FREEPORT-MCMORAN

Freeport-McMoRan Chino Mines Company
P.O. Box 10
Bayard, NM 88023

Sherry Burt-Kested
Manager, Environmental Services
Telephone: 575-912-5927
e-mail: sburtkes@fmi.com

July 2, 2021

Certified Mail #70182290000117918147

Mr. John Rhoderick, Deputy Director
Water Protection Division
New Mexico Environment Department
P.O. Box 5469
Santa Fe, New Mexico 87502

Dear Mr. Rhoderick:

Re: Interim Removal Action (IRA) Completion Report
Hanover Whitewater Creek Investigation Unit – Chino AOC

Freeport-McMoRan Chino Mines Company (Chino) submits under separate cover the *Completion Report for the Whitewater Creek Interim Removal Action for the Hanover Whitewater Creek Investigation Unit (HWCIU)* under the Chino Administrative Order on Consent (AOC). This report documents the IRA activities and results as well as the data collected, analyzed and validated for the soil/sediment removal performed by Chino. The Whitewater Creek IRA was performed in accordance with the 2018 HWCIU IRA Workplan, approved by the New Mexico Environment Department (NMED). The Completion Report was submitted today to Mr. David Mercer.

Please contact Ms. Pam Pinson at (575) 912-5213 with any questions or comments concerning this assessment report.

Sincerely,

Pam Pinson for
Sherry Burt-Kested
Manager, Environmental Services

SBK:pp
20210630-001

c: (via email)
Joseph Fox, NMED
David Mercer, NMED
Petra Sanchez, US EPA
Mike Steward, FCX

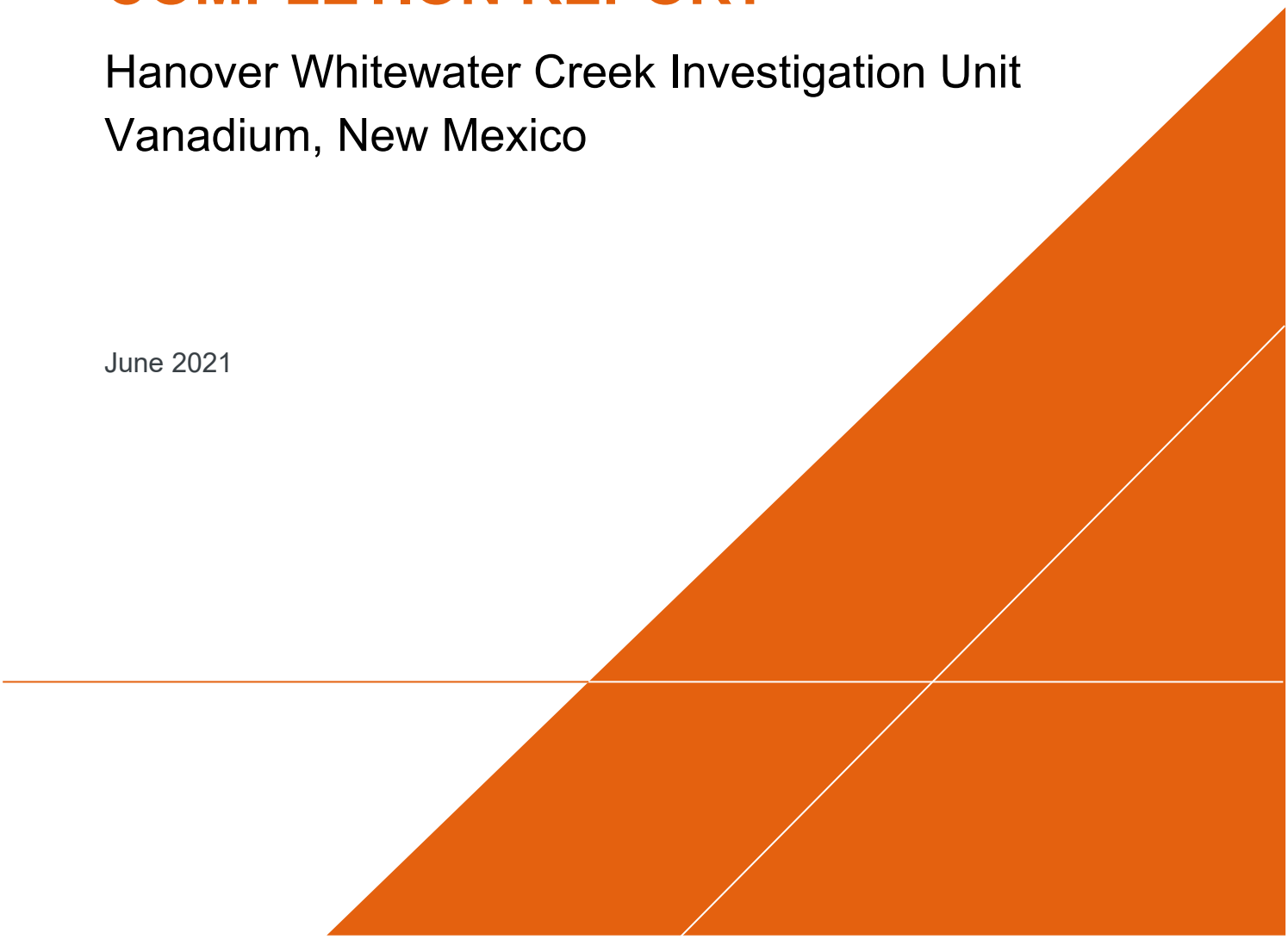
ARCADIS Design & Consultancy for natural and built assets

Freeport-McMoRan – Chino Mines Company

INTERIM REMOVAL ACTION COMPLETION REPORT

Hanover Whitewater Creek Investigation Unit
Vanadium, New Mexico

June 2021



Daniel Bonner, P.E.
Principal Engineer

Marianne Batchelder
Project Scientist

Oscar Sorensen
Project Manager

INTERIM REMOVAL ACTION COMPLETION REPORT

Hanover Whitewater Creek Investigation Unit
Vanadium, New Mexico

Prepared for:
Freeport-McMoRan Chino Mines Company

Prepared by:
Arcadis U.S., Inc.
630 Plaza Drive
Suite 100
Highlands Ranch
Colorado 80129
Tel 720 344 3500
Fax 720 344 3535

Our Ref.:
30084983.50000

Date:
June 2021

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ACRONYMS AND ABBREVIATIONS

AOC	Administrative Order on Consent
Arcadis	Arcadis U.S., Inc.
BMP	best management practice
CCP	Closure/Closeout Plan
CFR	Code of Federal Regulations
CGP	Construction General Permit
Chino	Freeport-McMoRan Inc. Chino Mines Company
COPC	constituent of potential concern
CWA	Clean Water Act
FMI	Freeport-McMoRan Inc.
HWC	Hanover and Upper Whitewater Creek
HWCIU	Hanover and Whitewater Creek Investigation Unit
IRA	Interim Removal Action
CR	Interim Removal Action Completion Report
NAD83	North American Datum of 1983
NAVD88	North American Vertical Datum of 1988
NMED	New Mexico Environment Department
NPDES	National Pollutant Discharge Elimination System
NWP	Nationwide Permit
QAP	Quality Assurance Plan
RI	Remedial Investigation
RRA	Residual Risk Assessment
SOP	Standard Operating Procedure
SWA	Site-wide Abatement
SWPPP	Stormwater Pollution and Prevention Plan
the site	Chino Mine located in Vanadium, New Mexico
TCO	tin can plant operation
TMDL	Total Maximum Daily Load
USA	USA Environment, L.P.

USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WP	Interim Removal Action Workplan
XRF	x-ray fluorescence

1 INTRODUCTION

Freeport-McMoRan Inc. Chino Mines Company (Chino) conducted an interim removal action (IRA) in 2019 for the Hanover Whitewater Creek Investigation Unit (HWCIU; **Figure 1**) under the Chino Administrative Order on Consent (AOC). The New Mexico Environment Department (NMED) and Chino entered into the AOC on December 23, 1994 to investigate and to address environmental risk within the Investigation Area that may have occurred due to historical mining operations. The HWCIU is one of six investigation units within the IA. The Phase I Remedial Investigation (RI; Golder 2000) indicated that physical reaches P1 through P3 within the HWCIU comprise the majority of sediment impacts.

A removal action was conducted under the HWCIU IRA Workplan (WP) (Arcadis 2018), which was approved by NMED in June 2018 (NMED 2018a). This IRA Completion Report (CR) describes construction activities performed as part of the HWCIU IRA, including removal of mine-impacted soil and sediment within the HWCIU to achieve mass reduction and subsequent backfilling to restore the preconstruction grade.

1.1 Site Setting

Chino operates the Santa Rita Mines in southeast Grant County, New Mexico (**Figure 1**). Nearby towns include Hanover, Vanadium, Bayard, North Hurley, and Hurley.

Hanover Creek begins in the Pinos Altos Range at an elevation of approximately 7,500 to 8,000 feet above sea level and flows to the south in a narrow valley for 8 miles at a slope of approximately 2 percent to the confluence with Whitewater Creek. Whitewater Creek originates near the former Chino Precipitation Plant and flows west approximately 3,000 feet at a grade of approximately 1.7 percent to its confluence with Hanover Creek. Downstream of the confluence, Hanover and Upper Whitewater Creek (HWC) flows for 7 miles to the south-southwest through a wide valley towards the Town of Hurley.

The topography for the area ranges from mountainous in the north to flat plains in the south. The hillslopes are steep in the north, ranging from 10 percent slope to vertical cliffs, and are gentle in the south, ranging from 0 to 3 percent slopes. Elevation, steepness, and ruggedness generally decrease from north to south.

Climate data are taken from two meteorological stations: the Santa Rita Station and the Hurley Station. The Santa Rita Meteorological Station is located near the mine at an elevation of approximately 6,200 feet. The Hurley Meteorological Station is located near the former Hurley Smelter at an elevation of 5,700 feet. The average annual precipitation for the Santa Rita and Hurley Stations between 1985 and 1999 were 19.18 and 15.69 inches, respectively; however, average annual precipitation fluctuates significantly, ranging from approximately 6 to 30 inches per year. The frost-free period is from late April to mid-October and is approximately 165 to 190 days. Spring and late fall months are generally dry (Golder Associates 1998). Approximately half of the annual precipitation occurs in July, August, and September in high-intensity, short-duration rain events. During the rainy season, high flow conditions result in the scour and deposition of soil and sediment within and adjacent to HWC.

1.2 Site History

Large-scale open-pit mining of copper began in 1910 at the current Santa Rita Mine site, but mining has occurred in the area for more than 200 years. The primary minerals extracted include copper, iron, lead, and zinc, and have also included limited amounts of gold and silver. The major activities associated with the Santa Rita Mine that have affected the creek system are listed below (Golder Associates 2000):

- Santa Rita Creek, a large tributary to Whitewater Creek that originated near the Santa Rita Mine, was cut off before 1948 as the Santa Rita Pit grew in size (based on a 1948 United States Geological Survey [USGS] topographic map).
- Emplacement of the West Stockpile on the east bank of Hanover Creek began sometime after 1948 (based on the 1948 USGS topographic map). Six containment dams, including interceptor wells, were constructed between 1991 and 1993 along the western edge of the stockpile to capture runoff and seepage releases to Hanover Creek. Leaching operations on the West Stockpile ceased in 1995.
- The Chino Precipitation Plant at the head of Whitewater Creek operated from the 1930s to 1998 and was demolished and removed. During upset conditions, overflows contributed process water to Whitewater Creek. The current Ivanhoe Concentrator was constructed near the Precipitation Plant in 1982. Dam 17 was constructed in 1998 immediately downstream of the Precipitation Plant and the Ivanhoe Concentrator in order to contain a 100-year return-interval flow event.
- Small tin can plant operations (TCOs) historically operated within Whitewater Creek using Precipitation Plant runoff during upset conditions to collect copper precipitate product. In 1999, an interim removal action removed the infrastructure and debris down to the natural creek bed for 25 of these sites.
- The tailing pipeline from the Ivanhoe Concentrator to the tailing ponds near Hurley was constructed in 1982. Before that time, ore was shipped by rail to a concentrator at Hurley, and no pipeline was necessary. The pipeline runs through Bayard Canyon and along the east side of Whitewater Creek. Occasionally, pipeline breaks have resulted in releases of tailing slurry that have reached Whitewater Creek.
- The historical Hurley Concentrator was constructed in approximately 1910. The former Hurley Smelter was constructed in 1939. Various mineral processing by-products (e.g., concentrate tailing) were released to Lake One (which is near the tailing ponds) in the past.
- Lake One was developed in Whitewater Creek and constructed southeast of the Hurley Concentrator in 1910 to capture stormwater runoff from upstream Whitewater Creek to supply the concentrator operations. Lake One captured many of the releases from the Chino operation and other non-Chino upstream operations and was reclaimed in 2014.
- Immediately downstream of Lake One, the older Chino tailing ponds operated from 1911 until the late 1980s with reclamation completed in 2012. Pond 7 was constructed in 1987 and is currently in use. These tailing ponds also covered the former Whitewater Creek channel. Beginning just north of Lake One, Whitewater Creek has been diverted to the east of Lake One and the older and current tailing ponds. The diversion confluences with the original Whitewater Creek just south of Tailing Pond 7.

1.3 Purpose

As stated in the NMED-approved HWCIU IRA WP (Arcadis 2018), the purpose of the IRA was:

- To reduce the mass of Constituents of Potential Concern (COPCs), including copper, iron, and lead in soil and sediment within the active channel, bar and overbank deposits of HWCIU which could be an ongoing source of exposure to nearby residents or ecological receptors, and
- To improve channel flow conditions by removing hardened physical obstructions left by historic TCOs.

The focus of the IRA was to remove accessible impacted sediment/soil deposited in the bars, overbanks, active channel (ferricrete only), and TCOs, located in reaches P2 through P3. Reach P1 did not meet the objective of the IRA because the physical reach was not affected by TCOs. Areas with visual ferricrete, as a result of the TCOs, in the active channel are included in the IRA Workplan (Arcadis 2018), whereas Site-wide Abatement (SWA) under Discharge Permit 1340 addresses the active channel sediment as part of the subsurface groundwater regulatory overlap with the AOC.

1.4 Background

The extent of soil and sediment removal conducted during the IRA was informed by numerous historical studies that detail the nature and extent of metal impacts in soil and sediment within HWCIU, including:

- AOC Background Study for the Investigative Area (Chino 1995)
- Phase I Remedial Investigation HWCIU (Golder 2000),
- Phase II Ecological Remedial Investigation HWCIU (JSA ARCADIS 2001),
- Supplemental Technical Memorandum Sediment Background Investigation HWCIU (Golder 2004),
- Interim Action Work Plan HWCIU (BBL 2006), and
- Technical Memorandum Data to Support Ecological Risk Assessment HWCIU (Golder 2008).

Delineation of removal areas was also based on the results of a visual inspection of HWC conducted in August 2017 by Arcadis U.S., Inc. (Arcadis), NMED, and Chino to document existing conditions and reevaluate areas with historical exceedances of site COPCs (Arcadis 2018). The 2017 visual inspection was intended to confirm and revise impacted areas identified in the 2006 BBL IRA Workplan. The visual inspection consisted of identifying impacted areas, describing impacts, measuring approximate dimensions, taking photographs, and collecting limited samples for x-ray fluorescence (XRF) testing. The visual inspection confirmed 19 impacted areas that were identified during previous investigations. The visual inspection also identified 87 impacted areas not previously mapped. Individual impacted areas ranged in size from approximately 65 to 90,000 square feet. The criteria used to identify the areas were as described in Section 3.2 of the HWCIU IRA WP:

- Presence of ferricrete,
- Lack of vegetation, which may indicate COPC mass,
- Discoloration or staining, which may be indicative of deposition of COPCs,

- Evaluation and verification of historic transects that were evaluated in 2006 to represent typical cross sections for different creek properties such as bedrock, rail, split channel, and weir. Transects are shown as red lines on Figures 3 through 7, BBL 2006 IRA Workplan,
- Presence of rock piles,
- Evidence of a former tin can operation

The IRA Workplan (Arcadis 2018) describes a removal area prioritization process that involved ranking removal areas based on overall benefit for effort as well as accounting for overall size, accessibility, and HWC geomorphology and hydraulics. The removal area prioritization proposed narrowing the scope of the IRA to the removal areas with the largest footprints, COC mass, and potential for mobility of impacted materials. However, during construction, the scope of the IRA expanded upon the scope proposed in the IRA Workplan (Arcadis 2018) and removal activities included each of the areas identified during the 2017 visual inspection, eleven additional removal areas identified during construction, removal of friable ferricrete, where observed, and removal of three locations in Hanover Creek that had elevated lead concentrations unrelated to TCOs, although visually targeted as were the historical plants.

1.5 Document Organization

The remaining sections of this CR are organized as follows:

- *Section 2 – Interim Removal Action Summary.* This section summarizes IRA construction activities.
- *Section 3 – Construction Documentation.* This section references the record drawings showing the final limits and extents of the work, presents photograph documentation of construction, and post-construction aerial surveys.
- *Section 4 – Interim Removal Action Sampling*. This section presents the results of sampling conducted as part of the interim removal action and data used to inform the Interim Removal Action Residual Risk Assessment Report (RRA) (Arcadis 2021).
- *Section 5 – Workplan Deviations.* This section presents deviations and changes from the IRA Workplan
- *Section 6 – Post-Construction Monitoring and Project Closeout.* This section presents the scope of post-construction monitoring and project closeout.
- *Section 7 – References.* This section provides references for documents cited within this CR.

2 INTERIM REMOVAL ACTION SUMMARY

This section describes completed construction activities associated with the IRA. The general elements of the IRA are listed below:

- Preconstruction activities including:
  - Obtain necessary approvals and permits.
  - Mobilize equipment and personnel.
- Community communications concerning the IRA activity and its use of public roads:
  - Two Open Houses, one month apart, prior to the start of the IRA.
  - Door Hanger distributed FAQ brochures within ¼ mile of the project site.
  - Local radio and newspaper community ads advising of heavy traffic due to haulage support of IRA.
- Establish site access, construction staging areas, and temporary facilities.
- Establish traffic control and traffic patterns, identify/locate existing utilities, protect existing utilities.
- Install erosion and sediment control devices in accordance with the Chino Operations Storm Water Pollution Prevention Plan (SWPPP; NMR050000).
- Maintain a project-specific SWPPP field notebook documenting compliance with the Chino Operations SWPPP using templates provided by the Owner.
- Perform select soil, sediment, and ferricrete removal.
- Construct and maintain temporary stockpiles in coordination with the Haul Contractor.
- Backfill removal areas.
- Perform site restoration.
- Demobilize equipment and personnel.

2.1 Removal Action Implementation Team

The roles and responsibilities for the construction of the IRA were developed and defined under construction contract documents. In accordance with the awarded contract, the following parties fulfilled the requirements of the project roles and responsibilities:

- **Owner:** Freeport-McMoRan Inc. (FMI) was the Owner and managed the construction contracts.
- **Design Engineer:** Arcadis was the Design Engineer.
- **Field & Quality Assurance Engineer:** Arcadis was on site as the Field and Quality Assurance Engineer.
- **XRF Technician:** Golder provided the XRF Technician.

- **Removal Contractor:** USA Environment, L.P. (USA) was the Removal Contractor. USA subcontracted the following parties to support construction:
  - Strategic Surveying: Surveyor
  - Deming Sand & Gravel, LLC: Backfill materials and trucking
  - McCauley Limestone Quarry: Backfill materials and trucking
  - Summit Technical Inc: Field density testing
- **Haul Contractor:** FMI Shared Services was the Haul Contractor.
- Other parties involved with the removal action included:
  - WestLand Resources, Inc.: Cultural resources survey(s)

2.2 Permitting

Before construction, the following permits were obtained:

- **U.S. Army Corps of Engineers (USACE) Nationwide Permit 38 (NWP 38):** The NWP 38 (cleanup of hazardous and toxic waste) is a type of general permit designed to authorize certain cleanup activities that have minimal individual and cumulative adverse effects on the aquatic environment and generally comply with the related laws cited in 33 Code of Federal Regulations (CFR) 320.3. NWP 38 allows for specific activities required to affect the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency. The NWP 38 was issued on January 24, 2018 and valid until January 24, 2020 (Action No. SPA-2017-00362-LCO). Construction was completed in accordance with the requirements and constraints set forth in the NWP 38 permit. Although a Clean Water Act (CWA) Section 404 permit was not required, the project was completed in accordance with Section 404 as a best practice.
- **National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit (CGP):** The NPDES-CGP is required for all construction projects that disturb 1 or more acres of land and applies to activities such as soil disturbances, clearing, grading, and excavation. Site activities must comply with the Chino Operations SWPPP (NMR050000) and Best Management Plan developed by the Owner, endangered species protection requirements, and Total Maximum Daily Load (TMDL) requirements.
- **Discharge Permit 526 (DP-526)**: NMED provided in an email dated November 16, 2018, temporary permission under Discharge Permit-526 (DP-526) to place 130,000 cubic yards of removed material from Whitewater Creek on an approved location on the West Stockpile within Chino operations (NMED 2018b).
- **Blue Stake Permit:** The Blue Stake Permit is an FMI-specific utility locating requirement. USA obtained and maintained Blue Stake Permit(s) applicable to the IRA throughout construction, including the New Mexico One Call program where applicable.

2.3 Mobilization and Site Preparation

USA and Arcadis mobilized to the Chino Mine located in Vanadium, New Mexico (the site) to begin construction in October 2018, during which time USA began mobilizing heavy equipment, supplies, and personnel. An office trailer, support facilities, and sanitation facilities were provided in the designated lay-down areas. Construction activities made use of existing access roads to the extent possible. Additional access roads were constructed, as needed. Before and concurrent with construction, removal areas were cleared of vegetation by grubbing shrubs and cutting trees. Grubbed vegetation was transported to areas designated by FMI. Utility locate procedures were completed in accordance with FMI's Blue Stake Policy.

2.4 Environmental and Site Controls

USA constructed erosion and sediment control best management practices (BMPs) around removal areas, temporary material stockpiles, borrow areas, staging area, and other areas related to construction activities. FMI conducted inspections throughout construction to verify that erosion and sediment control BMPs complied with the Chino Operations SWPPP. Two water trucks on site were used to limit dust generation from haul roads and excavation areas. Magnesium chloride was applied to the surfaces of temporary stockpiles to minimize dust.

2.5 Soil and Sediment Removal and Backfill

Soil and sediment removal limits were determined visually, using the criteria described in Section 3.2 of the WP. Soil, sediment, and friable ferricrete within the removal areas were excavated to depths required to accommodate the specified backfill material, or until competent ferricrete or bedrock was encountered. As required by the NWP 38, work was not conducted on more than two acres at a time, thereby limiting the total area of disturbance at any given time. In addition, the limits of applicable removal areas were marked with flagging and paint to ensure that mechanized equipment did not enter preserved or restricted areas around cultural resources, in accordance with the NWP 38. Buffer zones were also established around cultural resources, and work was not conducted on portions of removal areas located within those zones.

Expansion of removal area footprints was directed by the Arcadis Field Engineer with input and concurrence from FMI based on visual observations and XRF screening, as described in the NMED-approved IRA WP (Arcadis 2018). Friable ferricrete within the active channel was removed to underlying sediment or until flush with the surrounding bathymetry. In the event XRF analytical results indicated relatively high metal concentrations in the sidewall of a removal area, and that area had yet to be backfilled, the removal extent was increased to remove additional COPC mass prior to backfilling.

