifier	20 RL 1.0 1.0 RL	RL	Unit % Unit	D	Prepared Prepared	11/02/13 04:30 11/02/13 04:30 ID: 600-816 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 ID: 600-816	31-101 x: Solic Dil Fac Dil Fac 31-102
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:50 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:53 Date Received: 10/25/13 09:57 General Chemistry	1800 -09 (102313) - - - - - - - - - - - - - - - - - - -	Qualifier	20 RL 1.0 1.0 RL 8.4	RL	Unit % % Unit mg/Kg	D	Lab Sample	11/02/13 04:30 2 ID: 600-816 Matri Matri 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 4nalyzed 11/02/13 04:48 2 ID: 600-816 Matri	231-101 x: Solic Dil Fac Dil Fac 231-102 x: Solic
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:50 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:53 Date Received: 10/25/13 09:57 General Chemistry Analyte	1800 -09 (102313) 	Qualifier	20 RL 1.0 1.0 RL 8.4	RL	Unit Mg/Kg	D	Prepared Prepared	11/02/13 04:30 D: 600-816 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 EXAMPLE CONTRACTOR Matri Analyzed Analyzed	31-101 x: Solic Dil Fac Jil Fac 31-102 x: Solic Dil Fac
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:50 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:53 Date Received: 10/25/13 09:57 General Chemistry	1800 -09 (102313) - - - - - - - - - - - - - - - - - - -	Qualifier	20 RL 1.0 1.0 RL 8.4	RL	Unit % % Unit mg/Kg	D	Lab Sample	11/02/13 04:30 2 ID: 600-816 Matri Matri 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 10/28/13 08:43 4nalyzed 11/02/13 04:48 2 ID: 600-816 Matri	31-101 x: Solic Dil Faa Dil Faa 31-102 x: Solic Dil Faa
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:50 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:53 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Moisture Percent Solids	1800 -09 (102313) -09 (102313) -09 (102313) -09 (102313) -09 (102313)	Qualifier	20 RL 1.0 1.0 RL 8.4 RL 1.0	RL	Unit % % Unit mg/Kg	D	Lab Sample	11/02/13 04:30 11/02/13 04:30 ID: 600-816 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 11/02/13 04:48 ID: 600-816 Matri Analyzed 11/02/13 04:48 ID: 600-816 Matri Analyzed 11/02/13 04:48	31-101 x: Solic Dil Fac Dil Fac 31-102 x: Solic Dil Fac
Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:50 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture Percent Solids General Chemistry - Soluble Analyte Chloride Client Sample ID: VGWU 040- Date Collected: 10/23/13 15:53 Date Received: 10/25/13 09:57 General Chemistry Analyte Percent Moisture	Result 4.3 96 Result 900 -09 (102313) Result 900 -09 (102313) -09 (102313) -09 (102313)	Qualifier	20 RL 1.0 1.0 RL 8.4 RL 1.0	RL MDL	Unit % % Unit mg/Kg	D	Lab Sample	11/02/13 04:30 11/02/13 04:30 ID: 600-816 Matri Analyzed 10/28/13 08:43 10/28/13 08:43 11/02/13 04:48 ID: 600-816 Matri Analyzed 11/02/13 04:48 ID: 600-816 Matri Analyzed 11/02/13 04:48	31-101 x: Solic Dil Fac

Client Sample Results

5 6 7

TestAmerica Job ID: 600-81631-1

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

Client Sample ID: VGWU 040-	09 (102313)) 20'					Lab Samp	le ID: 600-816	31-103
Date Collected: 10/23/13 15:56								Matr	ix: Solid
Date Received: 10/25/13 09:57									
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.9		1.0		%			10/28/13 08:43	1
Percent Solids	91		1.0		%			10/28/13 08:43	1
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	580		8.8		mg/Kg	<u></u>		11/02/13 06:01	2
Client Sample ID: VGWU 040-	09 (102313)) 25'					Lab Samp	le ID: 600-816	31-104
Date Collected: 10/23/13 15:58								Matr	ix: Solid
Date Received: 10/25/13 09:57									
General Chemistry									
Analyte	Result	Qualifier	RL	RL		D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.6		1.0		%			10/28/13 08:43	1
Percent Solids	93		1.0		%			10/28/13 08:43	1
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	70		4.3		mg/Kg	<u></u>		11/02/13 06:19	1
Client Sample ID: VGWU 040-	09 (102313)) 30'					Lab Samp	le ID: 600-816	31-105
Date Collected: 10/23/13 16:00		·						Matr	ix: Solid
Date Received: 10/25/13 09:57									
General Chemistry									
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	5.5		1.0		%			10/28/13 08:43	1
Percent Solids	95		1.0		%			10/28/13 08:43	1
General Chemistry - Soluble									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	130		4.2		mg/Kg	¢		11/02/13 07:14	1

4

F

p

RER

Definitions/Glossary

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

TestAmerica Job ID: 600-81631-1 Qualifiers **General Chemistry** Qualifier **Qualifier Description** MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. MS/MSD Recovery and/or RPD exceeds the control limits Glossary 7 Abbreviation These commonly used abbreviations may or may not be present in this report. Listed under the "D" column to designate that the result is reported on a dry weight basis %R Percent Recovery CNF Contains no Free Liquid DER Duplicate error ratio (normalized absolute difference)

DER	Duplicate error ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision level concentration	
MDA	Minimum detectable activity	
EDL	Estimated Detection Limit	
MDC	Minimum detectable concentration	
MDL	Method Detection Limit	40
ML	Minimum Level (Dioxin)	13
NC	Not Calculated	
ND	Not detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	

RL	Reporting Limit or Requested Limit (I	Radiochemistry)	

RPD Relative Percent Difference, a measure of the relative difference between two points

- TEF Toxicity Equivalent Factor (Dioxin)
- TEQ Toxicity Equivalent Quotient (Dioxin)

Relative error ratio

QC Sample Results

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM TestAmerica Job ID: 600-81631-1

Page 64 of 210

Method: 9056 - Anions, Ion Chromatography Lab Sample ID: MB 600-119139/1-A **Client Sample ID: Method Blank** Matrix: Solid **Prep Type: Soluble** Analysis Batch: 119258 MB MB Result Qualifier RL MDL Unit D Dil Fac Analyte Prepared Analvzed 4.0 10/29/13 23:13 Chloride ND mg/Kg Lab Sample ID: MB 600-119139/27-A **Client Sample ID: Method Blank** Matrix: Solid **Prep Type: Soluble** Analysis Batch: 119258 MB MB Analyte **Result Qualifier** RL MDL Unit D Prepared Analyzed Dil Fac Chloride ND 4.0 mg/Kg 10/30/13 08:19 Lab Sample ID: LCS 600-119139/28-A **Client Sample ID: Lab Control Sample** Matrix: Solid **Prep Type: Soluble** Analysis Batch: 119258 Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits Chloride 200 197 mg/Kg 98 90 - 110 Lab Sample ID: LCS 600-119139/2-A **Client Sample ID: Lab Control Sample** Matrix: Solid **Prep Type: Soluble** Analysis Batch: 119258 Analyte Chlorid Lab Sample ID: 600-81631-15 MS Client Sample ID: VGWU 040-04 (102213) 2' Matrix: Solid **Prep Type: Soluble** Analysis Batch: 119258 Sample Sample Spike MS MS %Rec. Added Analyte Result Qualifier Result Qualifier Unit D Limits %Rec Chloride 1700 1060 F 80 - 120 2570 mg/Kg 78 Lab Sample ID: 600-81631-15 MSD Client Sample ID: VGWU 040-04 (102213) 2' Matrix: Solid **Prep Type: Soluble** Analysis Batch: 119258 Spike MSD MSD RPD Sample Sample %Rec. Result Qualifier Added Result Qualifier Analyte Unit D %Rec Limits RPD Limit ☆ 1060 82 Chloride 1700 2600 mg/Kg 80 - 120 1 20 Lab Sample ID: 600-81631-25 MS Client Sample ID: VGWU 040-02 (102213) 15' Matrix: Solid **Prep Type: Soluble** Analysis Batch: 119258 MS MS Sample Sample Spike %Rec. Added Analyte Result Qualifier Result Qualifier Unit D %Rec Limits ö Chloride 3900 10600 13500 mg/Kg 90 80 - 120 Lab Sample ID: 600-81631-25 MSD Client Sample ID: VGWU 040-02 (102213) 15' Matrix: Solid **Prep Type: Soluble** Analysis Batch: 119258 Spike MSD MSD %Rec. RPD Sample Sample Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits RPD Limit

.,										
		Spike	LCS	LCS				%Rec.		
/te		Added	Result	Qualifier	Unit	D	%Rec	Limits		
ide	 	200	198		mg/Kg		99	90 - 110	· –	

Chloride 10600 Ř 90 3900 13400 mg/Kg 80 - 120 1 20

QC Sample Results

Project/Site: HES Transfer Sites, Lea	County														
Lab Sample ID: 600-81631-35 MS Matrix: Solid									Clie	nt S	amp	le ID: V	GWU 040-0 Prep ⁻	1 (1023 Гуре: S	
Analysis Batch: 119258															
	Sample	Sam	nple	Spike		MS	MS						%Rec.		
Analyte	Result	Qua	lifier	Added		Result		lifier	Unit		D	%Rec	Limits		
Chloride	180			104		254	F		mg/Kg		×	75	80 - 120		
Lab Sample ID: 600-81631-35 MSD									Clie	nt S	amp	le ID: V	GWU 040-0		
Matrix: Solid Analysis Batch: 119258													Prep	Гуре: S	
Analysis Batch. 119230	Sample	Sam	nple	Spike		MSD	MSD						%Rec.		RPI
Analyte	Result		•	Added		Result			Unit		D	%Rec	Limits	RPD	Limi
Chloride	180			104		257			mg/Kg		×	78	80 - 120	1	2
-															
Lab Sample ID: MB 600-119229/1-A												Client S	ample ID: I		
Matrix: Solid													Prep	Type: S	SOIUDI
Analysis Batch: 119416		мр	МВ												
Analuto	Б		Qualifier		RL		MDL	Unit		D	Б	roparod	Analyz	od	Dil Fa
Analyte Chloride	ĸ	ND	Quaimer		4.0		WDL	mg/Kg		_	F	repared	Analyz 10/31/13 2		
		ND			4.0			mg/rty					10/31/132	10.45	
Lab Sample ID: MB 600-119229/27-/ Matrix: Solid	A											Client S	ample ID: I Pren	Method Fype: S	
Analysis Batch: 119416														.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
		мв	МВ												
Analyte	R	esult	Qualifier		RL		MDL	Unit		D	P	repared	Analyz	ed	Dil Fa
Chloride		ND			4.0			mg/Kg		_		•	11/01/13		
-															
Lab Sample ID: LCS 600-119229/28	- A									C	lient	Sample	ID: Lab Co	ontrol S	Sample
Matrix: Solid														Гуре: S	
Analysis Batch: 119416															
				Spike		LCS	LCS						%Rec.		
Analyte				Added		Result	Qua	lifier	Unit		D	%Rec	Limits		
Chloride				200		187			mg/Kg		-	94	90 - 110		
-															
Lab Sample ID: LCS 600-119229/2-/	4									C	lient	Sample	D: Lab Co		
Matrix: Solid													Prep ⁻	Гуре: S	Soluble
Analysis Batch: 119416															
				Spike			LCS				_		%Rec.		
Analyte				Added		Result	Qua	lifier	Unit		D	%Rec	Limits		
Chloride				200		196			mg/Kg			98	90 _ 110		
Lab Sample ID: 600-81631-39 MS Matrix: Solid									Clie	nt S	amp	le ID: V	GWU 040-0 Prep	3 (1023 Гуре: S	
Analysis Batch: 119416														-	
-	Sample	Sam	nple	Spike		MS	MS						%Rec.		
Analyte	Result	Qua	lifier	Added		Result	Qua	lifier	Unit		D	%Rec	Limits		
	23			103		111			mg/Kg		×	86	80 - 120		
Chloride	23														
Chloride Lab Sample ID: 600-81631-39 MSD	23								Clie	nt S	amp	le ID: V	GWU 040-0 Prep		
Chloride Lab Sample ID: 600-81631-39 MSD Matrix: Solid	23								Clie	nt S	amp	le ID: V(3 (1023 Гуре: S	
Chloride Lab Sample ID: 600-81631-39 MSD	Sample	Sam	iple	Spike		MSD	MSD)	Clie	nt S	amp	le ID: VO			
Chloride Lab Sample ID: 600-81631-39 MSD Matrix: Solid			-	Spike Added		MSD Result			Clier Unit	nt S	amp D	le ID: VO %Rec	Prep ⁻		Soluble

QC Sample Results

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

Method: 9056 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 600-81631-56 M	S									6 (1023 [,]	
Matrix: Solid									Prep	Type: S	oluble
Analysis Batch: 119416	<u> </u>	<u> </u>	.						~ -		
Ameluda	Sample	•	Spike		MS	11		% Dee	%Rec.		
Analyte Chloride	10	Qualifier	Added	Result 96.9	Qualifier	- Unit mg/Kg	— D	%Rec 84	Limits 80 - 120		
	10		104	30.3		ilig/itg		04	00 - 120		
Lab Sample ID: 600-81631-56 M	SD					Client	Samp	le ID: V	GWU 040-0	6 (1023 [,]	13) 30'
Matrix: Solid										Type: S	
Analysis Batch: 119416											
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	10		104	97.7		mg/Kg	<u></u>	84	80 - 120	1	20
Lab Sample ID: 600-81631-66 M	s					Client	Samn	le ID: V	GWU 040-0	7 (1023)	(3) 10'
Matrix: Solid	•					onom	Camp			Type: S	
Analysis Batch: 119416										. , por o	
·	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride	33		104	115		mg/Kg	<u></u>	80	80 - 120		
Lab Sample ID: 600-81631-66 M	e D					Client	Same		GWU 040-0	7 (4022)	12) 10'
Matrix: Solid	30					Client	Samp	ne id. v			
Analysis Batch: 119416									Flep	Type: S	Juble
									%Rec.		RPD
· · · · · · · · · · · · · · · · · · ·	Sample	Sample	Spike	MSD	MSD						
-	Sample Result	•	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec		RPD	Limit
Analyte Chloride	Result 33	Sample Qualifier	Spike Added 104		MSD Qualifier	Unit mg/Kg	— D	%Rec 81	Limits 80 - 120	RPD 1	Limit 20
Analyte	Result 33	Qualifier	Added	Result				81	Limits 80 - 120 Sample ID:	1	20 Blank
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606	Result 33	Qualifier	Added	Result 116	Qualifier	mg/Kg	— —	81 Client S	Limits 80 - 120 Sample ID: Prep	1 Method Type: So	20 Blank oluble
Analyte Chloride Lab Sample ID: MB 600-119474/ Matrix: Solid Analysis Batch: 119606 Analyte	Result 33	Qualifier MB MB esult Qualifier	Added	Result 116	Qualifier MDL Unit	mg/Kg	— —	81	Limits 80 - 120 Sample ID: Prep Analyz	1 Method Type: So	20 Blank
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606	Result 33	Qualifier	Added	Result 116	Qualifier	mg/Kg	— —	81 Client S	Limits 80 - 120 Sample ID: Prep	1 Method Type: So	20 Blank oluble Dil Fac
Analyte Chloride Lab Sample ID: MB 600-119474/ Matrix: Solid Analysis Batch: 119606 Analyte	Result 33 11-A 	Qualifier MB MB esult Qualifier	Added	Result 116	Qualifier MDL Unit	- <u>mg/Kg</u>		Client S	Limits 80 - 120 Sample ID: Prep Analyz 11/01/13 PID: Lab Co	Method Type: So and 23:57 -	20 Blank oluble Dil Fac 1 ample
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: LCS 600-119474 Matrix: Solid	Result 33 11-A 	Qualifier MB MB esult Qualifier	Added	Result 116	Qualifier MDL Unit	- <u>mg/Kg</u>		Client S	Limits 80 - 120 Sample ID: Prep Analyz 11/01/13 PID: Lab Co	Method Type: So red 23:57	20 Blank oluble Dil Fac 1 ample
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: LCS 600-119474	Result 33 11-A 	Qualifier MB MB esult Qualifier	Added 104	Result 116 RL 4.0	Qualifier MDL Unit mg/K	- <u>mg/Kg</u>		Client S	Limits 80 - 120 Sample ID: Prep Analyz 11/01/13 e ID: Lab Co Prep	Method Type: So and 23:57 -	20 Blank oluble Dil Fac 1 ample
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: LCS 600-119474 Matrix: Solid Analysis Batch: 119606	Result 33 11-A 	Qualifier MB MB esult Qualifier	Added 104 Spike	Result 116 RL 4.0	Qualifier MDL Unit mg/K	- <u>mg/Kg</u> <u>p</u>	P Client	Client S	Limits 80 - 120 Sample ID: Prep Analyz 11/01/13 e ID: Lab Co Prep %Rec.	Method Type: So and 23:57 -	20 Blank oluble Dil Fac 1 ample
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: LCS 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte	Result 33 11-A 	Qualifier MB MB esult Qualifier	Added 104 Spike Added	Result 116 4.0 LCS Result	Qualifier MDL Unit mg/K	g Unit		81 Client S repared Sample	Limits 80 - 120 Sample ID: Prep Analyz 11/01/13 Prep %Rec. Limits	Method Type: So and 23:57 -	20 Blank oluble Dil Fac 1 ample
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: LCS 600-119474 Matrix: Solid Analysis Batch: 119606	Result 33 11-A 	Qualifier MB MB esult Qualifier	Added 104 Spike	Result 116 RL 4.0	Qualifier MDL Unit mg/K	- <u>mg/Kg</u> <u>p</u>	P Client	Client S	Limits 80 - 120 Sample ID: Prep Analyz 11/01/13 e ID: Lab Co Prep %Rec.	Method Type: So and 23:57 -	20 Blank oluble Dil Fac 1 ample
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: LCS 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride	Result 33 11-A 	Qualifier MB MB esult Qualifier	Added 104 Spike Added	Result 116 4.0 LCS Result	Qualifier MDL Unit mg/K	g D g D g D g D g D d g D d d d g D d d d d d d d d d d d d d d d d d d d	 Client	81 Client S repared Sample %Rec 98	Limits 80 - 120 Sample ID: Prep Analyz 11/01/13 Prep %Rec. Limits 90 - 110	1 Method Type: So ed 23:57 Sontrol So Type: So	20 Blank oluble Dil Fac 1 ample oluble
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: LCS 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: 600-81631-70 M	Result 33 11-A 	Qualifier MB MB esult Qualifier	Added 104 Spike Added	Result 116 4.0 LCS Result	Qualifier MDL Unit mg/K	g D g D g D g D g D d g D d d d g D d d d d d d d d d d d d d d d d d d d	 Client	81 Client S repared Sample %Rec 98	Limits 80 - 120 Sample ID: Prep Analyz 11/01/13 PID: Lab Co Prep %Rec. Limits 90 - 110 GWU 040-0	1 Method Type: S ed 23:57 Dontrol S Type: S Type: S 7 (1023	20 Blank oluble Dil Fac 1 ample oluble
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: LCS 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: 600-81631-70 M Matrix: Solid	Result 33 11-A 	Qualifier MB MB esult Qualifier	Added 104 Spike Added	Result 116 4.0 LCS Result	Qualifier MDL Unit mg/K	g D g D g D g D g D d g D d d d g D d d d d d d d d d d d d d d d d d d d	 Client	81 Client S repared Sample %Rec 98	Limits 80 - 120 Sample ID: Prep Analyz 11/01/13 PID: Lab Co Prep %Rec. Limits 90 - 110 GWU 040-0	1 Method Type: So ed 23:57 Sontrol So Type: So	20 Blank oluble Dil Fac 1 ample oluble
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: LCS 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: 600-81631-70 M	Result 33 11-A 	Qualifier	Added 104 Spike Added	Result 116 4.0 LCS Result 197	Qualifier MDL Unit mg/K	g D g D g D g D g D d g D d d d g D d d d d d d d d d d d d d d d d d d d	 Client	81 Client S repared Sample %Rec 98	Limits 80 - 120 Sample ID: Prep Analyz 11/01/13 PID: Lab Co Prep %Rec. Limits 90 - 110 GWU 040-0	1 Method Type: S ed 23:57 Dontrol S Type: S Type: S 7 (1023	20 Blank oluble Dil Fac 1 ample oluble
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: LCS 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: 600-81631-70 M Matrix: Solid	Result 33 11-A	Qualifier	Added 104 Spike Added 200	Result 116 4.0 LCS Result 197	Qualifier MDL Unit mg/K LCS Qualifier	g D g D g D g D g D d g D d d d g D d d d d d d d d d d d d d d d d d d d	 Client	81 Client S repared Sample %Rec 98	Limits 80 - 120 Sample ID: Prep Analyz 11/01/13 PID: Lab Co Prep %Rec. Limits 90 - 110 GWU 040-0 Prep	1 Method Type: S ed 23:57 Dontrol S Type: S Type: S 7 (1023	20 Blank oluble Dil Fac 1 ample oluble
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: LCS 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: 600-81631-70 M Matrix: Solid Analysis Batch: 119606	Result 33 11-A	Qualifier	Added 104 Spike Added 200 Spike	Result 116 4.0 LCS Result 197	Qualifier MDL Unit mg/K LCS Qualifier MS	g g Client	Client D Samp	Client S repared Sample	Limits 80 - 120 Sample ID: Prep Analyz 11/01/13 Prep %Rec. Limits 90 - 110 GWU 040-0 Prep %Rec.	1 Method Type: S ed 23:57 Dontrol S Type: S Type: S 7 (1023	20 Blank oluble Dil Fac 1 ample oluble
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: LCS 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: 600-81631-70 M Matrix: Solid Analysis Batch: 119606 Analyte Chloride	Result 33 11-A N/2-A S S Sample Result 9.3	Qualifier	Added 104 Spike Added 200 Spike Added	Result 116 RL 4.0 LCS Result 197 MS Result	Qualifier MDL Unit mg/K LCS Qualifier MS	g Unit mg/Kg Client Unit mg/Kg Unit	 Client Samp ⊼	81 Client S repared Sample %Rec 98 ole ID: V0 %Rec 85	Limits 80 - 120 Sample ID: Prep Analyz 11/01/13 Prep %Rec. Limits 90 - 110 GWU 040-0 Prep %Rec. Limits 80 - 120	1 Method Type: So 23:57 Sontrol So Type: So 7 (10237 Type: So	20 Blank oluble 1 ample oluble
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: LCS 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: 600-81631-70 M Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: 600-81631-70 M	Result 33 11-A N/2-A S S Sample Result 9.3	Qualifier	Added 104 Spike Added 200 Spike Added	Result 116 RL 4.0 LCS Result 197 MS Result	Qualifier MDL Unit mg/K LCS Qualifier MS	g Unit mg/Kg Client Unit mg/Kg Unit	 Client Samp ⊼	81 Client S repared Sample %Rec 98 ole ID: V0 %Rec 85	Limits 80 - 120 Sample ID: Prep Analyz 11/01/13 Prep %Rec. Limits 90 - 110 GWU 040-0 Prep %Rec. Limits 80 - 120 GWU 040-0	1 Method Type: So ed 23:57 	20 Blank oluble 1 ample oluble 13) 30' 13) 30'
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: LCS 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: 600-81631-70 M Matrix: Solid Analyte Chloride Lab Sample ID: 600-81631-70 M Matrix: Solid	Result 33 11-A N/2-A S S Sample Result 9.3	Qualifier	Added 104 Spike Added 200 Spike Added	Result 116 RL 4.0 LCS Result 197 MS Result	Qualifier MDL Unit mg/K LCS Qualifier MS	g Unit mg/Kg Client Unit mg/Kg Unit	 Client Samp ⊼	81 Client S repared Sample %Rec 98 ole ID: V0 %Rec 85	Limits 80 - 120 Sample ID: Prep Analyz 11/01/13 Prep %Rec. Limits 90 - 110 GWU 040-0 Prep %Rec. Limits 80 - 120 GWU 040-0	1 Method Type: So 23:57 Sontrol So Type: So 7 (10237 Type: So	20 Blank oluble 1 ample oluble 13) 30' 13) 30'
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: LCS 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: 600-81631-70 M Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: 600-81631-70 M	Result 33 11-A N/2-A S S Sample Result 9.3	Qualifier	Added 104 Spike Added 200 Spike Added	Result 116 RL 4.0 LCS Result 197 MS Result	Qualifier MDL Unit mg/K LCS Qualifier MS Qualifier	g Unit mg/Kg Client Unit mg/Kg Unit	 Client Samp ⊼	81 Client S repared Sample %Rec 98 ole ID: V0 %Rec 85	Limits 80 - 120 Sample ID: Prep Analyz 11/01/13 Prep %Rec. Limits 90 - 110 GWU 040-0 Prep %Rec. Limits 80 - 120 GWU 040-0	1 Method Type: So ed 23:57 	20 Blank oluble 1 ample oluble 13) 30' 13) 30'
Analyte Chloride Lab Sample ID: MB 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: LCS 600-119474 Matrix: Solid Analysis Batch: 119606 Analyte Chloride Lab Sample ID: 600-81631-70 M Matrix: Solid Analyte Chloride Lab Sample ID: 600-81631-70 M Matrix: Solid	Result 33 11-A N/2-A S S Sample Result 9.3 SD Sample	Qualifier	Added 104 104 Spike Added 200 Spike Added 103	Result 116 4.0 LCS Result 197 MS Result 96.9 MSD	Qualifier MDL Unit mg/K LCS Qualifier MS Qualifier	g Unit mg/Kg Client Unit mg/Kg Unit	 Client Samp ⊼	81 Client S repared Sample %Rec 98 ole ID: V0 %Rec 85	Limits 80 - 120 Sample ID: Prep Analyz 11/01/13 PID: Lab Co Prep %Rec. Limits 90 - 110 GWU 040-0 Prep %Rec. Limits 80 - 120 GWU 040-0 Prep	1 Method Type: So ed 23:57 	20 Blank oluble 1 ample oluble 13) 30' oluble

TestAmerica Houston

TestAmerica Job ID: 600-81631-1

Client: ARCADIS U.S., Inc.