Backfill was placed to restore the pre-construction grade of the removal area. No backfill was placed over bedrock, competent ferricrete, or where ferricrete was removed from the active channel, as placement of backfill in these areas would result in elevations higher than pre-excavation elevations. Competent ferricrete was considered to be stable and not a source of COPCs because the material was formed by iron-cementation and thus has a consistency similar to concrete. This material was highly resistant to removal using equipment; thus, it was not considered to be readily erodible. Backfill was placed along the sides of the active channel in removal areas R98 and R99. No backfill was placed within the active channel in remaining removal areas.

Historic sediment has been redistributed across the creek by low flows and floods. Low flows such as the former Chino precipitation plant releases were contained within the banks, which limited redistribution of metals in dissolved form to the active channel and perhaps bars and resulted in the formation of widespread iron-cementation, or ferricrete. This material has a competency similar to concrete, as it was not readily excavated with the equipment used for the HWCIU IRA. Thus, ferricrete is considered to be stable and not a source of COPCs in its present form.

Table 1 summarizes final removal volumes, backfill volumes, and backfill types by removal area.

2.6 Transportation and Stockpiling

Temporary excavated material stockpile locations were established by the Removal Contractor and situated adjacent to the Lake One Haul Road. Stockpile locations were managed in accordance with the Chino Operations SWPPP (Number NMR050000). Dust control measures included a proprietary spray-on method (using magnesium chloride). Materials from the temporary stockpiles were loaded and transported to the West Stockpile for final placement by the Haul Contractor. Once use of a temporary stockpile was complete, the Haul Contractor removed stockpile containment berms and the top 6 inches of native soil beneath the stockpiles to transport to the West Stockpile. Placement of excavated materials on the West Stockpile met the temporary permission requirements provided by NMED under DP-526.

2.7 Restoration

The IRA was performed in a manner that mitigated adverse impacts on the surrounding area and the community. Following backfill placement, removal areas were left to revegetate naturally as prescribed in the WP (Arcadis 2018). Seed was hand broadcast for sites R3A/3B, R93, R118, and R72 as per agreement with private property owners to limited erosion and provide dust control. Reseeding was completed via drill seeding using the approved seed mix for use under the Closure/Closeout Plan (CCP, Chino 2007) and are presented in **Table 2**. Temporary features, such as access roads, equipment staging areas, clean backfill stockpile areas, and construction entrances, were removed and restored to match the surrounding conditions. Disturbed areas were graded to match surrounding topography in a manner that eliminated ponding of water to the extent practicable. Construction activities for the HWC IRA were completed in June 2019.

Table 2 Seed Mix

Common Name	Percent Pure
Seed Mix Type 1	
Sideoats Grama	28.74
Indian Ricegrass	22.99
Saltbush, Fourwing	13.04
Clover, Purple Prairie	5.69
Clover, White Prarie	4.60
Coneflower, Yellow Prairie	4.55
Blue Flax	3.49

Table 2 Seed Mix

Common Name	Percent Pure
Green Sprangletop	3.39
True Mountain Mahogany	2.37
Fairyduster	2.21
Total	**91.07%**
Seed Mix Type 2	
Winterfat	36.50
Sand Dropseed	16.73
Alkali Sacaton	15.14
James' Galleta	5.52
Rabbitbrush, Rubber	3.97
Blue Grama	3.42
Desert-Willow	1.40
Total	**82.68%**

Notes:

1 In addition to the seed types listed, seed mixtures contained inert matter, weed seed, and other crops not specified.

3 CONSTRUCTION DOCUMENTATION

This section summarizes construction documentation, including survey, backfill testing results, photographic documentation, and a post-construction aerial survey. Excavation sampling results are discussed in Section 4.

During construction, removal areas were surveyed prior to removal, after removal, and after backfill placement to document as-built surfaces and calculate removal and backfill volumes by removal area. Survey data are referenced to the North American Datum of 1983 (NAD83) New Mexico State Plane North Coordinates and the North American Vertical Datum of 1988 (NAVD88). Survey results reflecting as-built extents and limits of the IRA are presented in the record drawings in **Appendix A**.

Requirements as per guidance under the NW38 permit for backfill materials, were provided in the final contract documents. Testing specified in the contract documents included physical property testing (i.e., rock size and soil gradation, organic content, Atterberg limits, specific gravity, soundness, durability, and acid neutralization potential) and XRF scanning. Physical properties were required by the design so the material placed as backfill would be structurally sound and resist erosive forces associated with the 100-year/24-hour storm event, estimated using USACE guidance (USACE 1994) and in accordance to the WP. Chemical properties such as loss of sulfate, acid generation testing, and XRF testing was required to verify the backfill material would not add sulfate to or acidify HWCIU or impact the IU with COPCs that exceeded HWCIU screening criteria. Testing frequencies were based on the type and quantity of backfill material used for the project. The backfill testing results are included as **Appendix B**. Backfill testing results met project requirements and were accepted and approved prior to being imported to the site.

Appendix C presents a photographic log featuring photographs taken prior to, during, and/or after removal and backfill activities were conducted at each removal area. An aerial photographic survey of the completed extents of the IRA in HWC was conducted in July 2019. Results of the aerial photographic survey are included as **Appendix D**.

4 INTERIM REMOVAL ACTION SAMPLING

The IRA WP described a sampling program which included collecting XRF data to document post-removal conditions. Upon excavation to the removal limits for each removal area, one confirmation sample was collected per 250 linear feet of sidewall or a minimum of four samples per removal area whichever was greater. One excavation bottom sample was also collected for every 0.25 acre of excavation or a minimum of one sample per removal area. Additionally, as specified in the WP and in accordance with procedures included in the RI Quality Assurance Plan (QAP) (Chino 1997), split samples were to be collected at a rate of one for every twenty confirmation locations and analyzed by SVL lab. These split samples were used to calibrate XRF field analyses. The WP described that XRF field testing would be used to collect the post removal sample data for the purpose of documenting post removal conditions. However, during initiation of the IRA, this proposed sampling plan was adjusted to a more conservative sampling and analysis approach such that all samples collected upon the completion of each excavation were submitted for laboratory analysis. During the IRA, the XRF method was still utilized to document post removal conditions in the field and to guide engineer field decisions concerning visual removal protocols as discussed in the WP where needed. Post removal confirmation samples are reported in **Appendix E**.

The adjustment to a more conservative approach to sampling was made with the goal of developing a more comprehensive dataset for the HWCIU, one representing current conditions within the HWCIU that would be comparable to data collected during past investigations. These data will be used to evaluate whether the IRA achieved its objective in reducing the mass of COPCs within HWC, while also informing the associated reduction of potential human and ecological receptor exposure to COPCs; the analysis of these data is included in the RRA (Arcadis 2021).

Confirmation samples were collected following procedures established in the AOC RI Standard Operating Procedure (SOP)-22 “Surface Soil Sampling” (Chino 1997). Soil samples were sealed in plastic bags and shipped in coolers. Samples were handled and shipped in accordance with SOP-4 “Sample Custody Procedures” and SOP-5 “Packaging and Shipping of Environmental Sample Containers.” Laboratory samples were submitted under chain-of-custody to SVL Laboratory in Kellogg, Idaho. Confirmation samples were submitted to SVL Laboratory (Kellogg, ID) for the following analyses:

- Arsenic via United States Environmental Protection Agency (USEPA) method 6020
- Cadmium via USEPA method 6010
- Chromium via USEPA method 6010
- Copper via USEPA method 6010
- Iron via USEPA method 6010
- Lead via USEPA method 6020
- Manganese via USEPA method 6010
- Zinc via USEPA method 6010
- pH via USEPA method 9045C

- Moisture content via ASTM International D2216
- Total organic carbon vis ASTM International E415.1

Samples were dried and sieved by SVL in preparation for analysis. Consistent with previous HWCIU investigations, samples were sieved to size fractions relevant to evaluation of risk to ecological and human receptors. All samples were sieved to <2mm, which represents the size fraction most likely to be ingested by wildlife receptors and therefore used for evaluation of ecological risk (Formation 2015). One third of all samples were also sieved to <0.25mm, the size fraction that best represents the fraction that adheres to human skin and therefore most relevant to evaluation of risk to human receptors (Golder 2000).

Post removal confirmation samples are reported in **Appendix E** and was evaluated in the RRA (Arcadis 2021).

5 WORKPLAN DEVIATIONS

This section describes deviations from the WP (Arcadis 2018) during implementation of the IRA. These deviations expanded the scope of WP by employing a more conservative approach.

- As previously discussed in Section 4, the confirmation sampling plan was adjusted to a more conservative approach employing additional analytical testing as a supplement to XRF testing.
- Eleven additional sites not previously identified during initial reconnaissance in 2017 were added to the listed removal sites. The 11 sites were identified during the implementation of the WP, as the time spent implementing the WP allowed for the identification of additional sites that were not previously identified during the initial reconnaissance effort. These sites, described in **Table 1**, are R301 through R310 and R404.
- Friable ferricrete was removed from removal areas R43, R57, R82A, R83A, FC1, R70FC, R4A/FC3, R5A/FC2, R97A, and R117, and from three small pile areas not associated with a removal area, to improve natural stormwater flow in the active channel that was not previously identified in the WP.
- Per request by private property owners, seed was hand-broadcast over backfilled removal areas R3A and R3B.
- Identified in the 2017 field evaluation but unrelated to TCO sites targeted in the WP, three locations (HC-1, HC-2, and HC-3) with visual impacts in Hanover Creek and near the Whitewater Creek confluence were also removed. These sites (approximately 10 feet by 10 feet) were excavated, backfilled as appropriate, and post-removal XRF samples were collected but were not submitted to the laboratory. The three locations are identified in **Table 3** and **Figure 2**.

Table 3 Hanover Creek Removal Areas

Removal ID	Latitude	Longitude	Depth of Excavation
HC-1	32.78088855	-108.1083866	1 foot
HC-2	32.78316993	-108.1073667	2 feet
HC-3	32.78408138	-108.1072501	2 feet

6 POST-CONSTRUCTION MONITORING AND PROJECT CLOSEOUT

Monitoring of the IRA will be conducted to comply with the requirements of the USACE Nationwide Permit 38 and ensure that significant loss of backfill following storm events is identified and erosion representing detrimental erosion or instability is repaired. Monitoring will consist of the following activities within the first year following construction:

- Visual inspection of the removal areas to determine if backfill has moved or been lost;
- Visual inspection of the perimeter of removal areas for evidence of erosion or scour of soil or sediment around the removal areas;
- Visual inspection of Bayard flood control berms for signs of damage, erosion, or other scour;
- Visual characterization of sediment infilling over durable backfill; and
- Photograph documentation of the backfill within each removal area.

A photographic monitoring report and evaluation of the IRA stability will be provided to the USACE within 3 months of the post-construction monitoring event. Ongoing routine monitoring will be conducted annually for the first 3 years following construction and following significant rainfall events (i.e., rainfall in excess of the 10-year 24-hour rainfall event). The scope of maintenance activities will be based on the nature and severity of observed erosion, if any.

The purpose of the IRA was to reduce potential human and ecological receptor exposure to COPCs within and adjacent to the HWCIU and mitigate visual impairment of the creek system. IRA construction activities occurred between October 2018 and June 2019. As discussed in Section 4, IRA confirmation samples and results provided in **Appendix E**, will be included as part of a residual risk assessment for the HWCIU under the AOC. The residual risk assessment will discuss the IRA post-removal/confirmation analytical results and include a proposed path forward for the HWCIU.

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TABLES

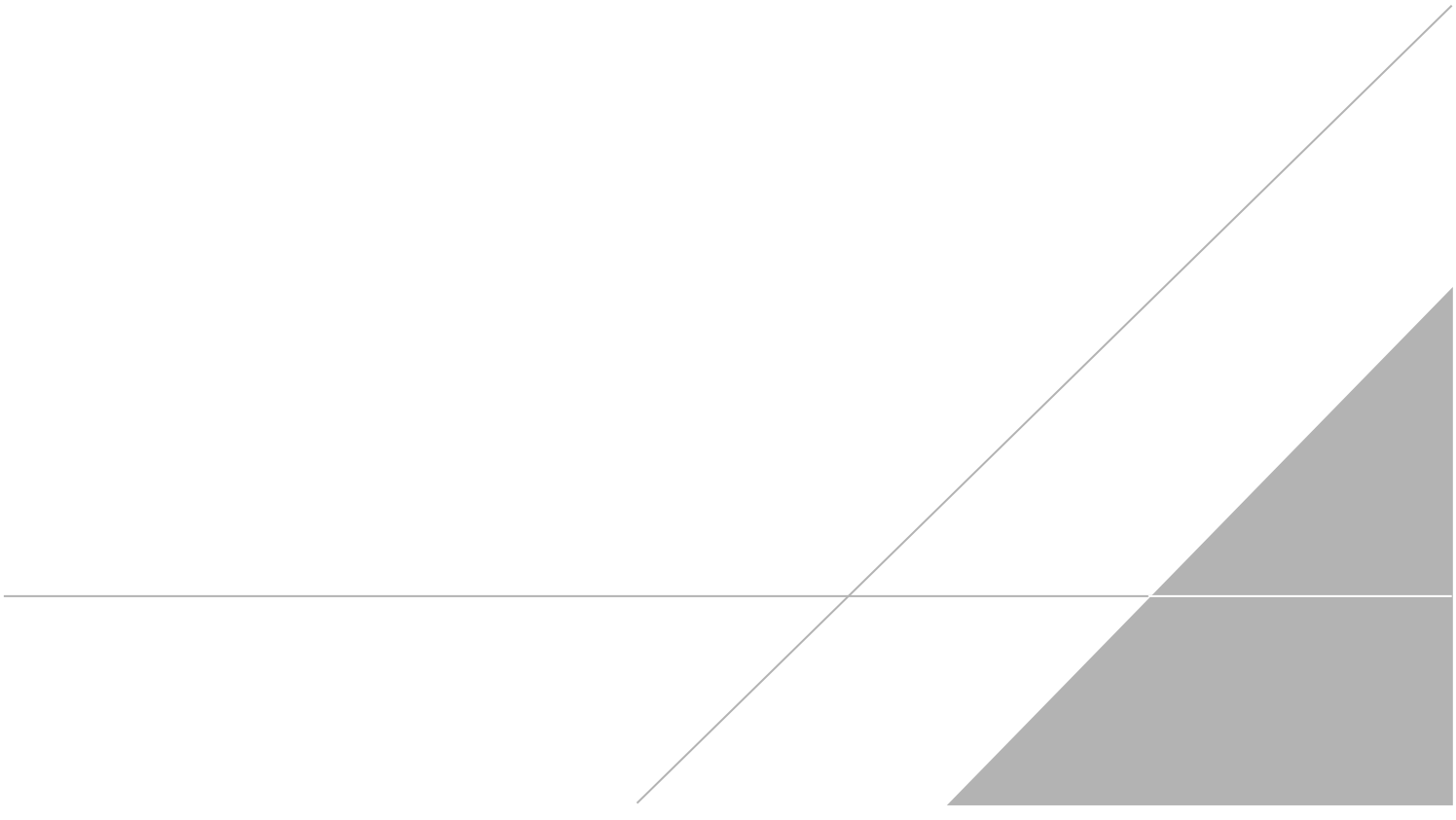


Table 1 - Removal and Backfill Volume Summary
Hanover Whitewater Creek
Vanadium, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Removal Area ID	Removal Area (acre)	Removal Volume (CY)	Filter Backfill Volume (CY)	Durable Backfill Volume (CY)	Median Backfill Size (D50/inch)[b]
R19	0.18	421	149	298	8
R20	0.03	62	24	47	8
R21	0.01	26	9	21	8
R22	0.02	60	19	46	8
R23	0.02	43	14	29	8
R24	0.02	44	14	32	8
R25	0.37	947	325	602	8
R26	0.03	62	21	40	8
R27	0.01	30	11	22	8
R28	0.04	105	35	76	8
R29	0.03	77	23	52	8
R30	0.03	75	27	54	8
R31	0.02	31	11	23	8
R32	0.01	35	12	22	8
R33	0.04	128	34	105	12
R34	0.02	88	12	68	24
R35	0.03	128	19	109	8
R36	0.01	39	8	33	12
R37	0.45	1,463	359	1,093	12
R38 / R40	0.10	250	70	205	12
R41	0.06	215	51	162	12
R15	0.70	2,461	740	1,874	15
R79	0.02	68	16	50	12
R14	0.20	622	184	467	12
R42	0.05	147	[a]	189	30
R44	0.01	50	19	38	15
R18	0.51	815	86	618	15
R46	0.07	421	76	310	24
R1	0.88	2,792	343	1,707	15
R310	0.02	46	13	32	8
R47	0.14	183	13	214	8
R48	0.05	156	36	99	8
R50	0.02	59	10	52	15
R51	0.01	34	[a]	34	15
R43	Ferricrete removal				
R52	0.10	622	159	496	15
R55	0.05	123	--	121	Berm Material
R56	0.13	345	--	367	Berm Material
R116	0.20	2,814	--	2,466	Berm Material
R307	0.19	486	172	328	8
R308	0.15	410	--	405	Berm Material
R309	0.08	400	--	359	Berm Material
R80	2.29	7,129	2,364	4,289	8
R58	0.05	132	43	87	8

Table 1 - Removal and Backfill Volume Summary
Hanover Whitewater Creek
Vanadium, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Removal Area ID	Removal Area (acre)	Removal Volume (CY)	Filter Backfill Volume (CY)	Durable Backfill Volume (CY)	Median Backfill Size (D50/inch)[b]
R57			Ferricrete removal		
Pile Removal			Ferricrete removal		
Pile Removal			Ferricrete removal		
R59	0.14	548	145	333	12
R60	0.04	129	52	111	12
R81	0.02	72	22	57	12
R61	0.11	469	117	299	12
R62	0.77	1,906	739	1,285	8
R304	0.29	948	334	672	8
R305	0.07	171	70	130	8
R63	0.42	878	[a]	980	8
R64	0.04	112	34	87	8
R65	0.04	131	49	98	8
R66	0.07	187	67	137	8
R83	1.71	4,579	1,635	2,966	8
R303	0.18	562	170	437	12
R82A (downstream of R82)			Ferricrete removal		
R83A (between R83 and R63)			Ferricrete removal		
R70	0.27	671	52	118	8
R78	0.06	162	62	93	8
R82	0.12	291	147	212	8
R67	0.05	135	61	78	8
R301	0.01	48	16	37	8
R302	0.16	495	73	515	12
R68	0.15	410	144	305	8
R69	0.17	486	187	330	8
R84	1.46	3,984	1,423	2,794	8
R85	0.69	1,664	612	1,316	8
R86	1.61	4,602	1,606	3,059	8
R87	1.22	3,339	1,326	2,224	8
R11	0.22	868	303	427	8
FC1			Ferricrete removal		
R70FC			Ferricrete removal		
R12	0.19	357	32	73	8
R5	0.42	838	408	627	8
R306	0.20	665	154	444	8
R6/R71/R88	1.17	3,011	1,088	1,252	8
R4	0.79	2,235	802	1,695	8
R10	0.55	1,706	516	1,208	8
R89	0.41	1,008	363	652	8
R118 / R72	1.94	4,901	1,181	383	8 / Gila Conglomerate
R89A	0.11	257	79	201	8
R4A (between R4 and R10) FC3			Ferricrete removal		
R5A (downstream of R5) FC2			Ferricrete removal		

Table 1 - Removal and Backfill Volume Summary
Hanover Whitewater Creek
Vanadium, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Removal Area ID	Removal Area (acre)	Removal Volume (CY)	Filter Backfill Volume (CY)	Durable Backfill Volume (CY)	Median Backfill Size (D50/inch)[b]
R93 / R119	1.94	1,116	275	855	8 / Gila Conglomerate
R95	0.04	144	36	110	8
R94/A	0.42	1,316	307	1,000	12
R120	0.80	2,654	817	2,091	12
R121	0.23	770	214	569	12
R122	1.01	3,394	874	2,277	12
R404	0.01	16	5	11	8
R90	0.04	137	35	100	12
R74 (Ferricrete)	0.03	116	24	82	12
R76 (Ferricrete)	0.10	353	78	256	12
R76A	0.11	323	96	184	8
R91 (Ferricrete)	0.17	689	151	514	12
R92 (Ferricrete)	0.13	444	119	328	12
R92A	0.04	139	40	86	12
R96	0.03	121	26	99	12
R93A	0.01	10	4	9	8
Pile Removal			Ferricrete removal		
R75	0.22	328	63	283	15
R9	0.92	4,754	973	2,915	15
R77	0.20	871	188	711	15
R3A/R3B	1.59	9,004	--	--	Gila Conglomerate
R97	2.17	9,551	2,222	7,506	15
R98	0.93	3,365	1,364	1,994	15
R99	0.19	697	161	538	15
R100	0.27	1,346	245	102	15
R97A			Ferricrete removal		
R101 (Ferricrete)	0.64	1,569	495	1,161	8
R102 (Ferricrete)	0.20	483	169	350	8
R2	0.95	2,357	874	1,509	8
R117			Ferricrete removal		
Totals	**36.7**	**113,536**	**29,446**	**65,299**	**--**

Notes:

[a] Bedrock encountered at the base of excavation, filter material not placed.

[b] D50 is the median particle diameter, in inches

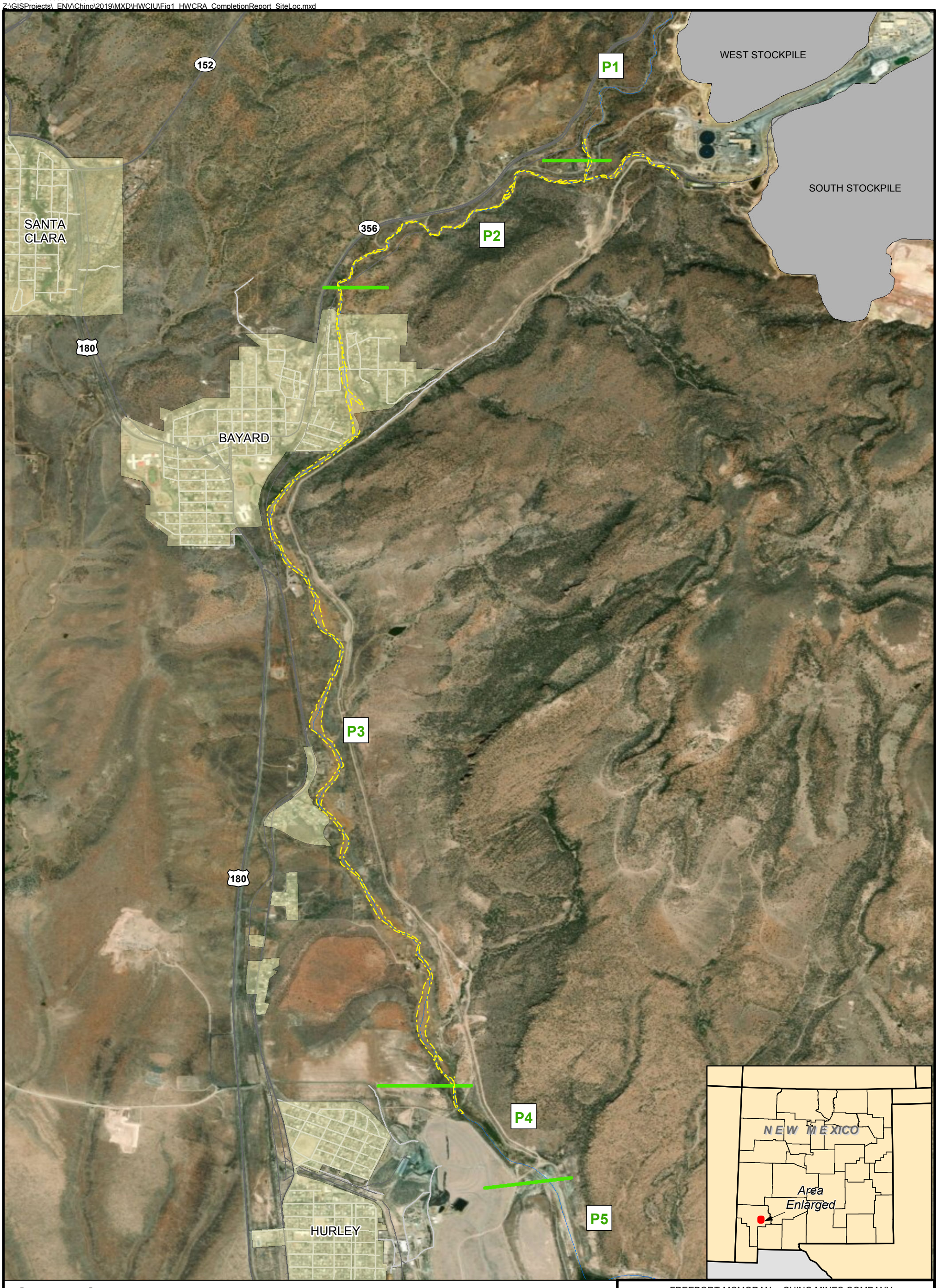
Acronyms and Abbreviations:

-- = Not applicable

CY = cubic yards

FIGURES

OFFICE: LAKEWOOD DB: MEB TM: MB PM: AT
PROJECT# B0063543.0018
Z:\GISProjects_ENV\Chino\2019\MXD\HWCIU\Fig1_HWCRA_CompletionReport_SiteLoc.mxd



Legend

- Project Extent
- P1 Physical Reach
- HWC Centerline
- Stockpiles
- Major Roads
- Railroad
- Town Roads

N

0 0.5 1

Scale in Miles

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

FREEPORT-MCMORAN -- CHINO MINES COMPANY
VANADIUM, NM

INTERIM REMOVAL ACTION COMPLETION REPORT

SITE OVERVIEW

ARCADIS

FIGURE
1

OFFICE: LAKEWOOD DB: MEB TM: MB PM: AT
PROJECT# B0063543.0018
Z:\GISProjects_ENV\Chino\2019\MXD\HWCIU\Fig2_HWCIRA_CR_HanoverCrk.mxd

Legend

- Hanover Creek Removal Locations
- Project Extent
- P1 Physical Reach
- HWC Centerline
- Major Roads
- Railroad

N

0 250 500
Feet

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

FREEPORT-MCMORAN -- CHINO MINES COMPANY
VANADIUM, NM

INTERIM REMOVAL ACTION COMPLETION REPORT

HANOVER CREEK REMOVAL LOCATIONS

ARCADIS

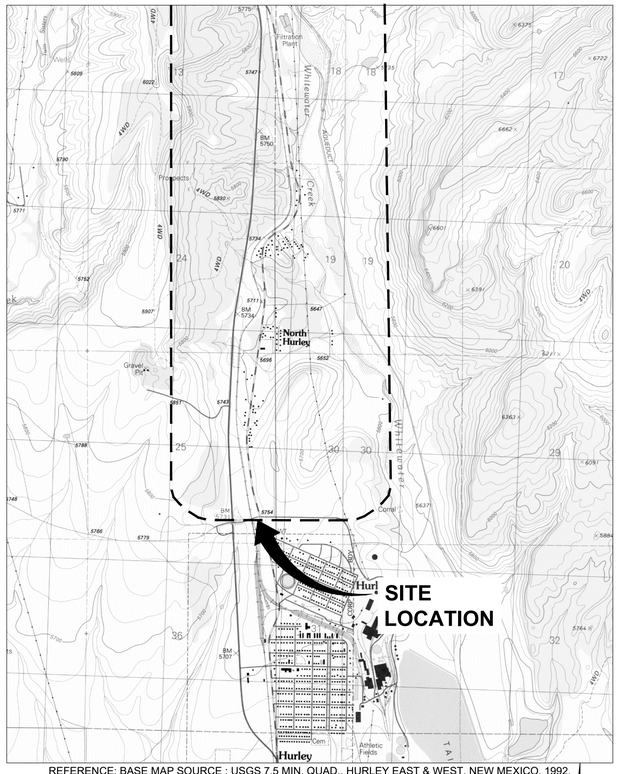
FIGURE
2

APPENDIX A

Record Drawings

RECORD DRAWINGS

HANOVER/WHITEWATER CREEK INTERIM REMOVAL ACTION



REFERENCE: BASE MAP SOURCE : USGS 7.5 MIN. QUAD., HURLEY EAST & WEST, NEW MEXICO, 1992.

LOCATION MAP

0 2000' 4000'

GRAPHIC SCALE

FREEPORT-MCMORAN - CHINO MINES COMPANY VANADIUM, NEW MEXICO

DATE ISSUED / DATE REVISED

AUGUST, 2019

ARCADIS Design & Consultancy for natural and built assets

ARCADIS U.S., INC.

INDEX TO DRAWINGS

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2	KEY MAP, GENERAL LEGEND, AND ABBREVIATIONS
3	REMOVALS 0, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, AND 36
4	REMOVALS 14, 15, 18, 37, 38, 39, 40, 41, 42, 44, AND 79
5	REMOVALS 1, 46, 47, 48 AND 310
6	REMOVALS 50, 51, 52 NORTH, 52 SOUTH, 55, 56, 57, 116, 308, AND 309
7	REMOVALS 58, 59, 60, 61, 62, 80, 81, 304, AND 307
8	REMOVALS 63, 64, 65, 66, 67, 78, 82, 83, 301, 302, 303, AND 305
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13	REMOVALS 2, 98, 99, 100, 101 NORTH, 101 SOUTH, AND 102

GENERAL NOTES:

1. BASE MAP INFORMATION PROVIDED BY FREEPORT MCMORAN (NEW MEXICO STATE PLANE NORTH AMERICAN DATUM OF 1983 [NAD83] WEST ZONE).
2. PROPERTY LINES ARE APPROXIMATE.
3. THE LOCATION OF STRUCTURES/UTILITIES SHOWN ARE APPROXIMATE. ADDITIONAL SITE FEATURES MAY BE PRESENT THAT ARE NOT SHOWN ON THE DRAWINGS.
4. THE HANOVER AND WHITEWATER CREEK BOUNDARIES ARE APPROXIMATE BASED ON A COMBINATION OF SURVEY AND INTERPRETATION OF AERIAL PHOTOGRAPHY.

Removal Area ID	Associated Design Modification	Removal Volume (CY)	Filter Backfill Volume(CY)	Durable Backfill Volume(CY)	Median Backfill Size (D50/inch)	Notes
Sheet 3						
R19	DM #030	421	149	298	8	--
R20	--	62	24	47	8	--
R21	--	26	9	21	8	--
R22	--	60	19	46	8	--
R23	--	43	14	29	8	--
R24	--	44	14	32	8	--
R25	--	947	325	602	8	--
R26	--	62	21	40	8	--
R27	--	30	11	22	8	--
R28	--	105	35	76	8	--
R29	--	77	23	52	8	--
R30	--	75	27	54	8	--
R31	--	31	11	23	8	--
R32	--	35	12	22	8	--
R33	--	128	34	105	12	--
R34	--	88	12	68	24	--
R35	--	128	19	109	8	--
R0	--	--	--	--	--	Deferred
Sheet 4						
R36	--	39	8	33	12	--
R37	--	1,463	359	1,093	12	--
R38	--	135	38	106	12	Bedrock encountered
R40	--	115	31	98	12	Bedrock encountered
R41	--	215	51	162	12	--
R15	--	2,461	740	1,874	15	Bedrock encountered
R79	--	68	16	50	12	--
R14	--	622	184	467	12	Bedrock encountered
R42	--	147	--	189	30	Bedrock encountered
R39	--	--	--	--	--	Deferred
R16	--	--	--	--	--	Deferred
Sheet 5						
R44	--	50	19	38	15	Bedrock encountered
R18	--	815	86	618	15	Bedrock encountered
R46	--	421	76	310	24	--
R1	--	2,792	343	1,707	15	Bedrock encountered
R310	DM #024	46	13	32	8	--
R47	DM #028	183	13	214	8	--
R48	--	156	36	99	8	--
R50	--	59	10	52	15	--
R51	--	34	--	34	15	Bedrock encountered
R43	--	--	--	--	--	Ferricrete removal
Sheet 6						
R52	--	622	159	496	15	--
R55	--	123	--	121	Berm Material	--
R56	--	345	--	367	Berm Material	--
R116	--	2,814	--	2,466	Berm Material	--
R307	DM #025	486	172	328	8	--
R308	DM #031	410	--	405	Berm Material	--
R309	DM #031	400	--	359	Berm Material	--
R80	--	7,129	2,364	4,289	8	--
R58	--	132	43	87	8	--
R57	--	--	--	--	--	Ferricrete removal
Pile Removal	DM #022	--	--	--	--	Ferricrete removal
Pile Removal	DM #023	--	--	--	--	Ferricrete removal
Sheet 7						
R59	--	548	145	333	12	--
R60	--	129	52	111	12	--
R81	--	72	22	57	12	--
R61	--	469	117	299	12	--
R62	--	1,906	739	1,285	8	Bedrock encountered
R304	DM #016	948	334	672	8	--
R305	DM #015	171	70	130	8	--
R63	--	878	--	980	8	Bedrock encountered
R64	--	112	34	87	8	--
R65	--	131	49	98	8	--
R66	--	187	67	137	8	--
R83	DM #014	4,579	1,635	2,966	8	--
R303	DM #014	562	170	437	12	--
R82A	--	--	--	--	--	Ferricrete removal
R83A	--	--	--	--	--	Ferricrete removal

Removal Area ID	Associated Design Modification	Removal Volume (CY)	Filter Backfill Volume(CY)	Durable Backfill Volume(CY)	Median Backfill Size (D50/inch)	Notes
Sheet 8						
R70	--	671	52	118	8	--
R78	--	162	62	93	8	--
R82	--	291	147	212	8	--
R67	--	135	61	78	8	--
R301	DM #017/021	48	16	37	8	--
R302	DM #018	495	73	515	12	--
R68	--	410	144	305	8	--
R69	--	486	187	330	8	--
R84	--	3,984	1,423	2,794	8	--
R85	--	1,664	612	1,316	8	--
R86	--	4,602	1,606	3,059	8	--
R87	--	3,339	1,326	2,224	8	--
R11	--	868	303	427	8	--
FC1	--	--	--	--	--	Ferricrete removal
R70FC	--	--	--	--	--	Ferricrete removal
Sheet 9						
R12	--	357	32	73	8	--
R5	--	838	408	627	8	--
R306	DM #026	665	154	444	8	--
R6/R71/R88	--	3,011	1,088	1,252	8	--
R4	--	2,235	802	1,695	8	--
R10	DM#010	1,706	516	1,208	8	--
R89	--	1,008	363	652	8	--
R118 / R72	DM #004	4,901	1,181	383	8/Gila Conglomerate	--
R89A	--	257	79	201	8	--
R4A/FC3	--	--	--	--	--	Ferricrete removal
R5A/FC2	--	--	--	--	--	Ferricrete removal
R72A	DM #009	--	--	--	--	Deferred
Sheet 10						
R93 / R119	DM #004	1,116	275	855	8/Gila Conglomerate	--
R95	--	144	36	110	8	--
R94	--	1,308	305	994	12	--
R94A	--	8	2	6	12	--
R120	--	2,654	817	2,091	12	--
R121	--	770	214	569	12	--
R122	--	3,394	874	2,277	12	--
R404	DM #027	16	5	11	8	--
R90	--	137	35	100	12	--
R74 (Ferricrete)	--	116	24	82	12	--
R76 (Ferricrete)	--	353	78	256	12	--
R76A	DM #007	323	96	184	8	--
R91 (Ferricrete)	--	689	151	514	12	--
R92 (Ferricrete)	--	444	119	328	12	--
R92A	DM #008	139	40	86	12	--
R96	--	121	26	99	12	--
R93A	--	10	4	9	8	--
Pile Removal	DM #029	--	--	--	--	Ferricrete removal
Sheet 11						
R75	--	328	63	283	15	--
R9	--	4,754	973	2,915	15	--
R77	--	871	188	711	15	--
R3A/R3B	DM# 002	9,004	--	--	Gila Conglomerate	--
R97	--	9,551	2,222	7,506	15	--
R98 NORTH/R98 SOUTH	DM #005	3,365	1,364	1,994	15	--
R99	DM #005	697	161	538	15	--
R100	--	1,346	245	102	15	--
R97A	DM #006	--	--	--	--	Ferricrete removal
Sheet 12						
R101 (Ferricrete)	--	1,569	495	1,161	8	--
R102 (Ferricrete)	--	483	169	350	8	--
R2	--	2,357	874	1,509	8	--
Sheet 13						
R103	--	--	--	--	--	Deferred
R104	--	--	--	--	--	Deferred
R105	--	--	--	--	--	Deferred
R117	--	--	--	--	--	Ferricrete removal
Total Volumes		113,536	29,446	65,299	--	--

NOTES:

-- = NOT APPLICABLE
CY = CUBIC YARDS

1"=50' (50' 0 50' 100')

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd.

Professional Engineer's Name: DANIEL BONNER
Professional Engineer's No.: 23706 EXP. DATE 12/31/20

State	Date Signed	Project Mgr.
NM		WA
Designed by: WT	Drawn by: KMD	Checked by: RDL

ARCADIS Design & Consultancy for natural and built assets

ARCADIS U.S., INC.

CHINO MINES COMPANY • VANADIUM, NEW MEXICO
HANOVER/WHITEWATER CREEK RECORD DRAWINGS

REMOVAL TABLES AND GENERAL NOTES

ARCADIS Project No. 30006788
Date AUGUST 2019

ARCADIS US, INC.
801 CORPORATE CENTER DR.
SUITE 300
RALEIGH, NC 27607
919.415.2255

CITY: SYRACUSE, NY DIVGROUP: IMDV DB: K.DAVIS LD: K.DAVIS PIC: W.ANCKNER PM: W.ANCKNER TM: C.KEENAN LYR: ON=*;OFF=*REF*
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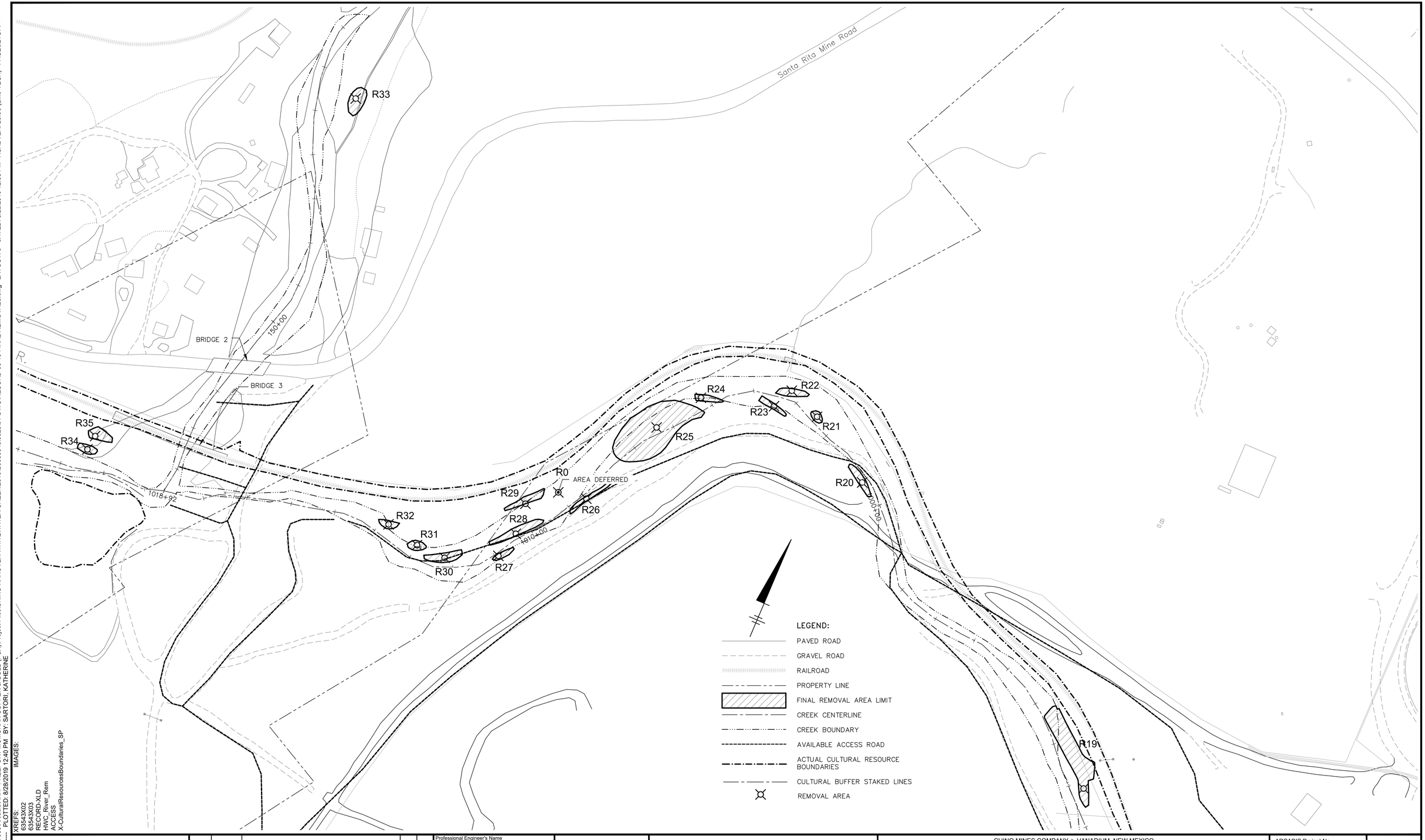

1"=100' 100' 0 100' 200'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd.

Professional Engineer's Name
DANIEL BONNER
Professional Engineer's No.
23706 EXP. DATE 12/31/20

State	Date Signed	Project Mgr.
NM		WA
Designed by	Drawn by	Checked by
WT	KMD	RDL

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XREFS:
IMAGES:
63543X02
63543X03
RECORD-XLD
HWC_River_Rem
ACCESS
X-Cultural\ResourcesBoundaries_SP

Southwestern R.R.

State Highway 356

Chino Mine Road

CMR

ACCESS ROAD

MINE TURNOFF BACKFILL STOCKPILE LOCATION

AREA DEFERRED

R16 AREA DEFERRED

R14 R15 R36 R37 R38 R39 R40 R41 R42 R79

195+00 180+00 160+00

LEGEND:

- PAVED ROAD
- GRAVEL ROAD
- RAILROAD
- PROPERTY LINE
- FINAL REMOVAL AREA LIMIT
- CREEK CENTERLINE
- CREEK BOUNDARY
- AVAILABLE ACCESS ROAD
- ACTUAL CULTURAL RESOURCE BOUNDARIES
- CULTURAL BUFFER STAKED LINES
- RIPRAP STOCK PILE
- REMOVAL AREA

100' 0 100' 200'
1"=100'

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No.	Date	Revisions	By	Ckd

Professional Engineer's Name: **DANIEL BONNER**
Professional Engineer's No.: 23706 EXP. DATE 12/31/20

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CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.DAVIS LD: K.DAVIS PIC: W.ANCKNER PM: W.ANCKNER TM: C.KEENAN LYR: ON=*;OFF=*REF*
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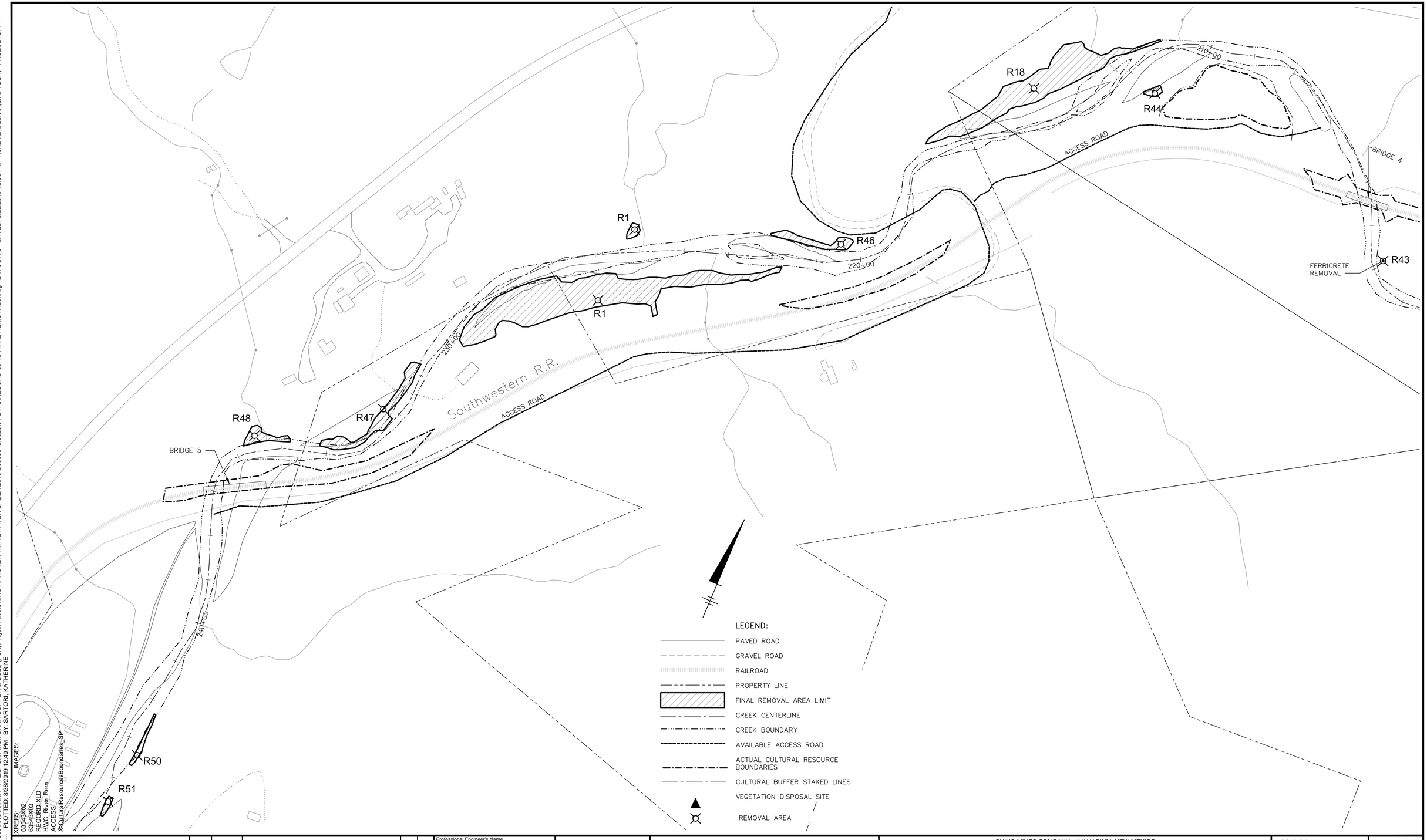

100' 0 100' 200'
1"=100'

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Designed by	Drawn by	Checked by
WT	KMD	RDL

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5

Maple Street
Poplar Street
Hurley Street
Vanadium Street
Asarco Street
Orchard Street
State Highway
Canyon Street
Virginia Street
Rogers Street
Empire Street
Watson Street
Waggoner Street
Blackhawk Street
Chino Street
Chino Concentrator Lines

R56
R55
R309
R57
R307
R116
R58
R80
R52

FERRICRETE REMOVAL
PILE REMOVAL
BRIDGE 6
ACCESS ROAD
250+00
260+00
270+00
280+00

LEGEND:
- PAVED ROAD
- GRAVEL ROAD
- RAILROAD
- PROPERTY LINE
- FINAL REMOVAL AREA LIMIT
- CREEK CENTERLINE
- CREEK BOUNDARY
- AVAILABLE ACCESS ROAD
- RIPRAP STOCK PILE
- REMOVAL AREA

110' 0 110' 220'
1"=110'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:

USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name
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Professional Engineer's No.
23706 EXP. DATE 12/31/20

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Designed by	Drawn by	Checked by
WT	KMD	RDL

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REMOVALS
STATION 249+00 TO 280+00

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6

C.C. Snell
Middle School

Bayard
Elementary
School

U.S. Highway 180

Southwestern Railroad Co. Inc.