QC Sample Results

TestAmerica Job ID: 600-81631-1

Lab Sample ID: 600-81631-101 MS Matrix: Solid									GWU 040-0 Prep	Type: So	
Analysis Batch: 119606										.,,	
	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride	900		209	998	4	mg/Kg	<u></u>	47	80 - 120		
Lab Sample ID: 600-81631-101 MS	п					Clien	t Samr	ne ID: V	GWU 040-0	9 (10231	13) 10
Matrix: Solid						onen	t Ourinp			Type: So	- C
Analysis Batch: 119606									Пер	Type. O	orubi
Analysis Baten. 110000	Sample	Sample	Spike	MSD	MSD				%Rec.		RPI
Analyte	-	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Lim
Chloride	900		209	1010	4	mg/Kg	<u></u>	51	80 - 120	1	2
ethod: Moisture - Percent M											
ethod: Moisture - Percent M	oisture										
ab Sample ID: 600-81631-16 DU						Clie	nt Sam	ple ID: \	VGWU 040-		
Matrix: Solid									Prep T	ype: To	tal/N/
Analysis Batch: 119025	0	0		БЦ	DU						
	-	Sample			DU		_				RP
Analyte		Qualifier		Result	Qualifier	Unit	D			RPD	Lim
Percent Moisture	8.9			10						11	2
Percent Solids	91			90		%				1	2
ab Sample ID: 600-81631-25 DU						Clien	t Samp	ole ID: V	GWU 040-0	<mark>)2 (1022</mark> 1	13) 18
Matrix: Solid									Prep T	ype: To	tal/N/
Analysis Batch: 119025											
	Sample	Sample		DU	DU						RP
Analyte		Qualifier			Qualifier	Unit	D			RPD	Lim
Percent Moisture	5.7			4.8		%				17	2
Percent Solids	94			95		%				0.9	2
_ab Sample ID: 600-81631-36 DU						Clie	nt Sam	ple ID: \	GWU 040-	-03 (1023	313) 2
Matrix: Solid									Prep T	ype: To	tal/N/
Analysis Batch: 119025											
	Sample	Sample		DU	DU						RP
Analyte	Result	Qualifier		Result	Qualifier	Unit	D			RPD	Lim
Percent Moisture	4.8			4.6		%				4	2
Percent Solids	95			95		%				0.2	2
Lab Sample ID: 600-81631-53 DU						Clien	t Samp	ole ID: V	GWU 040-0	1023 1	13) 1!
Matrix: Solid									Prep T	ype: To	tal/N
Analysis Batch: 119025	Sample	Sample		ווס	DU						RP
	-	Qualifier			Qualifier	Unit	D			RPD	Lim
analyto .	Nesult			8.8	Quaimer					0.5	2
	80			0.0		%				0.0	
Percent Moisture	8.9 91			01						0.05	2
Percent Moisture	8.9 91			91		70				0.05	2
Percent Moisture Percent Solids Lab Sample ID: 600-81631-63 DU				91			t Samp	ole ID: V	GWU 040-0)5 (1023 1	13) 3(
Percent Moisture Percent Solids Lab Sample ID: 600-81631-63 DU Matrix: Solid				91			t Samp	ole ID: V			13) 30
Percent Moisture Percent Solids Lab Sample ID: 600-81631-63 DU Matrix: Solid	91	Samole			DU		t Samp	ole ID: V)5 (1023 1	tal/N/
Analyte Percent Moisture Percent Solids Lab Sample ID: 600-81631-63 DU Matrix: Solid Analysis Batch: 119025 Analyte	91 Sample	Sample Qualifier		DU	DU Qualifier		t Samp	ole ID: V)5 (1023 1	13) 3(

TestAmerica Houston

a

%

%

4.9

95

Percent Moisture

Percent Solids

5.1

95

4

0.2

20

20

QC Sample Results

TestAmerica Job ID: 600-81631-1

Method: Moisture - Percent Moisture (Continued)

Lab Sample ID: 600-81631-87 DU Matrix: Solid Analysis Batch: 119025					Clien	it Sample ID:	VGWU 040-08 (10231 Prep Type: Tot	
	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Moisture	8.3		7.9		%		4	20
Percent Solids	92		92		%		0.4	20
Lab Sample ID: 600-81631-104 DU Matrix: Solid					Clien	t Sample ID:	VGWU 040-09 (10231 Prep Type: Tot	
Analysis Batch: 119025								
	Sample	Sample	DU	DU				RPD
Analyte	Result	Qualifier	Result	Qualifier	Unit	D	RPD	Limit
Percent Moisture	6.6		6.5		%		1	20
Percent Solids	93		93		%		0.08	20

5

QC Association Summary

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

General	Chemistry
Contonan	ononiouy

Analysis Batch: 119025

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
600-81631-15	VGWU 040-04 (102213) 2'	Total/NA	Solid	Moisture	
600-81631-16	VGWU 040-04 (102213) 5'	Total/NA	Solid	Moisture	
600-81631-16 DU	VGWU 040-04 (102213) 5'	Total/NA	Solid	Moisture	
600-81631-17	VGWU 040-04 (102213) 10'	Total/NA	Solid	Moisture	
600-81631-18	VGWU 040-04 (102213) 15'	Total/NA	Solid	Moisture	
600-81631-19	VGWU 040-04 (102213) 20'	Total/NA	Solid	Moisture	
600-81631-20	VGWU 040-04 (102213) 25'	Total/NA	Solid	Moisture	
600-81631-21	VGWU 040-04 (102213) 30'	Total/NA	Solid	Moisture	
600-81631-22	VGWU 040-02 (102213) 2'	Total/NA	Solid	Moisture	
600-81631-23	VGWU 040-02 (102213) 5'	Total/NA	Solid	Moisture	
600-81631-24	VGWU 040-02 (102213) 10'	Total/NA	Solid	Moisture	
600-81631-25	VGWU 040-02 (102213) 15'	Total/NA	Solid	Moisture	
600-81631-25 DU	VGWU 040-02 (102213) 15'	Total/NA	Solid	Moisture	
600-81631-26	VGWU 040-02 (102213) 20'	Total/NA	Solid	Moisture	
600-81631-27	VGWU 040-02 (102313) 25'	Total/NA	Solid	Moisture	
600-81631-28	VGWU 040-02 (102313) 30'	Total/NA	Solid	Moisture	
00-81631-29	VGWU 040-01 (102313) 2'	Total/NA	Solid	Moisture	
00-81631-30	VGWU 040-01 (102313) 5'	Total/NA	Solid	Moisture	
600-81631-31	VGWU 040-01 (102313) 10'	Total/NA	Solid	Moisture	
00-81631-32	VGWU 040-01 (102313) 15'	Total/NA	Solid	Moisture	
600-81631-33	VGWU 040-01 (102313) 20'	Total/NA	Solid	Moisture	
00-81631-34	VGWU 040-01 (102313) 25'	Total/NA	Solid	Moisture	
00-81631-35	VGWU 040-01 (102313) 30'	Total/NA	Solid	Moisture	
00-81631-36	VGWU 040-03 (102313) 2'	Total/NA	Solid	Moisture	
00-81631-36 DU	VGWU 040-03 (102313) 2'	Total/NA	Solid	Moisture	
00-81631-37	VGWU 040-03 (102313) 5'	Total/NA	Solid	Moisture	
00-81631-38	VGWU 040-03 (102313) 10'	Total/NA	Solid	Moisture	
00-81631-39	VGWU 040-03 (102313) 15'	Total/NA	Solid	Moisture	
00-81631-40	VGWU 040-03 (102313) 20'	Total/NA	Solid	Moisture	
00-81631-41	VGWU 040-03 (102313) 25'	Total/NA	Solid	Moisture	
00-81631-42	VGWU 040-03 (102313) 30'	Total/NA	Solid	Moisture	
00-81631-50	VGWU 040-06 (102313) 2'	Total/NA	Solid	Moisture	
600-81631-51	VGWU 040-06 (102313) 5'	Total/NA	Solid	Moisture	
00-81631-52	VGWU 040-06 (102313) 10'	Total/NA	Solid	Moisture	
00-81631-53	VGWU 040-06 (102313) 15'	Total/NA	Solid	Moisture	
00-81631-53 DU	VGWU 040-06 (102313) 15'	Total/NA	Solid	Moisture	
600-81631-54	VGWU 040-06 (102313) 20'	Total/NA	Solid	Moisture	
00-81631-55	VGWU 040-06 (102313) 25'	Total/NA	Solid	Moisture	
00-81631-56	VGWU 040-06 (102313) 20 VGWU 040-06 (102313) 30'	Total/NA	Solid	Moisture	
600-81631-57	VGWU 040-05 (102313) 2'	Total/NA	Solid	Moisture	
600-81631-58	VGWU 040-05 (102313) 5'	Total/NA			
			Solid	Moisture	
00-81631-59	VGWU 040-05 (102313) 10'	Total/NA	Solid	Moisture	
00-81631-60	VGWU 040-05 (102313) 15'	Total/NA	Solid	Moisture	
00-81631-61	VGWU 040-05 (102313) 20'	Total/NA	Solid	Moisture	
00-81631-62	VGWU 040-05 (102313) 25'	Total/NA	Solid	Moisture	
00-81631-63	VGWU 040-05 (102313) 30'	Total/NA	Solid	Moisture	
00-81631-63 DU	VGWU 040-05 (102313) 30'	Total/NA	Solid	Moisture	
00-81631-64	VGWU 040-07 (102313) 2'	Total/NA	Solid	Moisture	
00-81631-65	VGWU 040-07 (102313) 5'	Total/NA	Solid	Moisture	
600-81631-66	VGWU 040-07 (102313) 10'	Total/NA	Solid	Moisture	
600-81631-67	VGWU 040-07 (102313) 15'	Total/NA	Solid	Moisture	

QC Association Summary

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

General Chemistry (Continued)

Analysis Batch: 119025 (Continued)

ab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
00-81631-68	VGWU 040-07 (102313) 20'	Total/NA	Solid	Moisture	
00-81631-69	VGWU 040-07 (102313) 25'	Total/NA	Solid	Moisture	
00-81631-70	VGWU 040-07 (102313) 30'	Total/NA	Solid	Moisture	
00-81631-85	VGWU 040-08 (102313) 2'	Total/NA	Solid	Moisture	
00-81631-86	VGWU 040-08 (102313) 5'	Total/NA	Solid	Moisture	
00-81631-87	VGWU 040-08 (102313) 10'	Total/NA	Solid	Moisture	
00-81631-87 DU	VGWU 040-08 (102313) 10'	Total/NA	Solid	Moisture	
00-81631-88	VGWU 040-08 (102313) 15'	Total/NA	Solid	Moisture	
00-81631-89	VGWU 040-08 (102313) 20'	Total/NA	Solid	Moisture	
00-81631-90	VGWU 040-08 (102313) 25'	Total/NA	Solid	Moisture	
00-81631-91	VGWU 040-08 (102313) 30'	Total/NA	Solid	Moisture	
00-81631-99	VGWU 040-09 (102313) 2'	Total/NA	Solid	Moisture	
00-81631-100	VGWU 040-09 (102313) 5'	Total/NA	Solid	Moisture	
00-81631-101	VGWU 040-09 (102313) 10'	Total/NA	Solid	Moisture	
00-81631-102	VGWU 040-09 (102313) 15'	Total/NA	Solid	Moisture	
00-81631-103	VGWU 040-09 (102313) 20'	Total/NA	Solid	Moisture	
00-81631-104	VGWU 040-09 (102313) 25'	Total/NA	Solid	Moisture	
00-81631-104 DU	VGWU 040-09 (102313) 25'	Total/NA	Solid	Moisture	
00-81631-105	VGWU 040-09 (102313) 30'	Total/NA	Solid	Moisture	

Leach Batch: 119139

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
600-81631-15	VGWU 040-04 (102213) 2'	Soluble	Solid	DI Leach	
600-81631-15 MS	VGWU 040-04 (102213) 2'	Soluble	Solid	DI Leach	
600-81631-15 MSD	VGWU 040-04 (102213) 2'	Soluble	Solid	DI Leach	
600-81631-16	VGWU 040-04 (102213) 5'	Soluble	Solid	DI Leach	
600-81631-17	VGWU 040-04 (102213) 10'	Soluble	Solid	DI Leach	
600-81631-18	VGWU 040-04 (102213) 15'	Soluble	Solid	DI Leach	
600-81631-19	VGWU 040-04 (102213) 20'	Soluble	Solid	DI Leach	
600-81631-20	VGWU 040-04 (102213) 25'	Soluble	Solid	DI Leach	
600-81631-21	VGWU 040-04 (102213) 30'	Soluble	Solid	DI Leach	
600-81631-22	VGWU 040-02 (102213) 2'	Soluble	Solid	DI Leach	
600-81631-23	VGWU 040-02 (102213) 5'	Soluble	Solid	DI Leach	
600-81631-24	VGWU 040-02 (102213) 10'	Soluble	Solid	DI Leach	
600-81631-25	VGWU 040-02 (102213) 15'	Soluble	Solid	DI Leach	
600-81631-25 MS	VGWU 040-02 (102213) 15'	Soluble	Solid	DI Leach	
600-81631-25 MSD	VGWU 040-02 (102213) 15'	Soluble	Solid	DI Leach	
600-81631-26	VGWU 040-02 (102213) 20'	Soluble	Solid	DI Leach	
600-81631-27	VGWU 040-02 (102313) 25'	Soluble	Solid	DI Leach	
600-81631-28	VGWU 040-02 (102313) 30'	Soluble	Solid	DI Leach	
600-81631-29	VGWU 040-01 (102313) 2'	Soluble	Solid	DI Leach	
600-81631-30	VGWU 040-01 (102313) 5'	Soluble	Solid	DI Leach	
600-81631-31	VGWU 040-01 (102313) 10'	Soluble	Solid	DI Leach	
500-81631-32	VGWU 040-01 (102313) 15'	Soluble	Solid	DI Leach	
600-81631-33	VGWU 040-01 (102313) 20'	Soluble	Solid	DI Leach	
600-81631-34	VGWU 040-01 (102313) 25'	Soluble	Solid	DI Leach	
600-81631-35	VGWU 040-01 (102313) 30'	Soluble	Solid	DI Leach	
600-81631-35 MS	VGWU 040-01 (102313) 30'	Soluble	Solid	DI Leach	
600-81631-35 MSD	VGWU 040-01 (102313) 30'	Soluble	Solid	DI Leach	
600-81631-36	VGWU 040-03 (102313) 2'	Soluble	Solid	DI Leach	
600-81631-37	VGWU 040-03 (102313) 5'	Soluble	Solid	DI Leach	

TestAmerica Job ID: 600-81631-1

QC Association Summary

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

General Chemistry (Continued)

Leach Batch: 119139 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-81631-38	VGWU 040-03 (102313) 10'	Soluble	Solid	DI Leach	
LCS 600-119139/28-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCS 600-119139/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
MB 600-119139/1-A	Method Blank	Soluble	Solid	DI Leach	
MB 600-119139/27-A	Method Blank	Soluble	Solid	DI Leach	

Leach Batch: 119229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-81631-39	VGWU 040-03 (102313) 15'	Soluble	Solid	DI Leach	
600-81631-39 MS	VGWU 040-03 (102313) 15'	Soluble	Solid	DI Leach	
600-81631-39 MSD	VGWU 040-03 (102313) 15'	Soluble	Solid	DI Leach	
600-81631-40	VGWU 040-03 (102313) 20'	Soluble	Solid	DI Leach	
600-81631-41	VGWU 040-03 (102313) 25'	Soluble	Solid	DI Leach	
600-81631-42	VGWU 040-03 (102313) 30'	Soluble	Solid	DI Leach	
600-81631-50	VGWU 040-06 (102313) 2'	Soluble	Solid	DI Leach	
600-81631-51	VGWU 040-06 (102313) 5'	Soluble	Solid	DI Leach	
600-81631-52	VGWU 040-06 (102313) 10'	Soluble	Solid	DI Leach	
600-81631-53	VGWU 040-06 (102313) 15'	Soluble	Solid	DI Leach	
600-81631-54	VGWU 040-06 (102313) 20'	Soluble	Solid	DI Leach	
600-81631-55	VGWU 040-06 (102313) 25'	Soluble	Solid	DI Leach	
600-81631-56	VGWU 040-06 (102313) 30'	Soluble	Solid	DI Leach	
600-81631-56 MS	VGWU 040-06 (102313) 30'	Soluble	Solid	DI Leach	
600-81631-56 MSD	VGWU 040-06 (102313) 30'	Soluble	Solid	DI Leach	
600-81631-57	VGWU 040-05 (102313) 2'	Soluble	Solid	DI Leach	
600-81631-58	VGWU 040-05 (102313) 5'	Soluble	Solid	DI Leach	
600-81631-59	VGWU 040-05 (102313) 10'	Soluble	Solid	DI Leach	
600-81631-60	VGWU 040-05 (102313) 15'	Soluble	Solid	DI Leach	
600-81631-61	VGWU 040-05 (102313) 20'	Soluble	Solid	DI Leach	
600-81631-62	VGWU 040-05 (102313) 25'	Soluble	Solid	DI Leach	
600-81631-63	VGWU 040-05 (102313) 30'	Soluble	Solid	DI Leach	
600-81631-64	VGWU 040-07 (102313) 2'	Soluble	Solid	DI Leach	
600-81631-65	VGWU 040-07 (102313) 5'	Soluble	Solid	DI Leach	
600-81631-66	VGWU 040-07 (102313) 10'	Soluble	Solid	DI Leach	
600-81631-66 MS	VGWU 040-07 (102313) 10'	Soluble	Solid	DI Leach	
600-81631-66 MSD	VGWU 040-07 (102313) 10'	Soluble	Solid	DI Leach	
600-81631-67	VGWU 040-07 (102313) 15'	Soluble	Solid	DI Leach	
600-81631-68	VGWU 040-07 (102313) 20'	Soluble	Solid	DI Leach	
600-81631-69	VGWU 040-07 (102313) 25'	Soluble	Solid	DI Leach	
LCS 600-119229/28-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCS 600-119229/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
MB 600-119229/1-A	Method Blank	Soluble	Solid	DI Leach	
MB 600-119229/27-A	Method Blank	Soluble	Solid	DI Leach	

Analysis Batch: 119258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-81631-15	VGWU 040-04 (102213) 2'	Soluble	Solid	9056	119139
600-81631-15 MS	VGWU 040-04 (102213) 2'	Soluble	Solid	9056	119139
600-81631-15 MSD	VGWU 040-04 (102213) 2'	Soluble	Solid	9056	119139
600-81631-16	VGWU 040-04 (102213) 5'	Soluble	Solid	9056	119139
600-81631-17	VGWU 040-04 (102213) 10'	Soluble	Solid	9056	119139
600-81631-18	VGWU 040-04 (102213) 15'	Soluble	Solid	9056	119139

TestAmerica Houston

TestAmerica Job ID: 600-81631-1

General Chemistry (Continued) Analysis Batch: 119258 (Continued)

QC Association Summary

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM Page 72 of 210 5

Prep Batch

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

119139

9

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method
600-81631-19	VGWU 040-04 (102213) 20'	Soluble	Solid	9056
600-81631-20	VGWU 040-04 (102213) 25'	Soluble	Solid	9056
600-81631-21	VGWU 040-04 (102213) 30'	Soluble	Solid	9056
600-81631-22	VGWU 040-02 (102213) 2'	Soluble	Solid	9056
600-81631-23	VGWU 040-02 (102213) 5'	Soluble	Solid	9056
600-81631-24	VGWU 040-02 (102213) 10'	Soluble	Solid	9056
600-81631-25	VGWU 040-02 (102213) 15'	Soluble	Solid	9056
600-81631-25 MS	VGWU 040-02 (102213) 15'	Soluble	Solid	9056
600-81631-25 MSD	VGWU 040-02 (102213) 15'	Soluble	Solid	9056
600-81631-26	VGWU 040-02 (102213) 20'	Soluble	Solid	9056
600-81631-27	VGWU 040-02 (102313) 25'	Soluble	Solid	9056
600-81631-28	VGWU 040-02 (102313) 30'	Soluble	Solid	9056
600-81631-29	VGWU 040-01 (102313) 2'	Soluble	Solid	9056
600-81631-30	VGWU 040-01 (102313) 5'	Soluble	Solid	9056
600-81631-31	VGWU 040-01 (102313) 10'	Soluble	Solid	9056
600-81631-32	VGWU 040-01 (102313) 15'	Soluble	Solid	9056
600-81631-33	VGWU 040-01 (102313) 20'	Soluble	Solid	9056
600-81631-34	VGWU 040-01 (102313) 25'	Soluble	Solid	9056
600-81631-35	VGWU 040-01 (102313) 30'	Soluble	Solid	9056
600-81631-35 MS	VGWU 040-01 (102313) 30'	Soluble	Solid	9056
600-81631-35 MSD	VGWU 040-01 (102313) 30'	Soluble	Solid	9056
600-81631-36	VGWU 040-03 (102313) 2'	Soluble	Solid	9056

VGWU 040-03 (102313) 5'

VGWU 040-03 (102313) 10'

Lab Control Sample

Lab Control Sample

Method Blank

Method Blank

Analysis Batch: 119416

600-81631-37

600-81631-38

LCS 600-119139/28-A

LCS 600-119139/2-A

MB 600-119139/1-A

MB 600-119139/27-A

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-81631-39	VGWU 040-03 (102313) 15'	Soluble	Solid	9056	119229
600-81631-39 MS	VGWU 040-03 (102313) 15'	Soluble	Solid	9056	119229
600-81631-39 MSD	VGWU 040-03 (102313) 15'	Soluble	Solid	9056	119229
600-81631-40	VGWU 040-03 (102313) 20'	Soluble	Solid	9056	119229
600-81631-41	VGWU 040-03 (102313) 25'	Soluble	Solid	9056	119229
600-81631-42	VGWU 040-03 (102313) 30'	Soluble	Solid	9056	119229
600-81631-50	VGWU 040-06 (102313) 2'	Soluble	Solid	9056	119229
600-81631-51	VGWU 040-06 (102313) 5'	Soluble	Solid	9056	119229
600-81631-52	VGWU 040-06 (102313) 10'	Soluble	Solid	9056	119229
600-81631-53	VGWU 040-06 (102313) 15'	Soluble	Solid	9056	119229
600-81631-54	VGWU 040-06 (102313) 20'	Soluble	Solid	9056	119229
600-81631-55	VGWU 040-06 (102313) 25'	Soluble	Solid	9056	119229
600-81631-56	VGWU 040-06 (102313) 30'	Soluble	Solid	9056	119229
600-81631-56 MS	VGWU 040-06 (102313) 30'	Soluble	Solid	9056	119229
600-81631-56 MSD	VGWU 040-06 (102313) 30'	Soluble	Solid	9056	119229
600-81631-57	VGWU 040-05 (102313) 2'	Soluble	Solid	9056	119229
600-81631-58	VGWU 040-05 (102313) 5'	Soluble	Solid	9056	119229
600-81631-59	VGWU 040-05 (102313) 10'	Soluble	Solid	9056	119229
600-81631-60	VGWU 040-05 (102313) 15'	Soluble	Solid	9056	119229
600-81631-61	VGWU 040-05 (102313) 20'	Soluble	Solid	9056	119229

Soluble

Soluble

Soluble

Soluble

Soluble

Soluble

Solid

Solid

Solid

Solid

Solid

Solid

9056

9056

9056

9056

9056

9056
QC Association Summary

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

General Chemistry (Continued)

Analysis Batch: 119416 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-81631-62	VGWU 040-05 (102313) 25'	Soluble	Solid	9056	119229
600-81631-63	VGWU 040-05 (102313) 30'	Soluble	Solid	9056	119229
600-81631-64	VGWU 040-07 (102313) 2'	Soluble	Solid	9056	119229
600-81631-65	VGWU 040-07 (102313) 5'	Soluble	Solid	9056	119229
600-81631-66	VGWU 040-07 (102313) 10'	Soluble	Solid	9056	119229
600-81631-66 MS	VGWU 040-07 (102313) 10'	Soluble	Solid	9056	119229
600-81631-66 MSD	VGWU 040-07 (102313) 10'	Soluble	Solid	9056	119229
600-81631-67	VGWU 040-07 (102313) 15'	Soluble	Solid	9056	119229
600-81631-68	VGWU 040-07 (102313) 20'	Soluble	Solid	9056	119229
600-81631-69	VGWU 040-07 (102313) 25'	Soluble	Solid	9056	119229
LCS 600-119229/28-A	Lab Control Sample	Soluble	Solid	9056	119229
LCS 600-119229/2-A	Lab Control Sample	Soluble	Solid	9056	119229
MB 600-119229/1-A	Method Blank	Soluble	Solid	9056	119229
MB 600-119229/27-A	Method Blank	Soluble	Solid	9056	119229

Leach Batch: 119474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-81631-70	VGWU 040-07 (102313) 30'	Soluble	Solid	DI Leach	
600-81631-70 MS	VGWU 040-07 (102313) 30'	Soluble	Solid	DI Leach	
600-81631-70 MSD	VGWU 040-07 (102313) 30'	Soluble	Solid	DI Leach	
600-81631-85	VGWU 040-08 (102313) 2'	Soluble	Solid	DI Leach	
600-81631-86	VGWU 040-08 (102313) 5'	Soluble	Solid	DI Leach	
600-81631-87	VGWU 040-08 (102313) 10'	Soluble	Solid	DI Leach	
600-81631-88	VGWU 040-08 (102313) 15'	Soluble	Solid	DI Leach	
600-81631-89	VGWU 040-08 (102313) 20'	Soluble	Solid	DI Leach	
600-81631-90	VGWU 040-08 (102313) 25'	Soluble	Solid	DI Leach	
600-81631-91	VGWU 040-08 (102313) 30'	Soluble	Solid	DI Leach	
600-81631-99	VGWU 040-09 (102313) 2'	Soluble	Solid	DI Leach	
600-81631-100	VGWU 040-09 (102313) 5'	Soluble	Solid	DI Leach	
600-81631-101	VGWU 040-09 (102313) 10'	Soluble	Solid	DI Leach	
600-81631-101 MS	VGWU 040-09 (102313) 10'	Soluble	Solid	DI Leach	
600-81631-101 MSD	VGWU 040-09 (102313) 10'	Soluble	Solid	DI Leach	
600-81631-102	VGWU 040-09 (102313) 15'	Soluble	Solid	DI Leach	
600-81631-103	VGWU 040-09 (102313) 20'	Soluble	Solid	DI Leach	
600-81631-104	VGWU 040-09 (102313) 25'	Soluble	Solid	DI Leach	
600-81631-105	VGWU 040-09 (102313) 30'	Soluble	Solid	DI Leach	
LCS 600-119474/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
MB 600-119474/1-A	Method Blank	Soluble	Solid	DI Leach	

Analysis Batch: 119606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-81631-70	VGWU 040-07 (102313) 30'	Soluble	Solid	9056	119474
600-81631-70 MS	VGWU 040-07 (102313) 30'	Soluble	Solid	9056	119474
600-81631-70 MSD	VGWU 040-07 (102313) 30'	Soluble	Solid	9056	119474
600-81631-85	VGWU 040-08 (102313) 2'	Soluble	Solid	9056	119474
600-81631-86	VGWU 040-08 (102313) 5'	Soluble	Solid	9056	119474
600-81631-87	VGWU 040-08 (102313) 10'	Soluble	Solid	9056	119474
600-81631-88	VGWU 040-08 (102313) 15'	Soluble	Solid	9056	119474
600-81631-89	VGWU 040-08 (102313) 20'	Soluble	Solid	9056	119474
600-81631-90	VGWU 040-08 (102313) 25'	Soluble	Solid	9056	119474
600-81631-91	VGWU 040-08 (102313) 30'	Soluble	Solid	9056	119474

TestAmerica Houston

TestAmerica Job ID: 600-81631-1

9

QC Association Summary

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

General Chemistry (Continued)

Analysis Batch: 119606 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-81631-99	VGWU 040-09 (102313) 2'	Soluble	Solid	9056	119474
600-81631-100	VGWU 040-09 (102313) 5'	Soluble	Solid	9056	119474
600-81631-101	VGWU 040-09 (102313) 10'	Soluble	Solid	9056	119474
600-81631-101 MS	VGWU 040-09 (102313) 10'	Soluble	Solid	9056	119474
600-81631-101 MSD	VGWU 040-09 (102313) 10'	Soluble	Solid	9056	119474
600-81631-102	VGWU 040-09 (102313) 15'	Soluble	Solid	9056	119474
600-81631-103	VGWU 040-09 (102313) 20'	Soluble	Solid	9056	119474
600-81631-104	VGWU 040-09 (102313) 25'	Soluble	Solid	9056	119474
600-81631-105	VGWU 040-09 (102313) 30'	Soluble	Solid	9056	119474
LCS 600-119474/2-A	Lab Control Sample	Soluble	Solid	9056	119474
MB 600-119474/1-A	Method Blank	Soluble	Solid	9056	119474

TestAmerica Job ID: 600-81631-1

TestAmerica Houston

Project/Site: HES Transfer Sites, Lea County NM

Client: ARCADIS U.S., Inc.

Lab Chronicle

Matrix: Solid

Matrix: Solid

TestAmerica Job ID: 600-81631-1

Lab Sample ID: 600-81631-15

Lab Sample ID: 600-81631-16

10

Lab Sample ID: 600-81631-17 Matrix: Solid

Lab Sample ID: 600-81631-18

Batch Dil Batch Initial Final Batch Prepared Prep Type Method Number or Analyzed Analyst Туре Run Factor Amount Amount Lab Total/NA Analysis Moisture 119025 10/28/13 08:43 AYS TAL HOU 1 Soluble Leach DI Leach 5 g 50 mL 119139 10/29/13 09:39 DAW TAL HOU Soluble 9056 5 mL 5 mL 119258 10/30/13 01:02 DAW TAL HOU Analysis 1

Client Sample ID: VGWU 040-04 (102213) 15' Date Collected: 10/22/13 15:45 Date Received: 10/25/13 09:57

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119258	10/30/13 01:20	DAW	TAL HOU

Client Sample ID: VGWU 040-04 (102213) 20' Date Collected: 10/22/13 15:48 Date Received: 10/25/13 09:57

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119258	10/30/13 01:38	DAW	TAL HOU

TestAmerica Houston

Client Sample ID: VGWU 040-04 (102213) 2'	
Date Collected: 10/22/13 15:36	
Date Received: 10/25/13 09:57	

Ba	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
Soluble	Analysis	9056		10	5 mL	5 mL	119258	10/29/13 23:49	DAW	TAL HOU

Client Sample ID: VGWU 040-04 (102213) 5' Date Collected: 10/22/13 15:38 Date Received: 10/25/13 09:57

Client Sample ID: VGWU 040-04 (102213) 10'

Date Collected: 10/22/13 15:42

Date Received: 10/25/13 09:57

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
Soluble	Analysis	9056		100	5 mL	5 mL	119258	10/30/13 00:44	DAW	TAL HOU

Lab Sample ID: 600-81631-19 Matrix: Solid

Matrix: Solid

Released to Imaging: 7/9/2021 2:17:22 PM

11/5/2013

Date Collected: 10/22/13 15:50 Date Received: 10/25/13 09:57

Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119258	10/30/13 01:57	DAW	TAL HOU

Client Sample ID: VGWU 040-04 (102213) 30' Date Collected: 10/22/13 15:55 Date Received: 10/25/13 09:57

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119258	10/30/13 02:51	DAW	TAL HOU

Client Sample ID: VGWU 040-02 (102213) 2' Date Collected: 10/22/13 16:06 Date Received: 10/25/13 09:57

Prep Type	Batch Type Analvsis	Batch Method Moisture	Run	Dil Factor	Initial Amount	Final Amount	Batch - Number - 119025	Prepared or Analyzed 10/28/13 08:43	Analyst	_ Lab TAL HOU
Soluble	Leach Analysis	DI Leach 9056		10	5 g 5 mL	50 mL 5 mL	119139 119258	10/29/13 09:39 10/30/13 03:09	DAW DAW	TAL HOU TAL HOU

Client Sample ID: VGWU 040-02 (102213) 5' Date Collected: 10/22/13 16:07 Date Received: 10/25/13 09:57

Prep Type Total/NA	Batch Type Analysis	Batch Method Moisture	Run	Dil Factor	Initial Amount	Final Amount	Batch Number 119025	Prepared or Analyzed 10/28/13 08:43	Analyst	– Lab TAL HOU
Soluble	Leach Analysis	DI Leach 9056		100	5 g 5 mL	50 mL 5 mL	119139 119258	10/29/13 09:39 10/30/13 03:28	DAW DAW	TAL HOU TAL HOU

Client Sample ID: VGWU 040-02 (102213) 10' Date Collected: 10/22/13 16:10 Date Received: 10/25/13 09:57

Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
Soluble	Analysis	9056		100	5 mL	5 mL	119258	10/30/13 03:46	DAW	TAL HOU

Lab Sample ID: 600-81631-22 Matrix: Solid

Lab Sample ID: 600-81631-20

Lab Sample ID: 600-81631-21

TestAmerica Job ID: 600-81631-1

Matrix: Solid

Matrix: Solid

Released to Imaging: 7/9/2021 2:17:22 PM

TestAmerica Houston

Matrix: Solid

Lab Sample ID: 600-81631-23 Matrix: Solid

Lab Sample ID: 600-81631-24

TestAmerica Job ID: 600-81631-1

Lab Sample ID: 600-81631-25

Lab Sample ID: 600-81631-26

10

Client Sample ID: VGWU 040-02 (102213) 15'

Date Collected: 10/22/13 16:14 Date Received: 10/25/13 09:57

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
Soluble	Analysis	9056		100	5 mL	5 mL	119258	10/30/13 04:04	DAW	TAL HOU

Client Sample ID: VGWU 040-02 (102213) 20' Date Collected: 10/22/13 16:18 Date Received: 10/25/13 09:57

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
Soluble	Analysis	9056		10	5 mL	5 mL	119258	10/30/13 04:59	DAW	TAL HOU

Client Sample ID: VGWU 040-02 (102313) 25' Date Collected: 10/23/13 09:57 Date Received: 10/25/13 09:57

Ргер Туре	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
Soluble	Analysis	9056		50	5 mL	5 mL	119258	10/30/13 05:17	DAW	TAL HOU

Client Sample ID: VGWU 040-02 (102313) 30' Date Collected: 10/23/13 10:20 Date Received: 10/25/13 09:57

Ргер Туре	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
Soluble	Analysis	9056		50	5 mL	5 mL	119258	10/30/13 05:35	DAW	TAL HOU

Client Sample ID: VGWU 040-01 (102313) 2' Date Collected: 10/23/13 10:29 Date Received: 10/25/13 09:57

Ргер Туре	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
Soluble	Analysis	9056		5	5 mL	5 mL	119258	10/30/13 06:30	DAW	TAL HOU

Lab Sample ID: 600-81631-27 Matrix: Solid

Lab Sample ID: 600-81631-28

Lab Sample ID: 600-81631-29

Matrix: Solid

Matrix: Solid

TestAmerica Houston

Matrix: Solid

Matrix: Solid

Project/Site: HES Transfer Sites, Lea County NM

Batch

Туре

Leach

Batch

Туре

Leach

Analysis

Analysis

Client Sample ID: VGWU 040-01 (102313) 15'

Analysis

Analysis

Client Sample ID: VGWU 040-01 (102313) 10'

Client Sample ID: VGWU 040-01 (102313) 5'

Batch

Method

Moisture

DI Leach

9056

Batch

Method

Moisture

DI Leach

9056

Client: ARCADIS U.S., Inc.