Lake One Haul Road

Concentrator Lines

R64

R63

R305

R65

R66

320+00

310+00

ACCESS ROAD

WS

R62

R304

300+00

R61

R59

R60

R81

R83A

FERRICRETE
REMOVAL

R82A

FERRICRETE
REMOVAL

R83

R303

R78

TRAC

LEGEND:

- PAVED ROAD
- GRAVEL ROAD
- RAILROAD
- PROPERTY LINE
- FINAL REMOVAL AREA LIMIT
- CREEK CENTERLINE
- CREEK BOUNDARY
- AVAILABLE ACCESS ROAD
- WATER SPOUT
- REMOVAL AREA

100' 0 100' 200'
1"=100'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:

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Professional Engineer's No.
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REMOVALS
STATION 292+00 TO 328+00

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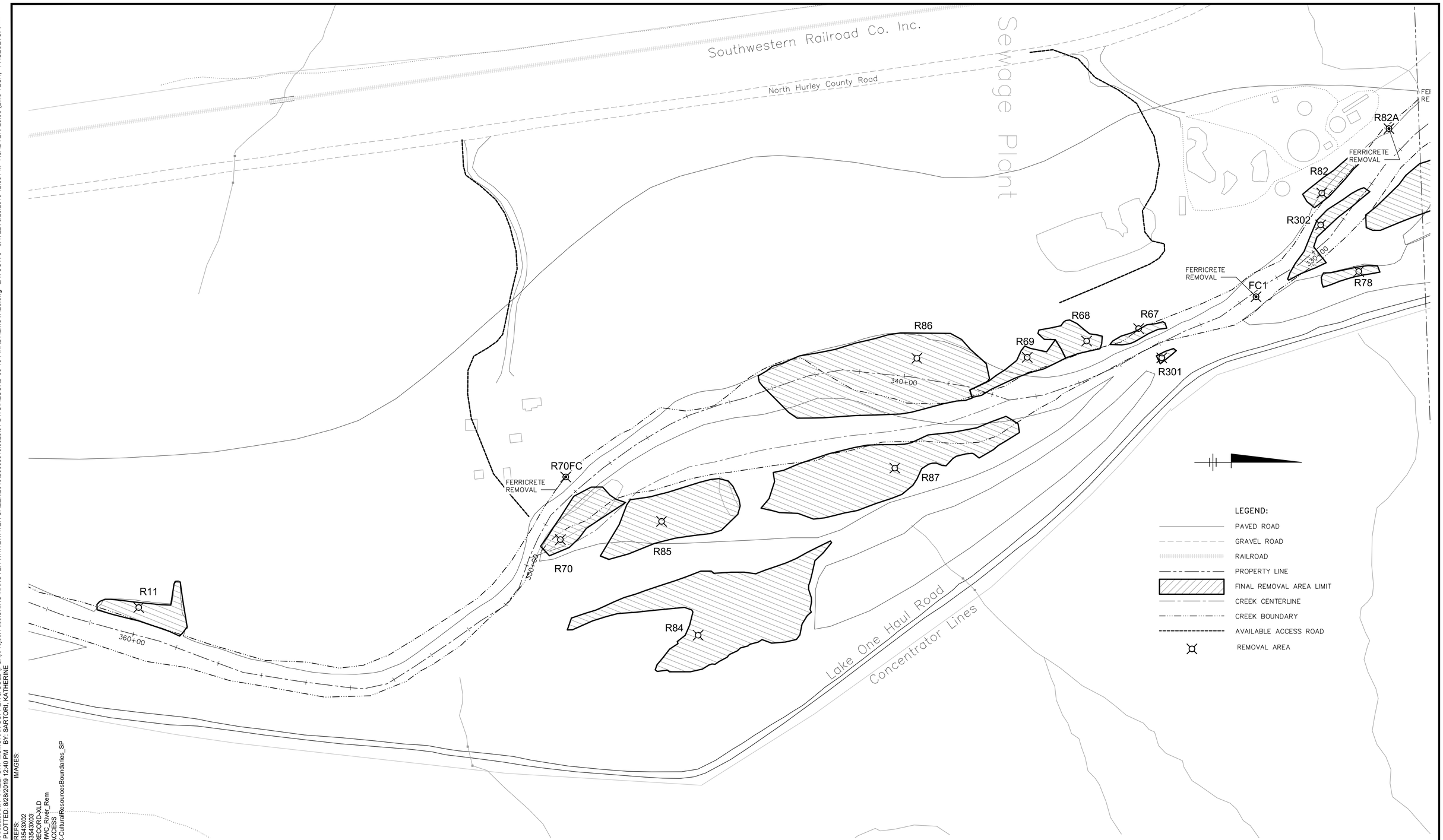

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100' 0 100' 200'
1"=100'

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Professional Engineer's No.
23706 EXP. DATE 12/31/20

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NM		WA
Designed by	Drawn by	Checked by
WT	KMD	RDL

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REMOVAL
STATION 328+00 to 361+00

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RECORD-XLD
HWC_River_Rem
ACCESS
X-CulturalResourcesBoundaries_SP

Southwestern Railroad

North Hurley County Road

Lake One Haul Road

Concentrator Lines

Road

F5A/FC2

FERRICRETE REMOVAL

380+00

R5

R306

R71

R88

R6

370+00

FERRICRETE REMOVAL

R10

R4A/FC3

R4

R89

R89A

R72A

R72

R118

FERRICRETE REMOVAL

390+00

R12

LEGEND:

- PAVED ROAD
- GRAVEL ROAD
- RAILROAD
- PROPERTY LINE
- FINAL REMOVAL AREA LIMIT
- CREEK CENTERLINE
- CREEK BOUNDARY
- AVAILABLE ACCESS ROAD
- VEGETATION DISPOSAL AREA
- REMOVAL AREA

100' 0 100' 200'
1"=100'

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NM		WA
Designed by	Drawn by	Checked by
WT	KMD	RDL

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REMOVAL
STATION 361+00 to 396+00

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9

XREFS:
63543X02
63543X03
RECORD-XLD
HWC_River_Rem
ACCESS
X-Cultural\ResourcesBoundaries_SP

IMAGES:

LEGEND:
- PAVED ROAD
- GRAVEL ROAD
- RAILROAD
- PROPERTY LINE
- FINAL REMOVAL AREA LIMIT
- CREEK CENTERLINE
- CREEK BOUNDARY
- AVAILABLE ACCESS ROAD
- REMOVAL AREA

Hurley Sewage Plant

North Hurley County Road

Lake One Haul Road

Concentrator Lines

R404
R92A
R92
R91
R74
R76
R76A
R96
R121
R122
R90
R120
R94
R95
R119
R93
R72A
PILE REMOVAL
FERRICRETE REMOVAL
FERRICRETE REMOVAL
410+00
400+00
430+00

100' 0 100' 200'
1"=100'

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No.	Date	Revisions	By	Ckd

Professional Engineer's Name
DANIEL BONNER
Professional Engineer's No.
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State	Date Signed	Project Mgr.
NM		WA
Designed by	Drawn by	Checked by
WT	KMD	RDL

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HANOVER/WHITEWATER CREEK RECORD DRAWINGS

REMOVAL
STATION 396+00 to 431+00

ARCADIS Project No.
30006788

Date
AUGUST 2019

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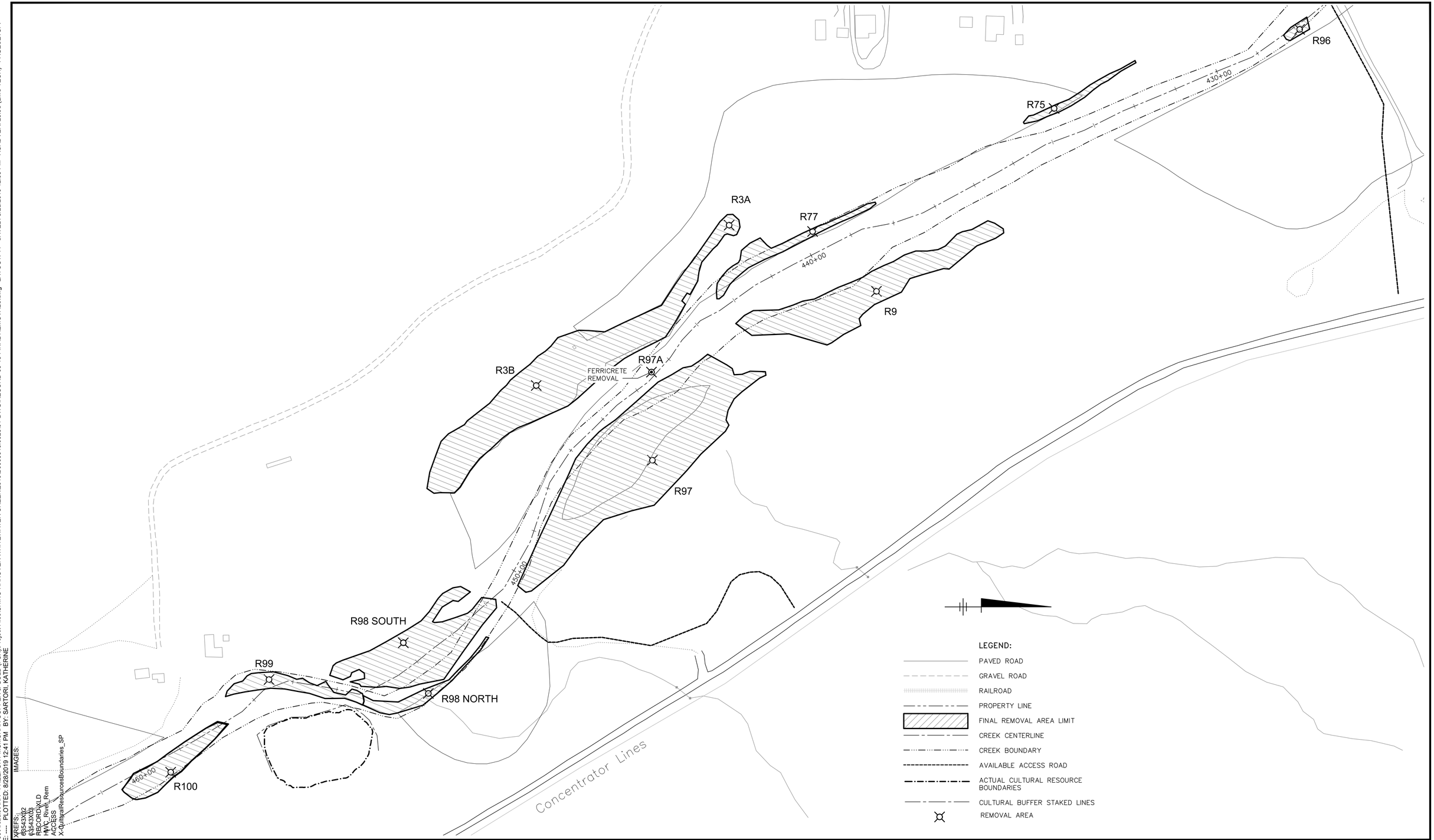
10



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1"=100'

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23706 EXP. DATE 12/31/20

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NM		WA
Designed by	Drawn by	Checked by
WT	KMD	RDL

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REMOVAL
STATION 431+00 TO 462+00

ARCADIS Project No.
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CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.DAVIS LD: K.DAVIS PIC: W.ANCKNER PM: W.ANCKNER TM: C.KEENAN LYR: ON=*;OFF=*REF*
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63543X03
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HWC_River_Rem
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480+00

470+00

460+00

R99

R101 SOUTH

R102

R101 NORTH

R100

R2

Haul Road

Lake One Haul Road

LEGEND:

- PAVED ROAD
- GRAVEL ROAD
- RAILROAD
- PROPERTY LINE
- FINAL REMOVAL AREA LIMIT
- CREEK CENTERLINE
- CREEK BOUNDARY
- AVAILABLE ACCESS ROAD
- REMOVAL AREA

1"=100' 100' 0 100' 200'

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STATION 462+00 TO 488+00

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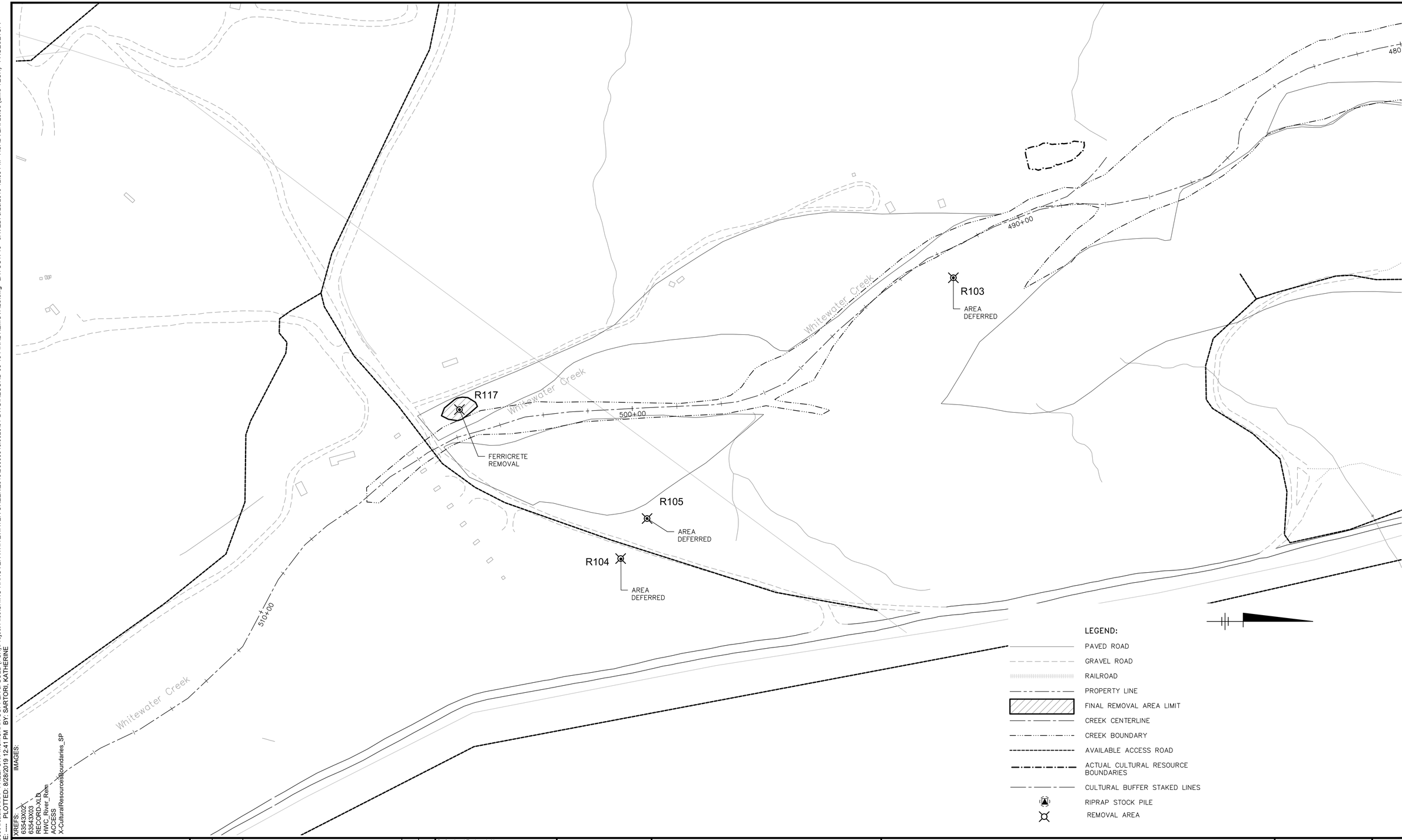

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NM		WA
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REMOVAL
STATION 488+00 TO 516+00

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919.415.2255

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APPENDIX B

Backfill Material Testing Results

Table B-1 - Berm Material Test Results
HWCIU Interim Removal Action
Chino Mine, Vanadium, New Mexico

Parameter	Material Supplier	Deming Sand & Gravel LLC
	Sample Date(s)	2/13/2019 & 11/19/2018
Grading	Percent Passing **1.5"** Sieve	100%
	Percent Passing **0.5"** Sieve	86%
	Percent Passing **#200** Sieve	29%
ASTM D2974	Organic Content	1.6%
ASTM D4318	Liquid Limit	31
	Plasticity Index	14
XRF Scanning[1]	Arsenic	<12
	Cadmium	<0.49
	Chromium (III)	10
	Copper	23
	Lead	8.4
	Iron	19,000
	Manganese	350
	Zinc	50

Notes:

1. XRF scanning included several individual XRF scans during each testing event. Average values are presented in the table.

Parameter	Material Supplier	Deming Sand & Gravel LLC		
	Sample Date(s)	10/1/2018 & 11/13/2018	11/9/2018 & 12/11/2018	11/29/2018 & 2/26/2019
Grading	Percent Passing **1.5"** Sieve	86%	92%	96%
	Percent Passing **0.5"** Sieve	42%	56%	55%
	Percent Passing **#4** Sieve	30%	28%	27%
ASTM C 127	Specific Gravity	2.53	2.40	2.43
ASTM C 88	Loss during Sulfate Testing	5.4%	9%	3%
ASTM C 535	Loss during LA Abrasion Test	22%	21%	19%
	Adsorption during LA Abrasion Test	2.4%	3.7%	1.7%
Nevada Modified Sobek Metho	Modified Sobek	Acid Neutralization Potential	Acid Neutralization Potential	Acid Neutralization Potential
XRF Scanning[1,2]	Arsenic	3.6	4.5	3.4
	Cadmium	0	0	0
	Chromium (III)	25.6	49.8	85.9
	Copper	31.2	20.8	51.2
	Lead	16.4	17.8	10.8
	Iron	28,994	29,322	14,699
	Manganese	532.2	614.5	398.8
	Zinc	64.4	66.3	121.3

Notes:
1. XRF scanning included several individual XRF scans during each testing event. Average values are presented in the table.
2. XRF scanning results were considered characteristic of other filter materials provided from this source. 12-inch and 15-inch filter backfill were not tested based on the results of the 8-inch filter XRF scan.

Parameter	Material Supplier	Deming Sand & Gravel LLC
	Sample Date(s)	9/21/2018
Grading	Percent Passing **1.5"** Sieve	100%
	Percent Passing **1"** Sieve	33%
	Percent Passing **0.75"** Sieve	6%
ASTM C 127	Specific Gravity	2.43
ASTM C 88	Loss during Sulfate Testing	2.0%
ASTM C 535	Loss during LA Abrasion Test	25%
	Adsorption during LA Abrasion Test	2.1%
Nevada Modified Method	Modified Sobek	Acid Neutralization Potential
XRF Scanning[1,2]	Arsenic	--
	Cadmium	--
	Chromium (III)	--
	Copper	--
	Lead	--
	Iron	--
	Manganese	--
	Zinc	--

Notes:
1. XRF scanning included several individual XRF scans during each testing event. Average values are presented in the table.
2. XRF scanning results were considered characteristic of other filter materials provided from this source. 12-inch and 15-inch filter backfill were not tested based on the results of the 8-inch filter XRF scan.

Parameter	Material Supplier	Deming Sand & Gravel LLC
	Sample Date(s)	9/25/2018
Grading	Percent Passing **4"** Sieve	100%
	Percent Passing **2.5"** Sieve	55%
	Percent Passing **#4** Sieve	0%
ASTM C 127	Specific Gravity	2.36
ASTM C 88	Loss during Sulfate Testing	4.3%
ASTM C 535	Loss during LA Abrasion Test	23%
	Adsorption during LA Abrasion Test	1.89%
Nevada Modified Method	Modified Sobek	Acid Neutralization Potential
XRF Scanning[1,2]	Arsenic	--
	Cadmium	--
	Chromium (III)	--
	Copper	--
	Lead	--
	Iron	--
	Manganese	--
	Zinc	--

Notes:
1. XRF scanning included several individual XRF scans during each testing event. Average values are presented in the table.
2. XRF scanning results were considered characteristic of other filter materials provided from this source. 12-inch and 15-inch filter backfill were not tested based on the results of the 8-inch filter XRF scan.

Parameter	Material Supplier	McCauley Hurley Limestone Pit			
	Sample Date(s)	8/22/2018 & 11/13/2018	11/19/2018 & 11/13/2018	11/12/2018 & 12/12/2018	11/29/2018 & 2/26/2019
Grading	D_{85}	10.2	10.8	12	10.8
	D_{50}	8	8	8	8
	D_{15}	5.5	6.1	5.0	6.1
ASTM C 127	Specific Gravity	2.69	2.69	2.69	2.61
ASTM C 88	Loss during Sulfate Testing	15.60%	2.2%	2.2%	1.2%
ASTM C 535	Loss during LA Abrasion Test	30%	31%	30%	27%
	Adsorption during LA Abrasion Test	0.4%	0.42%	0.25%	0.55%
Nevada Modified Method	Modified Sobek	Acid Neutralization Potential	Acid Neutralization Potential	Acid Neutralization Potential	Acid Neutralization Potential
XRF Scanning[1]	Arsenic	13.5	13.5	23.7	5.6
	Cadmium	0.0	0.0	0.0	0.0
	Chromium (III)	81.8	81.8	171.7	109.0
	Copper	13.6	13.6	12.3	25.2
	Lead	21.8	21.8	4.4	9.6
	Iron	11,200	11,200	12,876	10,423
	Manganese	888.9	888.9	644.9	265.0
	Zinc	297.8	297.8	148.0	100.4

Notes:
1. XRF scanning included several individual XRF scans during each testing event. Average values are presented in the table.

Parameter	Material Supplier	McCauley Hurley Limestone Pit	
	Sample Date(s)	9/12/2018 & 12/10/2018	11/29/2018 & 2/26/2019
Grading	D85	15	18
	D50	12.2	11.9
	D15	8.5	8.0
ASTM C 127	Specific Gravity	2.66	2.52
ASTM C 88	Loss during Sulfate Testing	3%	12%
ASTM C 535	Loss during LA Abrasion Test	32%	30%
	Adsorption during LA Abrasion Test	5.1%	1.5%
Nevada Modified Method	Modified Sobek	Acid Neutralization Potential	Acid Neutralization Potential
XRF Scanning[1]	Arsenic	6.4	8.6
	Cadmium	0.0	0.0
	Chromium (III)	13.1	47.2
	Copper	4.9	31.4
	Lead	2.8	10.4
	Iron	4,067	11,893
	Manganese	409.9	449.0
	Zinc	29.8	110.8

Notes:
1. XRF scanning included several individual XRF scans during each testing event. Average values are presented in the table.

Parameter	Material Supplier	McCauley Hurley Limestone Pit		
	Sample Date(s)	9/12/2018 & 11/12/2018 & 12/12/2018	11/19/2018 & 12/12/2018	11/29/2018 & 2/26/2019
Grading	D_{85}	19.5	21	22.2
	D_{50}	15	15	14.9
	D_{15}	8.9	9.1	8.9
ASTM C 127	Specific Gravity	2.67	2.68	2.60
ASTM C 88	Loss during Sulfate Testing	5.1%	3.1%	12.0%
ASTM C 535	Loss during LA Abrasion Test	30%	31%	29%
	Adsorption during LA Abrasion Test	0.5%	0.5%	1.6%
Nevada Modified Method	Modified Sobek	Acid Neutralization Potential	Acid Neutralization Potential	Acid Neutralization Potential
XRF Scanning[1]	Arsenic	2.3	2.3	13.2
	Cadmium	0.0	0.0	0.0
	Chromium (III)	109.2	109.2	45.0
	Copper	8.3	8.3	44.2
	Lead	8.5	8.5	23.2
	Iron	11,685	11,685	24,473
	Manganese	190.8	190.8	440.0
	Zinc	132.8	132.8	131.8

Notes:
1. XRF scanning included several individual XRF scans during each testing event. Average values are presented in the table.

Parameter	Material Supplier	McCauley Hurley Limestone Pit
	Sample Date(s)	11/12/2018
Grading	D_{85}	27
	D_{50}	23.8
	D_{15}	17.5
ASTM C 127	Specific Gravity	2.64
ASTM C 88	Loss during Sulfate Testing	1.1%
ASTM C 535	Loss during LA Abrasion Test	29%
	Adsorption during LA Abrasion Test	0.4%
Nevada Modified Method	Modified Sobek	Acid Neutralization Potential
XRF Scanning[1]	Arsenic	4.5
	Cadmium	0.0
	Chromium (III)	31.3
	Copper	8.2
	Lead	5.2
	Iron	7,135
	Manganese	188.0
	Zinc	49.2

Notes:
1. XRF scanning included several individual XRF scans during each testing event. Average values are presented in the table.

Parameter	Material Supplier	McCauley Hurley Limestone Pit
	Sample Date(s)	11/12/2018
Grading	D_{85}	35
	D_{50}	30
	D_{15}	12.5
ASTM C 127	Specific Gravity	2.682
ASTM C 88	Loss during Sulfate Testing	2.5%
ASTM C 535	Loss during LA Abrasion Test	30%
	Adsorption during LA Abrasion Test	0.47%
Nevada Modified Method	Modified Sobek	Acid Neutralization Potential
XRF Scanning[1]	Arsenic	8.7
	Cadmium	0.0
	Chromium (III)	114.9
	Copper	13.6
	Lead	8.4
	Iron	10,688
	Manganese	235.0
	Zinc	165.1

Notes:
1. XRF scanning included several individual XRF scans during each testing event. Average values are presented in the table.

Parameter	Material Supplier	Chino Mine
	Sample Date(s)	1/15/2019
XRF Scanning[1]	Arsenic	2.6
	Cadmium	0.0
	Chromium (III)	24.2
	Copper	299.0
	Lead	22.6
	Iron	26,608
	Manganese	622.8
	Zinc	151.2

Notes:
1. XRF scanning included several individual XRF scans during each testing event. Average values are presented in the table.

APPENDIX C

Construction Photographic Log

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R1

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Removal Area R100

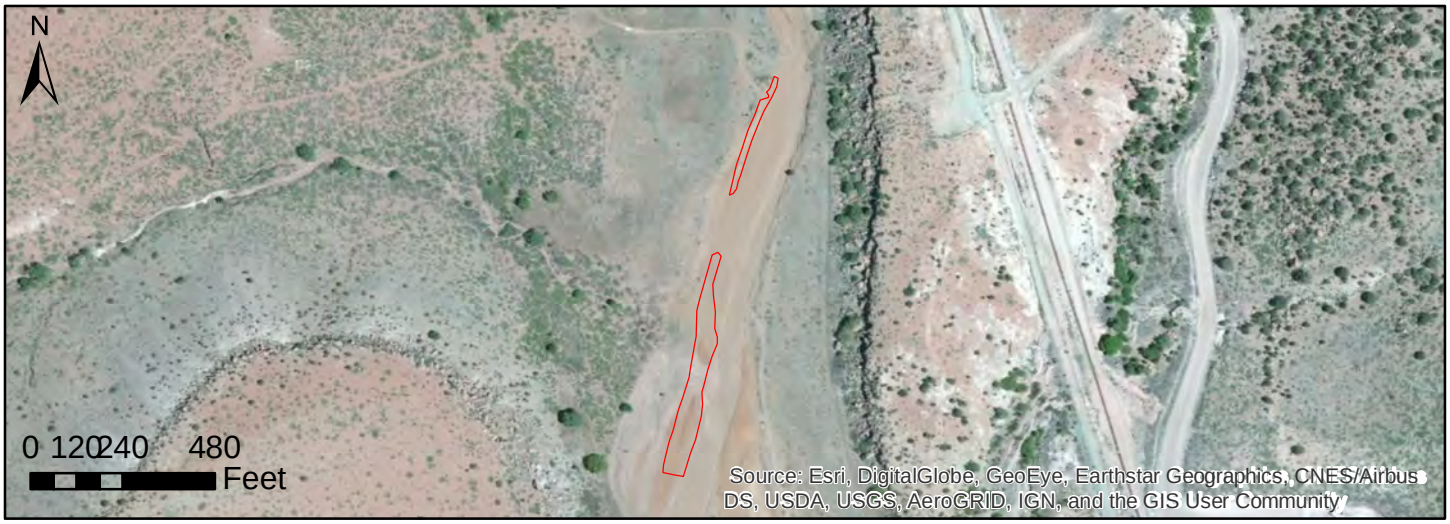
Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R101



Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R116

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Removal Area R118

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R119

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R12

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R120

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R121

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R122

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Removal Area R15

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Removal Area R18

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R19

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R2

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R20

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R21

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R22

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R24

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R25

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R26

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Removal Area R27

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Removal Area R28

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R29

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R30

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R301 / DM17

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R302 / DM18

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R303 / DM14

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R304 / DM16

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R305 / DM15

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R306 / DM26

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R307 / DM25

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R308 / DM31

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R309 / DM31

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R34

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R35

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R36

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R37

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R38

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Removal Area R3A

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R3B

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R4

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R40

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R41

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R44

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Removal Area R46

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Removal Area R47

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Removal Area R48

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R50

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R51

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R52

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R55

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Removal Area R56

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R58

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R59

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R6

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R60

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Removal Area R61

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R63

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R64

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R65

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R66

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R67

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R68

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R69

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R70

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R74

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R75

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R76

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R77

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R78

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R79

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R80

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R81

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R82

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Removal Area R83

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R84

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R85

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R86

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R87

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R89

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R9

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R90

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R91

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R92

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R93

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R94

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Removal Area R95

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R96

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

Removal Area R97

Pre-excavation

Progress/Completion

PHOTOGRAPH LOG

Freeport-McMoRan
Chino, New Mexico

ARCADIS Design & Consultancy for natural and built assets

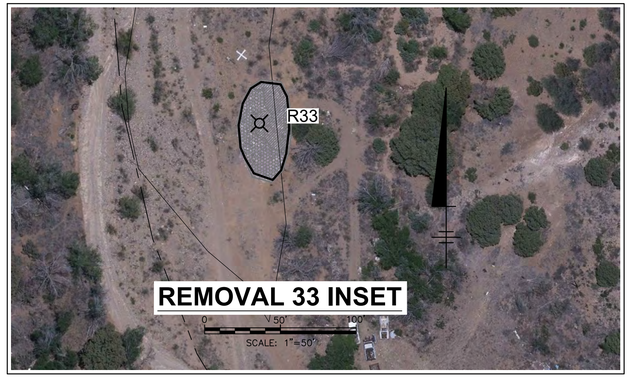
Removal Area R98

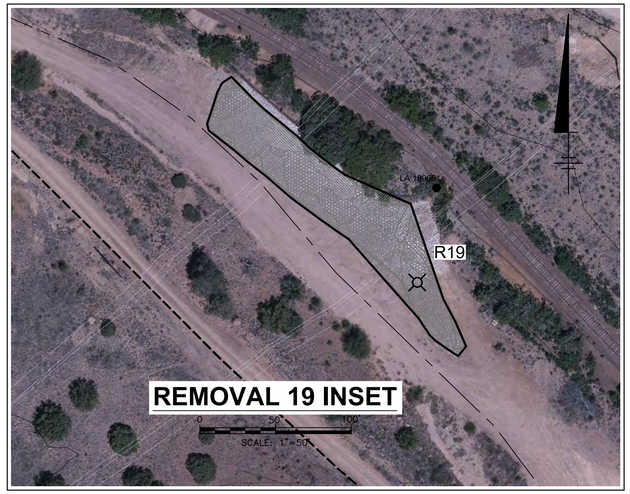
Pre-excavation

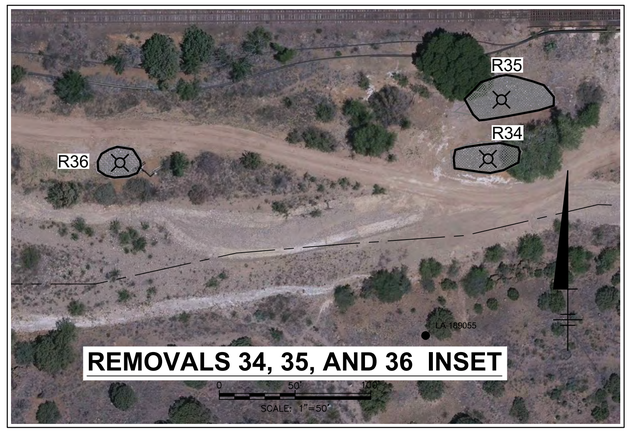
Progress/Completion

APPENDIX D

Post-Construction Aerial Survey







XREFS:
63543X02
63543X03
RECORD-XLD
HWC_River_Rem
ACCESS

IMAGES:
Chino Mine North.jpg
Chino Mine South 4-1.jpg

50' 0 50' 100'
1"=50'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:

USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name

Professional Engineer's No.

State	Date Signed	Project Mgr.
NM		WA
Designed by	Drawn by	Checked by
WT	KMD	RDL

ARCADIS | Design & Consultancy for natural and built assets

ARCADIS U.S., INC.

CHINO MINES COMPANY ● VANADIUM, NEW MEXICO

HANOVER/WHITEWATER CREEK RECORD DRAWINGS

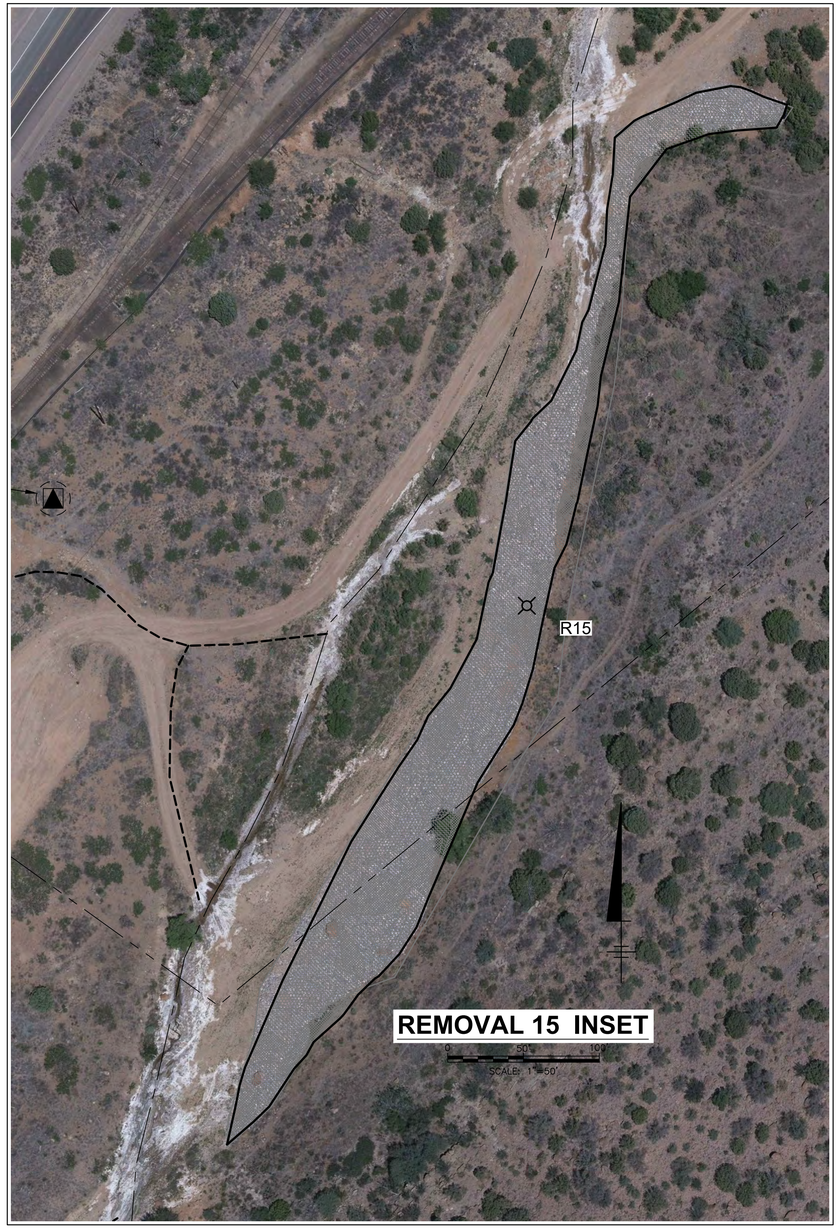
REMOVALS 0, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, AND 36

ARCADIS Project No.
B0063543.0023.00001

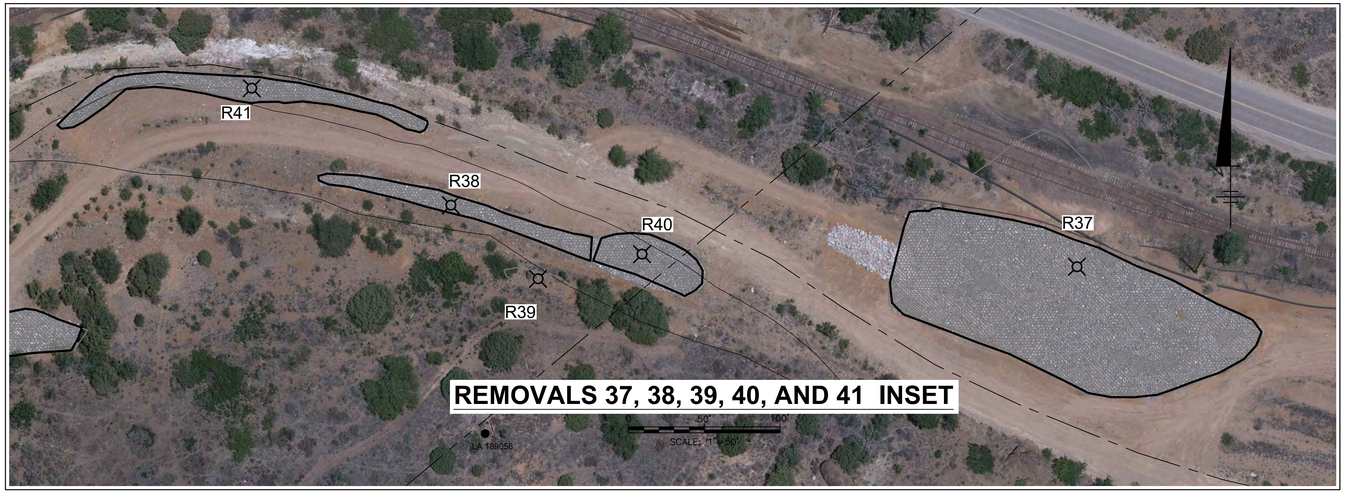
Date
APRIL 2019

ARCADIS US, INC.
801 CORPORATE CENTER DR.
SUITE 300
RALEIGH, NC 27607
919.415.2255

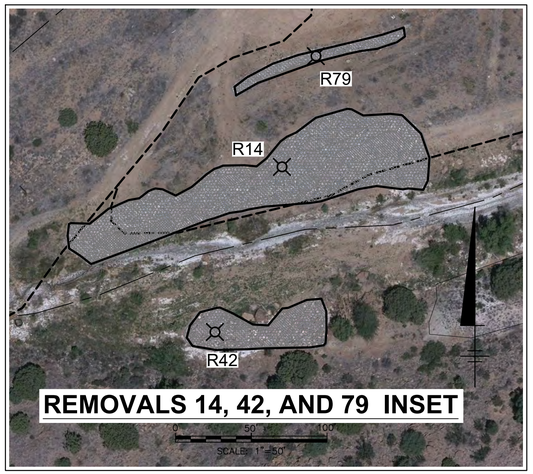
3



REMOVAL 15 INSET



REMOVALS 37, 38, 39, 40, AND 41 INSET



REMOVALS 14, 42, AND 79 INSET

REMOVALS 18 AND 44 INSET

LEGEND:

- PAVED ROAD
- GRAVEL ROAD
- RAILROAD
- PROPERTY LINE
- APPROXIMATE REMOVAL AREA
- CREEK CENTERLINE
- CREEK BOUNDARY
- AVAILABLE ACCESS ROAD
- POTENTIAL EXCLUSION ZONE
- FINAL GRADE CONTOUR
- FERRICRETE REMOVAL (LESS THAN 1.0 FOOT REMOVAL DEPTH)
- 1.0 TO 1.5 FOOT REMOVAL DEPTH
- 1.5 TO 2.0 FOOT REMOVAL DEPTH
- 2.0 TO 2.5 FOOT REMOVAL DEPTH
- GREATER THAN 2.5 FOOT REMOVAL DEPTH

CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.DAVIS LD: K.DAVIS PIC: W.ANCKNER PM: W.ANCKNER TM: C.KEENAN LYR: ON=*;OFF=*REF*
C:\Users\kdavis\BIM 360\Arcadis\ANA - FREEPORT MCMORAN COPPER & GOLD (FCX)\Project Files\CHINO-HANOVER WHITEWATER CREEK\2019\B0063543.0023\01-DWG\REMOVAL REPORT.dwg LAYOUT: 4 SAVED: 7/10/2019 1:58 PM ACADVER: 23.0S (LMS TECH) PAGESETUP: ----
PLOTSTYLETABLE: ---- PLOTTED: 7/11/2019 9:35 AM BY: DAVIS, KATHI

XREFS:
63543X02
63543X03
RECORD-XLD
HWC_River_Rem
ACCESS

IMAGES:
Chino Mine North.jpg
Chino Mine South 4-1.jpg

1"=50' (0, 50', 100')

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd.

Professional Engineer's Name		
Professional Engineer's No.		
State: NM	Date Signed:	Project Mgr.: WA
Designed by: WT	Drawn by: KMD	Checked by: RDL

ARCADIS Design & Consultancy for natural and built assets

ARCADIS U.S., INC.

CHINO MINES COMPANY • VANADIUM, NEW MEXICO
HANOVER/WHITEWATER CREEK RECORD DRAWINGS

REMOVALS 14, 15, 18, 37, 38, 39, 40, 41, 42, 44, AND 79

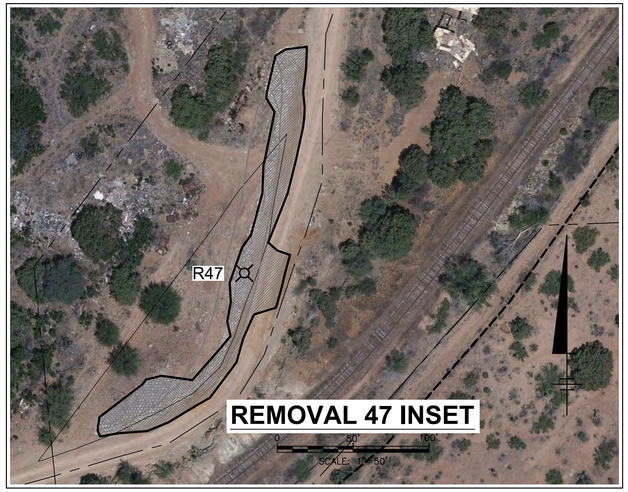
ARCADIS Project No.
B0063543.0023.00001

Date
APRIL 2019

ARCADIS US, INC.
801 CORPORATE CENTER DR.
SUITE 300
RALEIGH, NC 27607
919.415.2255

4

REMOVALS 1, 46, AND 310 INSET



REMOVAL 47 INSET

REMOVAL 48 INSET

LEGEND:

- PAVED ROAD
- GRAVEL ROAD
- RAILROAD
- PROPERTY LINE
- APPROXIMATE REMOVAL AREA
- CREEK CENTERLINE
- CREEK BOUNDARY
- AVAILABLE ACCESS ROAD
- POTENTIAL EXCLUSION ZONE
- FINAL GRADE CONTOUR
- FERRICRETE REMOVAL (LESS THAN 1.0 FOOT REMOVAL DEPTH)
- 1.0 TO 1.5 FOOT REMOVAL DEPTH
- 1.5 TO 2.0 FOOT REMOVAL DEPTH
- 2.0 TO 2.5 FOOT REMOVAL DEPTH
- GREATER THAN 2.5 FOOT REMOVAL DEPTH

XREFS:
63543X02
63543X03
RECORD-XLD
HWC_River_Rem
ACCESS

IMAGES:
Chino Mine North.jpg
Chino Mine South 4-1.jpg

50' 0 50' 100'
1"=50'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:

USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name		
Professional Engineer's No.		
State: NM	Date Signed:	Project Mgr.: WA
Designed by: WT	Drawn by: KMD	Checked by: RDL

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ARCADIS U.S., INC.

CHINO MINES COMPANY • VANADIUM, NEW MEXICO

HANOVER/WHITEWATER CREEK RECORD DRAWINGS

REMOVAL 25

ARCADIS Project No.: B0063543.0023.00001

Date: APRIL 2019

ARCADIS US, INC.
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SUITE 300
RALEIGH, NC 27607
919.415.2255

5

CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.DAVIS LD: K.DAVIS PIC: W.ANCKNER PM: W.ANCKNER TM: C.KEENAN LYR: ON="OFF="REF"
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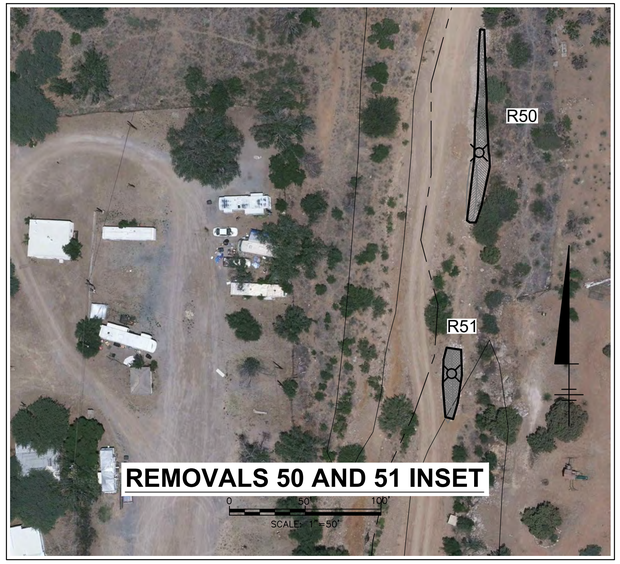


LEGEND:

- PAVED ROAD
- GRAVEL ROAD
- RAILROAD
- PROPERTY LINE
- APPROXIMATE REMOVAL AREA
- CREEK CENTERLINE
- CREEK BOUNDARY
- AVAILABLE ACCESS ROAD
- POTENTIAL EXCLUSION ZONE
- FINAL GRADE CONTOUR
- FERRICRETE REMOVAL (LESS THAN 1.0 FOOT REMOVAL DEPTH)
- 1.0 TO 1.5 FOOT REMOVAL DEPTH
- 1.5 TO 2.0 FOOT REMOVAL DEPTH
- 2.0 TO 2.5 FOOT REMOVAL DEPTH
- GREATER THAN 2.5 FOOT REMOVAL DEPTH

CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.DAVIS LD: K.DAVIS PIC: W.ANCKNER PM: W.ANCKNER TM: C.KEENAN LYR: ON="OFF="REF"
C:\Users\kdavis\BIM 360\Acadis\ANA - FREEPORT MCMORAN COPPER & GOLD (FCX)\Project Files\CHINO-HANOVER WHITEWATER CREEK\2019\B0063543.0023\01-DWG\REMOVAL REPORT.dwg LAYOUT: 6 SAVED: 7/10/2019 1:58 PM ACADVER: 23.0S (LMS TECH) PAGESETUP: ----
PLOTSTYLETABLE: ---- PLOTTED: 7/11/2019 9:45 AM BY: DAVIS, KATHI

XREFS:
63543X02
63543X03
RECORD-XLD
HWC_River_Rem
ACCESS

IMAGES:
Chino Mine North.jpg
Chino Mine South 1-1.jpg

1"=50' (50' 0 50' 100')

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name		
Professional Engineer's No.		
State: NM	Date Signed:	Project Mgr.: WA
Designed by: WT	Drawn by: KMD	Checked by: RDL

ARCADIS Design & Consultancy for natural and built assets

ARCADIS U.S., INC.