Date Collected: 10/23/13 10:31

Date Received: 10/25/13 09:57

Date Collected: 10/23/13 10:33

Date Received: 10/25/13 09:57

Date Collected: 10/23/13 10:36

Date Received: 10/25/13 09:57

Prep Type

Total/NA

Soluble

Soluble

Prep Type

Total/NA

Soluble

Soluble

Lab Chronicle

Initial

Amount

5 g

5 mL

Initial

Amount

5 g

5 mL

Final

Amount

50 mL

5 mL

Final

Amount

50 mL

5 mL

Batch

Number

119025

119139

119258

Batch

Number

119025

119139

119258

Prepared

or Analyzed

10/28/13 08:43

10/29/13 09:39

10/30/13 06:48

10/30/13 07:06

Dil

1

5

Dil

1

2

Factor

Factor

Run

Run

Lab

TAL HOU

TAL HOU

TAL HOU

TAL HOU

TestAmerica Job ID: 600-81631-1

Page 78 of 210 5

Lab Sample ID: 600-81631-30 Matrix: Solid

Lab Sample ID: 600-81631-32 Matrix: Solid

DAW

Prep Type Total/NA	Batch Type Analysis	Batch Method Moisture	Run	Dil Factor	Initial Amount	Final Amount	Batch - Number 119025	Prepared or Analyzed 10/28/13 08:43	Analyst AYS	- <mark>Lab</mark> TAL HOU
Soluble Soluble	Leach Analysis	DI Leach 9056		1	5 g 5 mL	50 mL 5 mL	119139 119258	10/29/13 09:39 10/30/13 07:24	DAW DAW	TAL HOU TAL HOU

Client Sample ID: VGWU 040-01 (102313) 20' Date Collected: 10/23/13 10:38 Date Received: 10/25/13 09:57

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119258	10/30/13 07:42	DAW	TAL HOU

Client Sample ID: VGWU 040-01 (102313) 25' Date Collected: 10/23/13 10:41 Date Received: 10/25/13 09:57

Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119258	10/30/13 08:01	DAW	TAL HOU

TestAmerica Houston

Lab Sample ID: 600-81631-31 Matrix: Solid Prepared or Analyzed Analyst Lab 10/28/13 08:43 AYS TAL HOU DAW TAL HOU 10/29/13 09:39

Released to Imaging: 7/9/2021 2:17:22 PM

Lab Sample ID: 600-81631-33

Lab Sample ID: 600-81631-34

Matrix: Solid

Matrix: Solid

Analyst

AYS

DAW

DAW

Client Sample ID: VGWU 040-01 (102313) 30'

Date Collected: 10/23/13 10:45 Date Received: 10/25/13 09:57

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119258	10/30/13 08:55	DAW	TAL HOU

Client Sample ID: VGWU 040-03 (102313) 2' Date Collected: 10/23/13 10:59 Date Received: 10/25/13 09:57

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
Soluble	Analysis	9056		50	5 mL	5 mL	119258	10/30/13 10:26	DAW	TAL HOU

Client Sample ID: VGWU 040-03 (102313) 5' Date Collected: 10/23/13 11:01 Date Received: 10/25/13 09:57

P	Ргер Туре	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
T	otal/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
s	Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
S	Soluble	Analysis	9056		2	5 mL	5 mL	119258	10/30/13 10:45	DAW	TAL HOU

Client Sample ID: VGWU 040-03 (102313) 10' Date Collected: 10/23/13 11:03 Date Received: 10/25/13 09:57

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119139	10/29/13 09:39	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119258	10/30/13 11:03	DAW	TAL HOU

Client Sample ID: VGWU 040-03 (102313) 15' Date Collected: 10/23/13 11:07 Date Received: 10/25/13 09:57

Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119229	10/30/13 10:09	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119416	10/31/13 21:21	DAW	TAL HOU

TestAmerica Houston

Page 79 of 210

Matrix: Solid

Matrix: Solid

TestAmerica Job ID: 600-81631-1

Lab Sample ID: 600-81631-35

Lab Sample ID: 600-81631-36

Matrix: Solid

Lab Sample ID: 600-81631-38 Matrix: Solid

Lab Sample ID: 600-81631-39

Lab Sample ID: 600-81631-37 Matrix: Solid

Matrix: Solid

Matrix: Solid

TestAmerica Job ID: 600-81631-1

Lab Sample ID: 600-81631-40

Lab Sample ID: 600-81631-41

10

Lab Sample ID: 600-81631-42 Matrix: Solid

Date Received: 10/25/13 09:57 Initial Batch Batch Dil Final Batch Prepared Prep Type Method Number or Analyzed Type Run Factor Amount Amount Analyst Lab Total/NA 10/28/13 08:43 AYS TAL HOU Analysis Moisture 1 119025 Soluble Leach DI Leach 5 g 50 mL 119229 10/30/13 10:09 DAW TAL HOU 10/31/13 22:52 9056 5 mL 5 mL DAW TAL HOU Soluble Analysis 1 119416

Client Sample ID: VGWU 040-06 (102313) 2' Date Collected: 10/23/13 12:13 Date Received: 10/25/13 09:57

Ргер Туре	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119229	10/30/13 10:09	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119416	10/31/13 23:10	DAW	TAL HOU

Client Sample ID: VGWU 040-06 (102313) 5' Date Collected: 10/23/13 12:15 Date Received: 10/25/13 09:57

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119229	10/30/13 10:09	DAW	TAL HOU
Soluble	Analysis	9056		2	5 mL	5 mL	119416	10/31/13 23:28	DAW	TAL HOU

TestAmerica Houston

Client Sample ID: VGWU 040-03 (102313) 20'	

Date Collected: 10/23/13 11:10 Date Received: 10/25/13 09:57

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119229	10/30/13 10:09	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119416	10/31/13 22:16	DAW	TAL HOU

Client Sample ID: VGWU 040-03 (102313) 25' Date Collected: 10/23/13 11:15 Date Received: 10/25/13 09:57

Client Sample ID: VGWU 040-03 (102313) 30'

Date Collected: 10/23/13 11:18

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type Total/NA	Analysis	Method Moisture	Run	Factor	Amount	Amount	Number 119025	or Analyzed 10/28/13 08:43	Analyst AYS	– Lab TAL HOU
Soluble Soluble	Leach Analysis	DI Leach 9056		1	5 g 5 mL	50 mL 5 mL	119229 119416	10/30/13 10:09 10/31/13 22:34	DAW DAW	TAL HOU TAL HOU

Lab Sample ID: 600-81631-50 Matrix: Solid

Lab Sample ID: 600-81631-51

Matrix: Solid

Date Collected: 10/23/13 12:18

Date Received: 10/25/13 09:57

Date Collected: 10/23/13 12:24

Date Received: 10/25/13 09:57

Date Collected: 10/23/13 12:26

Date Received: 10/25/13 09:57

Prep Type

Total/NA

Soluble

Soluble

Prep Type

Total/NA

Soluble

Soluble

Lab Chronicle

Initial

Amount

5 g

5 mL

Initial

Amount

5 g

5 mL

Final

Amount

50 mL

5 mL

Final

Amount

50 mL

5 mL

Batch

Number

119025

119229

119416

Batch

Number

119025

119229

119416

Dil

1

Dil

1

1

Factor

Factor

Run

Run

Batch

Туре

Leach

Batch

Туре

Leach

Analysis

Analysis

Client Sample ID: VGWU 040-06 (102313) 20'

Analysis

Analysis

Client Sample ID: VGWU 040-06 (102313) 15'

Client Sample ID: VGWU 040-06 (102313) 10'

Batch

Method

Moisture

DI Leach

9056

Batch

Method

Moisture

DI Leach

9056

Matrix: Solid

TAL HOU

TAL HOU

TAL HOU

Matrix: Solid

TAL HOU

TAL HOU

TAL HOU

Matrix: Solid

Matrix: Solid

Lab

Lab

TestAmerica Job ID: 600-81631-1

Lab Sample ID: 600-81631-52

Analyst

AYS

DAW

DAW

Lab Sample ID: 600-81631-53

Analyst

AYS

DAW

DAW

Prepared

or Analyzed

10/28/13 08:43

10/30/13 10:09

11/01/13 00:23

Prepared

or Analyzed

10/28/13 08:43

10/30/13 10.09

11/01/13 00:41

10

Lab Sample ID: 600-81631-54 Matrix: Solid

Batch Batch Dil Initial Final Batch Prepared Method Prep Type Type Run Factor Amount Amount Number or Analyzed Analyst Lab 10/28/13 08:43 TAL HOU Total/NA Analysis Moisture 1 119025 AYS Soluble DI Leach 5 g 50 mL 119229 10/30/13 10:09 DAW TAL HOU Leach DAW TAL HOU Soluble Analysis 9056 1 5 mL 5 mL 119416 11/01/13 00:59

Client Sample ID: VGWU 040-06 (102313) 25' Date Collected: 10/23/13 12:28 Date Received: 10/25/13 09:57

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119229	10/30/13 10:09	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119416	11/01/13 01:18	DAW	TAL HOU

Client Sample ID: VGWU 040-06 (102313) 30' Date Collected: 10/23/13 12:30 Date Received: 10/25/13 09:57

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119229	10/30/13 10:09	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119416	11/01/13 01:36	DAW	TAL HOU

TestAmerica Houston

Lab Sample ID: 600-81631-56

Lab Sample ID: 600-81631-55

Client: ARCADIS U.S., Inc.

Date Collected: 10/23/13 12:46

Date Received: 10/25/13 09:57

Date Collected: 10/23/13 12:47

Date Received: 10/25/13 09:57

Date Collected: 10/23/13 12:49 Date Received: 10/25/13 09:57

Prep Type

Total/NA

Soluble

Soluble

Prep Type

Total/NA

Soluble

Soluble

Prep Type

Total/NA

Soluble

Soluble

Lab Chronicle

Initial

Amount

5 g

5 mL

Final

Amount

50 mL

5 mL

Batch

Number

119025

Dil

1

1

Dil

1

1

Factor

Factor

Run

Run

Matrix: Solid

TAL HOU

Lab

TestAmerica Job ID: 600-81631-1

Lab Sample ID: 600-81631-57

Analyst

AYS

5

10

Lab Sample ID: 600-81631-59

Matrix: Solid

Dil Initial Final Batch Prepared Run Factor Amount Amount Number or Analyzed Analyst Lab 10/28/13 08:43 TAL HOU 1 119025 AYS 5 g 50 mL 119229 10/30/13 10:09 DAW TAL HOU DAW TAL HOU 1 5 mL 5 mL 119416 11/01/13 03:07

Client Sample ID: VGWU 040-05 (102313) 15' Date Collected: 10/23/13 12:53 Date Received: 10/25/13 09:57

	Batch	Batch	_	Dil	Initial	Final	Batch	Prepared		
Prep Type Total/NA	Analysis	Method Moisture	Run	Factor	Amount	Amount	Number 119025	or Analyzed 10/28/13 08:43	Analyst AYS	- Lab TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119229	10/30/13 10:09	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119416	11/01/13 04:02	DAW	TAL HOU

Client Sample ID: VGWU 040-05 (102313) 20' Date Collected: 10/23/13 12:55 Date Received: 10/25/13 09:57

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119229	10/30/13 10:09	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119416	11/01/13 04:20	DAW	TAL HOU

TestAmerica Houston

Released to Imaging: 7/9/2021 2:17:22 PM

Matrix: Solid

Lab Sample ID: 600-81631-60 Matrix: Solid

Lab Sample ID: 600-81631-61

11/01/13 02:49 DAW TAL HOU

119229 10/30/13 10:09 DAW TAL HOU 119416 11/01/13 02:31 DAW TAL HOU

Prepared

or Analyzed

10/28/13 08:43

			Lab Sample	e ID: 60	0-81631-58 Matrix: Solid
Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
		119025	10/28/13 08:43	AYS	TAL HOU
5 g	50 mL	119229	10/30/13 10:09	DAW	TAL HOU
5 mL	5 mL	119416	11/01/13 02:49	DAW	TAL HOU

Client Sample ID: VGWU 040-05 (102313) 2'

Batch

Method

Moisture

DI Leach

9056

Batch

Method

Moisture

DI Leach

9056

Batch

Method

Moisture

DI Leach

9056

Project/Site: HES Transfer Sites, Lea County NM

Batch

Туре

Leach

Batch

Туре

Leach

Batch

Type

Leach

Analysis

Analysis

Analysis

Analysis

Client Sample ID: VGWU 040-05 (102313) 10'

Analysis

Analysis

Client Sample ID: VGWU 040-05 (102313) 5'

Matrix: Solid

Matrix: Solid

TestAmerica Job ID: 600-81631-1

Lab Sample ID: 600-81631-62

Lab Sample ID: 600-81631-63

Client Sample ID: VGWU 040-05 (102313) 25'

Date Collected: 10/23/13 12:56 Date Received: 10/25/13 09:57

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119229	10/30/13 10:09	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119416	11/01/13 04:38	DAW	TAL HOU

Client Sample ID: VGWU 040-05 (102313) 30' Date Collected: 10/23/13 12:58 Date Received: 10/25/13 09:57

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119229	10/30/13 10:09	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119416	11/01/13 04:56	DAW	TAL HOU

Client Sample ID: VGWU 040-07 (102313) 2' Date Collected: 10/23/13 13:14 Date Received: 10/25/13 09:57

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture	Kun	1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119229	10/30/13 10:09	DAW	TAL HOU
Soluble	Analysis	9056		5	5 mL	5 mL	119416	11/01/13 05:14	DAW	TAL HOU

Client Sample ID: VGWU 040-07 (102313) 5' Date Collected: 10/23/13 13:16 Date Received: 10/25/13 09:57

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analvzed	Analvst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119229	10/30/13 10:09	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119416	11/01/13 05:51	DAW	TAL HOU

Client Sample ID: VGWU 040-07 (102313) 10' Date Collected: 10/23/13 13:17 Date Received: 10/25/13 09:57

[_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
	Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
	Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
	Soluble	Leach	DI Leach			5 g	50 mL	119229	10/30/13 10:09	DAW	TAL HOU
	Soluble	Analysis	9056		1	5 mL	5 mL	119416	11/01/13 06:45	DAW	TAL HOU

Lab Sample ID: 600-81631-64 Matrix: Solid

Lab Sample ID: 600-81631-65

Lab Sample ID: 600-81631-66

Matrix: Solid

Matrix: Solid

Date Collected: 10/23/13 13:18

Date Received: 10/25/13 09:57

Date Collected: 10/23/13 13:24

Date Received: 10/25/13 09:57

Prep Type

Total/NA

Soluble

Soluble

Lab Chronicle

Client Sample ID: VGWU 040-07 (102313) 15'

. . .

Matrix: Solid

TAL HOU

TAL HOU

TAL HOU

Matrix: Solid

Lab

TestAmerica Job ID: 600-81631-1

Lab Sample ID: 600-81631-67

Analyst

AYS

DAW

DAW

Lab Sample ID: 600-81631-68

10/28/13 08:43

10/30/13 10:09

11/01/13 08:16

10

Lab Sample ID: 600-81631-69 Matrix: Solid

Batch Batch Dil Initial Final Batch Prepared Prep Type Method Type Run Factor Amount Amount Number or Analyzed Analyst Lab Total/NA 10/28/13 08:43 TAL HOU Analysis Moisture 1 119025 AYS Soluble Leach DI Leach 5 g 50 mL 119229 10/30/13 10:09 DAW TAL HOU 11/01/13 08:53 9056 DAW TAL HOU Soluble Analysis 1 5 mL 5 mL 119416

Client Sample ID: VGWU 040-07 (102313) 30' Date Collected: 10/23/13 13:27 Date Received: 10/25/13 09:57

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119474	11/01/13 14:54	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119606	11/02/13 00:33	DAW	TAL HOU

Client Sample ID: VGWU 040-08 (102313) 2' Date Collected: 10/23/13 14:43 Date Received: 10/25/13 09:57

Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119474	11/01/13 14:54	DAW	TAL HOU
Soluble	Analysis	9056		5	5 mL	5 mL	119606	11/02/13 01:28	DAW	TAL HOU

TestAmerica Houston

----.... Prepared or Analyzed

Batch	Batch		Dil	Initial	Final	Batch	
Туре	Method	Run	Factor	Amount	Amount	Number	
Analysis	Moisture		1			119025	
Leach	DI Leach			5 g	50 mL	119229	
Analysis	9056		1	5 mL	5 mL	119416	

Client Sample ID: VGWU 040-07 (102313) 20' Date Collected: 10/23/13 13:20 Date Received: 10/25/13 09:57

Client Sample ID: VGWU 040-07 (102313) 25'

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture	Kun	1	Amount		119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119229	10/30/13 10:09	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119416	11/01/13 08:35	DAW	TAL HOU

Released to Imaging: 7/9/2021 2:17:22 PM

Matrix: Solid

Lab Sample ID: 600-81631-70 Matrix: Solid

Lab Sample ID: 600-81631-85

Matrix: Solid

Matrix: Solid

TestAmerica Job ID: 600-81631-1

Lab Sample ID: 600-81631-86

Lab Sample ID: 600-81631-87

10

Lab Sample ID: 600-81631-88 Matrix: Solid

Date Received: 10/25/13 09:57 Initial Batch Batch Dil Final Batch Prepared Prep Type Туре Method Number or Analyzed Run Factor Amount Amount Analyst Lab Total/NA 10/28/13 08:43 AYS TAL HOU Analysis Moisture 1 119025 Soluble Leach DI Leach 5 g 50 mL 119474 11/01/13 14:54 DAW TAL HOU 9056 5 mL 5 mL 119606 11/02/13 02:23 DAW TAL HOU Soluble Analysis 1

Client Sample ID: VGWU 040-08 (102313) 20' Date Collected: 10/23/13 14:54 Date Received: 10/25/13 09:57

Ргер Туре	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119474	11/01/13 14:54	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119606	11/02/13 02:41	DAW	TAL HOU

Client Sample ID: VGWU 040-08 (102313) 25' Date Collected: 10/23/13 14:57 Date Received: 10/25/13 09:57

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119474	11/01/13 14:54	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119606	11/02/13 03:35	DAW	TAL HOU

TestAmerica Houston

Client Sample ID: VGWU 040-08 (102313) 5'	
---	--

Date Collected: 10/23/13 14:44 Date Received: 10/25/13 09:57

Date Collected: 10/23/13 14:50

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOL
Soluble	Leach	DI Leach			5 g	50 mL	119474	11/01/13 14:54	DAW	TAL HOL
Soluble	Analysis	9056		2	5 mL	5 mL	119606	11/02/13 01:46	DAW	TAL HOU

Client Sample ID: VGWU 040-08 (102313) 10' Date Collected: 10/23/13 14:48 Date Received: 10/25/13 09:57

Client Sample ID: VGWU 040-08 (102313) 15'

Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119474	11/01/13 14:54	DAW	TAL HOU
Soluble	Analysis	9056		10	5 mL	5 mL	119606	11/02/13 02:04	DAW	TAL HOU

Lab Sample ID: 600-81631-89

Lab Sample ID: 600-81631-90

Matrix: Solid

Matrix: Solid

Matrix: Solid

Matrix: Solid

TestAmerica Job ID: 600-81631-1

Lab Sample ID: 600-81631-91

Lab Sample ID: 600-81631-99

Client Sample ID: VGWU 040-08 (102313) 30'

Date Collected: 10/23/13 14:58 Date Received: 10/25/13 09:57

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119474	11/01/13 14:54	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119606	11/02/13 03:54	DAW	TAL HOU

Client Sample ID: VGWU 040-09 (102313) 2' Date Collected: 10/23/13 15:47 Date Received: 10/25/13 09:57

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119474	11/01/13 14:54	DAW	TAL HOU
Soluble	Analysis	9056		10	5 mL	5 mL	119606	11/02/13 04:12	DAW	TAL HOU

Client Sample ID: VGWU 040-09 (102313) 5' Date Collected: 10/23/13 15:48 Date Received: 10/25/13 09:57

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119474	11/01/13 14:54	DAW	TAL HOU
Soluble	Analysis	9056		5	5 mL	5 mL	119606	11/02/13 04:30	DAW	TAL HOU

Client Sample ID: VGWU 040-09 (102313) 10' Date Collected: 10/23/13 15:50 Date Received: 10/25/13 09:57

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119474	11/01/13 14:54	DAW	TAL HOU
Soluble	Analysis	9056		2	5 mL	5 mL	119606	11/02/13 04:48	DAW	TAL HOU

Client Sample ID: VGWU 040-09 (102313) 15' Date Collected: 10/23/13 15:53 Date Received: 10/25/13 09:57

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119474	11/01/13 14:54	DAW	TAL HOU
Soluble	Analysis	9056		5	5 mL	5 mL	119606	11/02/13 05:43	DAW	TAL HOU

Lab Sample ID: 600-81631-100 Matrix: Solid

Lab Sample ID: 600-81631-101 Matrix: Solid

Lab Sample ID: 600-81631-102

Matrix: Solid

Matrix: Solid

Matrix: Solid

TestAmerica Job ID: 600-81631-1

Lab Sample ID: 600-81631-103

Lab Sample ID: 600-81631-104

10 1 2 3 4 5 6 7

10

Client Sample ID: VGWU 040-09 (102313) 20'

Date Collected: 10/23/13 15:56 Date Received: 10/25/13 09:57

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119474	11/01/13 14:54	DAW	TAL HOU
Soluble	Analysis	9056		2	5 mL	5 mL	119606	11/02/13 06:01	DAW	TAL HOU

Client Sample ID: VGWU 040-09 (102313) 25' Date Collected: 10/23/13 15:58 Date Received: 10/25/13 09:57

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119474	11/01/13 14:54	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119606	11/02/13 06:19	DAW	TAL HOU

Client Sample ID: VGWU 040-09 (102313) 30' Date Collected: 10/23/13 16:00 Date Received: 10/25/13 09:57

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			119025	10/28/13 08:43	AYS	TAL HOU
Soluble	Leach	DI Leach			5 g	50 mL	119474	11/01/13 14:54	DAW	TAL HOU
Soluble	Analysis	9056		1	5 mL	5 mL	119606	11/02/13 07:14	DAW	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

TestAmerica Houston

Released to Imaging: 7/9/2021 2:17:22 PM

Lab Sample ID: 600-81631-105 Matrix: Solid

Client: ARCADIS U.S., Inc. Project/Site: HES Transfer Sites, Lea County NM

Laboratory: TestAmerica Houston

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-13 *
Louisiana	NELAP	6	01967	06-30-14
Oklahoma	State Program	6	9503	08-31-13 *
Texas	NELAP	6	T104704223-10-6-TX	10-31-13 *
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	GULF	10-31-13 *

TestAmerica Job ID: 600-81631-1

* Expired certification is currently pending renewal and is considered valid.

TestAmerica Houston

Page 89 of 210 6310 Rothway Street Houston, TX 77040

	, .				
Phone	(713)	690 (-4444 Fa	ax (713)	690-5646

Client Information	Phone:	Lab PM Kudchadk	kar, Sachin G	Carrier Tracking No(s):	СОС № 600-23595-8666.1
Client Contact: Mr. Jonathan Olsen	Phone 1/617) 251 -8741	E-Mail sachin.ku	dchadkar@testamericainc.com		Page of 10
Company. ARCADIS U.S., Inc.	<u> </u>		Analysis Re	auested	Job #Bon 48616.0000
Address: 2929 Briarpark Drive Suite 300	Due Date Requested:				Preservation Codes:
City:	TAT Requested (days):	·			A - HCL M - Hexane B - NaOH N - None
HoustonState, Zip.	Handard				C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3
TX, 77042	PO #:				F - MeOH R - Na2S2SO3 G - Amchior S - H2SO4
(617) 251-8741 Email	Purchase Order Requested	(0N			H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone
jonathan.olsen@arcadis-us.com Project Name:	Project #:	es or	600-81631 Chain of C	ustody	y J - DI Water V - MCAA K - EDTA W - ph 4-5
HES Transfer Sites, Lea County NM	60004633 \$\$0W#:		8		L - EDA Z - other (specify)
VGWUL 0-40 Trunk Linz		Sam	loride		of a
	Sample	Matrix (W=water, S=solid, O=waste/oil, BT=Tifsue, =Aair)	Perform MIS/MISD - 9056_28D - Chloride 9056_28D - Chloride 8015B_GRO 8021B- BTEX		nmber
	Type Sample (C=comp,	S≔solid, O=waste/oil,	Perform M 80168_DRO 9056_28D - 1 80158_GRO 80218-BTE		Z
Sample Identification	Sample Date Time G=grab) Preserv				P Special Instructions/Note:
VGWU 040-10 (102213) 2'	10-22-13 1431 6	Solid	X		1 Hold
V6W4 040-10 (102213) 5'	10-22-13 1432 6	Solid	X		1 Hold
V6W4 040-10(102213) 10'	10-22-13 1435 6	Solid	X		1 Hold
V6~4 040-10(102213)15'	10-22-13 1437 6	Solid			1 Hold
VGWU 040-10/ 102213/20'	10-22-13 1438 6	Solid	X III		1 Hold
VGuu 040-10 (1022-13) 25'	10-22-13 1442 6	Solid			1 Hold
VGWU 040-10/102213/30'	10-22-13 1445 6	Solid			1 Hold
VGWU 040-12 (102213) 2'	10-22-13 1506 6	Solid			1 Hold
V64 U 040-12 (102213) 5'	10-22-13 1908 6	Solid	X		1 Hold
Ubwu 040-12 (102213) 10'	10-22-13 1512 6	Solid			Hold
VGWU 040-12 (102213)15'	10-22-13 1514 6	Solid			1 Hold
Possible Hazard Identification	Poison B Unknown Radiologica	1	Cample Disposal (A fee may be a Return To Client	· · · · ·	tained longer than 1 month) Archive For Months
Deliverable Requested: I, II, III, IV, Other (specify)	olson B Olikilown (Nadiologica		pecial Instructions/QC Requireme		
Empty Kit Relinquished by:	Date:	Time	e:	Method of Shipment	
Relinquished by	Date/Time: 10-24-13/1700	General ARCANISA	Received by:	Date/Time:	Company
Remarking by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by	Date/Time	Company	Received by:	Date/Time:/	0957 Company
Custody Seals Intact: Custody Seal No.:			Cooler Temperature(s) °C and Other R	emarks:	<u>v197</u>
Δ Yes Δ No				Ľ Į	

Chain of Custody Record

N

· · · · . .*

TestAmerica Houston 6310 Rothway Street

Page 90 of 210

Received by QCD: 10/28/2019 8:04:07 AM

Houston, TX 77040

Phone (713) 690-4444 Fax (713) 690-5646

Client Information	Sampler Nonay	Lab P Kudo		dkar	, Sachin	G		Carrier Tracking	g No(s):	COC No: 600-23595-8666	.1
Client Contact Mr. Jonathan Olsen	Phone: E-Main 19 1 - 3741 sach			udc	hadkar@	Dtesta	mericainc.com	1		Page: PageZof 10	
Company: ARCADIS U.S., Inc.			Γ	Analysis Requ						Job # Boo 4 26 1 Preservation Coo	16.0000
Address: 2929 Briarpark Drive Suite 300	Due Date Requested:		\mathbf{T}					TIT		Preservation Cod	les:
City:	TAT Requested (days):									A - HCL B - NaOH	M - Hexane N - None
Houston State, Zip:	Standard									C - Zn Acetate D - Nitric Acid	0 - AsNaO2 P - Na2O4S
TX, 77042 Phone:	PO #									E - NaHSO4 F - MeOH	Q - Na2SO3 R - Na2S2SO3
(617) 291-8741	Purchase Order Requested		<u>ê</u>							G - Amchlor H - Ascorbic Acid I - Ice	S - H2SO4 T - TSP Dodecahydrate U - Acetone
Email: jonathan.olsen@arcadis-us.com			s or l	(N					S.	J - DI Water K - EDTA	V - MCAA W - ph 4-5
Project Name. HES Transfer Sites, Lea County NM	Project #: 60004633		le (Ye	es or					Italners	L - EDA	Z - other (specify)
Site: VGWU 12-40 Trunk Line	SSOW#:		Samp	Perform MS/MSD (Yes	Chloride				of cor	Other:	
	Sample	Matrix	Filtered	M\$/M		GRO	EX.		Number		
	Sample (C=comp,	(W=water, S=solid, O=waste/oil,	d FIII	form	8016B_DRO 9056_28D - (SB_G	8021B- BTEX		al Nu		
Sample Identification	Sample Date Time G=grab) BT		Field					+	Total	Special In	structions/Note:
	Preservation 10-22-13 1516 6	Solid	Ĥ	Å	N N	N	N	┦╾┦╾┞╌		Hold	
VGWU 040-12(102213) 20'	10	Solid	$\left \right $		-		╶┼╶┼╴┼╴	╶┼╾┼╼┞╼			
V6WU 040-12 (102213) 25'	10-22-13 1518 6	Solid	┼╌╢		$-\dot{\chi}$					Hoid	<i>#</i>
1 VGWU 040 -12 (102213) 30'	10-22-13 1520 6	Solid	$\left \cdot \right $	-	f	4 - 1		┼╌┼╌┦╌		Hold	
VGWU 040-04 (102213) 2'	10-22-13 1536 6		┼┼	_			╌┼╴┽╺┾╴	┥╸┽╺┝╴		<u></u>	
V644 040 - 04 (102213) 5'	10-22-13 1538 6	Solid	+		K	++					
Ubull 040 - 04 (102213) 10'	10-27-13 1542 6	Solid		-	6	-					
Vbnu 040 - 04 (107213) 15'	10-22-13 1545 6	Solid	$\left \cdot \right $	-	K			<u> </u>			
V6nU 040-04 (10=213) 20'	10-22-13 1548 6	Solid	\mathbb{H}		\mathcal{X}			<u> </u>		 	
V644040-04 (102213) 25'	10-22-13 1550 6	Solid	\prod		K	1-1		+			
V6w4 040 - 04 (102213) 30'	10-22-13 1555 6	Solid	$\left \right $	_	<u> N</u>			┦┛┨╸┨	┝╌┼╾╎┦		
V6WU 040 - 02 (102213) 2'	10-22-13 1606 6	Solid	Ц		K	1					
	on B Unknown Radiological			San	⊐ _{Retun}			Disposal By La	amples are retaine ab Archi		Months
Deliverable Requested: I, II, III, IV, Other (specify)	<u>_</u>			Spe			s/QC Requirem				
Empty Kit Relinquished by:	Date:		Tin	ne:				Method of	Shipment		
Relinquished by:	Date/Time: 10-24-13/1700 4	mpany (calis - i	uş		Received	by:			Date/Time:		Company
Bettinguisdeer by:		mpany		-	Received	by.		~ ~ ~ ~ ~ ~ ~	Date/Time:		Company
Relinquished by	Date/Time: Co	mpany			Received	65	D	-	10/25/13	0451	Company
Custody Seals Intact: Custody Seal No.:					Cooler Ter	mperat	ne(s) °C and Other F	Remarks:	1-1-1-2		<u></u>

. . . .