CHINO MINES COMPANY • VANADIUM, NEW MEXICO

HANOVER/WHITEWATER CREEK RECORD DRAWINGS

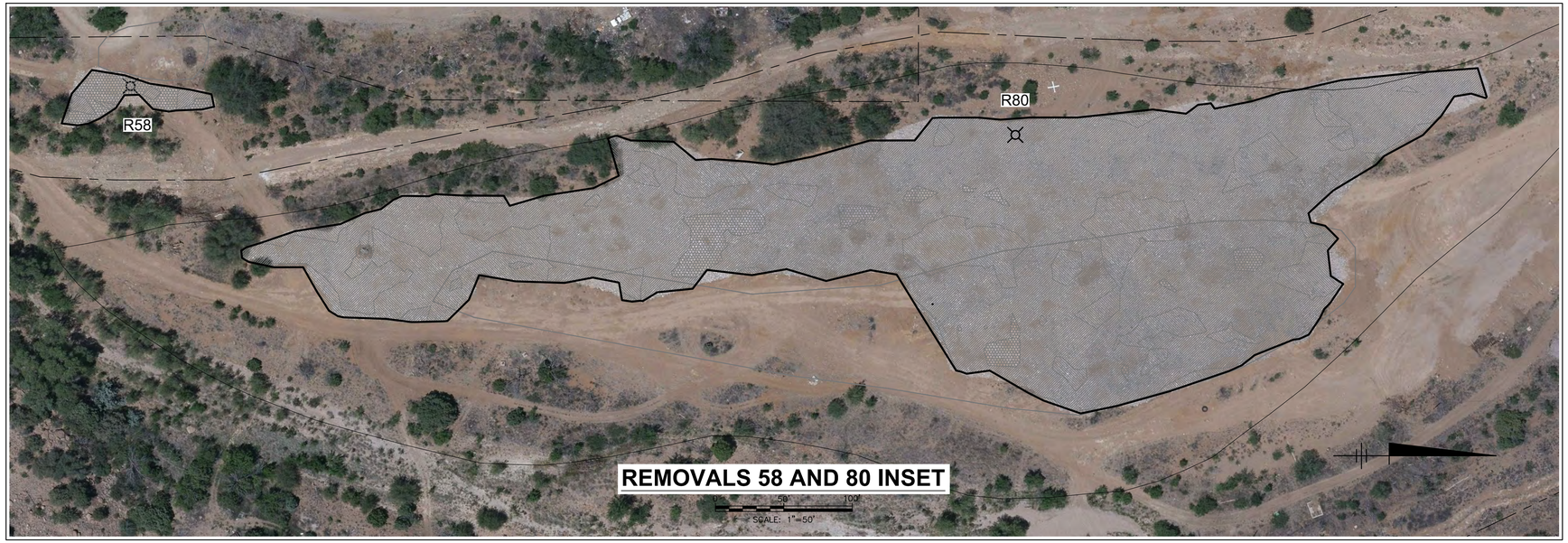
REMOVALS 50, 51, 52, 55, 56, 57, 116, 308, AND 309

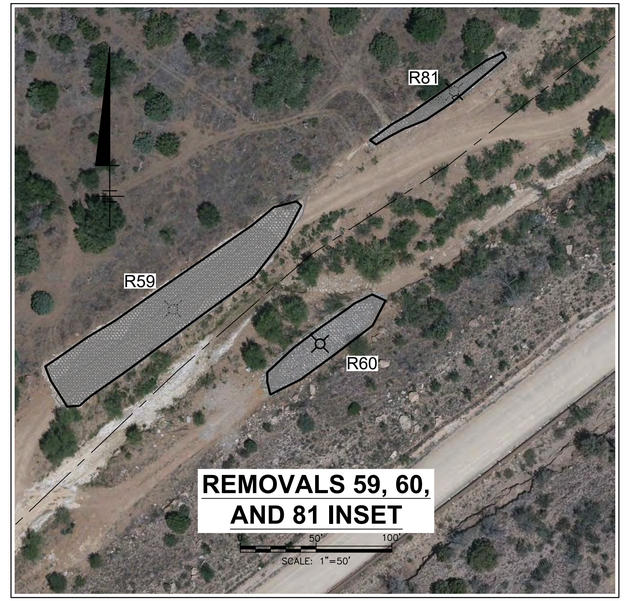
ARCADIS Project No.
B0063543.0023.00001

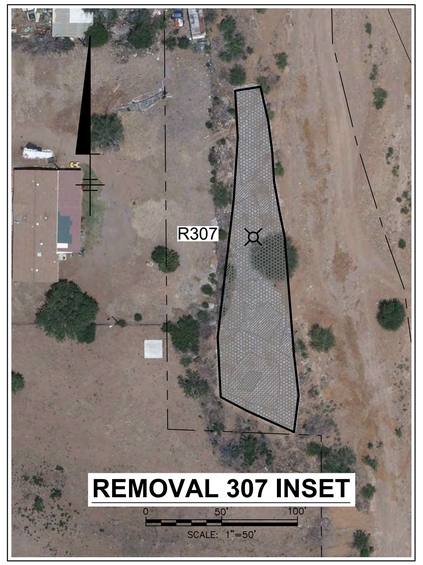
Date
APRIL 2019

ARCADIS US, INC.
801 CORPORATE CENTER DR.
SUITE 300
RALEIGH, NC 27607
919.415.2255

6







LEGEND:

- PAVED ROAD
- GRAVEL ROAD
- RAILROAD
- PROPERTY LINE
- APPROXIMATE REMOVAL AREA
- CREEK CENTERLINE
- CREEK BOUNDARY
- AVAILABLE ACCESS ROAD
- POTENTIAL EXCLUSION ZONE
- FINAL GRADE CONTOUR
- FERRICRETE REMOVAL (LESS THAN 1.0 FOOT REMOVAL DEPTH)
- 1.0 TO 1.5 FOOT REMOVAL DEPTH
- 1.5 TO 2.0 FOOT REMOVAL DEPTH
- 2.0 TO 2.5 FOOT REMOVAL DEPTH
- GREATER THAN 2.5 FOOT REMOVAL DEPTH

CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.DAVIS LD: K.DAVIS PIC: W.ANCKNER PM: W.ANCKNER TM: C.KEENAN LYR: ON=*;OFF=*REF*
C:\Users\kdavis\BIM 360\Arcadis\ANA - FREEPORT MCMORAN COPPER & GOLD (FCX)\Project Files\CHINO-HANOVER WHITEWATER CREEK\2019\B0063543.0023\01-DWG\REMOVAL REPORT.dwg LAYOUT: 7 SAVED: 7/10/2019 1:58 PM ACADVER: 23.0S (LMS TECH) PAGESETUP: ----
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XREFS:
IMAGES:
63543X02 Chino Mine North.jpg
63543X03 Chino Mine South 4-1.jpg
RECORD3X1D
HMC_River_Rem
ACCESS

1"=50' 50' 0 50' 100'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd.

Professional Engineer's Name		
Professional Engineer's No.		
State: NM	Date Signed:	Project Mgr.: WA
Designed by: WT	Drawn by: KMD	Checked by: RDL

ARCADIS Design & Consultancy for natural and built assets

ARCADIS U.S., INC.

CHINO MINES COMPANY • VANADIUM, NEW MEXICO
HANOVER/WHITEWATER CREEK RECORD DRAWINGS

REMOVALS 58, 59, 60, 61, 62, 68, 80, 81, 304, AND 307

ARCADIS Project No.: B0063543.0023.00001

Date: APRIL 2019

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801 CORPORATE CENTER DR.
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919.415.2255

7

CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.DAVIS LD: K.DAVIS PIC: W.ANCKNER PM: W.ANCKNER TM: C.KEENAN LYR: ON=*;OFF=*REF*
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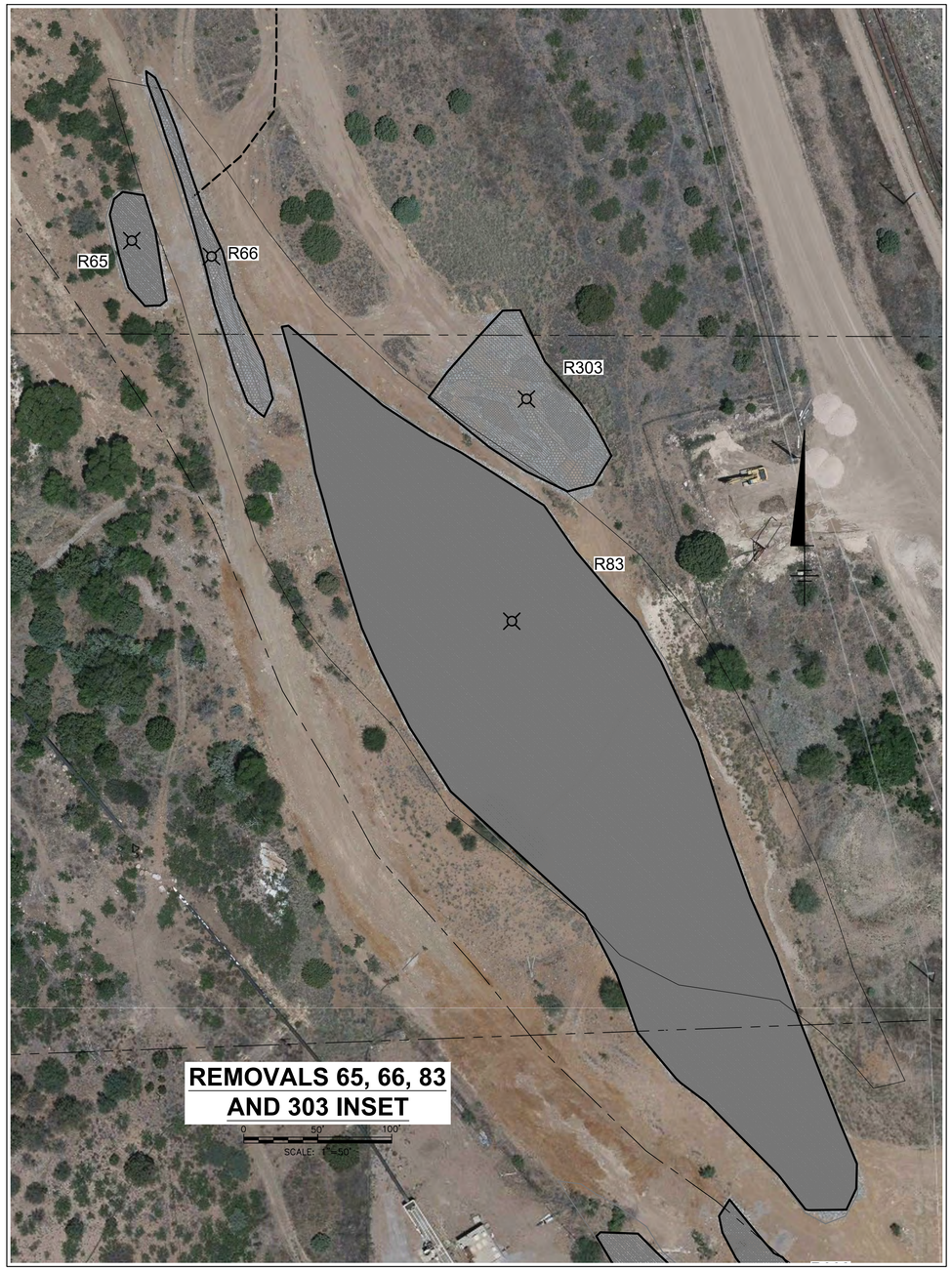
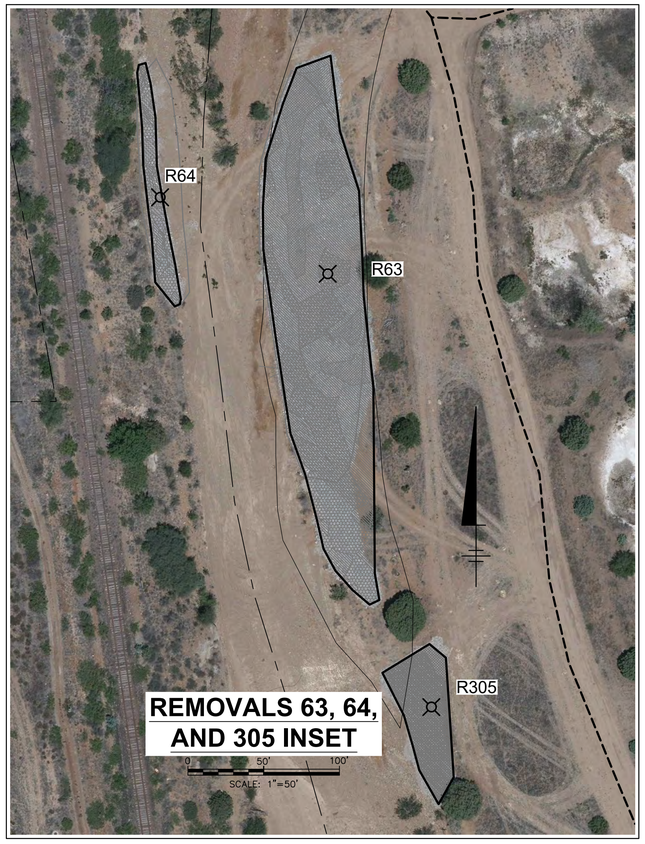
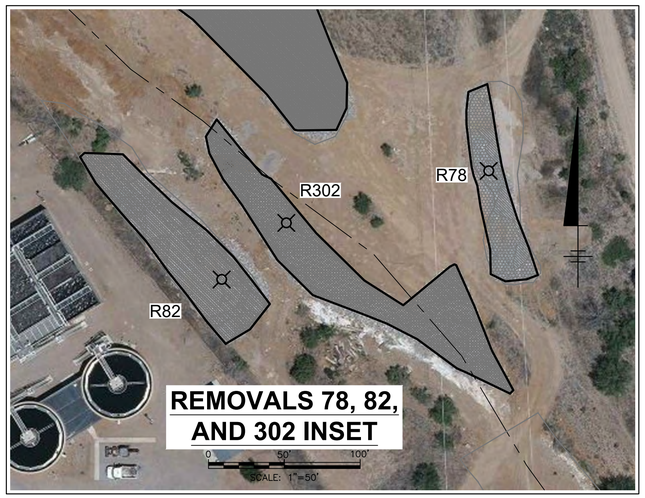
PLOTSTYLETABLE: ---- PLOTTED: 7/11/2019 9:47 AM BY: DAVIS, KATHI

IMAGES:
Chino Mine North.jpg
Chino Mine South 4-1.jpg

XREFS:
63543X02
63543X03
RECORD-XLD
HWC_River_Rem
ACCESS







LEGEND:
- PAVED ROAD
- GRAVEL ROAD
- RAILROAD
- PROPERTY LINE
- APPROXIMATE REMOVAL AREA
- CREEK CENTERLINE
- CREEK BOUNDARY
- AVAILABLE ACCESS ROAD
- POTENTIAL EXCLUSION ZONE
- FINAL GRADE CONTOUR
- FERRICRETE REMOVAL (LESS THAN 1.0 FOOT REMOVAL DEPTH)
- 1.0 TO 1.5 FOOT REMOVAL DEPTH
- 1.5 TO 2.0 FOOT REMOVAL DEPTH
- 2.0 TO 2.5 FOOT REMOVAL DEPTH
- GREATER THAN 2.5 FOOT REMOVAL DEPTH

50' 0 50' 100'
1"=50'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name
Professional Engineer's No.

State	Date Signed	Project Mgr.
NM		WA
Designed by	Drawn by	Checked by
WT	KMD	RDL

ARCADIS Design & Consultancy for natural and built assets

ARCADIS U.S., INC.

CHINO MINES COMPANY • VANADIUM, NEW MEXICO
HANOVER/WHITEWATER CREEK RECORD DRAWINGS

REMOVALS 63, 64, 65, 66, 67, 78, 82, 83, 301, 302, 303 AND 305

ARCADIS Project No.
B0063543.0023.00001

Date
APRIL 2019

ARCADIS US, INC.
801 CORPORATE CENTER DR.
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919.415.2255

8

REMOVALS 68, 69, 86, AND 87 INSET

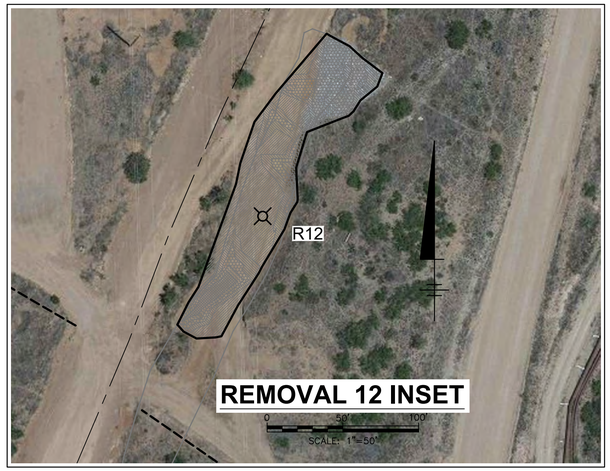
0 50' 100'
SCALE: 1"=50'

REMOVALS 70, 84, AND 85 INSET

0 50' 100'
SCALE: 1"=50'

REMOVAL 11 INSET

0 50' 100'
SCALE: 1"=50'



REMOVAL 12 INSET

0 50' 100'
SCALE: 1"=50'

LEGEND:

- PAVED ROAD
- GRAVEL ROAD
- RAILROAD
- PROPERTY LINE
- APPROXIMATE REMOVAL AREA
- CREEK CENTERLINE
- CREEK BOUNDARY
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- 2.0 TO 2.5 FOOT REMOVAL DEPTH
- GREATER THAN 2.5 FOOT REMOVAL DEPTH

CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.DAVIS LD: K.DAVIS PIC: W.ANCKNER PM: W.ANCKNER TM: C.KEENAN LYR: ON=*;OFF=*REF*
C:\Users\kdavis\BIM 360\Arcadis\ANA - FREEPORT MCMORAN COPPER & GOLD (FCX)\Project Files\CHINO-HANOVER WHITEWATER CREEK\2019\B0063543.0023\01-DWG\REMOVAL REPORT.dwg LAYOUT: 9 SAVED: 7/10/2019 1:58 PM ACADVER: 23.0S (LMS TECH) PAGESETUP: ----
PLOTSTYLETABLE: ---- PLOTTED: 7/11/2019 9:47 AM BY: DAVIS, KATHI
IMAGES:
Chino Mine North.jpg
Chino Mine South 4-1.jpg
XREFS:
63543X02
63543X03
RECORD-XLD
HWC_River_Rain1
ACCESS

1"=50' 50' 0 50' 100'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:

USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name		
Professional Engineer's No.		
State: NM	Date Signed:	Project Mgr.: WA
Designed by: WT	Drawn by: KMD	Checked by: RDL

ARCADIS Design & Consultancy for natural and built assets

ARCADIS U.S., INC.

CHINO MINES COMPANY • VANADIUM, NEW MEXICO
HANOVER/WHITEWATER CREEK RECORD DRAWINGS

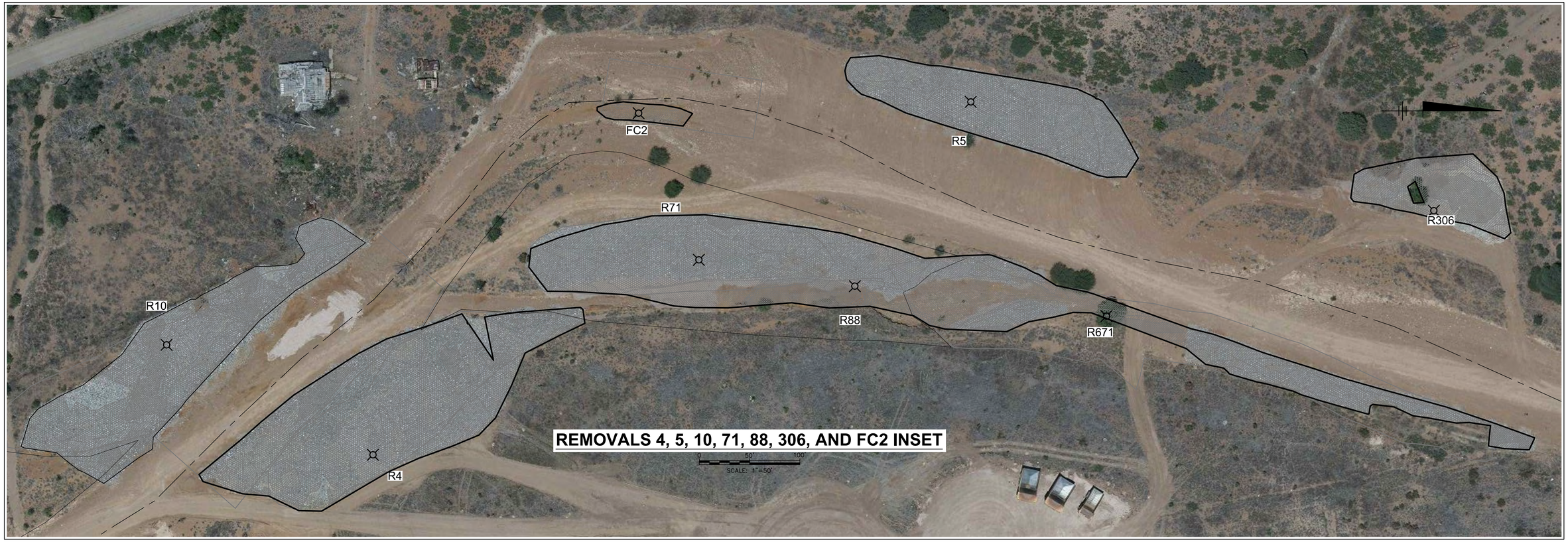
REMOVALS 11, 12, 68, 69, 70, 84, 85, 86, AND 87