Chain of Custody Record

3

Page 91 of 210

12

G

	Phone (713) 690-4444 Fax (713) 690-5646 Client Information	Sampler Ryan Nanny	Lab PN Kudch	n: nadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-23595-8666.1
	Client Contact: Mr. Jonathan Olsen	Phone (617) 251- 8741	E-Mail. sachir	n.kudchadkar@testamericainc.com	1	Page. Page 3 of / 0
I	Company ARCADIS U.S., Inc.	**************************************		Analysis Re	quested	Job # <i>Boo</i> 4 8616 - Occo Preservation Codes:
	Address: 2929 Briærpark Drive Suite 300	Due Date Requested:				
	City. Houston	TAT Requested (days):				A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2
	State, Zip: TX, 77042	Gtandard				D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3
	Phone (617) 251-8741	PO#:	{			F - MeOH R - Na2S2SO3 G - Amchior S - H2SO4
	Email:	Purchase Order Requested				H - Ascorbic Acid T - TSP Dodecahydrate 1 - Ice U - Acetone
	jonathan.olsen@arcadis-us.com Project Name:	Project #:		or No)		J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)
	HES Transfer Sites, Lea County NM	60004633 ssow#:		(Yes		o Other:
	VGWU 0-40 Trunk Line	·		MS/MSD am MS/MSD - Chloride RO		of c
		Sample	Matrix (w=water,	Field Filtered Sam Perform MS/MSD 80158_DRO 80158_28D - Chloride 80158_GRO 80218-BTEX		Number
				Field Fitte Perform 1 80158_DR 9056_28D 9056_28D 80158_GR 80218-BT		tai
	Sample Identification	Sample Date Time G=grab) BT Preservatio			╅╍╁╍┼╍┼╍┼	Special Instructions/Note:
3	VGWU 040-02 (102213)5'	10-22-13 1607 6	Solid	T X		
,	VGWU 040 - 07 (102213) 10'	10-22-13 1610 6	Solid	X		1
•	VGWL 040-02 (102213) 15'	10-22-13 1614 6	Solid	X		
•	VGWU 040-02 (102213) 20'	10-22-13 1618 G	Solid			1
ĩ	VGWU 040-02 (co2313) 25'	10-23-13 0957 6	Solid			1
4	VGwU 040 - 02 (102313) 30'	10-23-13 1020 6	Solid			1
	VGWU 040-01 (102313) 2'	10-23-13 1029 6	Solid			1
	V6WU 040-01 (1023/3) 5'	10-23-13 1031 6	Solid			1
	VGWU 040-01 (102313) 10'	10-23-13 1033 6	Solid	10		1
	VGwU 040-01 (102313) 15'	10-23-13 1036 6	Solid	λ		1
か	VGWU 040-01 (102313) 20'	10-23-13 1038 6	Solid			1
1	Possible Hazard Identification Possible Hazard Identification Power Skin Irritant			Sample Disposal (A fee may be		ained longer than 1 month) rchive For Months
`	Deliverable Requested: I, II, III, IV, Other (specify)	UTB UTKTOWN Naulological		Special Instructions/QC Requireme		Wollars
	Empty Kit Relinquished by:	Date:	F	Time:	Method of Shipment:	
	Relinquished by	Date/Time: 10-24-13/1700 A	ompany	Received by	Date/Time:	Company
	Rahtforthed by:	Date/Time:	ompany	Received by:	Date/Time:	Company
-	Relinquished by:	Date/Time: Co	ompany	Received	28/32-11	Z DS Company
	Custody Seals Intact: Custody Seal No.:	ــــــــــــــــــــــــــــــــــــــ		Cooler Temperature(s) °C and Other R	Remarks:	7017
	Δ Yes Δ No				· · ·	

.

9

6310 Rothway Street

Houston, TX 77040

12

r	Phone (713) 690-4444 Fax (713) 690-5646	Sampler:	Lab FN	Л:					Carrier Tra	acking No(s):		COC No:
	Client Information	Kyan Nanny	Kudc	hadkar	, Sach	in G						600-23595-8666.1
	Dient Contact Mr. Jonathan Olsen	Phone: (617) 251 - 8741	E-Mail: sachi		hadka	r@test	america	ainc.com				Page: Page Yof <i>10</i>
	Company: ARCADIS U.S., Inc.						Ana	alysis R	equested			BDD 48616.0000
	Address: 2929 Brīarpark Drive Suite 300	Due Date Requested:										Preservation Codes: A - HCL M - Hexane
	City: Houston	TAT Requested (days):										B - NaOH N - None C - Zn Acetate O - AsNaO2
	State, Zip: TX, 77042	Standard										D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3
	C617) 251 - 8741	PO# Purchase Order Requested		0								F - MeOH R - Na2S2SO3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate
	Email: jonathan.olsen@arcadis-us.com	WO#:		(Yes or No or No) -		1					g	J - Ice U - Acetone J - DI Water V - MCAA
	Project Name: HES Transfer Sites, Lea County NM	Project #: 60004633		e (Yes es or f							talner	K - EDTA W - ph 4-5 L - EDA Z - other (specify)
	Site VGWU 0-40 Tounta Linz	SSOW#:		Field Filtered Sample (Yes or Perform MS/MSD (Yes or No)	:	oride					of con	
		Sample Type	Matrix (w=water,	iltered n MS/h	ORO	9056_28D - Chioride 8015B_GRO	втех				Number	
		Sample (C=comp,		Field F Perforr	8015B_DRO	9056_28D - (8015B_GRO	8021B- BTEX				Total N	
	Sample Identification	Sample Date Time G=grab) Preservat		ш Т Х			N				Ť	Special Instructions/Note:
34	VGnu 040-01 (102313)25'	10-23-13 1041 6	Solid			D					1	
	VGWU 040-01(102313) 30'	10-23-13 1045 6	Solid			0					1	
	VGWU040-01(102313) 30' VGWU040-03(102313) 2'	10-23-13 1059 6	Solid		à	2					1	
	V6ml 040-03 (102313) 5'	10-23-13 1101 6	Solid			6]	
	V6WU 040-03 (102313) 10'	10-23-13 1103 6	Solid		Å	0					1	f
	V6wU040-03(102313) 15'	10-23-13 1107 6	Solid)	0					1	
	V6WU040-03(102313) 20'	10-23-13 1110 6	Solid		1	0					ł	l [*] ₂₃ -13 310 ⁻²³⁻¹ 3
	116WU040-03/102313)25'	10-23-17 1115 6	Solid			Ø					1	
	V6wy 040 - 03/102313) 30'	10-23-13 1118 6	Solid		X	0					1	
	V6WL040-11 (102313) 2'	10-23-13 1132 6	Solid			0					1	Hold
إلى ا	V Gw U O 40 - 11 (10 2313) 5'	10-23-13 1134 6	Solid			X					1	Hold
`	Possible Hazard Identification	on B Unknown Radiological		Sar	~)ispos a um To		e may be	PDisposal E	if samples are	retain	ed longer than 1 month) ive For Months
	Peliverable Requested: I, II, III, IV, Other (specify)	n BRaciological		Spe	_	_		Requirem	ents:	y Lab	AICH	ive For Months
	Empty Kit Relinquished by:	Date:		Time:					Meth	od of Shipment:		***************************************
	Relinquished by:	Date/Time: 10-24-13/1700	Company Alladis-4	4	Receive	ed by:				Date/Time:		Company
4	Relinquisticed by:		Company		Receive	ad by:				Date/Time:	,	Company
	Relinquished by:	Date/Time:	Company	_	Receive		S	and the second		Date/Time:	13	0957 Company
	Custody Seals Intact: Custody Seal No.:	<u>.</u>			Cooler	Tempera	atuce(s) °	C and Other	Remarks:	77		

.

Received by OCD: 10/28/2019 8:04:07 AM

.

TestAmerica Houston 6310 Rothway Street

Page 93 of 210

Chain	of	Custody	Record
-------	----	---------	--------

N

. . . .

Houston, TX 77040 Phone (713) 690-4444 Fax (713) 690-5646

~ Γ		Sampler, Ryan Nanny Phone. (617) 251-8741	Lab F Kud	⁵ M [.] chadka	ar, Sad	chin G			Carrier	Tracking	No(s)		-23595-8666	
1	Client Contact: Mr. Jonathan Olsen	Phone. (417) 751-8741	E-Ma		chadk	ar@test	tamerica	inc.com	1			Page	10 10 10	
t	Company: ARCADIS U.S., Inc.	Contra ven		Ī				lysis R				Job #	Booys	616.0000
ţ	Address:	Due Date Requested:		+-					equesi			Pres	servation Co	e <u>/6 , 00000</u> les:
. i.	2929 Brianpark Drive Suite 300 City:	TAT Requested (days):		41.								A-t	⊣CL NaOH	M - Hexane N - None
1	Houston	Granda rel										C-:	Zn Acetate Nitric Acid	O - AsNaO2 P - Na2O4S
	State, Zip: TX, 77042	7741166 10										E-1	NaHSO4 MeOH	Q - Na2SO3 R - Na2SO3
l.	Phone: (617) 251-8741	PO#: Purchase Order Requested										G-1	Amchlor Ascorbic Acid	S - H2SO4 T - TSP Dodecahydrate
	Email: ionathan.olsen@arcadis-us.com	WO #:		N N N								l - lo		U - Acetone V - MCAA
1	Project Name:	Project #:		er Ke									EDTA	W - ph 4-5 Z - other (specify)
l l	HES Transfer Sites, Lea County NM	60004633 ssow#:		(Yes								Stucy Othe		
-	VGWU 0-40 Trunk Linz	/ /		teved Sam MS/MSD		- Chloride						er of		
		Sample	Matrix (w=water,	iltere n MS	ß	8D - CI GRO	BTEX					Numbe		
		Type Sample (C≂comp,	S=solid, O=waste/oil,	Field Filt	8015B_DRO	9056_28D - 8016B_GRC	8021B-					Total N		
ŀ	Sample Identification		BT=Tissue, A=Air)		A	8 8 N N	- 08 N						Special Ir	structions/Note:
Ъ	NGWH AHD-11 (102313) 10'	10-23-13 1138 6	Solid	ĥŤ	Ť	X			-+-+			TI	Hold.	
y	1/6 mil 040-11 (109313) 15'	10-23-13 1140 6	Solid			χ							Hold.	
47	VGWU 040-11 (102313) 10' VGWU 040-11 (109313) 15' VGWU 040-11 (102313) 20'	10-23-13 1145 6	Solid	Π		D		11				11	Hold.	
48	V6nU 040-11 (102313) 25'	10-23-13 1150 6	Solid			$\overline{\chi}$						1	Hold	· · · · · · · · · · · · · · · · · · ·
ψq	V644040-11 (102313) 30'	10-23-13 1155 6	Solid	Π		X						1	Hold	
50	V6WU 040-06 (102313) 2'	10-23-13 1213 6	Solid	Π		<i>t</i>						1		
	16WU 040-06 (102313)5'	10-23-13 1215 6	Solid			Ø						1		
	V6mu 040-06 (102313) 10'	10-23-13 1218 6	Solid			b						1		
AN	VGWU 040-06 (102313) 15'	10-23-13 1224 6	Solid			Ø				_		1		
-0-1 2	116wa 040-06 (102313) 20'	10-23-13 1226 6	Solid			∞						1		
૾ૢૼઙૣૼ	VGWU 040-06(102313)25'	10-23-13 1228 6	Solid			x						1		
61	Possible Hazard Identification			Sa		•	•		e assess Disposi		mples are re		-	
8/20	Non-Hazard Flammable Skin Irritant Pois Deliverable Requested: I, II, III, IV, Other (specify)	on B Unknown Radiological		Sp	_	eturn To Instructio		Requirem		ai By Lai		Archive F	01	Months
10/28/2019 8:04:07 AM	Empty Kit Relinquished by:	Date:		Time:						Nethod of	Shipment:	·		
	Relinquished by	Date/Time: 10-24-13/1700	Company Arcudis	-45	Recei	ived by		·	_ _		Date/Time:			Company
0C	Relipquished by:	Date/Time:	Company		Recei	ived by					Date/Time ⁻			Company
l by	Relinquished by	Date/Time;	Company		Rece		d l	2-			Date/The	15 1	XIT	Company
Received by OCD:	Custody Seals Intact: Custody Seal No.:	<u> </u>			Coole	ar Tempera	aturets) °C	and Other	Remarks:	(T	<u> </u>
lece	Δ Yes Δ No				<u> </u>				·			<u> </u>		

. . .

. .

.

TootAm	orion	Houston
1620AU	enca	nousion

8310 Roth	away Street	
Houston,	TX 77040	

Chain of Custody Record

		1	•	~	2
-		·		•	

TestAmerica Houston C310 Rothway Street Houston, TX 77040 Phone (713) 690-4444 Fax (713) 690-5646		Chain of	Custody Re	cord		an a
Client Information	Sampler	Lab PM Kudch	adkar, Sachin G	Carrier Trackin		COC No 600-23595-8666,1
Client Contact: Dient Contact: Mr. Jonathan Olsen	Kyan Nonny Phone: (617) 251-8741	E-Mail	.kudchadkar@testamer	ricaine com		Page Page 6 f 10
Company:	1 6011 691-0191					
ARCADIS U.S., Inc.	Due Date Requested:			Inalysis Requested		BOOY8616.0000 Preservation Codes:
2929 Briarpark Drive Suite 300 City.	TAT Requested (days):					A - HCL M - Hexane B - NaOH N - None
Houston State, Zip:	- 41 1 /					C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S
TX, 77042	Handaid PO#					E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2SO3
<u>(617) 251 - 3741</u>	Purchase Order Requested					G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydra
Email: jonathan.olsen@arcadis-us.com	WO #:	N N	No)		<u>ب</u>	I - Ice U - Acetone J - Di Water V - MCAA K FDTA
Project Name: HES Transfer Sites, Lea County NM	Project #: 60004633		Yes or No)			K - EDTA W - ph 4-5 L - EDA Z - other (specify)
Site: UGull D-40 Trunte Lin=	SSOW#:	Samnia (Ves or No	SD (Y			Other:
	Sample					••••••••••••••••••••••••••••••••••••••
	Type	(W=water,	orm MS 3_DRO 28D - C 3_GRO 3- BTEX		Number	
Sample Identification	Sample (C=com Sample Date Time G=grab) BT=Tissue, A=Air)	Perform MS 8015B_DRO 9056_28D - C 8015B_GRO 8021B- BTEX		Total	Special Instructions/Note:
	Preser	vation Code:				
VGWU 040-06(102313) 30'	1023-13 1230 6	Solid				
V6WU 040-05 (102313) 2'	10-23-13 1246 6	Solid	1 D			
VGWU 040-05 (102313) 5'	10-23-13 1247 6	Solid) X			
VGul 040-05 (102313) 10'	10-23-13 1249 6	Solid	N N			
1644 040-05 (102313) 15'	10-23-13 1253 6	Solid	$ \chi $)	
VGWU 040-05 (102313) 20'	10-23-13 1255 6	Solid	Ø			
16WU 040-05 (102313) 25'	10-23-13 1256 6	Solid	$ \lambda $			
VGWU 040-05(102313)30'	1023-13 1258 6	Solid				
V6WU 040-07 (102313) 2'	10-23-13 1314 6	Solid	1 D		1	
V6WU040-07 (102313) 5'	10-23-13 1316 6	Solid	X			
V6WU 040-07(102318)10' Possible Hazard Identification & 10-13-13	10-23-13 1317 6	Solid				
Possible Hazard Identification		1 1		fee may be assessed if s	amples are retaine	
Non-Hazard Flammable Skin Irritant	Poison B Unknown Radiologic	al	Return To Clier		ab Archiv	ve For Months
Empty Kit Relinquished by:	Date:	1+	ime:	•	f Shipment:	
Relinquished by:	Date/Time:	Company	Received by:		Date/Time:	Company
Relizauisheetov	10-24-13/1700 Date/Time:	Aicolis - U Company	Received by:		Date/Time:	Company
			Pagaing	m	11	
Relinquished by:	Date/Time:	Company	Received		0 25 13	Off T Company

10	The second s
of 2.	TestAme <i>r</i> ica H
95 0	6310 Rothway Street
age	Houston, TX 77040 Phone (713) 690-4444

Houston, TX 77040

Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

N

Client Information	Phone Phone Phone	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s)	COC No: 600-23595-8666.1
Client Contact Mr. Jonathan Olsen	Phone (617) 251-8741	E-Mail: sachin.kudchadkar@testamericainc.c	com	Page: Page 7of 10
Company: ARCADIS U.S., Inc.			is Requested	Job# Boo 48616.0000 Preservation Codes:
Address: 2929 Briarpark Drive Suite 300	Due Date Requested:			Preservation Codes:
City:	TAT Requested (days):			A - HCL M - Hexane B - NaOH N - None
HoustonState, Zip:	Standard			C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S
TX, 77042 Phone.	PO#:			E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2SO3
(617) 251- 8741	Purchase Order Requested			G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone
jonathan.olsen@arcadis-us.com		No)		I - DI Water V - MCAA
Project Name: HES Transfer Sites, Lea County NM	Project #: 60004633	(Yes or No)		state K - EDTA W - ph 4-5 L - EDA Z - other (specify) Other:
Ste VGWU 0-40 Trunk Lina	SSOW#:	Sample (Yes or No)		o
	Sample	Matrix Water. S=28 D - Chloride 8001 58 B - DRO 8001 58 B - Chloride 8001 58 B - C		Number
	Type Sample (C=comp,	Miatrix (w=water, S=solid, C=waste/oil, BT=Tissue, A=Air)		Z T P Special Instructions/Note:
Sample Identification		BT=Tissue, A=Air) ii d' b b b b b b b b b b b b b b b b b b b		P Special Instructions/Note:
& VGWU 040-07 (102313) 15'	10-23-13 1318 6	Solid K		1
68 VGWU 040-07 (102313) 20'	10-23-13 1320 6	Solid D		
(9 UGWU 040-07 (102313) 25'	10-23-13 1324 6	Solid D		
2 116mu 040-07 (102313) 30'	10-23-13 1327 6	Solid D		1
V6WU040-13 (102313) 2'	10-23-13 1348 6	Solid jo		1 4010
VGull 040-13(102313) 5'	10-23-13 1349 6	Solid 🔊		1 Hold
VGWU 040-13(102313) 10'	10-23-13 1352 6	Solid X		1 Hold
11/11/04/0-13/2-712)16	10-23-13 1355 6	Solid 🕖		1 Hold
UGWL040-13(102313), 20'	10-23-13 1357 6	Solid D		1 Hold
V6WU040-13(102313)25'	10-23-13 1359 6	Solid 🕅 🕅		1 Hold.
V6WU040-17(102313) 20' V6WU040-13(102313) 20' V6WU040-13(102313) 25' V6WU040-13(102313) 30'	10-23-13 1400 6	Solid X		1 Hold
Possible Hazard Identification	Poison B Unknown Radiological		ay be assessed if samples are ret	tained longer than 1 month) Archive For Months
Deliverable Requested: I, II, III, IV, Other (specify)	UISULI DI UTIKIUWIT KAUIOlOgical	Special Instructions/QC Requ	Jirements:	
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:	
	Date/Time: 10-24-13/1700	Company Received by: Ailadig-US	Date/Time:	Company
Relinentshed by:	Date/Time:	Company Received by:	Date/Time:	Company
Relinquished by: Relinquished by: Custody Seals Intact: Δ Yes Δ No	Date/Time:	Company Received	Date The St	3 0957 Company
Custody Seals Intact: Custody Seal No.:		Cooler Torperative(s) C and	Other Remarks:	
			- v	

96 of 210 6310 Rothway Street

Houston, TX 77040

殆 ø

Received by OCD: 10/28/2019 204:07 ANE: 20 2 2 2

Chain of Custody Record

age	Houston, TX 77040 Phone (713) 690-4444 Fax (713) 690-5646						,								
2	Client Information	Sampler Ryan Nan-	2.7	Lab PM Kudcł		, Sac	hin G			Ca	rrier Tracking	no(s):		COC No: 600-23595-8666	.1
	Client Contact: Mr. Jonathan Olsen	Ryan Nan- Phone 1617) 251-3	3741	E-Mail sachir	n.kudo	hadka	ar@tes	tameri	cainc.co	m				Page: Page of 10	
	Company: ARCADIS U.S., Inc.			·····				Aı	nalysis	Reque	ested			Job # Boo 486 Preservation Cod	16.0000
	Address: 2929 Briarpark Drive Suite 300	Due Date Requested:		Ì										1000010000	
	City: Houston State, Zip: TX, 77042 Phone:	TAT Requested (days): Handard PO#	1											A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH	M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2SO3
	(617) 251-8741	Purchase Order Requ	lested		()									G - Amchlor H - Ascorbic Acid	S - H2SO4 T - TSP Dodecahydrate
	Email: jonathan.olsen@arcadis-us.com	WO #:			s or No)								s	I - Ice J - DI Water K - EDTA	U - Acetone V - MCAA W - ph 4-5
	Project Name: HES Transfer Sites, Lea County NM	Project #: 60004633			o (Ye es or								Itaine	L - EDA	Z - other (specify)
	Site. VGWU 0-40 Trunk lin=	SSOW#:			samplo (Yes or No SD (Yes or No)		ride						of cor	Other:	
	Sample Identification	Sample Date Tir	Sample Type (C=comp, me G=grab)		Fiers Filtsred Samplo (Yes or Perform MS/MSD (Yes or No)	8015B_DRO	9056_28D - Chloride 8015B_GRO	- 8021B- BTEX					Total Number	Special In	structions/Note:
				1 ··· /·	\mathbf{A}		N N	N							
76 -	VGWU 040-14(102313)2' VGWU 040-14(102313)5'	10-23-13 141		Solid			X						1	Hold	
29	VGWU 040 - 14 (102313) 5'	10-23-13 141		Solid			<u>X</u>						1	Hold	
	V644 040- 14 (102313)10'		20 6	Solid			<u>× </u>	_					1	Hold	-
1	V644040-14(102313)15'		22 6	Solid			X						1	Hold	
	16mil 040 - 14 (102313)20		24 6	Solid			X						1	Hold	
83	V644040-14(102313)25'	10-23-13 14	26 6	Solid			χ)	Hold	
8Y	116WU 040-14 (102313) 30'	10-23-13 14:	28 6	Solid		(κ						1	Hold	
	V6WU 040-08 (102313) 2'	10-23-13 14	43 6	Solid			\otimes						1		
ZAJ	V644 040-08 (102313) 5'	10-23-13 144	14 6	Solid			N						1		
4:0	V644 040-08 (102313) 10'	10-23-13 14	48 6	Solid			X						1		
	V6w0 040-08 (102313) 15'	10-23-13 14	50 6	Solid			Ø		-				1		
019	Possible Hazard Identification				San				fee may	be asse	e <mark>ssed if sa</mark> osal By La	mples are		ed longer than 1 i	
28/2	Constraint Flammable Skin Irritant Pois Deliverable Requested: I, II, III, IV, Other (specify)	on B Unknown	Radiologica		Spe		<i>tum To</i> nstructi			rements:	osal By La	D	Archi	ve For	Months
10/	Empty Kit Relinquished by:	Date:		[i	lime:						Method of	Shipment			
ä	Relinquished by	Date/Time.	7.00	Company Aicadis		Receiv	ed by:					Date/Time:			Company
0 OCD	Relinquisher by:	Date/Time:		Company	17	Receiv	red by:					Date/Time:			Company
ed by	Relinquished by:	Date/Time ⁻		Company		Receiv	D D D	T	T			Date/Tine	5/13	0957	Company
sceived	Custody Seals Intact: Custody Seal No.:	1		I		Cooler	Temper	ature(s)	°C and Ot	ther Remar	ks:	1.0/20		- 10- <u> </u>	L.,

of 210

Chain of Custody Record

6 9	6310 Rothway Street Houston, TX 77040 Phone (713) 690-4444 Fax (713) 690-5646	Cha	ain o	fCι	istody Reco	rd		
P	Client Information	Sampler: Kyan Nanny Phone:		hadkar	, Sachin G	Carrier Tracking	No(s)	COC № 600-23595-8666.1
4	Client Contact [.] Mr. Jonathan Olsen	(617) 251-8741	E-Mail sachi		hadkar@testamericain	c.com		Page 9 of 10
	Company. ARCADIS U.S., Inc.				Analy	sis Requested	<u> </u>	Boo 48616, Dece Preservation Codes:
	Address: 2929 Briarpark Drive Suite 300	Due Date Requested:						Preservation Codes:
and the second	City Houston State, Zip TX, 77042	TAT Requested (days): Handard						A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O45 E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2SO3
	Phone: [617] 251-8741	PO#: Purchase Order Requested		æ				G - Arnchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate
	Email. jonathan.olsen@arcadis-us.com	WO #:	ľ				ø	I - Ice U - Acetone J - DI Water V - MCAA
	Project Name: HES Transfer Sites, Lea County NM	Project #: 60004633		e (Yes or s or (N))			tainer	K - EDTA W - ph 4-5 L - EDA Z - other (specify)
	VGWU 0-40 Trunk Lin=	SSOW#:		Sample (Yes or <u>Nð</u> 1SD (Yes or (Nþ)	Chloride X		of cont	Other:
	Sample Identification	Type (w	=solid, /aste/oil, sue, A=Air)	Field Filtered Sam	8015B_DRC 9056_28D - 8015B_GRC 8021B-BTE		Total Number	Special Instructions/Note:
:Q	V6WU 040-08 (102313) 20'	10-23-13 1454 6 s	Solid	ŤÌ	X		1	
âl	VGWU 040-08 (102313) 25'		Solid		X		1	
03	V6WU 040-08 (102313) 25' V6WU 040-08 (102313) 30'	1	Solid		X		1	
61	VGWU 040-15 (102313) 2'		olid		X			Hold
	V6WU 040-15 (102313) 2' V6WU 040-15 (102313) 5'		Solid		k		1	Hold
Ī	VGWU 040-15 (102313)10'		olid		Ŕ			Hold
Ī	VGWU 040-15(102313)15'		olid		x			Hold
_	VGWU 040-15(102313)20'		olid		b		1	Hold
:07 AM	UGWU 040-15(102313) 25'		iolid		6		1	Hold
1:07	V641 040-15(102313) 30'		olid				1	Hold
Ś	VGWU 040-09(102313) 2'		iolid		14		, , ,	11-10
5	Possible Hazard Identification		4.	San	ple Disposal (A fee i	nay be assessed if sa	mples are retaine	ed longer than 1 month)
	Non-Hazard Flammable Skin Irritant Pois Deliverable Requested: I, II, III, IV, Other (specify)	on B 🔄 Unknown 🔄 Radiological	,	Sne	Return To Client	Disposal By La	bArchi	ive For Months
2	Empty Kit Relinquished by:	Date:		Time:		Method of	Shinment	
	Relinquished by:				Received by.		Date/Time:	Company
0C)	Relinquishee by:	<u>10-24-13 700</u> Али Date/Time: Сотра	any <i>a d</i> i 5 - 2 any		Received by:		Date/Time:	Company
(p)	Relinquished by:				Rectivedby	2		
ived		Date/Time: Compa	a. 1y		<u>Palos</u>		00/25/13	0957 Company
Received by OCD:	Custody Seals Intact: Custody Seal No.: Δ Yes Δ No				Cooler Tekspelatine(s) °C ar	d Other Remarks.	11	