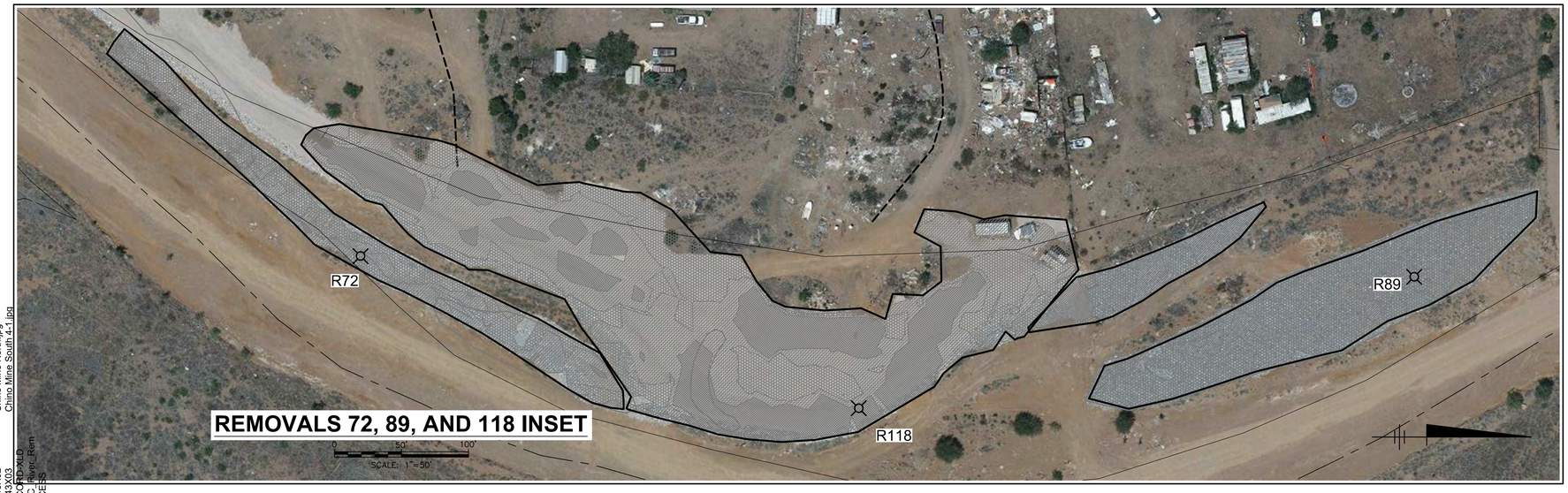
ARCADIS Project No.
B0063543.0023.00001

Date
APRIL 2019

ARCADIS US, INC.
801 CORPORATE CENTER DR.
SUITE 300
RALEIGH, NC 27607
919.415.2255

9





LEGEND:

- PAVED ROAD
- GRAVEL ROAD
- RAILROAD
- PROPERTY LINE
- APPROXIMATE REMOVAL AREA
- CREEK CENTERLINE
- CREEK BOUNDARY
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- FERRICRETE REMOVAL (LESS THAN 1.0 FOOT REMOVAL DEPTH)
- 1.0 TO 1.5 FOOT REMOVAL DEPTH
- 1.5 TO 2.0 FOOT REMOVAL DEPTH
- 2.0 TO 2.5 FOOT REMOVAL DEPTH
- GREATER THAN 2.5 FOOT REMOVAL DEPTH

CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.DAVIS LD: K.DAVIS PIC: W.ANGKNER PM: W.ANGKNER TM: C.KEENAN LYR: ON=*;OFF=*REF*
C:\Users\kdavis\BIM 360\Arcadis\ANA - FREEPORT MCMORAN COPPER & GOLD (FCX)\Project Files\CHINO-HANOVER WHITEWATER CREEK\2019\B0063543.0023\01-DWG\REMOVAL REPORT.dwg LAYOUT: 10 SAVED: 7/10/2019 1:58 PM ACADVER: 23.0S (LMS TECH) PAGESETUP: ----
PLOTSTYLETABLE: ---- PLOTTED: 7/11/2019 9:48 AM BY: DAVIS, KATHI
XREFS:
63543X02 RECORDXLD
63543X03 HWC_River_Rem
ACCESS
IMAGES:
Chino Mine North.jpg
Chino Mine South 4-1.jpg

50' 0 50' 100'
1"=50'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name

Professional Engineer's No.

State	Date Signed	Project Mgr.
NM		WA
Designed by	Drawn by	Checked by
WT	KMD	RDL

ARCADIS Design & Consultancy for natural and built assets

ARCADIS U.S., INC.

CHINO MINES COMPANY ● VANADIUM, NEW MEXICO

HANOVER/WHITEWATER CREEK RECORD DRAWINGS

REMOVALS 4, 5, 10, 71, 72, 88, 89, 118, 306, AND FC2

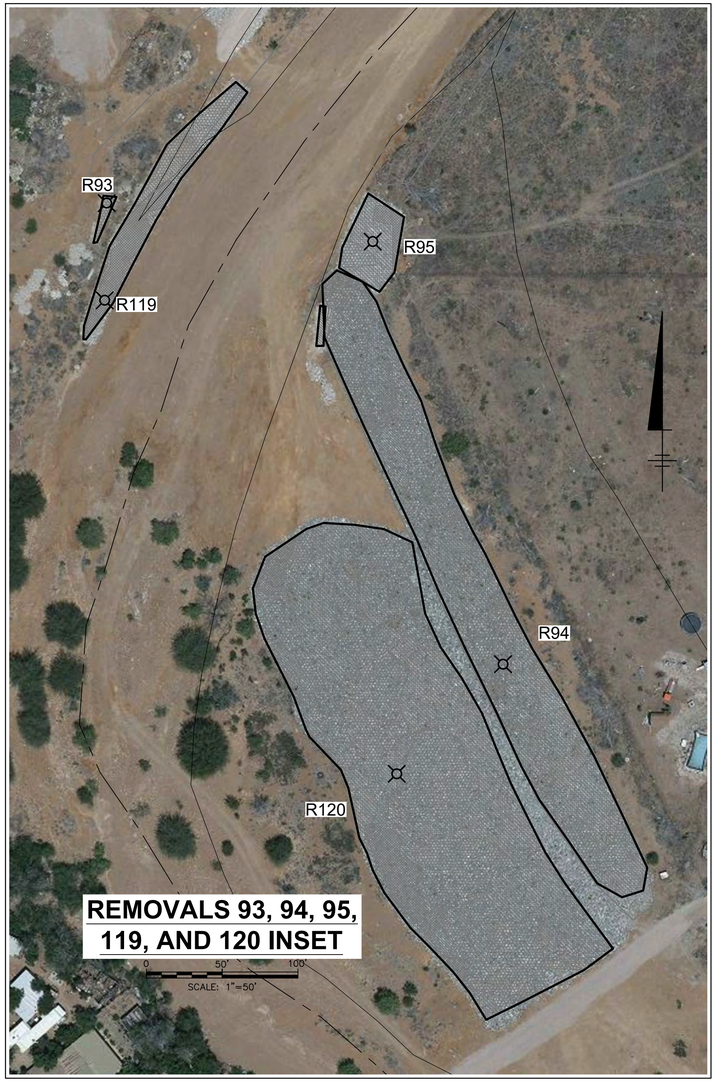
ARCADIS Project No.
B0063543.0023.00001

Date
APRIL 2019

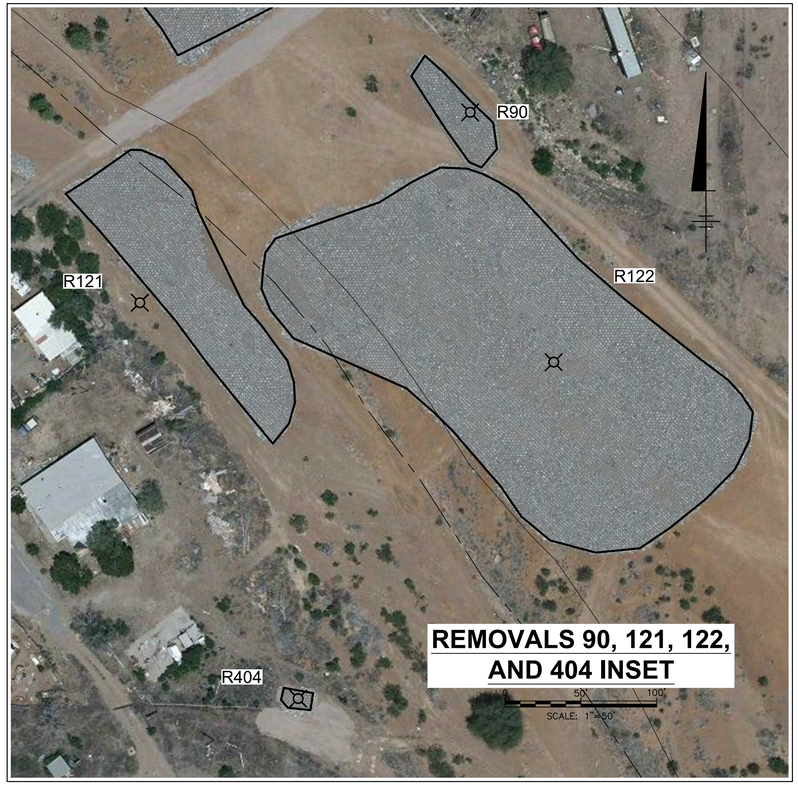
ARCADIS US, INC.
801 CORPORATE CENTER DR.
SUITE 300
RALEIGH, NC 27607
919.415.2255

10

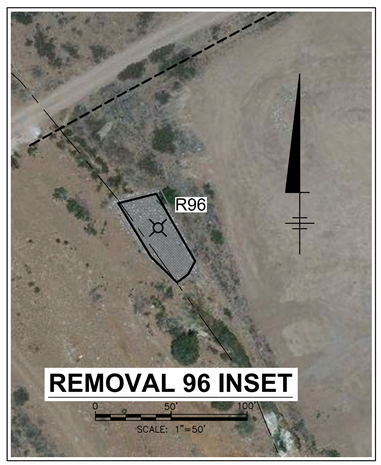
CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.DAVIS LD: K.DAVIS PIC: W.ANCKNER PM: W.ANCKNER TM: C.KEENAN LYR: ON=*;OFF=*REF*
C:\Users\kdavis\BIM 360\Arcadis\ANA - FREEPORT MCMORAN COPPER & GOLD (FCX)\Project Files\CHINO-HANOVER WHITEWATER CREEK\2019\B0063543.0023\01-DWG\REMOVAL REPORT.dwg LAYOUT: 11 SAVED: 7/10/2019 1:58 PM ACADVER: 23.0S (LMS TECH) PAGESETUP: ----
PLOTSTYLETABLE: ---- PLOTTED: 7/11/2019 9:48 AM BY: DAVIS, KATHI
XREFS:
IMAGES:
Chino Mine North.jpg
Chino Mine South 4-1.jpg
63543X02
63543X03
RECORD-XLD
HWC_River_Rem
ACCESS



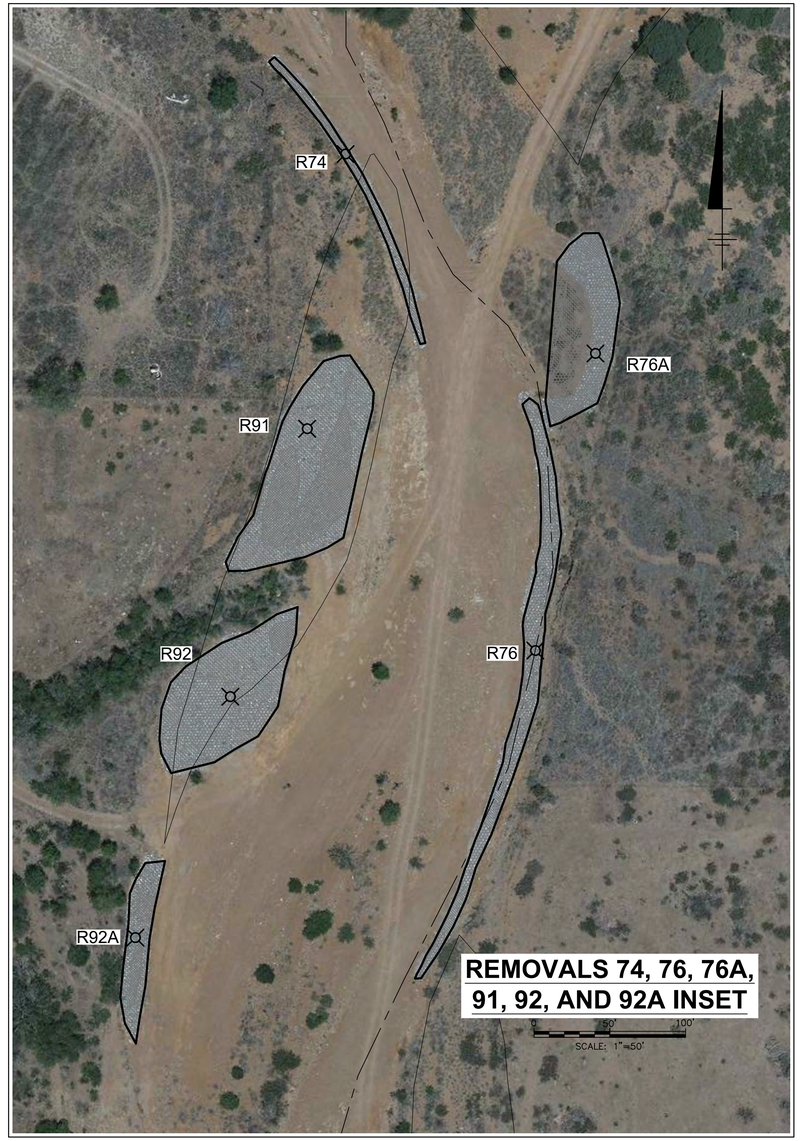
REMOVALS 93, 94, 95, 119, AND 120 INSET



REMOVALS 90, 121, 122, AND 404 INSET



REMOVAL 96 INSET



REMOVALS 74, 76, 76A, 91, 92, AND 92A INSET

LEGEND:

- PAVED ROAD
- GRAVEL ROAD
- RAILROAD
- PROPERTY LINE
- APPROXIMATE REMOVAL AREA
- CREEK CENTERLINE
- CREEK BOUNDARY
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- 1.0 TO 1.5 FOOT REMOVAL DEPTH
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- GREATER THAN 2.5 FOOT REMOVAL DEPTH

50' 0 50' 100'
1"=50'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING:

USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd

Professional Engineer's Name

Professional Engineer's No.

State	Date Signed	Project Mgr.
NM		WA
Designed by	Drawn by	Checked by
WT	KMD	RDL

ARCADIS | Design & Consultancy for natural and built assets

ARCADIS U.S., INC.

CHINO MINES COMPANY • VANADIUM, NEW MEXICO

HANOVER/WHITEWATER CREEK RECORD DRAWINGS

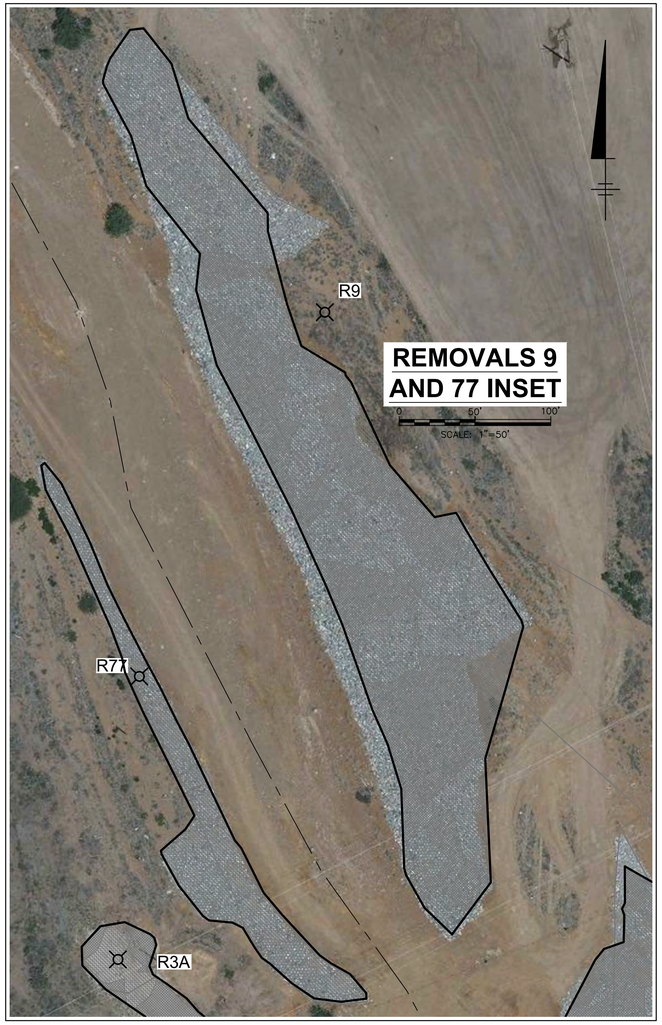
REMOVALS 74, 76, 76A, 90, 91, 92, 92A, 93, 94, 95, 96, 119, 120, 121, 122, AND 404

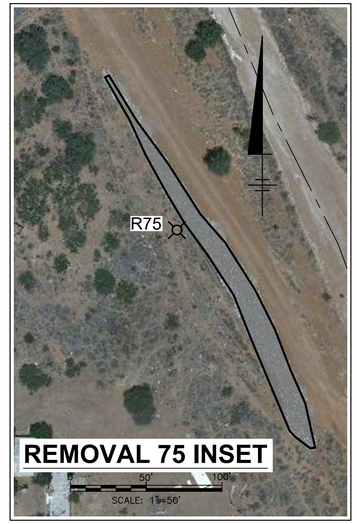
ARCADIS Project No.
B0063543.0023.00001

Date
APRIL 2019

ARCADIS US, INC.
801 CORPORATE CENTER DR.
SUITE 300
RALEIGH, NC 27607
919.415.2255

11





LEGEND:

- PAVED ROAD
- GRAVEL ROAD
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IMAGES:
Chino Mine North.jpg
Chino Mine South 4-1.jpg

XREFS:
63543X02
63543X03
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HWC_River_Rem
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NM		WA
Designed by	Drawn by	Checked by
WT	KMD	RDL

ARCADIS Design & Consultancy for natural and built assets

ARCADIS U.S., INC.

CHINO MINES COMPANY • VANADIUM, NEW MEXICO
HANOVER/WHITEWATER CREEK RECORD DRAWINGS

REMOVALS 3, 3A, 9, 75, 77, 94, 95, AND 97

ARCADIS Project No.
B0063543.0023.00001

Date
APRIL 2019

ARCADIS US, INC.
801 CORPORATE CENTER DR.
SUITE 300
RALEIGH, NC 27607
919.415.2255

12

CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.DAVIS LD: K.DAVIS PIC: W.ANCKNER PM: W.ANCKNER TM: C.KEENAN LYR: ON=*;OFF=*REF*
C:\Users\ktavis\BIM 360\Arcadis\ANA - FREEPORT MCMORAN COPPER & GOLD (FCX)\Project Files\CHINO-HANOVER WHITEWATER CREEK\2019\B0063543.0023\01-DWG\REMOVAL REPORT.dwg LAYOUT: 12 SAVED: 7/10/2019 1:58 PM ACADVER: 23.0S (LMS TECH) PAGESETUP: ----
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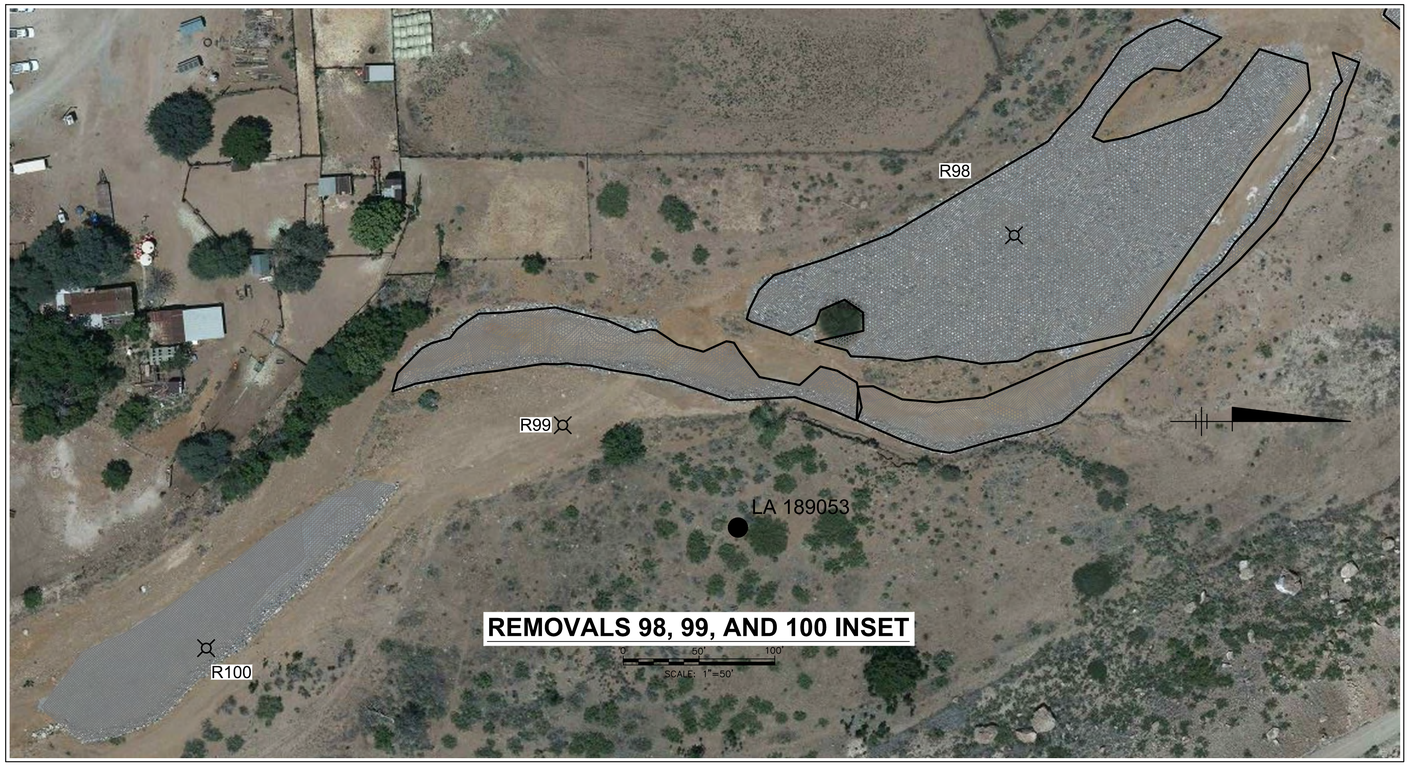
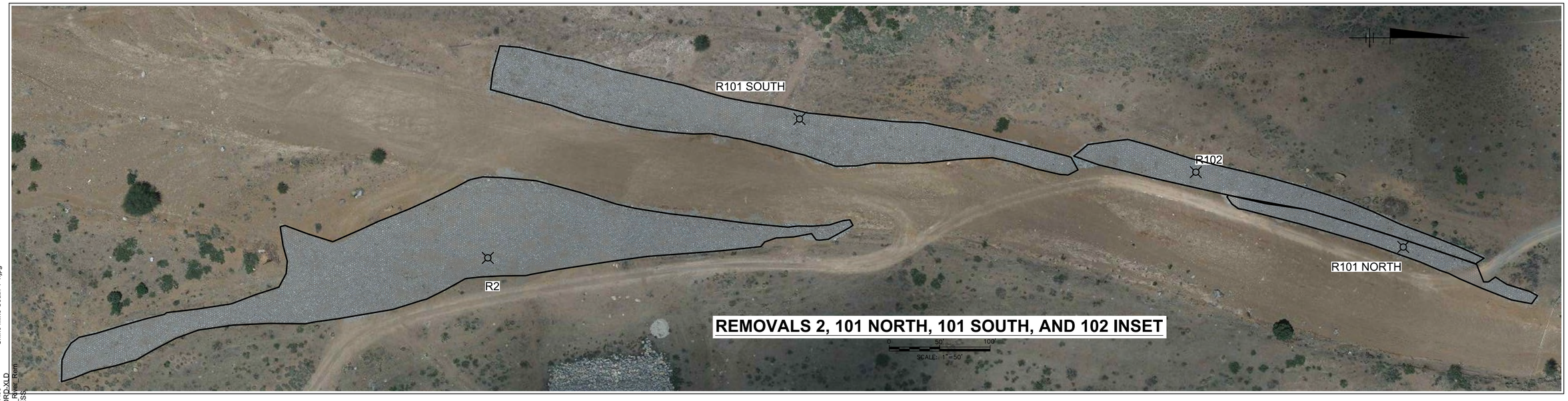


LEGEND:

- PAVED ROAD
- GRAVEL ROAD
- RAILROAD
- PROPERTY LINE
- APPROXIMATE REMOVAL AREA
- CREEK CENTERLINE
- CREEK BOUNDARY
- AVAILABLE ACCESS ROAD
- POTENTIAL EXCLUSION ZONE
- FINAL GRADE CONTOUR
- FERRICRETE REMOVAL (LESS THAN 1.0 FOOT REMOVAL DEPTH)
- 1.0 TO 1.5 FOOT REMOVAL DEPTH
- 1.5 TO 2.0 FOOT REMOVAL DEPTH
- 2.0 TO 2.5 FOOT REMOVAL DEPTH
- GREATER THAN 2.5 FOOT REMOVAL DEPTH



CITY: SYRACUSE, NY DIV/GROUP: IMDV DB: K.DAVIS LD: K.DAVIS PIC: W.ANCKNER PM: W.ANCKNER TM: C.KEENAN LYR: ON=*;OFF=*REF*
C:\Users\kdavis\BIM 360\Arcadis\ANA - FREEPORT MCMORAN COPPER & GOLD (FCX)\Project Files\CHINO-HANOVER WHITEWATER CREEK\2019\B0063543.0023\01-DWG\REMOVAL REPORT.dwg LAYOUT: 13 SAVED: 7/11/2019 10:24 AM ACADVER: 23.0S (LMS TECH) PAGESETUP: ----
PLOTSTYLETABLE: ---- PLOTTED: 7/11/2019 10:27 AM BY: DAVIS, KATHI
XREFS:
63543X02
63543X03
RECORD.XLD
HWC_River_Rem
ACCESS
IMAGES:
Chino Mine North.jpg
Chino Mine South 4-1.jpg

1"=50' 50' 0 50' 100'

THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING: USE TO VERIFY FIGURE REPRODUCTION SCALE

No.	Date	Revisions	By	Ckd.