6310 Rothway Street

Houston, TX 77040

Received by OCD: 10/28/2019 8:04:07 AM

Chain of Custody Record

3

۰ ۱۰ ۲۰

Houston, 1X 77040 Phone (713) 690-4444 Fax (713) 690-5646

Client Information	Sampler, Lab : Kud Phone; L617) 251-8741 Sacl					adkar, Sachin G						Carrier Tracking No(s):				COC No: 600-23595-8666.1		
Client Contact:	Phone:	~1-2		E-Ma	nil.										F	Page:		
Mr. Jonathan Olsen Company:	(617)2	51-01	/9/	sact	าเท หน	udcha	dkar@	testa	meric	ainc.com		1				Page)0 of (0	·	
ARCADIS U.S., Inc.									An	alysis F	leque	sted				Preservation Code	6.0000	
Address: 2929 Briarpark Drive Suite 300	Due Date Requested	d:				-											s: M - Hexane	
City: Houston	TAT Requested (day	/s):			11											B - NaOH	N - None O - AsNaO2	
State, Zip:	Gtanda	· d														D - Nitric Acid	P - Na2O4S	
TX, 77042		• 61														F - MeOH	Q - Na2SO3 R - Na2S2SO3	
Phone. (617) 251-8741	PO#: Purchase Order F	Requested			6												S - H2SO4 T - TSP Dodecahydrate	
Email: jonathan.olsen@arcadis-us.com	WO #:				N N	(QN											U - Acetone V - MCAA	
Project Name.	Project #:				_ o _	N N								acu			W - ph 4-5 Z - other (specify)	
HES Transfer Sites, Lea County NM	60004633 ssow#:	<u> </u>			ple (Yes									onta	Other:		
VGWU 0-40 Trunk Linz	330 W#.				Sam	USD (oride							1	5			
			Sample	Matrix	ered	WS/N	- GP	ò	втех					4	Total Number			
		<u> </u>	Туре	(W=water, S≖solid,	Filt	n n n	28D	B_GRO	8-81						Z			
Sample Identification	Sample Date	Sample Time	(C=comp, G=grab) вт	O≕waste/oil, [=Tissue, A=Air]	Field	Perform Mi 8015B DRO	9056_28D - Ch	8015B_	8021B-					40	Tota	Special Ins	tructions/Note:	
	\rightarrow	$>\!$	Preservatio		\bowtie	×л	N		N						X.			
VGUU 040-09(102313)5'	10-23-13	1548	6	Solid	Π		X							1	l			
VGWN 040-09(102313)10'		1550	6	Solid			X								1			
V6wU040-09(102313)15	10-23-13	1953	6	Solid			X				1				1			
V6WU040-09(102313)20	10-23-13	1556	6	Solid			Ø								1			
V6mU040-09 (102313) 25'	10-23-13	1558	6	Solid			\mathbf{x}))			
V6mU040-09(102313)30'	10-23-13	1600	6	Solid			\mathcal{N}								(
				Solid														
				Solid	++													
				Solid	\prod	X						+						
•				Solid	П									<u>†</u> -{	$\overline{+}$			
				Solid	П													
Possible Hazard Identification	'				5				•							d longer than 1 n	nonth)	
Non-Hazard Flammable Skin Irritant Poise	on B Unknov	wn ^L	adiological				Returi					osal By L	ab	Arc	chiv	re For	_ Months	
						Specia	al instr	uction	ns/QC	Requirer	nents:							
Empty Kit Relinquished by:	Ľ	Date:			Tim							Method o	of Shipment:					
	Date/Time:	1 1700		ompany Ficadis	-49	Re	ceived t	oy.					Date/Time	:			Company	
Refinquisser By:	Date/Time:		C	ompany		Re	ceived I	oy:	_				Date/Time	:			Company	
Relinquished by	Date/Time:		Ci	ompany		Re		B	Ì	2			Date/Time	st-	3	0957	Company	
Custody Seals Intact: Custody Seal No.:						Co	oler Ter	nperat	lije(s) °	°C and Othe	r Remar	ks:	1					

13

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Login Number: 81631 List Number: 1

Creator: Lopez, Sandro R

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.6/2.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

List Source: TestAmerica Houston

Job Number: 600-81631-1

Analytical Report 536657

for Arcadis - Houston

Project Manager: Jonathan Olsen

HES Transfer

30-SEP-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

Cover Page	1
Cover Letter	3
Sample ID Cross Reference	4
Case Narrative	5
Certificate of Analysis Summary	6
Explanation of Qualifiers (Flags)	9
LCS / LCSD Recoveries	10
MS / MSD Recoveries	11
Chain of Custody	13
Sample Receipt Conformance Report	15



30-SEP-16

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

Reference: XENCO Report No(s): **536657 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) 536657. 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. 536657 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,

Kunshoah

Kelsey Brooks 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 - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America





Sample Id

VGWUO40-11 (2')
VGWUO40-11 (4')
VGWUO40-10 (2')
VGWUO40-10 (4')
VGWUO40-10 (7')
VGWUO40-10 (70')
VGWUO40-14 (2')
VGWUO40-14 (4')
VGWUO40-15 (2')
VGWUO40-15 (4')
VGWUO40-13 (2')
VGWUO40-13 (4')
VGWUO40-13 (10')

Sample Cross Reference 536657

Arcadis - Houston, Houston, TX

HES Transfer

Matrix	Date Collected	Sample Depth	Lab Sample Id
S	09-12-16 10:05		536657-001
S	09-12-16 10:05		536657-002
S	09-12-16 10:05		536657-003
S	09-12-16 10:05		536657-004
S	09-12-16 10:05		536657-005
S	09-12-16 10:05		536657-006
S	09-12-16 10:05		536657-007
S	09-12-16 10:05		536657-008
S	09-12-16 10:05		536657-009
S	09-12-16 10:05		536657-010
S	09-12-16 10:05		536657-011
S	09-12-16 10:05		536657-012
S	09-12-16 10:05		536657-013





CASE NARRATIVE



Client Name: Arcadis - Houston Project Name: HES Transfer

Project ID: Work Order Number(s): 536657
 Report Date:
 30-SEP-16

 Date Received:
 09/13/2016

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3000202 Inorganic Anions by EPA 300/300.1

Lab Sample ID 536657-010 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 536657-001, -002, -003, -004, -007, -008, -009, -010, -011, -012.

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





Project Id:Contact:Jonathan OlsenProject Location:Lovington NM

Certificate of Analysis Summary 536657

Arcadis - Houston, Houston, TX Project Name: HES Transfer



Date Received in Lab:Tue Sep-13-16 10:05 amReport Date:30-SEP-16Project Manager:Kelsey Brooks

	Lab Id:	536657-0	01	536657-0	02	536657-0	03	536657-0	04	536657-0	005	536657-0	06
Analysis Requested	Field Id:	VGWUO40-	VGWUO40-11 (2')		VGWUO40-11 (4')		VGWUO40-10 (2')		VGWUO40-10 (4')		10 (7')	VGWUO40-10 (70')	
Analysis Kequestea	Depth:												
	Matrix:	SOIL	SOIL			SOIL	SOIL			SOIL		SOIL	
	Sampled:	Sep-12-16	Sep-12-16 10:05		Sep-12-16 10:05		0:05	Sep-12-16 10:05		Sep-12-16 10:05		Sep-12-16 10:05	
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-16-16	5:48	Sep-16-16 15:48		Sep-16-16 1	5:48	Sep-16-16 1	5:48	Sep-22-16	09:00	Sep-30-16 0	9:00
	Analyzed:	Sep-16-162	Sep-16-16 21:56		2:04	Sep-16-16 22:27		Sep-16-16 22:35		Sep-22-16	18:09	Sep-30-16 1	2:57
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		44.2	10.0	ND	10.0	1980	10.0	428	10.0	259	10.0	920	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.

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

Huns Boah

Kelsey Brooks Project Manager





Project Id:Contact:Jonathan OlsenProject Location:Lovington NM

Certificate of Analysis Summary 536657

Arcadis - Houston, Houston, TX Project Name: HES Transfer



Date Received in Lab:Tue Sep-13-16 10:05 amReport Date:30-SEP-16Project Manager:Kelsey Brooks

	Lab Id:	536657-0	07	536657-0	08	536657-0	09	536657-0	10	536657-0	011	536657-0	12
Analysis Requested	Field Id:	VGWUO40-	VGWUO40-14 (2')		VGWUO40-14 (4')		VGWUO40-15 (2')		VGWUO40-15 (4')		3 (2')	VGWUO40-13 (4')	
Analysis Kequestea	Depth:												
	Matrix:	SOIL	SOIL			SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-12-16 1	Sep-12-16 10:05		Sep-12-16 10:05		0:05	Sep-12-16 1	0:05	Sep-12-16 10:05		Sep-12-16 10:05	
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-16-16 1	5:48	Sep-16-16 15:48		Sep-16-16 1	5:48	Sep-16-16 1	5:48	Sep-16-16	15:48	Sep-16-16 1	5:48
	Analyzed:	Sep-16-16 2	Sep-16-16 22:43		22:51	Sep-16-16 22:58		Sep-16-16 2	3:06	Sep-16-162	23:30	Sep-16-16 2	23:37
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		87.0	10.0	101	10.0	ND	10.0	ND	10.0	753	10.0	714	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.

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

Huns Boah

Kelsey Brooks Project Manager





Project Id:Contact:Jonathan OlsenProject Location:Lovington NM

Certificate of Analysis Summary 536657

Arcadis - Houston, Houston, TX Project Name: HES Transfer



Date Received in Lab:Tue Sep-13-16 10:05 amReport Date:30-SEP-16Project Manager:Kelsey Brooks

Analysis Requested	Lab Id:	536657-013			
	Field Id:	VGWUO40-13 (10')			
	Depth:				
	Matrix:	SOIL			
	Sampled:	Sep-12-16 10:05			
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-22-16 09:00	Î		
	Analyzed:	Sep-22-16 18:16			
	Units/RL:	mg/kg RL			
Chloride		10.1 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.

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

Huns Boah

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 LimitSDL Sample Detection LimitLOD Limit of DetectionPQL Practical Quantitation LimitMQL Method Quantitation LimitLOQ 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

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

Dhone

Houston - Dallas - San Antonio - Atlanta - Midland/Odessa - Tampa/Lakeland - Phoenix - Latin America

	FIIOIIC	Tax
4147 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr Suite 102, Tempe AZ 85282	(602) 437-0330	




BS / BSD Recoveries

Project Name: HES Transfer

Work Order #: 536657							Pro	ject ID:					
Analyst: MNR	D	ate Prepar	ed: 09/16/201	6			Date A	nalyzed: (09/16/2016				
Lab Batch ID: 3000202 Sample: 713850-1-	BKS	Batcl	n #: 1		Matrix: Solid								
Units: mg/kg		BLAN	K/BLANK	SPIKE /]	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY			
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	275	110	250	274	110	0	90-110	20			
Analyst: MNR	D	Date Prepared: 09/22/2016 Date Analyzed: 09/22/2016											
Lab Batch ID: 3000568 Sample: 714063-1-	BKS	Batcl	n #: 1					Matrix: S	Solid				
Units: mg/kg		BLAN	K/BLANK	SPIKE /]	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY			
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		
Inorganic Anions by EPA 300/300.1 Analytes Chloride	Sample Result	Added	Spike Result	Spike %R	Added	Spike Duplicate	Dup. %R		Limits	Limits	Flag		
Analytes	Sample Result [A] <10.0	Added [B] 250	Spike Result [C]	Spike %R [D] 98	Added [E]	Spike Duplicate Result [F]	Dup. %R [G] 95	%	Limits %R	Limits %RPD	Flag		
Analytes Chloride	Sample Result [A] <10.0 D	Added [B] 250 ate Prepar	Spike Result [C] 244	Spike %R [D] 98	Added [E]	Spike Duplicate Result [F]	Dup. %R [G] 95 Date A	%	Limits %R 90-110 09/30/2016	Limits %RPD	Flag		
Analytes Chloride Analyst: MNR	Sample Result [A] <10.0 D	Added [B] 250 ate Prepar Batcl	Spike Result [C] 244 ed: 09/30/201	Spike % R [D] 98	Added [E] 250	Spike Duplicate Result [F] 238	Dup. %R [G] 95 Date A	% 2 nalyzed: (Matrix: S	Limits %R 90-110 09/30/2016 Solid	Limits %RPD 20	Flag		
Analytes Chloride Analyst: MNR Lab Batch ID: 3001120 Sample: 714399-1-	Sample Result [A] <10.0 D	Added [B] 250 ate Prepar Batcl	Spike Result [C] 244 ed: 09/30/201 h #: 1	Spike % R [D] 98	Added [E] 250	Spike Duplicate Result [F] 238	Dup. %R [G] 95 Date A	% 2 nalyzed: (Matrix: S	Limits %R 90-110 09/30/2016 Solid	Limits %RPD 20	Flag		

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 Page 109 of 210

.

Received by OCD: 10/28/2019 8:04:07 AM



Form 3 - MS / MSD Recoveries

Project Name: HES Transfer

.

Work Order # :	536657						Project II) :						
Lab Batch ID:	3000202	QC- Sample ID:	536602	-003 S	Ba	tch #:	1 Matrix	: Soil						
Date Analyzed:	09/16/2016	Date Prepared:	09/16/2	016	An	alyst: N	MNR							
Reporting Units:	mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
Inorga	nic Anions by EPA 300/300.1	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits %R	Control Limits	Flag		
	Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%0K	%RPD			
Chloride		2350	1250	3640	103	1250	3630	102	0	90-110	20			
Lab Batch ID:	3000202	QC- Sample ID:	536657	-010 S	Ba	tch #:	1 Matrix	: Soil						
Date Analyzed:	09/16/2016	Date Prepared:	09/16/2	016	An	MNR								
Reporting Units:	mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
Inorga	nic 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]	Kesun [F]	[G]	/0	70K	70KI D			
Chloride		<10.0	250	278	111	250	279	112	0	90-110	20	X		
Lab Batch ID:	3000568	QC- Sample ID:	536919	-001 S	Ba	tch #:	1 Matrix	: Soil						
Date Analyzed:	09/22/2016	Date Prepared:	09/22/2	016	An	alyst: N	MNR							
Reporting Units:	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY				
Inorga	nic 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]	[U]	70K [D]	[E]	Acsunt [F]	76K [G]	/0					
Chloride		41.8	250	299	103	250	292	100	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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Page 11 of 15

Received by OCD: 10/28/2019 8:04:07 AM



Form 3 - MS / MSD Recoveries

Project Name: HES Transfer

.

Work Order # :	536657						Project II):						
Lab Batch ID:	3000568	QC- Sample ID:	537017	-001 S	Ba	tch #:	1 Matrix	k: Soil						
Date Analyzed:	09/22/2016	Date Prepared:	09/22/2	016	An	alyst: N	MNR							
Reporting Units:	mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY				
Inorgai	nic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag		
	Analytes	[A]	[B]	[C]	⁷ 0K [D]	E]	Kesult [F]	56K [G]	70	70K	70KPD			
Chloride		1900	1250	3070	94	1250	3040	91	1	90-110	20			
Lab Batch ID:	3001120	QC- Sample ID:	536657	-006 S	Ba	tch #:	1 Matrix	k: Soil						
Date Analyzed:	09/30/2016	Date Prepared:	09/30/2	016	An	alyst: N	MNR							
Reporting Units:	mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
Inorgai	nic 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]		⁷ 0K [D]	E]	Kesun [F]	%K [G]	70	70K	70KPD			
Chloride		920	250	1160	96	250	1150	92	1	90-110	20			
Lab Batch ID:	3001120	QC- Sample ID:	537439	-001 S	Ba	tch #:	1 Matrix	k: Soil						
Date Analyzed:	09/30/2016	Date Prepared:	09/30/2	016	An	alyst: N	MNR							
Reporting Units:	mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY				
Inorgai	nic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag		
	Analytes	[A]	Added [B]	[C]	%R [D]	E]	Kesut [F]	%K [G]	70	70K	70KrD			
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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Page 12 of 15

					,							(
	D#:	СН			(JSTOD SIS REC				ORY	Page <u> </u>	of <u> </u>	Lab Work Order # 536657
Contact & Company Name:	Telephone:		•	Preservativ	-							Keys Preservation Key: Container information Key:
ä Arcadis; Jonathan Arcadis; Olsen 2929 Brianpark Di Suits 300 20 Huna Storn TX 7704	11395 Fax:	34874	t	Filtered (~								A. H.SO. 1. 40 ml Vial B. HCL 2. 1 LAmber
2929 Brianpark D	~			Container						+		C. HNO 3. 250 ml Plastic D. NaOH 4. 500 ml Plastic
Hunston TX 7704	E-mail Address:		'in a	BITOIT BROOM		AMET	ER ANA	LYSIS 8	METH	OD		E. None 5. Encore F. Other: 6. 2 oz. Glass 7. 4 oz. Glass
	2 Jonathan	Olsen Carco	1912.00	r /	· · /	/	. /	/	' /	' /		G. Other: 8. 8 oz. Glass H. Other: 9. Other:
Papier Namer Location (City, State): LOVINGHUN, NM (HES				_ /,	ω / ψ							10. Other:
Semeter's Printed Memo: MCLISA Phan	Sampler's Signature:	<u> </u>		/	इ /							SO - Soil SE - Sediment NL - NAPL/OIl W - Water SL - Sludge SW - Sample Wipe
Sample ID	Collection Date Time	Type (√) Comp Grab	Matrix	Ch Ionid 2		/				/	/	T - Tissue A - Air Other.
VGWU040-11(2')	9/12/14/1005	X		X								
VGWU040-11(4')	9/12/16/1007			\times								
VGWU040-10(Z')	9/12/14/1050			\mathbf{x}								
VGWU040-10(4')	9/12/14/1053	X		X								
1GWU040-10(7')	7/12/10/1109			X							HOLD	>
GWUD40-10(70')	1/12/11/1300			X							Hou	D
VGWU040-14 (2')	9/12/14/1345			\star								
VGWU040-14(4')	9/12/16/1350			X								
VGWU040-15(2')	9/12/16/1415	1 1 . 1		X								
VGWU040-15(4')	9/12/16/417			X								
NGWU ()40 -13(2')	9/12/11/1500			X								
VGWU040-13(4')	9/12/10/1503			X								
VGWU040-13(10)	9/12/16 1578	X		X							Hor	-D
Special Instructions/Comments: Standard TA	Ţ					i	🖾 Special Q/	4/QC Instruc	:tions(√):			
Laboratory Inforr	nation and Receipt Cooler Custody Se	al (🗸)	Printed	Relin	quished By		Printed Liamo	Received By	Г.: .	R Printed Name:	elinquished	Distantia
					han		<u>-Kr-</u>	Mix	Ē	LAV	UH	UNIT. DUS
□ Cooler packed with ice (✓)	□ Intact	Not Intact	Signati	ure: U	NC		Signilature:	ut	ν Γ	Signature:"	-	Simahaa
Specify Turnaround Requirements:	Sample Receipt	_0	Firm	ircadi	/ S		Film/Courier:	$\overline{\langle}$		Firm/Courier:		Firm:
Shipping Tracking #:	Condition/Cooler Te	42	Date/T	me:	1630		Date Tane:	7/16	0435	Date/Time:		Déte/Time:
0730825 CofC AR Form 08.27.2015	Dis	tribution:			y returns with	n results	- ; ; '(YELLOW -	Lab copy		PINK – Retained by Arcadis

Page 112 of 210

Final 1.003

•

9



Released to Imaging: 7/9/2021 2:17:22 PM

Page 14 of 15

Final 1.003

XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Arcadis - Houston	Acceptable Temperature Range: 0 - 6 degC
Date/ Time Received: 09/13/2016 10:05:00 AM	Air and Metal samples Acceptable Range: Ambient
Work Order #: 536657	Temperature Measuring device used : r8
Sample Rece	ipt Checklist Comments
#1 *Temperature of cooler(s)?	
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	Yes
#5 *Custody Seals intact on shipping container/ cooler?	Yes
#6 Custody Seals intact on sample bottles?	Yes
#7 *Custody Seals Signed and dated?	Yes
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	Νο
#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)?	N/A
#21 VOC samples have zero headspace (less than 1/4 inch	bubble)? N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? samples for the analysis of HEM or HEM-SGT which are veri analysts.	
#23 >10 for all samples preserved with NaAsO2+NaOH, Zn/	Ac+NaOH? N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Jessica Kramer

Date: 09/13/2016

Checklist reviewed by: Mms Avah Kelsey Brooks

Date: 09/13/2016

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

Cover Page	1
Cover Letter	3
Sample ID Cross Reference	4
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,

Kunshoah

Kelsey Brooks 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 - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America





Sample Id

VGWUO40-12 (2')
VGWUO40-12 (4')
VGWUO40-17 (2')
VGWUO40-17 (4')
VGWUO40-16 (2')
VGWUO40-16 (4')
VGWUO40-16 (50')
VGWUO40-19 (2')
VGWUO40-19 (4')
VGWUO40-18 (2')
VGWUO40-18 (4')
VGWUO40-18 (70')
VGWU85-06 (2')
VGWU85-06 (4')
VGWU85-06 (10')
VGWU85-06 (50')
VGWU85-11 (2')
VGWU85-11 (4')
VGWUSAT3-03 (4')
VGWUSAT3-03 (40')
VGWUSAT3-05 (4')
VGWUSAT3-05 (40')
VGWU118-15 (2')
VGWU118-15 (4')
VGWU118-18 (2')
VGWU118-18 (4')
VGWU118-18 (7')
VGWU118-18 (10')
VGWU85-06 (7')
VGWU85-11 (7')
VGWU85-11 (10')
VGWU85-11 (11')
VGWU118-15 (7')
VGWU118-15 (10')

Sample Cross Reference 536864

Arcadis - Houston, Houston, TX

HES Transfer

Matri	x Date Collected	Sample Depth	Lab Sample Id
S	09-13-16 08:50		536864-001
S	09-13-16 08:55		536864-002
S	09-13-16 10:30		536864-003
S	09-13-16 10:34		536864-004
S	09-13-16 09:58		536864-005
S	09-13-16 10:00		536864-006
S	09-13-16 10:48		536864-007
S	09-13-16 11:46		536864-008
S	09-13-16 11:50		536864-009
S	09-13-16 12:14		536864-010
S	09-13-16 12:16		536864-011
S	09-13-16 13:23		536864-012
S	09-13-16 14:41		536864-013
S	09-13-16 14:42		536864-014
S	09-13-16 14:44		536864-016
S	09-13-16 15:27		536864-017
S	09-13-16 16:00		536864-018
S	09-13-16 16:01		536864-019
S	09-14-16 09:49		536864-023
S	09-14-16 10:40		536864-024
S	09-14-16 11:11		536864-025
S	09-14-16 11:55		536864-026
S	09-14-16 14:00		536864-027
S	09-14-16 14:01		536864-028
S	09-14-16 14:30		536864-031
S	09-14-16 14:31		536864-032
S	09-14-16 14:32		536864-033
S	09-14-16 14:33		536864-034
S	09-13-16 14:43		Not Analyzed
S	09-13-16 16:02		Not Analyzed
S	09-13-16 16:05		Not Analyzed
S	09-13-16 16:21		Not Analyzed
S	09-14-16 14:02		Not Analyzed
S	09-14-16 14:03		Not Analyzed





CASE NARRATIVE



Client Name: Arcadis - Houston Project Name: HES Transfer

Project ID: Work Order Number(s): 536864 Report Date: *11-OCT-16* 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



Date Received in Lab:Thu Sep-15-16 11:30 amReport Date:11-OCT-16Project Manager:Kelsey Brooks

	Lab Id:	536864-0	01	536864-0	02	536864-0	03	536864-0	04	536864-005		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')
Analysis Kequestea	Depth:												
	Matrix:	SOIL	SOIL			SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-13-16 (08:50	Sep-13-16 08:55		Sep-13-16 1	0:30	Sep-13-16 1	0:34	Sep-13-16	09:58	Sep-13-16	0:00
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-20-16 (08:00	Sep-20-16 08:00		Sep-20-16 0	8:00	Sep-20-16 0	8:00	Sep-20-16	08:00	Sep-20-16 (08:00
	Analyzed:	Sep-20-16	Sep-20-16 14:44		4:51	Sep-20-16 1	4:59	Sep-20-16 1	5:07	Sep-20-16	15:15	Sep-20-16 1	5:23
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	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.

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

Huns Boah

Kelsey Brooks Project Manager





Certificate of Analysis Summary 536864

Arcadis - Houston, Houston, TX Project Name: HES Transfer



Date Received in Lab:Thu Sep-15-16 11:30 amReport Date:11-OCT-16Project Manager:Kelsey Brooks

	Lab Id:	536864-0	07	536864-0	008	536864-0	09	536864-010		536864-011		536864-0	12
Analysis Requested	Field Id:	VGWUO40-1	6 (50')	VGWUO40-19 (2')		VGWUO40-19 (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	10:48	Sep-13-16 11:46		Sep-13-16 11:50		Sep-13-16 1	2:14	Sep-13-16 12:16		Sep-13-16 1	3:23
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-30-16 (09:00	Sep-21-16 10:00		Sep-21-16 1	0:00	Sep-21-16 1	0:00	Sep-21-16	0:00	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	2:49	Sep-30-16 1	3:26
	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

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

Huns Boah

Kelsey Brooks Project Manager





Certificate of Analysis Summary 536864

Arcadis - Houston, Houston, TX Project Name: HES Transfer



Date Received in Lab:Thu Sep-15-16 11:30 amReport Date:11-OCT-16Project Manager:Kelsey Brooks

	Lab Id:	536864-0	13	536864-0	014	536864-0	16	536864-0	17	536864-018		536864-0	019
Analysis Requested	Field Id:	VGWU85-0	VGWU85-06 (2')		VGWU85-06 (4')		VGWU85-06 (10')		VGWU85-06 (50')		VGWU85-11 (2')		1 (4')
Analysis Kequestea	Depth:												
	Matrix:	SOIL	SOIL			SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-13-16 1	Sep-13-16 14:41		Sep-13-16 14:42		Sep-13-16 14:44		5:27	Sep-13-16 16:00		Sep-13-16 1	16:01
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-21-16 1	0:00	Sep-21-16 10:00		Sep-30-16 (9:00	Oct-10-16 0	9:35	Sep-21-16	10:00	Sep-21-16 1	10:00
	Analyzed:	Sep-21-16 1	Sep-21-16 12:57		17:46	Sep-30-16 1	3:47	Oct-10-16 1	9:19	Sep-21-16	13:28	Sep-21-16 1	13:36
	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

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

Huns Boah

Kelsey Brooks Project Manager





Certificate of Analysis Summary 536864

Arcadis - Houston, Houston, TX Project Name: HES Transfer



Date Received in Lab:Thu Sep-15-16 11:30 amReport Date:11-OCT-16Project Manager:Kelsey Brooks

	Lab Id:	536864-0	23	536864-0	24	536864-0	25	536864-026		536864-027		536864-0	28
Analysis Requested	Field Id:	VGWUSAT3-	03 (4')	VGWUSAT3-03 (40')		VGWUSAT3-05 (4')		VGWUSAT3-05 (40')		VGWU118-15 (2')		VGWU118-1	15 (4')
Analysis Kequestea	Depth:												
	Matrix:	SOIL	SOIL			SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-14-16 ()9:49	Sep-14-16 10:40		Sep-14-16 11:11		Sep-14-16 1	1:55	Sep-14-16	14:00	Sep-14-16 1	4:01
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-21-16	10:00	Sep-30-16 09:00		Sep-30-16 (9:00	Oct-10-16 0	9:35	Sep-21-16	10:00	Sep-21-16 1	0:00
	Analyzed:	Sep-21-16	Sep-21-16 13:44		3:54	Sep-30-16 1	4:01	Oct-10-16 1	9:26	Sep-21-16	13:51	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

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

Huns Boah

Kelsey Brooks Project Manager

Page 9 of 21





Certificate of Analysis Summary 536864

Arcadis - Houston, Houston, TX Project Name: HES Transfer



Date Received in Lab:Thu Sep-15-16 11:30 amReport Date:11-OCT-16Project Manager:Kelsey Brooks

	Lab Id:	536864-0	31	536864-0	32	536864-0	33	536864-0	34		
Analysis Requested	Field Id:	VGWU118-1	18 (2')	VGWU118-	18 (4')	VGWU118-1	18 (7')	VGWU118-1	8 (10')		
Analysis Kequestea	Depth:										
	Matrix:	SOIL		SOIL		SOIL		SOIL			
	Sampled:	Sep-14-16 1	4:30	Sep-14-16	4:31	Sep-14-16 1	4:32	Sep-14-16	4:33		
Inorganic Anions by EPA 300/300.1	Extracted:	Sep-21-16 1	0:00	Sep-21-16	0:00	Sep-30-16 0	9:00	Oct-10-16 0	9:35		
	Analyzed:	Sep-21-16 1	4:23	Sep-21-16	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		

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

Huns Boah

Kelsey Brooks Project Manager

Page 10 of 21

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 LimitSDL Sample Detection LimitLOD Limit of DetectionPQL Practical Quantitation LimitMQL Method Quantitation LimitLOQ 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

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 - San Antonio - Atlanta - Midland/Odessa - Tampa/Lakeland - Phoenix - Latin America

	Phone	гах
4147 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200 (281)	281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300 (2	214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334 (2	210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800 (4	432) 563-1713
2525 W. Huntington Dr Suite 102, Tempe AZ 85282	(602) 437-0330	





BS / BSD Recoveries

Project Name: HES Transfer

Work Order #: 536864							Proj	ject ID:			
Analyst: MNR	D	ate Prepar	red: 09/20/201	16			Date A	nalyzed: (09/20/2016		
Lab Batch ID: 3000344 Sample: 713949-1-	BKS	Batc	h #: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K /BLANK	SPIKE /]	BLANK S	SPIKE DUP	LICATE	RECOVI	ERY STUI	DY	
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	250	100	250	257	103	3	90-110	20	
Analyst: MNR	D	ate Prepar	red: 09/21/201	16			Date A	nalyzed: (09/21/2016		
Lab Batch ID: 3000445 Sample: 713999-1-1	BKS	Batc	h #: 1					Matrix: S	Solid		
Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Inorganic Anions by EPA 300/300.1	Blank	Spike	Blank	Blank	Spike	Blank	Blk. Spk		Control	Control	
	Sample Result [A]	Added [B]	Spike Result [C]	Spike %R [D]	Added [E]	Spike Duplicate Result [F]	Dup. %R [G]	RPD %	Limits %R	Limits %RPD	Flag
Analytes Chloride	-		Result	%R		Duplicate	%R				Flag
Analytes	[A] <10.0	[B] 250	Result [C]	% R [D] 98	[E]	Duplicate Result [F]	%R [G] 100	%	%R	%RPD	Flag
Analytes Chloride	[A] <10.0 D	[B] 250 ate Prepar	Result [C] 246	% R [D] 98	[E]	Duplicate Result [F]	%R [G] 100	%	% R 90-110 09/30/2016	%RPD	Flag
Analytes Chloride Analyst: MNR	[A] <10.0 D	[B] 250 ate Prepar Bate	Result [C] 246 246 red: 09/30/201	%R [D] 98	[E] 250	Duplicate Result [F] 250	%Ř [G] 100 Date A	% 2 nalyzed: (Matrix: S	%R 90-110 09/30/2016 Solid	% RPD	Flag
Analytes Chloride Analyst: MNR Lab Batch ID: 3001120 Sample: 714399-1-1	[A] <10.0 D	[B] 250 ate Prepar Bate	Result [C] 246 246 red: 09/30/201 h #: 1	%R [D] 98	[E] 250	Duplicate Result [F] 250	%Ř [G] 100 Date A	% 2 nalyzed: (Matrix: S	%R 90-110 09/30/2016 Solid	% RPD	Flag

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 Page 126 of 210





BS / BSD Recoveries

Project Name: HES Transfer

Work Order #: 536864			Project ID:								
Analyst: MNR	D	ate Prepar	red: 10/10/201	6			Date A	nalyzed: 1	0/10/2016		
Lab Batch ID: 3001741 Sample: 714723-1-E								Matrix: S	Solid		
Units: mg/kg		BLAN	K /BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUI	DY	
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	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 Page 127 of 210

Received by OCD: 10/28/2019 8:04:07 AM



Form 3 - MS / MSD Recoveries

Project Name: HES Transfer

.

Work Order # :	536864						Project II) :				
Lab Batch ID:	3000344	QC- Sample ID:	536602	-002 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed:	09/20/2016	Date Prepared:	09/20/2	016	An	alyst: N	MNR					
Reporting Units:	mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorgai	nic 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		2780	1250	4000	98	1250	4030	100	1	90-110	20	
Lab Batch ID:	3000344	QC- Sample ID:	536660	-002 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed:	09/20/2016	Date Prepared:	09/20/2	016	An	alyst: N	MNR					
Reporting Units:	mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorgai	nic 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]	itesuit [1]	[G]			/one D	
Chloride		1970	1250	3230	101	1250	3210	99	1	90-110	20	
Lab Batch ID:	3000445	QC- Sample ID:	536864	-008 S	Ba	tch #:	1 Matrix	k: Soil	•	·		-
Date Analyzed:	09/21/2016	Date Prepared:	09/21/2	016	An	alyst: N	MNR					
Reporting Units:	mg/kg		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorgai	nic 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		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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Page 14 of 21





Form 3 - MS / MSD Recoveries

Project Name: HES Transfer

.

Work Order # :	536864						Project II):				
Lab Batch ID:	3000445	QC- Sample ID:	536864	-028 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed:	09/21/2016	Date Prepared:	09/21/2	016	An	alyst: N	MNR					
Reporting Units:	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorgai	nic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result [C]	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		<10.0	250	250	100	250	244	98	2	90-110	20	
Lab Batch ID:	3001120	QC- Sample ID:	536657	-006 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed:	09/30/2016	Date Prepared:	09/30/2	016	An	alyst: N	MNR					
Reporting Units:	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorgai	nic 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]	riosuro [1]	[G]		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	/01112	
Chloride		920	250	1160	96	250	1150	92	1	90-110	20	
Lab Batch ID:	3001120	QC- Sample ID:	537439	-001 S	Ba	tch #:	1 Matrix	k: Soil				
Date Analyzed:	09/30/2016	Date Prepared:	09/30/2	016	An	alyst: N	MNR					
Reporting Units:	mg/kg		Ν	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorgai	nic 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	1 mai y 105	4120	[b]	6760	[D]	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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Page 15 of 21





Form 3 - MS / MSD Recoveries

Project Name: HES Transfer

Work Order # :	536864						Project II):				
Lab Batch ID:	3001741	QC- Sample ID:	538189	-001 S	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed:	10/10/2016	Date Prepared:	10/10/2	016	An	alyst: 1	MNR					
Reporting Units:	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorgan	ic 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]	Kesunt [F]	[G]	/0	/or	70KI D	
Chloride		1720	250	1980	104	250	1970	100	1	90-110	20	
Lab Batch ID:	3001741	QC- Sample ID:	538316	-006 S	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed:	10/10/2016	Date Prepared:	10/10/2	016	An	alyst: 1	MNR					
Reporting Units:	mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Inorgan	ic Anions by EPA 300/300.1	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R		Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Analytes	[A]	[B]	[0]	50K [D]	[E]	Kesult [F]	76K [G]	/0	/0K	70KPD	
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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Page 16 of 21

Gontact & Company Name				OF CU IALYSI	S REC				JRY	Page <u>l</u>	of	2 Lab		362	<u>}</u>
je Junathan Olsen Address: Suita 300	5 713,957	3.487	}-	Preservative Filtered (*/) # of Containers	E NA							Preservatio A. H.SO, B. HCL C. HNO,	n Key:	ys Container Informa 1. 40 ml Vial 2. 1 L Amber	ation Key:
2929 Briar Park Dr City State Zip	E-mail Address:			Container Information	PAR	AMETER		YSIS &	METH	OD	 	D. NaOH E. None F. Other:		3. 250 ml Plastic 4. 500 ml Plastic 5. Encore 3. 2 oz. Glass	
HOUSTON TX 77042 roject Namer Location (City State): LUVINGTON, NM (HES) appler's Printed Name: Well Sa Phan	Jonathan . Ol	serCan	Lom	7	7	/		/	/	/	/	G. Other:	<u> </u>	4 oz. Glass 8 oz. Glass 9. Other:	
LUVING TON, NM (HES) Sampler's Printed Name: MARCA Dia a La	Sampler's Signature:	······································		Ĭ,	۲ /							Matrix Key:	1	10. Other:	
Sample ID	Collection /	Type (✓) comp Grab	Matrix	Ch louid .		/ /	/ /		/			SO - Soll W - Water T - Tissue	SL • Slud A - Air	iment NL-NA ge SW-Si Other:	ample Wipe
VGWUD40-12(2')	9/13/16 850	X	so	X		((<u></u>	/	(
1GWU1240-12(4')	9/13/16 855	×	50	X								· ·			
VGWU040-17(2)	9/12/16 1030	<u> </u>	SO	X											
VGWU040-17(4)	9/13/10/034	<u>×</u>	SO	X								·			
VGWUCAO-16(2')	9/13/16958	<u> </u>	30	X											
VGWM040-16(4')	9/13/10/000	<u>×</u>	SO	X								- <u></u>			
GWU040-16(50)	9/13/16/1048		50								Hou	Ð			
(GWU040-19(2')	9/13/10/146	<u> </u>	50	\times									: -		
<u> /GWИ04ø-19(4')</u>	9/13/10/1150		50	X	· .										
1GWU040-18(2')	9/13/10/214	<u> </u>	<u> 50</u>	4									<u>.</u>		
VGWM040-18(4')	9/13/14/216	<u>×</u>	50	X											
VGWU040-18(70)	9/13/10/323	×	20	\prec			<u> </u>				HOL	<u>D</u>			
VGW1040-85((4).	9/13/10/441		6				·····								
<u>/GWU85-DG(2')</u> pecial Instructions/Comments:	111311011441		SO				Special QA/C	C Instructi	ions(~):						
Standard TAT							· .								
Laboratory information by Name:	Cooler Custody Seal (•	<u>)</u> ,	Printed	Name:	ished By	4.	ted Name:	ceived By		Re Printed Name:	elinquished	Ву	Labor Printed Mame:	atory Received B	
Cooler packed with ice (✓)		□ Not Intact	Signatu	<u>lisa Pl</u>	ian	Sid	UNU Neture:	~		Signature:		d		MANU	UK
<u> </u>	\wedge			\mathcal{M}			HOM	rall	9200						
ecify Turnaround Requirements:	Sample Receipt:	10	Firm: AVC	adis		·	^{vc} gurier M	5.		Firm/Courier:			"Xe y	700	
hipping Tracking #:	Condition/Cooler Temp	10	Date/Tin	14/16	1600	Date	9/14	11/2 4	1:000	Date/Time:			Date There:	5010	1121

!

Ű	vevv	TES	Tr	ן – ן העלק	SFe/	spe r sit	er tC										
					AIN (OF CU IALYSI	STOL)Y & I			ORY	Page Z	_ of <u>3</u>	Lab V	Vork Order	 *?~\	4
Contact & Company Name: Arcadis Stinger Address: Suite 300 2929 Buarpark Dr City State 21 4000 State 21 City State 21 City State 21 City State 21 City State 21 City State 20 City State 20 C	E-mail Addres					Preservative Filtered (-') & of Container Container Information	1				2. METH			Preservation A. H ₂ SO ₄ B. HCL C. HNO ₃ D. NaOH E. None F. Other:	i Kay:	Container Inf 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Pia 4. 500 ml Pia 5. Encore 6. 2 oz. Glas	ISUC ISUC
Project Name/Location (City, State): <u>COVUNCTION</u> , NM (HES) Sample's printerName: Millisa Phan Sample ID	Jtna Project#: Sampler's Sig Colle	$\frac{1}{1}$	(U.S.C. Type		adis.c	Ch Ioni	7							G. Other: H. Other: Matrix Key: SO - Soil W - Water T - Tissue		7. 4 oz. Glas. 8. 8 oz. Glas. 9. Other: 10. Other: wdiment. NL udge SV	•
• •	Date 9/13/16	Time ນໄປລ	Comp	Grab		╀────┼	/(/	/	/	/	(/ 1	REMARI	KS		
$V_{GWU85-tb}(4')$	9/13/16			X	<u>So</u> So	X	·						1h	aD			<u></u>
VGWU85-06(7') VGWU85-06(10')	9/13/16			$\hat{\mathbf{X}}$	<u>50</u> 50	X											
VGWU85-00(50')	91/13/16			$\hat{\mathcal{L}}$	<u></u> 50	X							Ho	<u>dic</u>	***		
VGWU85-11 (2')	9/13/16			$\frac{1}{\sqrt{2}}$	So	X							-HF	100	Do		
VGWU85-11(4')	9/13/16			X	SO	X								<u>~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ </u>		<u></u>	
VGWU85-11(7')	9/13/16			X	SO	X							Ho	D			
	9/13/16			Ń	55	X							HO				
	9/13/16			X	SO	X								LD			
	9/14/14	949		X	SO	X											
	9/14/14	1040		X	SO	X							HOL	D			
	9/14/16	1111		X	SO	\times							HOL				
	9/14/16			X	50	X							HOL	D			
VGMULLS-15 (Z') Special Instructions/Comments:	11/14/16			X	SO	X			7.0								
Special instructions comments. Standard TAT Laboratory Informati		1400				Dellas	uished By] Special Q/	teceived By			1				
Laboratory momati		istody Sea	I (*)	n en de la composition de la c	Printer	Name: 6	3	1	Printed Name:,		<u> </u>	Printed Name:	linquished E	<u> </u>	Printed None		
Cooler packed with ice (~)	Kinta	ct	□ Not	Intact	Signat		Man N		<u>Dessi</u> Dessister	<u>rroe</u> nao (634 50	Signature;		(*	Signature:	KANY	UK
Specify Turnaround Requirements:	Sample R	eceipt		26	Firm:	treadi	4		Firm/Courler:	$\sqrt{\Delta}$		Firm/Courier:	····		101	$\overline{\cap \alpha}$	λ
Shipping Tracking #:	Condition	/Cooler Tei	mp:	Δ	27	Tit lilo	1600		911 L	116	4:00	Date/Time:	<u> </u>			5.110	<u>,</u> 112X
10730826 CofC AR Form 08.27.2015	L	Dist	ribution:	<u> </u>	WHITE -	Laboratory	<u>`</u>	th results	1		TELLOW -				l L PINK - R	etained by A	IT CO Ircadis
	(0.0	2						ł								

d to Imaging: 7/9/2021 2:17:22 PM

*2

Page 132 of 210

GARCADIS	ID#:			CH	AIN (ORATO	DRY	Page 2	2 of 2	2 Lab Work	Order# 3LP	Sley
is <u>Contect & Company Name:</u> <u>Address:</u> <u>Address:</u> <u>Suitc</u> <u>29729 Briarpark Dr</u> <u>E</u> <u>City</u> <u>State</u> Z	dis Telephone:	957	3487	4		Preservative Filtered (*)]						Preservation Key		er Information K
Suite 2929 Briarbark Dr	ZOD Fax:	/_ //	×			# of Containe								A. H.SO. B. HCL C. HNO.	1.40 n 2.1 L/ 3.250	
City State	p E-mail Addre	158;	<u></u>			Container Information								D. NeOH E. None F. Other:		ml Plastic xre
HOUSTON TX 7704	2 Jona	than.(Ised	dan	cadis.		7	XAME!	ERANA	ALYSIS 8	<u>s me i ri</u>	<u>טט:</u> 7	/	G. Other:	7.4 oz - 8.8 oz	Glass Glass
Project Named ocation (City, State): (HTS) LOVINGTON, M	Δ					1 /	24/		· /		/			H. Other:	9, Othe 10, Othe	· · · · · · · · · · · · · · · · · · ·
Sampler's Printed Name: MCUSAPhan	Sampler's Si	grature:	/									/		Matrix Key: SO - Soil W - Water	SE - Sediment SL - Sludge	NL - NAPL/Oil SW - Sample
Sample ID	Colie Date	ection Time	Type (Comp	√) Grab	Matrix	S. Mar		/	/	/	/	/ :	/	T - Tissue REMARKS	A - Air	Other:
VGWU118-15(4')	9/14/16															
VGWU118-15(7)	1/14/16							•						ND		
VGWU118-15(10) 1/14/16	1403											H	OLD		
VGWU118-18(2')		1430				-										
VGWU118-1B(4')	91/14/16												1			
VGWUII8-18(7)		1432											Hou			
VGWM118-18(10	/ -///9/10	1433											Hou	<u>D</u>		
					···											
			·····													
		·														
Special Instructions/Comments: Standavd	TAT					<u> </u>			Special C	A/QC Instruc	:tions(√):					
Laboratory In	formation and Rec		140		Defeater of		quished By	a ja sija	Printed Name	Received By	lan sa ang sa		elinquished	By	Alaboratory	Received By
		ustody Sea	II (♥)		Printed	evisa	Phan			irrol	6097	Printed Name:			PUR	AMO
Cooler packed with ice (✓)	Inte	ict	🗆 Not I	ntact	Signati		N		Signature:	111702	680	Signature:		Signat	ure:	
Specity Turnaround Requirements:	Sample F	Receipt:		<u> </u>	Firm	Cra 15	·		Firm/Couries:	$\frac{1}{\sqrt{2}}$	-	Firm/Courier:		Firm:	Nan	C
Shipping Tracking #:	Condition	n/Cooler Te	mp: <u> </u>	2	27	14/16	1600		Date/Time:	$\frac{3}{16}$	4:60	Date/Time:		Dapot	1.15	1611
20730826 CofC AR Form 08.27,2015	I * * *	Dist	ribution	<u> '</u>	WHITE -	Laboratory	1	ith results	1	+	YELLOW -	•		Pi	NK - Retained	i by Arcadis

Page 133 of 210



XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Arcadis - Houston Date/ Time Received: 09/15/2016 11:30:00 AM Work Order #: 536864

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

Temperature Measuring device used : R8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	6.3	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seal present on shipping container/ cooler?	Yes	
#5 *Custody Seals intact on shipping container/ cooler?	Yes	
#6 Custody Seals intact on sample bottles?	Yes	
#7 *Custody Seals Signed and dated?	Yes	
#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)?	N/A	
#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	

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

Analyst:

PH Device/Lot#:

Checklist completed by: Jessica Kramer

Date: 09/15/2016

Checklist reviewed by: Mms Hoah Kelsey Brooks

Date: 09/16/2016

Analytical Report 570585

for Arcadis - Houston

Project Manager: Jonathan Olsen

HES Transfer Sites

Boo48611.1701.00002

16-DEC-17

Collected By: Client





1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12) Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



16-DEC-17

Project Manager: Jonathan Olsen Arcadis - Houston 10205 Westheimer Rd., Suite 800 Houston, TX 77042

Reference: XENCO Report No(s): **570585 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) 570585. 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. 570585 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,

Mike Kimmel Client Services 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 570585

Page 138 of 210

Arcadis - Houston, Houston, TX

HES Transfer Sites

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Dup-1 (120717)	W	12-07-17 00:00		570585-001
Equipment Blank (120717)	W	12-07-17 10:38		570585-002
VGWU040-MW-1 (120717)	W	12-07-17 11:28		570585-003



CASE NARRATIVE

Client Name: Arcadis - Houston Project Name: HES Transfer Sites

 Project ID:
 Boo48611.1701.00002

 Work Order Number(s):
 570585

Report Date: *16-DEC-17* Date Received: *12/07/2017*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Received by OCD: 10/28/2019 8:04:07 AM

Contact:

Project Location:



Jonathan Olsen

Buckeye, NM

Certificate of Analysis Summary 570585

Arcadis - Houston, Houston, TX Project Name: HES Transfer Sites



Date Received in Lab:Thu Dec-07-17 02:21 pmReport Date:16-DEC-17Project Manager:Kelsey Brooks

	Lab Id:	570585-0	01	570585-0	02	570585-0	03			
Analysis Requested	Field Id:	Dup-1 (120	717)	Equipment Blank	(120717)	VGWU040-MW-1	(120717)			
Analysis Kequesieu	Depth:									
	Matrix:	WATER	ł	WATEF	٤	WATEF	ł			
	Sampled:	Dec-07-17 0	00:00	Dec-07-17 1	0:38	Dec-07-17 1	1:28			
Chloride by EPA 300	Extracted:	Dec-08-17 1	5:30	Dec-08-17 1	5:30	Dec-08-17 1	5:30			
	Analyzed:	Dec-08-17 2	23:49	Dec-08-17 2	3:55	Dec-09-17 0	0:13			
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL			
Chloride		459	5.00	ND	0.500	470	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.

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



Mike Kimmel Client Services 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 LimitSDL Sample Detection LimitLOD Limit of DetectionPQL Practical Quantitation LimitMQL Method Quantitation LimitLOQ 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

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 - San Antonio - Atlanta - Midland/Odessa - Tampa/Lakeland - Phoenix - Latin America

	Phone	Fax
4147 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd, Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr Suite 102, Tempe AZ 85282	(602) 437-0330	





BS / BSD Recoveries

.

Work Order #: 570585 Project ID:											Boo48611.1701.00002					
Analyst:	MNV		D	ate Prepar	red: 12/08/201	Date Analyzed: 12/08/2017										
Lab Batch	Atch ID: 3035553 Sample: 7635708-1-BKS Batch #: 1							Matrix: Water								
Units:	mg/L			BLAN	K /BLANK	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOV	ERY STUE	ΟY				
	Chloride by EPA		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			
An	alytes			[B]	[C]	[D]	[E]	Result [F]	[G]							
Chlorie	de		< 0.500	20.0	19.1	96	20.0	19.2	96	1	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

Work Order # :	570585						Project II	D: Boo48	611.1701.	00002		
Lab Batch ID:	3035553	QC- Sample ID:	570535	-001 S	Ba	tch #:	1 Matrix	x: Drinkin				
Date Analyzed:	12/08/2017	Date Prepared:	12/08/2	017	An	alyst: N	MNV					
Reporting Units:	mg/L		Μ	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY S	STUDY		
	Chloride by EPA 300	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
Chloride		5.57	25.0	31.2	103	25.0	31.7	105	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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

ARCA	DIS	#:			CH		OF CU					ORY	Page _]_of_	Lab Wo	rk Order #	585
or sonathan Ols	en Arcadis	Telephone: 713-	953-	4874	1		Preservative Filtered (√)	ENA				-			Preservation M		tainer Information I
Suite 800	State Zip	E-mail Addre	NA				# of Containers Container Information	3							B. HCL C. HNO ₃ D. NaOH E. None	2. 1 3. 2 4. 5	L Amber 50 ml Plastic 00 ml Plastic
Hauston 7	5 77047			Isand)	arcadig	s. Lom	- /	PAF	RAMET	ER ANA	LYSIS	& METH	HOD		F. Other: G. Other: H. Other:	6. 2 7. 4 8. 8	ncore oz. Glass oz. Glass oz. Glass tther:
roject Name/Location (City, State): <u>HES Transfer Si</u> samplar's Printed Name: <u>K7419</u> Ngnn			gnature:	1	e (√)		Chloride	' /							Matrix Key: SO - Soil W - Water T - Tissue	10. C SE - Sedime SL - Sludge A - Air	SW - Sample
Sampl		Date	Time	Comp	Grab	Matrix	3	/(/						REMARK		Other:
<u> 14р-1 (1207)</u> 	(120717)	12-7-17	1038		V	W	1								vs of 1) at al	ready
16wu040-r	1w-1(120717)	12-7-17	1128		~	W	1							1	had we	iter 1 mils	ready h then
		-													1		VICE OF
									A		_						
																	-
pecial Instructions/Comme														emp:	3.5	IR ID:R-8	3
										🗆 Special Q	A/QC Instru	ctions(√):		(6-23	-0.2°C) 3: +0.2°C),- ed Temp:	23	7
ah Nama:	Laboratory Informat	and the second s					Contraction of a state of the local data and the local data and the local data and the local data and the local	ished By			Received B	,	T	JULIECIE			y Received By
Xenco				Tun Na	nny		Printed Name: Kaking Aimenez			Printed Name	~ /	neg Pri	Bill k	Pah yann			
Cooler packed with ice (</td <td></td> <td></td> <td></td> <td>LI No</td> <td>t Intact</td> <td>Signatu</td> <td>3y</td> <td>5</td> <td></td> <td>Signature:</td> <td>1</td> <td>wat</td> <td>Signature:</td> <td>nd</td> <td>und Sig</td> <td>Boll</td> <td>Rah</td>				LI No	t Intact	Signatu	3y	5		Signature:	1	wat	Signature:	nd	und Sig	Boll	Rah
5-day TA	T	Sample F	leceipt: /Cooler Tei	mp: /)•	ZC	Firm. A Date/Tir	cadis,			Firm/Courier:	15	0	Firm/Courier	ns	Fin	Xena	20
					_	12-	7-17/1	1603		12-7-1	714	103	12-7	-17 /	4:26 Da	e/Time:	7 1115

ק
XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Arcadis - Houston Date/ Time Received: 12/07/2017 02:21:00 PM Work Order #: 570585

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

Temperature Measuring device used : R8

Sample Receipt Checklis	st	Comments
#1 *Temperature of cooler(s)?	3.3	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	No	
#5 Custody Seals intact on sample bottles?	N/A	
#6*Custody Seals Signed and dated?	N/A	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	No	
#18 Water VOC samples have zero headspace?	N/A	

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

Analyst: ch

PH Device/Lot#: 213315

Checklist completed by:

Comis- Kannedy Connie Hernandez

Checklist reviewed by:

Mike Kimmel

Date: 12/16/2017

Date: 12/08/2017

Certificate of Analysis Summary 594037

Page 146 of 210

ARCADIS, Midland, TX Project Name: VGWU040

Project Id:B0048611.1701Contact:Brett KrehbielProject Location:Hobbs, NM

Date Received in Lab: Fri Jul-27-18 04:40 pm Report Date: 01-AUG-18 Project Manager: Kelsey Brooks

	Lab Id:	594037-001		594037-0	02		
Analysis Requested	Field Id:	Dup-1(072618)		VGWU040-MW1	(072618)		
Analysis Kequestea	Depth:						
	Matrix:	WATER		WATER	t l		
	Sampled:	Jul-26-18 00:00		Jul-26-18 1	7:03		
Chloride by EPA 300	Extracted:	Jul-31-18 14:00		Jul-31-18 14	4:00		
	Analyzed:	Jul-31-18 18:31		Jul-31-18 18	3:44		
	Units/RL:	mg/L Rl	L	mg/L	RL		
Chloride		526 12	25	556	125		

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 594037

for ARCADIS

Project Manager: Brett Krehbiel

VGWU040

B0048611.1701

01-AUG-18

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122): Texas (T104704215-18-26), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054) Oklahoma (2017-142)

> Xenco-Dallas (EPA Lab Code: TX01468): Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12) Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16) Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-15) Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3) 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-AUG-18

Project Manager: **Brett Krehbiel ARCADIS** 1004 N. Big Spring St. Midland, TX 79701

Reference: XENCO Report No(s): **594037 VGWU040** Project Address: Hobbs, 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) 594037. 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. 594037 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,

sur Tr

Kelsey Brooks 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 594037

ARCADIS, Midland, TX

VGWU040

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Dup-1(072618)	W	07-26-18 00:00		594037-001
VGWU040-MW1(072618)	W	07-26-18 17:03		594037-002

.

CASE NARRATIVE

Client Name: ARCADIS Project Name: VGWU040

 Project ID:
 B0048611.1701

 Work Order Number(s):
 594037

Report Date: 01-AUG-18 Date Received: 07/27/2018

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

ARCADIS, Midland, TX

VGWU040

Sample Id: Dup-1(072618) Lab Sample Id: 594037-001		Matrix: Date Colle	Wat ected: 07.2	er 6.18 00.00]	Date Received:07.2	27.18 16.4	0
Analytical Method: Chloride by EP	A 300				1	Prep Method: E30	00P	
Tech: RNL						% Moisture:		
Analyst: RNL		Date Prep	: 07.3	1.18 14.00				
Seq Number: 3058427								
Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	526	125	17.3	mg/L	07.31.18 18.31		50

ARCADIS, Midland, TX

VGWU040

Sample Id: Lab Sample I	VGWU040-MW1(07 d: 594037-002	2618)	Matrix: Date Colle	Wat ected: 07.2	ter 26.18 17.03]	Date Received:07.2	27.18 16.4	0
Analytical Mo	ethod: Chloride by EPA	300]	Prep Method: E30	00P	
Tech:	RNL					Q	% Moisture:		
Analyst:	RNL		Date Prep:	07.3	31.18 14.00				
Seq Number:	3058427								
Parameter		Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	556	125	17.3	mg/L	07.31.18 18.44		50

.

- 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 LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

SMP Cli	ent Sample	BLK	Method Blank	
BKS/LCS	S Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labo	ratory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

QC Summary 594037

ARCADIS

VGWU040

Analytical Method:	Chloride by EPA 30	00						Pr	ep Metho	d: E30	0P	
Seq Number:	3058427			Matrix:	Water				Date Pre	p: 07.3	31.18	
MB Sample Id:	7659486-1-BLK		LCS Sar	nple Id:	7659486-1	I-BKS		LCSI	O Sample	Id: 765	9486-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	t Units	Analysis Date	Flag
Chloride	< 0.347	25.0	26.1	104	26.0	104	90-110	0	20	mg/L	07.31.18 16:02	

Analytical Method:	Chloride by EPA 30	00						Pre	p Method	1: E30	OP	
Seq Number:	3058427			Matrix:	Waste Wa	ter			Date Prep	p: 07.3	31.18	
Parent Sample Id:	593949-001		MS Sar	nple Id:	593949-00	01 S		MSD	Sample	Id: 593	949-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD R	RPD Limit	Units	Analysis Date	Flag
Chloride	471	1250	1830	109	1810	107	80-120		20	mg/L	07.31.18 16:52	

Analytical Method:	Chloride by EPA 30	00						P	rep Metho	od: E30	0P	
Seq Number:	3058427			Matrix:	Water				Date Pre	ep: 07.3	1.18	
Parent Sample Id:	593985-001		MS Sar	nple Id:	593985-00	01 S		MS	D Sample	Id: 593	985-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date	Flag
Chloride	130	250	417	115	411	112	80-120	1	20	mg/L	07.31.18 19:33	

MS/MSD Percent Recovery Relative Percent Difference LCS/LCSD Recovery Log Difference [D] = 100*(C-A) / B RPD = 200* | (C-E) / (C+E) | [D] = 100 * (C) / [B] Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample A = Parent Result C = MS/LCS Result E = MSD/LCSD Result MS = Matrix Spike B = Spike Added D = MSD/LCSD % Rec

.

ARCADIS				CH/		OF CL						Page	<u></u> of <u></u>	Lab	Work Order #	037
Contact & Company Name:	Telephone:					Preservativ	e E								Keys	
Brott Krehbiel (Accaris	916-7	86-53	382			Fiftered (✓							-	A. H.SO	on Key: Con	tainer Information 0 ml Vial
Address: 1004 N. Big Spring St. Suite 300	Pax:		^			# of Containe	0							B. HCL C. HNO,	2. 1	L Amber
0		NI	9			Container Informatior	1 5							D. NaOH	4. 5	50 ml Plastic 00 ml Plastic
City State Zip	E-mail Addres			,			PA	RAME	FER AN	ALYSIS	& MET	HOD		E. None F. Other:	6. 2	oz. Glass
Midlend To 79701 Project Name/Location (City State)	Br.H.K	cehbie	Rac	cadis, c	om	/	/	, ,	/	/		/	/	G. Other:		oz. Glass oz. Glass
VGWUD40/ Hobbs NM	B004	8611.	1701				5		/	' /	· /	' /	/ /	H. Other: _		
Sampler's Printed Name:		gnature:					5						/	Matrix Key		
	Call	ction	7			4 61.								SO - Soil W - Water	SE - Sedimer SL - Sludge	t NL - NAPL/Oil SW - Sample
Sample ID			Туре		Matrix	1 5	/	/						T - Tissue	A - Air	Other:
DILLE	Date	Time	Comp	Grab			/	<u> </u>	<i>(</i>	-/			1	REMAR	KS	
Dup-1072618)	7-26-18			V	h	1										
VGWU 040-MWI (072618)	7-26-18	1703		\checkmark	W											
					· · · · ·							+				
					CHECKENNED											
								No. of Concession, Name								
									X							
																· · · · · · · · · · · · · · · · · · ·
	+															
															1	
						T										
Special Instructions/Comments:			I.A.	To	at	1.	2		Special C	A/QC Instru	ctions(√):					
Special Instructions/Comments:	GWU		99	inai	nic.	Une	N									
Laboratory Informat							lished By			Received B	y	R	elinquished l	Ву	Laboratory	Received By
Lad Name:	Cooler Cu	stody Sea	! (✓)		Printed N				Printed Name:			Printed Name:		1	Printed Name:	
Cooler packed with ice (1)		:t	🗆 Not	Intact	Signature	an N	an 7		BRENDI Signature:	a wh	20	Signature:				
					6	56-		7	Brend	aln	and	orginature:		5	lignature:	
Specify Turnaround Requirements:	Sample Re	eceipt:		1	Firm	1.			Firm/Courier:			Firm/Courier:		F	irm:	
Shipping Tracking #:			1	6		calig										
	Condition/	Cooler ler	np:	6	Date/Tim	e.	162	-	Date/Time:	4		Date/Time:		-	ate/Time:	

Page 10 of 11

Final 1.000

PINK – Retained by Arcadis

Page 155 of 210

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: ARCADIS	Acceptable Temperature Range: 0 - 6 degC							
Date/ Time Received: 07/27/2018 04:40:00 PM	Air and Metal samples Acceptable Range: Ambient							
Work Order #: 594037	Temperature Measuring device used : IR3							
Sample Recei	pt Checklist Comments							
#1 *Temperature of cooler(s)?	2.8							
#2 *Shipping container in good condition?	Yes							
#3 *Samples received on ice?	Yes							
#4 *Custody Seals intact on shipping container/ cooler?	N/A							
#5 Custody Seals intact on sample bottles?	N/A							
#6*Custody Seals Signed and dated?	N/A							
#7 *Chain of Custody present?	Yes							
#8 Any missing/extra samples?	No							
#9 Chain of Custody signed when relinquished/ received?	Yes							
#10 Chain of Custody agrees with sample labels/matrix?	Yes							
#11 Container label(s) legible and intact?	Yes							
#12 Samples in proper container/ bottle?	Yes							
#13 Samples properly preserved?	Yes							
#14 Sample container(s) intact?	Yes							
#15 Sufficient sample amount for indicated test(s)?	Yes							
#16 All samples received within hold time?	Yes							
#17 Subcontract of sample(s)?	No							
#18 Water VOC samples have zero headspace?	N/A							

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

Analyst: asd

PH Device/Lot#: 208515

Checklist completed by:

Ashley Derstine

Date: 07/31/2018

Checklist reviewed by:

Ward Horach Kelsey Brooks

Date: 08/01/2018

B0048616.0040

Lea County, NM

Brett Krehbiel

Project Id:

Project Location:

Contact:

Certificate of Analysis Summary 603762

Arcadis - Roseville, CA, Roseville, CA Project Name: VGWU O-40 Truckline



Date Received in Lab:Sat Oct-27-18 09:00 amReport Date:31-OCT-18Project Manager:Kelsey Brooks

	Lab Id:	603762-001	603762-002	
Analysis Requested	Field Id:	VGWUO40-MW1	Dup-1	
Analysis Kequeslea	Depth:			
	Matrix:	WATER	WATER	
	Sampled:	Oct-25-18 14:15	Oct-25-18 00:00	
Chloride by EPA 300	Extracted:	Oct-29-18 15:00	Oct-29-18 15:00	
	Analyzed:	Oct-29-18 19:40	Oct-29-18 19:45	
	Units/RL:	mg/L RL	mg/L RL	
Chloride		630 5.00	628 5.00	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

Kuns hoak

Kelsey Brooks Project Manager

Analytical Report 603762

for Arcadis - Roseville, CA

Project Manager: Brett Krehbiel

VGWU O-40 Truckline

B0048616.0040

31-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) 31-OCT-18

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

Reference: XENCO Report No(s): 603762 VGWU O-40 Truckline 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) 603762. 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. 603762 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,

Kung hoah

Kelsey Brooks 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 603762

Page 160 of 210

Arcadis - Roseville, CA, Roseville, CA

VGWU O-40 Truckline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VGWUO40-MW1	W	10-25-18 14:15		603762-001
Dup-1	W	10-25-18 00:00		603762-002

CASE NARRATIVE

Client Name: Arcadis - Roseville, CA Project Name: VGWU 0-40 Truckline

 Project ID:
 B0048616.0040

 Work Order Number(s):
 603762

 Report Date:
 31-OCT-18

 Date Received:
 10/27/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Arcadis - Roseville, CA, Roseville, CA

VGWU O-40 Truckline

Sample Id: Lab Sample Id	VGWUO40-MW1 d: 603762-001		Matrix: Date Colle	Water cted: 10.25.18 14.15]	Date Received:10.2	27.18 09.0	0
Analytical Me Tech:	ethod: Chloride by EPA CHE	300				Prep Method: E30 % Moisture:	0P	
Analyst:	SCM		Date Prep:	10.29.18 15.00		vi ivioisture.		
Seq Number:	3067928	Coo Norrel or	D14	DY.	T T 1 /			D "
Parameter Chloride		Cas Number 16887-00-6	Result 630	RL 5.00	Units mg/L	Analysis Date 10.29.18 19.40	Flag	Dil 10

Released to Imaging: 7/9/2021 2:17:22 PM

Arcadis - Roseville, CA, Roseville, CA

VGWU O-40 Truckline

Sample Id: Dup-1 Lab Sample Id: 603762-002		Matrix: Date Colle	Water cted: 10.25.18 00.00	1	Date Received:10.2	27.18 09.0	0
Analytical Method: Chloride by EP. Tech: CHE	A 300				Prep Method: E30 % Moisture:	0P	
Tech: CHE Analyst: SCM		Date Prep:	10.29.18 15.00		% Moisture:		
Seq Number: 3067928							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	628	5.00	mg/L	10.29.18 19.45		10

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 LimitSDLSample Detection LimitLOD Limit of Detection
- PQL Practical Quantitation Limit MQL Method Quantitation Limit LOQ Limit of Quantitation
- DL Method Detection Limit
- NC Non-Calculable

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	S Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labo	ratory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

QC Summary 603762

Arcadis - Roseville, CA VGWU O-40 Truckline

Analytical Method:	Chloride by EPA 3	00						Pr	ep Metho	d: E30	OP	
Seq Number:	3067928			Matrix:	Water				Date Pre	p: 10.2	29.18	
MB Sample Id:	7665067-1-BLK		LCS Sar	nple Id:	7665067-	1-BKS		LCSI	O Sample	Id: 766	5067-1-BSD	
Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD 1	RPD Limit	Units	Analysis Date	Flag

Analytical Method:	Chloride by EPA 30	00						Pr	ep Metho	d: E30	0P	
Seq Number:	3067928			Matrix:	Water				Date Pre	p: 10.2	9.18	
Parent Sample Id:	603729-001		MS Sar	nple Id:	603729-00	01 S		MSI	O Sample	Id: 603'	729-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limi	t Units	Analysis Date	Flag
Chloride	171	125	292	97	298	102	90-110	2	20	mg/L	10.29.18 17:07	

Analytical Method:	Chloride by EPA 30	00						P	rep Metho	od: E30	0P	
Seq Number:	3067928			Matrix:	Water				Date Pre	ep: 10.2	9.18	
Parent Sample Id:	603732-002		MS Sar	nple Id:	603732-00	02 S		MS	D Sample	e Id: 603	732-002 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	208	125	353	116	340	106	90-110	4	20	mg/L	10.29.18 18:44	Х

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

[D] = 100*(C-A) / B $\begin{aligned} \text{RPD} &= 200^* \mid (\text{C-E}) / (\text{C+E}) \mid \\ \text{[D]} &= 100^* (\text{C}) / \text{[B]} \end{aligned}$ Log Diff. = Log(Sample Duplicate) - Log(Original Sample) LCS = Laboratory Control SampleA = Parent Result C = MS/LCS Result E = MSD/LCSD Result

MS = Matrix Spike B = Spike AddedD = MSD/LCSD % Rec

.

Page 9 of 11

ARCADIS 🕫	#:			СН					LABO			Page _/	of		k Order #
Contact & Company Name: Brett Krehbiel (Arcadis) Address: 101 Creekside Ridge Court, Suite 200 City State Zip Roseville CA 95678	Telephone: 916-786- Fax:	5382	J			Preservativ Filtered (/ # of Contain	• E							Preservation Ke A. H.SO. B. HCL C. HNO.	Keys Container Information Key 1. 40 ml Vial 2. 1 L Amber 3. 250 ml Plastic
Interview 101 Creekside Ridge Court, Suite 200 Interview State Interview CA Interview CA Interview State Interview CA Interview State	E-mail Addre		dia aom			Containe Informatio	<u>n 5</u>	RAME	TER ANA	LYSIS 8	8. METH	OD		D. NeOH E. None F. Other.	4. 500 ml Plastic 5. Encore 6. 2 oz. Glass
Project Name/Location (City, State): VGWU O-40 Trunkline, Lea County, NM Sampler's Printed Name: RAPHAEL FRAMES Sample ID	Project #: B00486 Sampler's Si	16.0040)e (√)	Matrix	Chlonde	^{USEP4} 300.1							G. Other H. Other Matrix Key: SO - Soil W - Water T - Tissue	9. Other: 10. Other: SE - Sediment NL - NAPL/Oil SL - Sludge SW - Sample Wip A - Air Other:
VGWUO40-MW1	Date 19/25/18	Time	Comp	Grab X	W	/ ठ x	/	/		(REMARKS	3
Dup-1	19/25/18		W	X	W	X				5					
	· · ·														
					1.								-		
			1				1						2		· · · · · · · · · · · · · · · · · · ·
				· · ·									1		
							:								
		-											-		
															· · · ·
							; ;								
		1.1.5													
														та. 	
Special Instructions/Comments:		-								QA/QC Instru					· · · · · · · · · · · · · · · · · · ·
Laboratory Inform	Contraction of the second	celpt Custody Se	al (*)		Print	Reli ed Name;	nquished B	<u>y</u>	Printed Name	Received E	<u>sy</u> // .	Printed Nam		PI PI	Laboratory Received By
XENCS	∭_ Int	act		Not Intact		HAEL	PRANCO	.	Espe	rang	jonale	2631	erant	Lurda	Dilaring yes
Cooler packed with ice () Specify Termanound Requirements:</td <td>Sample</td> <td></td> <td><u> </u></td> <td>TOTIMEC</td> <td>signi Tirm:</td> <td>27</td> <td></td> <td></td> <td></td> <td>a Gov</td> <td>ps.</td> <td>Firm/Coprier</td> <td>n Cir</td> <td>a Fi</td> <td>ALLMOTH</td>	Sample		<u> </u>	TOTIMEC	signi Tirm:	27				a Gov	ps.	Firm/Coprier	n Cir	a Fi	ALLMOTH
Shipping Tracking #:	Conditio	n/Cooler T	emp: <u> </u>	0.8_	•	/Time:	8/050		Date/Time:	-18	8:39	Date/Time:	- 18	11:02	NOTINE 2 19 DANN
20730826 CofC AR Form 08.27.2015	1	Dis	stributic	on:		- Laborato	7	·		<u> </u>		- Lab copy	1	· · · · ·	PINK – Retained by Arcadis

Received by OCD: 10/28/2019 8:04:07 AM

Final 1.000

.

XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Arcadis - Roseville, CA	Acceptable Temperature Range: 0 - 6 degC					
Date/ Time Received: 10/27/2018 09:00:00 AM	Air and Metal samples Acceptable Range: Ambient					
Work Order #: 603762	Temperature Measuring device used : R8					
Sample Recei	pt Checklist Comments					
#1 *Temperature of cooler(s)?	.8					
#2 *Shipping container in good condition?	Yes					
#3 *Samples received on ice?	Yes					
#4 *Custody Seals intact on shipping container/ cooler?	N/A					
#5 Custody Seals intact on sample bottles?	N/A					
#6*Custody Seals Signed and dated?	N/A					
#7 *Chain of Custody present?	Yes					
#8 Any missing/extra samples?	Νο					
#9 Chain of Custody signed when relinquished/ received?	Yes					
#10 Chain of Custody agrees with sample labels/matrix?	Yes					
#11 Container label(s) legible and intact?	Yes					
#12 Samples in proper container/ bottle?	Yes					
#13 Samples properly preserved?	Yes					
#14 Sample container(s) intact?	Yes					
#15 Sufficient sample amount for indicated test(s)?	Yes					
#16 All samples received within hold time?	Yes					
#17 Subcontract of sample(s)?	Yes					
#18 Water VOC samples have zero headspace?	N/A					

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

Analyst: BT

PH Device/Lot#: A032690

Date: 10/29/2018

 Checklist completed by:
 Ballo Tal

 Brianna Teel
 Brianna Teel

 Checklist reviewed by:
 Many Abrah

 Kelsey Brooks
 Kelsey Brooks

Date: 10/29/2018

B0048616.0040

Lea County, NM

Brett Krehbiel

Project Id:

Project Location:

Contact:

Certificate of Analysis Summary 603763

Arcadis - Roseville, CA, Roseville, CA Project Name: VGWU O-40 Truckline



Date Received in Lab:Sat Oct-27-18 09:00 amReport Date:30-OCT-18Project Manager:Kelsey Brooks

	Lab Id:	603763-0	01	603763-0	02	603763-0	03	603763-0	04	603763-0	05	
Analysis Requested	Field Id:	VGWUO40	0-20	VGWUO4	0-21	VGWUO4)-22	VGWUO4	0-23	VGWUO4	0-24	
Analysis Kequeslea	Depth:											
	Matrix:	SOIL										
	Sampled:	Oct-25-18 1	2:10	Oct-25-18	2:20	Oct-25-18 1	2:30	Oct-25-18 1	2:50	Oct-25-18	3:00	
Chloride by EPA 300	Extracted:	Oct-29-18 1	1:30									
	Analyzed:	Oct-29-18 1	5:38	Oct-29-18 1	5:43	Oct-29-18 1	5:55	Oct-29-18 1	6:01	Oct-29-18 1	6:06	
	Units/RL:	mg/kg	RL									
Chloride		<4.95	4.95	938	4.98	27.5	4.96	972	4.99	<5.01	5.01	

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

Kung froak

Kelsey Brooks Project Manager

Analytical Report 603763

for Arcadis - Roseville, CA

Project Manager: Brett Krehbiel

VGWU O-40 Truckline

B0048616.0040

30-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) 30-OCT-18

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

Reference: XENCO Report No(s): 603763 VGWU O-40 Truckline 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) 603763. 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. 603763 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,

Kung hoak

Kelsey Brooks 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 603763

Page 171 of 210

Arcadis - Roseville, CA, Roseville, CA

VGWU O-40 Truckline

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VGWUO40-20	S	10-25-18 12:10		603763-001
VGWUO40-21	S	10-25-18 12:20		603763-002
VGWUO40-22	S	10-25-18 12:30		603763-003
VGWUO40-23	S	10-25-18 12:50		603763-004
VGWUO40-24	S	10-25-18 13:00		603763-005

CASE NARRATIVE

Client Name: Arcadis - Roseville, CA Project Name: VGWU 0-40 Truckline

 Project ID:
 B0048616.0040

 Work Order Number(s):
 603763

 Report Date:
 30-OCT-18

 Date Received:
 10/27/2018

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Arcadis - Roseville, CA, Roseville, CA

VGWU O-40 Truckline

Sample Id:VGWUO40-20Lab Sample Id:603763-001		Matrix: Date Collec	Soil ted: 10.25.18 12.10		Date Received:10.	27.18 09.0	0
Analytical Method: Chloride by EPA	300				Prep Method: E3	00P	
Tech: CHE					% Moisture:		
Analyst: CHE		Date Prep:	10.29.18 11.30		Basis: We	t Weight	
Seq Number: 3067996							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.95	4.95	mg/kg	10.29.18 15.38	U	1

Released to Imaging: 7/9/2021 2:17:22 PM



Arcadis - Roseville, CA, Roseville, CA

VGWU O-40 Truckline

Sample Id:VGWU040-21Lab Sample Id:603763-002		Matrix: Date Collec	Soil eted: 10.25.18 12.20		Date Received:10.	27.18 09.0	0
Analytical Method: Chloride by EP.	A 300				Prep Method: E3)0P	
Tech: CHE Analyst: CHE		Date Prep:	10.29.18 11.30		% Moisture: Basis: We	t Weight	
Seq Number: 3067996							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	938	4.98	mg/kg	10.29.18 15.43		1



Arcadis - Roseville, CA, Roseville, CA

VGWU O-40 Truckline

Sample Id:VGWUO40-22Lab Sample Id:603763-003		Matrix: Date Collec	Soil cted: 10.25.18 12.30		Date Received:10.	27.18 09.0	0
Analytical Method: Chloride by E	EPA 300				Prep Method: E30)0P	
Tech: CHE					% Moisture:		
Analyst: CHE		Date Prep:	10.29.18 11.30		Basis: We	t Weight	
Seq Number: 3067996							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	27.5	4.96	mg/kg	10.29.18 15.55		1

Released to Imaging: 7/9/2021 2:17:22 PM



Arcadis - Roseville, CA, Roseville, CA

VGWU O-40 Truckline

Sample Id: Lab Sample Id	VGWUO40-23 : 603763-004		Matrix: Date Colle	Soil cted: 10.25.18 12.50		Date Received:10	0.27.18 09.0	0
5	thod: Chloride by EPA	300				Prep Method: E3	300P	
Tech:	CHE			10 20 10 11 20		% Moisture:		
Analyst: Seq Number:	CHE 3067996		Date Prep:	10.29.18 11.30		Basis: W	et Weight	
Seq Number.	5007990							
Parameter		Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride		16887-00-6	972	4.99	mg/kg	10.29.18 16.01		1



Arcadis - Roseville, CA, Roseville, CA

VGWU O-40 Truckline

Sample Id:VGWU040-24Lab Sample Id:603763-005		Matrix: Date Collec	Soil eted: 10.25.18 13.00]	Date Received:10.	27.18 09.0	0
Analytical Method: Chloride by EPA	A 300			1	Prep Method: E30	90P	
Tech: CHE					% Moisture:		
Analyst: CHE		Date Prep:	10.29.18 11.30	1	Basis: We	t Weight	
Seq Number: 3067996							
Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.01	5.01	mg/kg	10.29.18 16.06	U	1

Released to Imaging: 7/9/2021 2:17:22 PM

Flagging Criteria

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

SMP Clie	ent Sample	BLK	Method Blank	
BKS/LCS	S Blank Spike/Laboratory Control Sample	BKSD/LCSD	Blank Spike Duplicate/Labo	ratory Control Sample Duplicate
MD/SD	Method Duplicate/Sample Duplicate	MS	Matrix Spike	MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

QC Summary 603763

Arcadis - Roseville, CA VGWU O-40 Truckline

Analytical Method:	Chloride by EPA 3	00						Pre	ep Metho	d: E300	OP	
Seq Number:	3067996			Matrix:	Solid				Date Pre	p: 10.2	9.18	
MB Sample Id:	7665051-1-BLK		LCS Sar	nple Id:	7665051-1	I-BKS		LCSI	Sample	Id: 7665	5051-1-BSD	
Parameter	MB	Spike	LCS	LCS	LCSD	LCSD	Limits	%RPD I	RPD Limi	t Units	Analysis	Flag
	Result	Amount	Result	%Rec	Result	%Rec					Date	Tiag

Analytical Method:	Chloride by EPA 30)0						Pre	ep Metho	d: E30	OP 90	
Seq Number:	3067996			Matrix:	Soil				Date Pre	p: 10.2	9.18	
Parent Sample Id:	603758-002		MS Sar	nple Id:	603758-00	02 S		MSE	Sample	Id: 6037	758-002 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD F	RPD Limi	t Units	Analysis Date	Flag

Analytical Method:	Chloride by EPA 30	00						P	rep Meth	od: E30	OP	
Seq Number:	3067996			Matrix:	Soil				Date Pr	ep: 10.2	9.18	
Parent Sample Id:	603767-001		MS Sar	nple Id:	603767-00	01 S		MS	D Sample	e Id: 6037	767-001 SD	
Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Lim	it Units	Analysis Date	Flag
Chloride	163	248	414	101	421	104	90-110	2	20	mg/kg	10.29.18 13:46	

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

[D] = 100*(C-A) / B $\begin{aligned} \text{RPD} &= 200^* \mid (\text{C-E}) / (\text{C+E}) \mid \\ \text{[D]} &= 100^* (\text{C}) / \text{[B]} \end{aligned}$ Log Diff. = Log(Sample Duplicate) - Log(Original Sample) LCS = Laboratory Control SampleA = Parent Result C = MS/LCS Result E = MSD/LCSD Result

MS = Matrix Spike B = Spike AddedD = MSD/LCSD % Rec

.

				CH		OF CUS						Page _	_of_(Lab Work 0	00316
Contact & Company Name:	Telephone:					Preservative	E		:		· ·				Keys
Brett Krehbiel (Arcadis)	916-786- Fax:	-5382				Filtered (*)					-		-	A. H.SO B. HCL	Container Information 1. 40 ml Vial 2. 1 L Amber
Address: 101 Creekside Ridge Court, Suite 200						# of Containers Container Information	5							C. HNO ₃ D. NeOH	3. 250 ml Plastic 4. 500 ml Plastic
City State Zip Roseville CA 95678	E-mail Addres	_{is:} biel@arca	dis.com	4			PAF	RAMET	ERANA	LYSIS	METH	OD	1	E. None F. Other	7 A oz Glass
ject Name/Location (City, State):	Project #:	-				· USEPA 300	Lin			1			· · · /	G. Other H. Other:	8. 8 oz. Glass 9. Other:
GWU O-40 Trunkline, Lea County, NM	B00486 Sampler's Sig	i16.0040									. /			Matrix Key:	10. Other:
APHAEL FRANCES	R			-		37								W - Water	SE - Sediment NL - NAPL/ SL - Sludge SW - Samp
Sample ID	Colle	ction Time	Type) (√) Grab	Matrix	Chloride.	/							T - Tissue	A-Air Other:
/GWUO40-20	10-25-18		So	X	SO	X	(/		(((
/GWUO40-21	10/25/18	1220	50	X	SO	X					· · ·			· · ·	
/GWUO40-22		1230	50	X	SO	X			i	:	÷				
/GWUO40-23	1/25/19	12 50	50	X	SO	X							:		
/GWUO40-24	1 /29/18	1300	50	x	SO	X									
sector and the sector of the s															· · · · · · · · · · · · · · · · · · ·
· · · · · · · · · · · · · · · · · · ·		:													
								1							
			-			:	. ji								
			· .											·····	
			1.1.1	- E 			:								
											1				
ecial Instructions/Comments:				-	-										
			Non-zero concercio						Special C						
Laboratory Informat		eipt ustody Sea	ll (✔)		Printe	Relinqu ed Name:	lished By		Printed Name	Received B	<u>y</u>], ,	Printed-Nam	Relinquish :		Laboratory Received By
Cooler packed with ice (</td <td>× Inte</td> <td>ict</td> <td></td> <td>ot Intact</td> <td>Risigna</td> <td>DAMAGE E</td> <td>RANCO</td> <td>2</td> <td>Signature:</td> <td>Cono (</td> <td>ionzalez K</td> <td>Signature:</td> <td>a Go</td> <td>Canard rch</td> <td>TUMOUTA</td>	× Inte	ict		ot Intact	Risigna	DAMAGE E	RANCO	2	Signature:	Cono (ionzalez K	Signature:	a Go	Canard rch	TUMOUTA
city Turneround Requirements:	Sample F	Receipt:			Firm:	0			Firm/Courier:	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	- 0	Firm/Couried	- 	V X	na
pping Tracking #:	Condition	1/Cooler Te	mp: <u>/)</u>	.8	Date/		1		Date/Time:	10 -		Date/Time:	1-10	11:00 Date	1719/10
730826 CofC AR Form 08.27.2015		Dist	ributior	1:	marversenta	<u>> -26-18 /</u> - Laboratory	<u>o</u> guc returns v		10-26	-18 5	7:39 YELLOW-	10 20	18		IF 110 09 NK – Retained by Arcadi

Received by OCD: 10/28/2019 8:04:07 AM

Final 1.000

•
XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Arcadis - Roseville, CA	Acceptable Temperature Range: 0 - 6 degC
Date/ Time Received: 10/27/2018 09:00:00 AM	Air and Metal samples Acceptable Range: Ambient
Work Order #: 603763	Temperature Measuring device used : R8
Sample Recei	pt Checklist Comments
#1 *Temperature of cooler(s)?	.8
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6*Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	Νο
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

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

Analyst:

PH Device/Lot#:

Date: 10/29/2018

Checklist completed by: Ballo Tal Brianna Teel Checklist reviewed by: Muno Morah Kelsey Brooks

Date: 10/29/2018

ATTACHMENT 3.

Soil Boring Logs and Monitor Well Logs





Project: B0048616 Template:ChevronSoilBoring.ldfx Data File:VGWUO40-01 Date:6/25/2014





Remarks: ags = above ground surface; AK = air knife; amsl = above mean sea level; AR = air rotary; bgs = below ground surface; ppm = parts per million; HV=Hydrovac; * - Possible false PID readings due to instrument error.

Project: B0048616 Template:ChevronSoilBoring.ldfx Data File:VGWUO40-02 Date:6/25/2014





Project: B0048616 Template:ChevronSoilBoring.ldfx Data File:VGWUO40-03 Date:6/26/2014

Released to Imaging: 7/9/2021 2:17:22 PM





Project: B0048616 Template:ChevronSoilBoring.ldfx Data File:VGWUO40-04 Date:6/26/2014







Project: B0048616 Template:ChevronSoilBoring.ldfx Data File:VGWUO40-06 Date: 6/26/2014





Project: B0048616 Template:ChevronSoilBoring.ldfx Data File:VGWUO40-07 Date: 9/23/2014





Data File:VGWUO40-08 Date: 9/23/2014

<i>Re</i> Der	ivæl d illing (by/F0 Comp	GD: pany:	10/2 Har	3220 rison	398 and (4:07 AM Well/Boring ID: VGWUO40-09	evro Page 191 of 210
Dri	illing I mpling	Meth	od: A	ir Ro	otary		Client: Chevron EMC Location: VGWUO40- Trunk Line from VGWU Battery	
Bo De	orehol escrip	e De tions	pth: By:	30' b R.Na	gs anny			
рертн	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID Headspace (ppm)	Analytical Sample	Stratigraphic Description	
	0		HV			1		
-	-	1	AR	5	3.2	æ	SANDY CLAY (TOPSOIL), Brown (10YR5/3), silt to fine grained, trace medium grains in sample, loose becoming bi roots in sample, dry. CAPROCK CALICHE, White (2.5Y8/1) to Light Yellowish Brown (10YR6/4), indurated, fractured, laminated, dry, silic	
-5	-5 -				3.3	×	CALICHE, White (2.5Y8/1), vrey firm to indurated, powdery, dry, trace sand, very fine grained, sub-rounded, poorly s	sorted.
10	- - -10 -	2	AR	5				
-	-	-			1.8		5 2	
-	-	3	AR	5			CALICHE SAND, Very Pale Brown (10YR8/2), firm grained, sub-rounded, poorly sorted, weakly to slightly firm ceme calcareous.	ntation, dry, strongly
- 15	-15 -				1.6	×		
	-	4	AR	5				
- 20	-20 -	-			2.7		SANDSTONE, Very Pale Brown (10YR8/3), fine grained, sub-rounded, moderately sorted, firmly cemented, dry, cale	careous.
- 25		5	AR	5				
- 25	-25 -				2.1			
-	-	6	AR	5				
L_30-					3.5	×		



Project: B0048616 Template:ChevronSoilBoring.ldfx Data File:VGWUO40-09 Date: 9/23/2014

ARC		S Design 8 for natur built ass	Consultancy al and ets					Boring	No.: VGWUO40-	10
Soil B										
Project Na	ame:		'Y /RON F	MC			Date Started: 09/12/2016	Logger: <u>Melisa</u>	<u>Sheet: 1 of</u> a Phan	_2
				040.0003A		— Da	ate Completed: 09/12/2016 Rev			
				Y, NEW MEXICO		_	•	Reviewed: 01/07		
Depth (feet)	Sample Interval		Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description		Construction Details	Well
				Sample ID VGWU040-10 (2) at VGWU040-10 (4) at VGWU040-10 (7) at 1109			Description (0.0-2.0') 50% SILT, nonplastic; 40% sand, 1 gravel, angular to subangular; dry; roots (org reaction to HCl; light gray (10YR 7/2). (2.0-10.0') 90% SILT, nonplastic; 5% sand, 1 subrounded; high reaction to HCl; white (10' At 20.0 ft bgs, 90% SILT, nonplastic; 5% sand gravel, subrounded; high reaction to HCl; while (30.0-50.0') 90% SAND, very fine to medium nonplastic; dry; weak to no reaction to HCl; while (30.0-50.0') 90% SAND, very fine to medium	nd, medium; 5% gravel, YR 0/1).		Well
32 33 34										
35										
Drilling Co) .:		Drilling				Sampling Method:NA			
Driller:			<u>y Coope</u>					-		
Drilling Me								,		
Drilling Flu		None					\		No	
Drilling Rig	-	<u>NA</u> '/ft=fe	ot: " / in-	inch: has- below aroun	d surface	. nnm	Converted to Well:			
Remarks:					u suriace	, μρπ= β				
million; NA= not applicable / available. 2016 borings are generally logged in intervals: 0-10, 20, 30-50, 60-70 ft bgs. East Coor:										

57	ARCADIS Design & Conce for natural arc built assets	sultancy d				Boring	No.:_VGWUO40-	·10
(retv) Interval Counts (in.) Jampine (ppm) Case Details Weil 36	Soil Boring Log Project Name: CHEVE Project Number: B00486) RON EMC 616.0040.0003A		Da	te Completed: <u>09/12/2016</u> Revi	Logger: <u>Melisa</u> ewed by: <u>A. Le</u> l	a Phan hman	2
37 38 38 39 44 44 55 45 56 57 57 45 56 56 57 46 60 44 61 44 62 44 63 44 64 44 66 44 66 44 66 44	Depth Sample Blow Re (feet) Interval Counts	ecovery (in.) Sample ID		USCS Class	Description			Well
2016 borings are generally logged in intervals: 0-10, 20, 30-50, 60-70 ft bgs.	37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	1300	w grour	nd surfa	moist; weak to no reaction to HCI; yellowish b	orown (10YR 5/4).	native material	

ARCAD	Design & Consultancy for natural and built assets					Boring	No.:_VGWUO40-	11	
Soil Borir						,	Sheet: 1 of	1	
Project Name:	CHEVRON E				Date Started: 09/12/2016	Logger: Melisa	a Phan		
Project Number				_ Da	te Completed: 09/12/2016 Rev				
Project Location	n: <u>LEA COUNT</u>	Y, NEW MEXICO		_	Date F	Reviewed: <u>01/07</u>	/2019		
Depth Sampl (feet) Interva	e Blow Recovery al Counts (in.)	Sample ID	PID (ppm)	USCS Class	Description		Construction Details	Well	
	HCI Drilling	VGWUO40-11 (2) at 1005 VGWUO40-11 (4) at 1007			(0.0-2.0') 85% SILT, nonplastic; 15% sand, i dry; high reaction to HCl; light gray (caliche) At 4.0 ft bgs, 95% SILT, nonplastic; 5% fine dry; high reaction to HCl; very pale brown (c End of boring at 4.0 ft bgs.	(10YR 7/2).	Backfilled with native material		
Drilling Co.: Driller:	•	er				ft bas			
Drilling Method						-			
Drilling Fluid:					,				
Drilling Rig	NA			Converted to Well:		No			
Remarks:		inch; bgs= below around	d surface						
0									
2016 borings are		in intervals: 0-10, 20, 3	30-50.6	0-70 ft b		North Coor:			

.

ARCAD Soil Borin Project Name: Project Number Project Locatior	<u>g</u> Log <u>CHEVRON E</u> B0048616.00			 Da	Date Started: <u>09/13/2016</u> ate Completed: <u>09/13/2016</u> Rev Date F	Logger: <u>M</u> riewed by: <u>A</u> Reviewed: <u>0</u>	elisa Phan . Lehman	1
	e Blow Recovery I Counts (in.)	/ Sample ID	PID (ppm)	USCS Class	Description		Construction Details	Well
		VGWUO40-12 (2) at 0850 VGWUO40-12 (4) at 0855			(0.0-4.0') 60% SILT, nonplastic; 40% sand, dry; weak reaction to HCl; light gray (10YR End of boring at 4.0 ft bgs.	very fine to mediu 7/2).	m; Backfilled with native material	
5	HCI Drilling				Sampling Method:NA			
Driller:	-	er				ft bgs		
Prilling Method:	Air Rotary				, -	,		
Prilling Fluid:	None							
Drilling Rig	NA				Converted to Well:	Yes	× No	
2 3		inch: bas- below arour	d surface	opm= r	parts per Surface Elev.:NA			
Remarks:	/ π= teet; " / in=	· mon, bys- below groun	la barrabe	, pp r	Surface ElevINA			
emarks:		applicable / available.		, ppin p	North Coor:			

ARCAD	S Design & Consultancy for natural and built assets					Boring	No.: VGWUO40-	-13	
Soil Borin						c	Sheet: 1 of	1	
Project Name:	<u>CHEVRON E</u>	MC		_	Date Started: 09/12/2016	Logger: <u>Melisa</u>	Phan	1	
Project Number				_ Da	ate Completed: 09/12/2016 Revi	•			
Project Location	: LEA COUNT	Y, NEW MEXICO		_	Date Reviewed: <u>01/07/2019</u>				
Depth Sample (feet) Interva	e Blow Recovery Counts (in.)	Sample ID	PID (ppm)	USCS Class	Description		Construction Details	Well	
		VGWUO40-13 (2) at 1500 VGWUO40-13 (4) at 1503 VGWUO40-13 (10) at 1518			(0.0-4.0') 60% SILT, nonplastic; 40% sand, v dry; weak reaction to HCI; light gray (Caliche bill of the sand; 5% gravel, rounded to subrounded; hig dry; white (10YR 8/1). End of boring at 10.0 ft bgs.) (10YR 7/2).	Backfilled with native material		
					Sompling Mathed NA				
Drilling Co.: Driller:	HCI Drilling	er				1 10 ft bas			
Drilling Method:						-			
Drilling Fluid:						,			
Drilling Rig	NA				Converted to Well:		No		
Remarks:		inch; bgs= below groun	d surface	; ppm= r	parts per Surface Elev.:NA				
	million; NA= not	applicable / available.			North Coor:				
2016 borings are	016 borings are generally logged in intervals: 0-10, 20, 30-50, 60-70 ft bgs.								

ARC		S Design of for nature built ass	Consultancy ral and iets					Boring	No.: VGWUO40-	-14
Soil B									Sheet: 1 of	1
Project Na	ame:		VRON E	MC			Date Started: 09/12/2016	Logger: <u>Melisa</u>		I
-				040.0003A		_ Da	te Completed: 09/12/2016 Rev			
Project Lo	cation:	LEA	COUNT	Y, NEW MEXICO		_	Date F	Reviewed: <u>01/07</u>	/2019	
Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description		Construction Details	Well
				VGWUO40-14 (2) at 1345 VGWUO40-14 (4) at 1350			(0.0-4.0') 75% SAND, fine to medium; 15% s gravel, angular to subangular; well sorted; dr to HCI; pink (7.5YR 7/3). Note: Secondary color gray (7.5YR 6/1).	silt, nonplastic; 10% y, moderate reaction	Backfilled with native material	
Drilling Co).: 	HCI I	Drilling				Sampling Method <u>:NA</u>			
Driller:			-	er				ft bgs		
							-			
						Water Level Start (it. bgs. Water Level Finish (ft. bto				
ć.		NA					Converted to Well:		< No	
Drilling Ri			ot: " / in-	inch: has- holow arcus	deurfoor					
Remarks:					a surface	; ppm= p	arts per Surface Elev. <u>:NA</u>			
							North Coor:			
2016 borings are generally logged in intervals: 0-10, 20, 30-50, 60-70 ft bgs.						J ^{s.} East Coor:	East Coor:			

ARC		S Design & for natu built ass	Consultancy al and ets					Boring	No.: <u>VGWUO40-</u>	15
Soil B									haati 1 of	1
Project Na			VRON E	MC			Date Started: 09/12/2016	Logger: <u>Melisa</u>	<u>heet: 1 of</u> Phan	1
Project Nu	umber:	<u>B004</u>	8616.0C	040.0003A		_ Da	te Completed: <u>09/12/2016</u> Rev	iewed by: <u>A. Leh</u>	man	
Project Lo	cation	LEA	COUNT	Y, NEW MEXICO			Date F	Reviewed: <u>01/07/2</u>	2019	
Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description		Construction Details	Well
				VGWUO40-15 (2) at 1415 VGWUO40-15 (4) at 1417			(0.0-4.0') 80% SAND, fine to medium; 10% gravel, subangular; well sorted; dry; modera pink (7.5YR 7/3).	silt, nonplastic; 10% te reaction to HCI;	Backfilled withnative material	
Drilling Co	D.:	HCI [Drilling				Sampling Method: <u>NA</u>			
Driller:			•	r				ft bgs		
							-			
EI										
Drilling Ri		NA					Converted to Well:		No	
Remarks:	-		et: " / in-	inch: bas= below aroun	d surface	nnm= n				
0										
						North Coor:				
2016 borings are generally logged in intervals: 0-10, 20, 30-50, 60-70 ft bgs.							^{gs.} East Coor:			

.

Boring N										16
Soil Bo									Sheet: 1 of	2
Project Na	me:		VRON E	MC			Date Started: 09/13/2016	Logger: <u>Melisa</u>	a Phan	2
-				040.0003A		_ Da	te Completed: <u>09/13/2016</u> Rev			
Project Lo	cation:	<u>LEA</u>	COUNT	Y, NEW MEXICO			Date F	Reviewed: <u>01/07</u>	/2019	
Depth (feet)	Sample Interval		Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description		Construction Details	Well
$ \begin{bmatrix} 1 \\ 2 \\ 3 \\ 4 \\ - 3 \\ - 4 \\ - 5 \\ - 6 \\ - 7 \\ - 6 \\ - 7 \\ - 8 \\ - 9 \\ - 10 \\ - 11 \\ - 12 \\ - 13 \\ - 14 \\ - 15 \\ - 14 \\ - 15 \\ - 16 \\ - 17 \\ - 18 \\ - 19 \\ - 20 \\ - 21 \\ - 22 \\ - 23 \\ - 24 \\ - 25$				VGWUO40-16 (2) at 0958 VGWUO40-16 (4) at 1000			(0.0-4.0') 75% SAND, very fine to medium; 1 15% gravel, subangular to angular; well sorte moderate reaction to HCl; pink (7.5YR 7/3). (4.0-10.0') 80% SILT, nonplastic; 10% sand, 10% gravel, subrounded to subangular; high white (10YR 8/1). At 20.0 ft bgs, 80% SILT, nonplastic; 10% sand, 10% gravel, subrounded to subangular; high white (10YR 8/1).	ed; dry; weak to fine to medium; reaction to HCI; dry;	Backfilled with native material	
Drilling Co	.:		Drilling							
Driller: Kenny Cooper Sampling Inte								-		
Drilling Method: <u>Air Rotary</u> Water Level Start										
							` _	v.):NA		
Drilling Rig		NA	+ - + / '	in the large of the					< No	
Remarks: ' / ft= feet; " / in= inch; bgs= below ground surface; ppm= parts per Surface Elev.:NA million; NA= not applicable / available. North Coor:										
2016 boring				applicable / available. in intervals: 0-10, 20,	30-50, 6	0-70 ft b	North Coor: ^{gs.} East Coor:			

	D ring L me: <u>CH</u> mber: <u>B0</u>	. OG EVRON E 048616.00	MC 040.0003A Y, NEW MEXICO		Da	te Completed: 09/13/2016_Reviewe	S ogger: <u>Melisa</u>	man	
Depth (feet)	Sample Blo Interval Cour	w Recovery nts (in.)	Sample ID	PID (ppm)	USCS Class	Description		Construction Details	Well
26 27 28 29 30 31 31 32 33 34 33 34 35 36 37 36 37 38 37 40 41 41 42 41 42 41 42 43 44 41 42 43 44 41 42 43 44 41 42 43 44 45 44 45 46 47 48 49 50 50 7 7 7 7 7 7 7 7 7 7 7 7 7			VGWUO40-16 (50) at 1048			(30.0-50.0') 90% SAND, fine to medium; 10% silt, dry; weak reaction to HCI; pink (7.5YR 7/3).	nonplastic;	Backfilled with native material	
2016 boring			in= inch; bgs= belo n intervals: 0-10, 20,			ace; ppm= parts per million; NA= not a gs.	pplicable / av	ailable.	

ARC		n & Consultancy tural and assets						Boring	No.: VGWUO40-	-17
Soil Bo	orina L	ba							Sheet: 1 of	1
Project Nar	ne: <u>CHE</u>	EVRON E	MC			Date Started:	09/13/2016	Logger: <u>Melis</u>		1
Project Nur					_ Da	te Completed:	09/13/2016 Revi			
Project Loc	ation: <u>LEA</u>	COUNT	Y, NEW MEXICO		_		Date R	Reviewed: <u>01/07</u>	7/2019	
	Sample Blow nterval Count		Sample ID	PID (ppm)	USCS Class		Description			Well
			VGWUO40-17 (2) at 1030 VGWUO40-17 (4) at 1034			dry; weak reaction to		rery fine to medium; /2).	Backfilled withnative material	
Drilling Co.:		Drilling					ng Method <u>:NA</u>			
Driller: Kenny Cooper						-	ng Interval <u>:2 and 4</u>			
							evel Start (ft. bgs.)			
							Water Level Finish (ft. btoc.):NA			
ទ្វីDrilling Rig <u>NA</u> Con						Convert	Converted to Well: Yes X No			
Remarks: '/ ft= feet; "/ in= inch; bgs= below ground surface; ppm= parts per Surfa										
million; NA= not applicable / available. No					North C					
2016 borings	2016 borings are generally logged in intervals: 0-10, 20, 30-50, 60-70 ft bgs.						North Coor: East Coor:			

ARC		S Design & for natu built ass	Consultancy ral and ets					Boring	No.: VGWUO40-	18
Soil B										2
Project Na	ame:		VRON E	MC			Date Started: 09/13/2016	Logger: <u>Melis</u>	<u>Sheet: 1 of</u> a Phan	2
-				040.0003A		_ Da	te Completed: 09/13/2016 Rev			
Project Lo	cation:	LEA	COUNT	Y, NEW MEXICO			Date F	Reviewed: <u>01/07</u>	/2019	
Depth (feet)	Sample Interval		Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description		Construction Details	Well
(feet)		Counts	(in.)	VGWUO40-18 (2) at 1214 VGWUO40-18 (4) at 1216	(ppm)		(0.0-4.0') 80% SAND, fine to medium; 10% s gravel, subangular to angular; well sorted; dr HCl; pink (7.5YR 7/3). (4.0-10.0') 75% SILT, nonplastic; 10% sand, 15% gravel, subrounded; high reaction to H0 8/1). At 20.0 ft bgs, 75% SILT, nonplastic; 10% se 15% gravel, subrounded; high reaction to H0 8/1).	very fine to fine; Cl; dry; white (10YR	Backfilled with	
	1									
Drilling Co	D.:		Drilling				Sampling Method: <u>NA</u>	d 70 ft baa		
Driller:	othad		<u>y Coope</u> otony				10			
Drilling Me			-							
Drilling Flu		None	9				`		No	
Drilling Ri	-	<u>NA</u> '/ft=fe	et·"/in-	inch: has= below aroun	d surface	. nnm- n	Converted to Well: arts per Surface Elev. <u>:NA</u>			
Remarks:				applicable / available.	u sunace	<i>ν</i> , μριτι– β	North Coor:			
2016 boring				n intervals: 0-10, 20, 3	30-50, 6	0-70 ft b				

ARC		gn & Consultancy atural and assets					Boring	No.: VGWUO40	-18
Soil Bo Project Nam Project Num	ring L ne: <u>CH</u> nber: <u>B00</u>	OG EVRON E 48616.00	040.0003A		Da	Date Started: <u>09/13/2016</u> ate Completed: <u>09/13/2016</u> Revi	Logger: <u>Melisa</u> iewed by: <u>A. Le</u> ł	nman	2
	ation: <u>LEA</u>		Y, NEW MEXICO	PID	USCS		eviewed: <u>01/07/</u>	Construction	
(feet) Ir	nterval Coun	ts (in.)	Sample ID	(ppm)	Class	Description		Details	Well
36 37 38 39 40 41 42 43 44 45 46 47 48 50 51 52 53 54 55 56 57 58 59 60 61 62 63 66 67 68 69 70 71			VGWU040-18 (70) at 1323			(60.0-70.0') 85% SAND, fine to medium; 10% gravel, subrounded; moist; weak reaction to (7.5YR 5/4).	6 silt, nonplastic; 5% HCI; yellowish brown	Backfilled with native material	
						End of boring at 70.0 ft bgs.			
Remarks:			in= inch; bgs= belo in intervals: 0-10, 20,			ace; ppm= parts per million; NA= n gs.	ot applicable / av	ailable.	
URGEN									

AR		S Design of for nature built as:	Consultancy ral and ets					Boring	No.: VGWUO40-	19
Soil B	oring	g Lo	g					s	Sheet: 1 of	1
Project Na	ame:	CHE	VRON E				Date Started: 09/13/2016	Logger: <u>Melisa</u>	Phan	
-				040.0003A		_ Da	ate Completed: 09/13/2016 Rev			
Project Lo	cation	<u>LEA</u>	COUNT	Y, NEW MEXICO		_	Date R	Reviewed: <u>01/07/</u>	2019	
Depth (feet)	Sample Interval	Blow Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description		Construction Details	Well
				VGWUO40-19 (2) at 1146 VGWUO40-19 (4) at 1150			(0.0-4.0') 80% SAND, fine to medium; 10% s gravel, subangular; well sorted; dry; weak rea (7.5YR 7/3).	silt, nonplastic; 10% action to HCI; pink	Backfilled withnative material	
Drilling Co	D.:	HCI I	Drilling				Sampling Method:NA			
Driller:			•	er				ft bgs		
Drilling M	ethod:		•					-		
Drilling Fl		None	-							
Drilling Ri		NA	,				Converted to Well:		No	
-	-		pet· " / in-	inch: has= helow arour	nd surface		<u></u> Converted to well: <u></u> parts per Surface Elev.:NA			
Remarks:					iu surtaci	e, ppm= p				
2016 boring	are a			applicable / available. in intervals: 0-10, 20,	30-50.6	0-70 ft b	North Coor:			
5 1- 0.000000	, y		, 99001				^{gs.} East Coor:			

ARCAD	S Design & Consultancy for natural and					Boring	g No.:VGWUO4	0-MW-1
Soil Borin Project Name:		MC			Date Started: <u>12/04/2017</u>	Logger: <u>R. Na</u>		5
		040.0003A		— Da	te Completed: <u>12/04/2017</u> Rev		-	
-		Y, NEW MEXICO			•	Reviewed: 01/07		
Depth Sample			PID (ppm)	USCS Class	Description		Construction Details	Well
	()		(1+1+)		(0.0-0.4') No cuttings available (Hydro-Vac)			
1 2 3 4 5 6 7 8 9 11 12 13 14			0.7		(0.4-15.0) CAPROCK CALICHE; indurated; showing trace fine grains, subrounded; poo pisolites; white (2.5Y 8/1) laminated with pir	; fractured; dry; rly sorted and	7 inch diameter_ Drilled Hole Well Casing 4 inch diameter – Sch.40	
15 16 17 18 19 20 21 22 23 24 25 26			1.0		(15.0-35.0') SANDY CALICHE, very fine, su moderately sorted; firm; friable; dry containi trace caliche nodules, 0.2 to 0.3' in size; pir	ng little to some;	Portland Bentonite mix – Grout (2-110 ft)	
					Sand increased to some and fine; poorly so			
Drilling Co.:	HCI Drilling				Sampling Method:Shovel			
Driller:		er						
Drilling Method: Drilling Fluid:		ary				•		
Drilling Rig	NA] Yes [No	
Remarks:		inch: has= below aroun	d surface	. nnm= n	arts per Surface Elev.:NA			
		applicable / available.						
Well stick up const		t above ground surfac			North Coor: East Coor:			

ARC	ADIS Design 8 for nature built asso	Consultancy ral and ets						Boring N	o.: <u>VGWI</u>	<u>JO40-</u>	<u>-MW-1</u>	
	oring Lc							Sh	eet: 2	of	5	
Project Na	ame: <u>CHE'</u>	VRON E				Date Started: <u>12/04/2017</u>	Logger:	R. Nanr	ıy			
	Imber: <u>B004</u>				_ Da	ate Completed: <u>12/04/2017</u> Rev	-					
Project Lo	cation: <u>LEA (</u>		, NEW MEXICO			Date F	Reviewed:	01/07/2	019			
Depth (feet)	Sample Blow Interval Counts	Recovery (in.)	Sample ID	PID (ppm)	USCS Class	Description			Construct Details	ion	We	ااد
31 32 33 34 35 36 37 38				1.5		(35.0-37.0') SILICEOUS CALICHE, indurate very fine, subrounded; moderately sorted; d 5/4). (37.0-60.0') SANDSTONE, very fine to fine, sorted; friable; dry; calcareous; pink (7.5YR	ry; brown (7.5Y	Ŕ				
339 40 41 42 43 43 44 45 46 46 47 48 49				2.2					Portlan Bentonite Grout (2-11	mix —		
50 - 51 - 52 - 53 - 53 - 53 - 55 - 55 - 56 - 57 - 58 - 59 - 60 - 61 - 62 -				2.7		(60.0-70.0') SANDSTONE, fine, subrounded friable; weakly cemented; dry; formation cor (7.5YR 8/4).	d; poorly sorted ntains firm; pink					
§ 62 Remarks:	/// ft=	feet [.] " / i	n= inch: bas= bela	w arou	hd surfe	 ace; ppm= parts per million; NA= r	not applicat	le / ava	ilahle		<u>Y/}_</u>	
	/ 11-	1001, 71		Ju groui								
אוואפ ר												
24												

ARCADIS Design & Consultance for natural and Useds	Boring No.: VGWUO40	-10100-1
Soil Boring Log	Sheet: 3 of	5
Project Name: <u>CHEVRON EMC</u> Date Started: <u>12/04/2017</u>	Logger: <u>R. Nanny</u>	
Project Number: <u>B0048616.0O40.0003A</u> Date Completed: <u>12/04/2017</u> Rev	viewed by: <u>A. Lehman</u>	
Project Location: LEA COUNTY, NEW MEXICO Date F	Reviewed: <u>01/07/2019</u>	
Depth (feet) Sample Interval Blow Counts Recovery (in.) Sample ID PID (ppm) USCS Class Description	Construction Details	Well
63 64 64 65 66 67 68 69 70 71 71 72 73 74 75 75.5 76 77.7 77 76 77 76 77 77.7 78 75.5 76 77.7 78 75.5 88 81 82 83 84 85 90 90 91 91 92 91 93 94 */ft= feet; " / in= inch; bgs= below ground surface; ppm= parts per million; NA= r	e, subrounded; poorly calcareous (7.5YR 8/2); ranging tht brown (7.5YR 6/4).	

ARC	ADIS	Design & Consultancy for natural and built assets					B	oring No.:	VGWU	040-	MW-1	
Soil Bo								<u>.</u>		,	_	
Project Na	me: C	HEVRON	EMC			Date Started: <u>12/04/2017</u>	Logger: <u>R</u>	Sheet: . Nannv	4	of	5	
			O40.0003A		— Da	ite Completed: <u>12/04/2017</u> Rev						
			Y, NEW MEXICO		_		Reviewed: <u>0</u>					
Depth (feet)	Sample B Interval Co	low Recover	y Sample ID	PID (maga)	USCS Class	Description		Со	nstructio Details	on	We	11
Depth (feet) 95 96 97 98 99 99 100 101 102 102 103 104 105 106 107 108 109 100 107 108 109 110 108 109 110 111 111 112 113 114 115 115 116	Sample B Interval C	low Recover (in.)	Sample ID	PID (ppm) 61.2 47.2 36.8	USCS Class	Description		H Ber Grou Ben (1	Portland tonite m ut (2-110 ell Seal 3 h Hydrato onite Ch 10-114 ft	/8 eed	We	
						Formation because moderately to firmly an		(1	Silica Sa 14-149 fi	and t)		
				43.1		Formation became moderately to firmly cerbgs.	nenteu al 120.0 Π	We incl Sch	ll Screen n diamet . 40 0.01 slot 9.26-149. ft)	er 10"		
Remarks:		ft= feet; "	/ in= inch; bgs= belo	w groui	nd surfa	ace; ppm= parts per million; NA=	not applicable	e / availabl	e.			
0.065.0												
YING												
2 2 2 2 2 2												

ARCADIS Design & Consultancy tornature and torsate		Boring No.: VGWUO40-MW-1	
Soil Boring Log		Sheet: 5 of 5	
Project Name: <u>CHEVRON EMC</u>		Date Started: <u>12/04/2017</u> Logger: <u>R. Nanny</u>	
Project Number: <u>B0048616.0O40.0003A</u> Project Location: <u>LEA COUNTY, NEW MEXICO</u>		Date Completed: <u>12/04/2017</u> Reviewed by: <u>A. Lehman</u> Date Reviewed: <u>01/07/2019</u>	
Depth Sample Blow Recovery Sample ID		JSCS Description Construction We	2
	(PP)		-
		Began trace gravel, block, flint, 0.1 cm in size, rounded at 130.0 ft bgs increasing in size and amount with increasing depth.	
	25.3		
137 /		Well Screen 4	
	• •	stati 40.000	
		ft)	
		Formation contained trace calcareous; thin lenses and nodules	
		very pale brown (10YR 8/3) at 140.0 ft bgs.	
	113.2	(145.0-150.0') GRAVELLY SAND, very fine to fine, subrounded;	
	0	poorly sorted; tightly packed; wet; containing trace gravel; multicolored; churt; flint and guartz pebbles; 0.1 to 0.5 cm;	
	\sum_{c}	subrounded; loose; formation also contained; trace clay;	
	0	subrounded; firm; blocky and clay stone; light red; (2.5YR 6/6); lenses; firm; blocky; thin; light brown (7.5YR 6/4).	
	h. 1	End Cap	
). . c		
		End of boring at 150.0 ft bgs.	
157			
Remarks: ' / ft= feet; " / in= inch; bgs= below	ground	surface; ppm= parts per million; NA= not applicable / available.	

District I 1625 N. French Dr., Hobbs, NM 88240 Phone:(575) 393-6161 Fax:(575) 393-0720 District II

811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505 Phone: (505) 476-3470 Fax: (505) 476-3462

State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division 1220 S. St Francis Dr. Santa Fe, NM 87505

CONDITIONS

Operator:	OGRID:
Arcadis U.S., Inc	329073
630 Plaza Drive	Action Number:
Highlands Ranch, CO 80129	2101
	Action Type:
	[C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bbillings	1) Each individual incident number needs a separate report, even if duplicate 2) Approved monitor well plan 3) Approved as investigation report but needs soil remediation/plan	7/9/2021

Page 210 of 210 CONDITIONS

Action 2101