Professional Engineer's Name		
Professional Engineer's No.		
State: NM	Date Signed:	Project Mgr.: WA
Designed by: WT	Drawn by: KMD	Checked by: RDL

ARCADIS Design & Consultancy for natural and built assets

ARCADIS U.S., INC.

CHINO MINES COMPANY ● VANADIUM, NEW MEXICO

HANOVER/WHITEWATER CREEK RECORD DRAWINGS

REMOVALS 2, 98, 99, 100, 101 NORTH, 101 SOUTH, AND 102

ARCADIS Project No.
B0063543.0023.00001

Date
APRIL 2019

ARCADIS US, INC.
801 CORPORATE CENTER DR.
SUITE 300
RALEIGH, NC 27607
919.415.2255

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APPENDIX E

Post Removal Confirmation Sample Laboratory Results

Sample Location	Excavation ID	Sample Date	Excavation Collection Location[1]	Sample Type	Duplicate Parent Sample	X Coordinate[2]	Y Coordinate[2]	Sieve Size (µm)	Sample ID	Analyte	Arsenic		Cadmium		Chromium		Copper		Iron		Lead		Manganese		Percent Moisture		pH		Total Organic Carbon		Zinc	
										CAS	7440-38-2		7440-43-9		7440-47-3		7440-50-8		7439-89-6		7439-92-1		7439-96-5		ARC-Moist		ARC-pH		ARC-TOC		7440-66-6	
										Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		%		SU		%		mg/kg	
										Sample Date	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
R01-001F	R01	11/29/2018	U	Primary	--	2633524.26	645153.98	2000	R01-001F(11292018) 2000	11/29/2018	3.53		3.53	J	11.6		357		34000		162		1470		1.1		7.7	J	0.419	J	1330	
	R01	11/29/2018	U	Primary	--	2633524.26	645153.98	250	R01-001F(11292018) 250	11/29/2018	4.17		1.41	J	7.76		230		25900		182		1100		1.7		7.8	J	0.896	J	530	
R01-002F	R01	11/29/2018	R	Primary	--	2633361.73	645111.02	250	R01-002F(11292018) 250	11/29/2018	4.41		2.91	J	12.1		401		37900		148		1510		1.8		7.7	J	1.19	J		
R01-003F	R01	11/29/2018	R, D	Primary	--	2633068.78	644936.12	250	R01-003F(11292018) 250	11/29/2018	3.26		4		2.4	J	66.6		12300		124		457		1.2		7.8	J	0.223	J	157	
R01-004F	R01	11/29/2018	D	Primary	--	2633020.79	644787.49	2000	R01-004F(11292018) 2000	11/29/2018	2.2		0.96	J	10.6		122		21100		111		444		1.4		7.8	J	0.401	J	356	
	R01	11/29/2018	D	Primary	--	2633020.79	644787.49	250	R01-004F(11292018) 250	11/29/2018	2.36		4		3.87	J	54		12500		114		259		1.5		7.8	J	0.425	J	82.7	
R01-005F	R01	11/29/2018	L	Primary	--	2633271.08	645038.47	250	R01-005F(11292018) 250	11/29/2018	4.24		0.77	J	3.98	J	119		16700		187		639		1.7		7.7	J	0.791	J	162	
R02-001F	R02	12/17/2018	U	Primary	--	2634667.07	623451.11	2000	R02-001F(12172018) 2000	12/17/2018	5.99		1.72	J	15.3		927		39300		247		961		1.2		5.8	J	0.185	J	699	
R02-002F	R02	12/17/2018	R	Primary	--	2634645.82	623333.32	2000	R02-002F(12172018) 2000	12/17/2018	3.52		3.02	J	13.5		861		41000		155		1090		1.1		7.6	J	0.312	J	1060	
R02-003F	R02	12/17/2018	D	Primary	--	2634691.99	623143.54	2000	R02-003F(12172018) 2000	12/17/2018	3.64		2.12	J	14.2		599		38900		144		1330		1.7		7.3	J	0.478	J	796	
	R02	12/17/2018	D	Primary	--	2634691.99	623143.54	250	R02-003F(12172018) 250	12/17/2018	3.97		2.24	J	13.7		596		40000		149	J	1250		1.7		7.4	J	0.414	J	784	
R02-004F	R02	12/17/2018	L	Primary	--	2634689.08	623257.11	2000	R02-004F(12172018) 2000	12/17/2018	5.11		3.22	J	11.9		992		37500		201		1100		1.2		7.5	J	0.333	J	1330	
R02-005F	R02	12/17/2018	L	Field Duplicate	R02-004F	2634689.08	623257.11	2000	R02-005F(12172018) 2000	12/17/2018	5.03		3.00	J	13.0		967		40100		178		1080		1.2		7.2	J	0.315	J	1240	
R02-006F	R02	2/14/2019	F	Primary	--	2634665.26	623386.76	2000	R02-006F(02142019) 2000	02/14/2019	1.83		0.69		8.61		296		20700		56.4		885		1.1		7.6				334	
	R02	2/14/2019	F	Primary	--	2634665.26	623386.76	250	R02-006F(02142019) 250	02/14/2019	2.53		1.34		13.5		579		28100		99.5		984		2		7.7				577	
R02-007F	R02	2/14/2019	F	Primary	--	2634671.13	623320.13	2000	R02-007F(02142019) 2000	02/14/2019	2.96		1.87		11.8		835		31900		172		1060		1		7.6				769	
R02-008F	R02	2/14/2019	F	Primary	--	2634688.85	623216.07	2000	R02-008F(02142019) 2000	02/14/2019	2.45		0.5		12.6		305		40500		95.1		590		2.1		5.3				295	
R02-009F	R02	2/14/2019	F	Primary	--	2634710.39	623162.37	2000	R02-009F(02142019) 2000	02/14/2019	2.58		0.39		11.5		186		41200		82.1		539		1.9		4.6				276	
	R02	2/14/2019	F	Primary	--	2634710.39	623162.37	250	R02-009F(02142019) 250	02/14/2019	2.8		0.35		15.3		201		52500		121		464		2.9		4.7				273	
R03A-001F	R03A	12/18/2018	U	Primary	--	2633335.92	626292.27	2000	R03A-001F(12182018) 2000	12/18/2018	3.71		< 4.00		19.6		465		34400		94.9		561		1.9		6.7	J	1.25	J	251	
	R03A	12/18/2018	U	Primary	--	2633335.92	626292.27	250	R03A-001F(12182018) 250	12/18/2018	3.28		0.59	J	18.0		459		31700		104		550		2.1		6.6	J	1.33	J	215	
R03A-002F	R03A	12/18/2018	R	Primary	--	2633338.93	626249.93	2000	R03A-002F(12182018) 2000	12/18/2018	2.81		0.98	J	16.5		459		23600		80.4		1000		2.2		7.8	J	1.15	J	176	
R03A-003F	R03A	12/18/2018	D	Primary	--	2633371.70	626257.83	2000	R03A-003F(12182018) 2000	12/18/2018	6.01		2.72	J	30.1		768		57600		338		695		3.0		4.1	J	0.337	J	1000	
R03A-004F	R03A	12/18/2018	L	Primary	--	2633369.01	626285.68	2000	R03A-004F(12182018) 2000	12/18/2018	2.69		2.85	J	12.5		473				51.2		1200		2.4		6.3	J	0.347	J		
	R03A	12/18/2018	L	Primary	--	2633369.01	626285.68	250	R03A-004F(12182018) 250	12/18/2018	2.48		2.66	J	10.4		461		21100		48.7		1120		2.2		6.5	J	0.425	J	1300	
R03A-005F	R03A	12/18/2018	D	Field Duplicate	R03A-003F	2633371.70	626257.83	2000	R03A-005F(12182018) 2000	12/18/2018	6.16		2.74	J	28.4		764		55900		361		796		3.3		4.2	J	0.611	J	1090	
R03B-001F	R03B	12/18/2018	U	Primary	--	2633431.27	626207.53	2000	R03B-001F(12182018) 2000	12/18/2018	2.69		0.7	J	10.3		399		20400		47.5		831		2.8		7.3	J	0.783	J	246	
R03B-002F	R03B	12/18/2018	R	Primary	--	2633606.72	625953.69	2000	R03B-002F(12182018) 2000	12/18/2018	2.59		1.15	J	11.6		808		28400		111		940		1.0		8	J	0.527	J	565	
	R03B	12/18/2018	R	Primary	--	2633606.72	625953.69	250	R03B-002F(12182018) 250	12/18/2018	2.88		1.4	J	11.3		810		28500		94.2		910		1.8		7.9	J	0.462	J	571	
R03B-003F	R03B	12/18/2018	R	Primary	--	2633830.09	625625.39	2000	R03B-003F(12182018) 2000	12/18/2018	2.88		1.05	J	15.0		1250		23700		73.9		1120		2.1		7.9	J	1.12	J	416	
R03B-004F	R03B	12/18/2018	D	Primary	--	2633934.29	625598.02	2000	R03B-004F(12182018) 2000	12/18/2018	3.09		1.96	J	13.0		953		26600		105		995		0.9		8.1	J	0.669	J	721	
R03B-005F	R03B	12/18/2018	L	Primary	--	2633812.73	625776.72	2000	R03B-005F(12182018) 2000	12/18/2018	5.02	J	2.26	J	10.6		698		28300		145		1060		0.9		7.9	J	< 0.15	UJ	829	
	R03B	12/18/2018	L	Primary	--	2633812.73	625776.72	250	R03B-005F(12182018) 250	12/18/2018	7.38		3.37	J	15.7		1010		55100		222		1270		0.9		7.6	J	0.467	J	1030	
R03B-006F	R03B	12/18/2018	LU	Primary	--	2633645.12	626027.54	2000	R03B-006F(12182018) 2000	12/18/2018	4.70		< 4.00		13.7		572		43900		187		637		1.1		5.7	J	< 0.15	UJ	324	
R03B-007F	R03B	12/18/2018	R	Field Duplicate	R03B-002F	2633606.72	625953.69	2000	R03B-007F(12182018) 2000	12/18/2018	2.84		1.12	J	10.6		635		25400		76.6		842		1.1		7.9	J	0.504	J	452	
R03B-010F	R03B	2/6/2019	F	Primary	--	2633917.01	625609.08	2000	R03B-010F(02062019) 2000	02/06/2019	1.88		0.82		18.1		455		58800		118		345		1.6		4.2				235	
	R03B	2/6/2019	F	Primary	--	2633917.01	625609.08	250	R03B-010F(02062019) 250	02/06/2019	2.5		0.65		23.3		602		65500		208		302		2.2		4.1				225	
R03B-014F	R03B	2/7/2019	F	Field Duplicate	R03B-013F	2633611.67	625943.25	2000	R03B-014F(02072019) 2000	02/07/2019	2.19		0.62		10.5		358		36800		72.2		650		1.4		6.4				276	
R04-006F	R04	2/26/2019	F	Primary	--	2632241.79	631403.12	2000	R04-006F(02262019) 2000	02/26/2019	2.43		0.79		10.7		406		26900		72		856		1.4		7.4				333	
R04-007F	R04	2/26/2019	F	Primary	--	2632216.09	631469.65	2000	R04-007F(02262019) 2000	02/26/2019	2.56		0.46		11.3		395		30500		74.2		664		2.5		6				279	
R09M-009F	R09M	1/24/2019	R	Primary	--	2633430.96	626599.85	2000	R09M-009F(01242019) 2000	01/24/2019	4.14		1.05	J	14.5		375		51900		155		869		0.8		7	J	< 0.15		500	
R09M-010F	R09M	1/24/2019	RD	Primary	--	2633529.17	626363.72	2000	R09M-010F(01242019) 2000	01/24/2019	4.26		1.03	J	20.1		415		71900		123		822		0.8		6.2	J	< 0.15		526	
R09M-019F	R09M	1/31/2019	F	Primary	--	2633569.18	626442.33	2000	R09M-019F(01312019) 2000	01/31/2019	3.05		< 4		10.6		144		38600		95.1		426		2.6		4.8		< 0.15		202	
R10-001F	R10	12/10/2018	U	Primary	--	2632054.11	631348.93	2000	R10-001F(12102018) 2000	12/10/2018	2.43		0.66	J	10.9		1140		20400		73.4		825		1.8		8.1	J	1.17	J	223	
R10-002F	R10	12/10/2018	R	Primary	--	2632120.52	631215.90	2000	R10-002F(12102018) 2000	12/10/2018	2.67		1.18	J	12.8		318	J	28700	J	157	J	942		2.0		7.8	J	0.908	J	352	
R10-003F	R10	12/10/2018	D	Primary	--	2632193.57	631087.95	2000	R10-003F(12102018) 2000	12/10/2018	1.84		< 4.00		11.5		61.2		22400		24.0		1680		1.0		8.2	J	< 0.150	UJ	74.8	
	R10	12/10/2018	D	Primary	--	2632193.57	631087.95	250	R10-003F(12102018) 250	12/10/2018	1.76		< 4.00		18.4		78.8		28000		15.8		769		1.3		8	J	< 0.15	UJ	77.7	
R10-004F	R10	12/10/2018	L	Primary	--	2632235.54	631163.69	2000	R10-004F(12102018) 2000	12/10/2018	6.12		1.52	J	18.0		467		57600		255		702		1.1		5.9	J	< 0.15	UJ	411	
R103-001F	R103	12/21/2018	U	Primary	--	2634918.44	622119.78	2000	R103-001F(12212018) 2000	12/21/2018	3.84		1.03	J	13.8		365		44300		141		781		1.6		7	J	0.182	J	447	
R103-002F	R103	12/21/2018	R	Primary	--	2634900.72	622046.83	2000	R103-002F(12212018) 2000	12/21/2018	3.77		1.38	J	12.5		400		38100		123		877		1.7		7.4	J	0.596	J	503	
R103-003F	R103	12/21/2018	D	Primary	--	2634957.94	621978.67	2000	R103-003F(12212018) 2000	12/21/2018	3.48		0.81	J	11.8		357		44100		114		833		1.1		6.5	J	0.256	J	404	
R103-004F	R103	12/21/2018	L	Primary	--	2634955.93	622080.19	2000	R103-004F(12212018) 2000	12/21/2018	4.18		1.05	J	13.5		426		53600		142		893		1.0		6.8	J	< 0.15	UJ	521	
R104-001F	R104	12/21/2018	U	Primary	--	2635570.88	621295.36	2000	R104-001F(12212018) 2000	12/21/2018	0.965		< 4.00		3.90	J	571		10400		5.97		149		1.8		7.3	J	< 0.150	UJ	22.5	
R104-002F	R104	12/21/2018	R	Primary	--	2635563.92	621282.13	2000	R104-002F(12212018) 2000	12/21/2018	1.95		0.83	J	9.17		1570		18000		24.2		447		1.7		6.8	J	0.692	J	103	
R104-003F	R104	12/21/2018	D	Primary	--	2635581.28	621261.27	2000	R104-003F(12212018) 2000	12/21/2018	3.00		2.41	J	13.0		1870		17200		30.1		451		4.3		7.5	J	1.62	J	95.5	
R104-004F	R104	12/21/2018	L	Primary	--	2635593.80	621286.91	2000	R104-004F(12212018) 2000	12/21/2018	2.91		0.57	J	17.3		746		21700		22.8		371		5.5		7.2	J	1.67	J	86.2	
R104-005F	R104	12/21/2018	U	Field Duplicate	R104-001F	2635570.88	621295.36	2000	R104-005F(12212018) 2000	12/21/2018	1.15				5.31	J	605		10700		7.84		213		2.7		7.6	J	< 0.150	UJ	25.6	
R105-001F	R105	12/21/2018	U	Primary	--	2635496.61	621384.82	2000	R105-001F(12212018) 2000	12/21/2018	3.22		0.93	J	8.39		892		12200		36.8		456		2.3		5.3	J	2.33	J	85.3	
R105-002F	R105	12/21/2018	R	Primary	--	2635471.56	621348.73	2000	R105-002F(12212018) 2000	12/21/2018	4.35		6.06		8.89		4200		19800		80.1		1030		3.8		7.7	J	2.36	J	383	
R105-003F	R105	12/21/2018	D	Primary	--	2635481.34	621286.28	2000	R105-003F(12212018) 2000	12/21/2018	2.81		< 4.00		8.62		1850		15700		48.5		307		1.8		7.1	J	0.238	J	111	
R105-004F	R105	12/21/2018	L	Primary	--	2635518.75	621346.07	2000	R105-004F(12212018) 2000	12/21/2018	2.58		2.87	J	9.18		2390		15700		32.5		469		3.9		7.9	J	0.774	J	118	
R11-001F	R11	12/10/2018	U	Primary	--	2632464.12	633535.13	2000	R11-001F(12102018) 2000	12/10/2018	3.50		2.75	J	12.5		507		34000		126		1160		1.3		7.6	J	1.92	J	862	
R11-002F	R11	12/10/2018	R	Primary	--	2632361.67	633515.93	2000	R11-002F(12102018) 2000	12/10/2018	2.60		1.70	J	16.3		510		68000		65.7		728		2.8		5.9	J	1.20	J	209	
	R11	12/10/2018	R	Primary	--	2632361.67	633515.93	250	R11-002F(12102018) 250	12/10/2018	2.68		0.89	J	19.6		600		93900		72.2		683		3.3		5.9	J	0.928	J	212	
R11-003F	R11	12/10/2018	R	Primary	--	2632415.87	633497.52	2000	R11-003F(12102018) 2000	12/10/2018	4.21		3.43	J	16.3		1670		31900		152		1050		3.2		7.3	J	1.21	J	961	
R11-004F	R11	12/10/2018	D	Primary	--	2632403.36	633351.49	2000	R11-004F(12102018) 2000	12/10/2018	2.55	J	1.32	J	9.55		279		26700		83.2		1060		2.1		7	J	0.555	J	381	J
R11-005F	R10	12/10/2018	R	Field Duplicate	R10-002F	2632120.52	631215.90	2000	R11-005F(12102018) 2000	12/10/2018	2.41		0.79	J	17.8		600	J	116000	J	85.5	J	690		3.1		5.3	J	0.996	J	228	
	R10	12/10/2018	R	Field Duplicate	R10-002F	2632120.52	631215.90	250	R11-005F(12102018) 250	12/10/2018	2.37		1.27	J	19.6		736		148000		114		593		3.6		5.1	J	1.12	J	225	
R11-006F	R11	3/6/2019	F	Primary	--	2632433.54	633450.23	2000	R11-006F(03062019) 2000	03/06/2019	4.13		1.1		17.2		753		68000		176		776		3		4.6				565	
	R11	3/6/2019	F	Primary	--	2632433.54	633450.23	250	R11-006F(03062019) 250	03/06/2019	5.15		1.04		18.3		830		76500		215		722		3.5		4.7				560	
R116-001F	R116	12/3/2018	U	Primary	--	2632744.15	641794.76	2000	R116-001F(12032018) 2000	12/03/2018	4.56		0.97	J	14.3		295		40100		150		831		1.7		7.9	J	0.846	J	424	
R116-002F	R116	12/3/2018	R	Primary	--	2632758.96	641261.21	2000	R116-002F(12032018) 2000	12/03/2018	5.96		1.06	J	17.2		361		53900		182		890		1.8		7.5	J	0.295	J	500	
R116-003F	R116	12/3/2018	L	Primary	--	2632771.06	641481.86	2000	R116-003F(12032018) 2000	12/03/2018	4.46		0.69	J	19.3		585		91500		243		733		1.5		5.6	J	0.479	J	336	
	R116	12/3/2018	L	Primary	--	2632771.06	641481.86	250	R116-003F(12032018) 250	12/03/2018	6.26		0.81	J	27.3		766		123000		379		601		2.5		5.3	J	0.455	J	402	
R116-004F	R116	12/3/2018	D	Primary	--	2632766.74	641241.30	2000	R116-004F(12032018) 2000	12/03/2018	4.48		1.86	J	19.6		651		70500		255		948		1.5		6.9	J	0.233	J	776	
R116-005F	R116	5/3/2019	F	Primary	--	2632730.14	641677.65	2000	R116-005F(05032019) 2000	05/03/2019	7.41		0.65		24.5		400		73700		358		892		1.8		5.4				397	
R116-006F	R116	5/3/2019	F	Primary	--	2632764.28	641409.93	2000	R116-006F(05032019) 2000	05/03/2019	6.43		1.49		16.4		581		66700		301		1230		1.6		6.5	J			736	
	R116	5/3/2019	F	Primary	--	2632764.28	641409.93	250	R116-006F(05032019) 250	05/03/2019	8.25		1.96		19.1		721		75400		356		1430		1.6		6.7	J			928	
R117-001F	R117	12/21/2018	U	Primary	--	2635239.87	620956.06	2000	R117-001F(12212018) 2000	12/21/2018	3.92		2.45	J	16.0		1010		27200		109		1110		4.2		7.5	J	2.18	J	659	
R117-002F	R117	12/21/2018	R	Primary	--	2635221.13	620910.23	2000	R117-002F(12212018) 2000	12/21/2018	2.36		0.94	J	10.5		3030		17300		23.5		404		1.9		7.8	J	0.478	J	86.4	
R117-003F	R117	12/21/2018	L	Primary	--	2635268.76	620890.99	2000	R117-003F(12212018) 2000	12/21/2018	3.19		1.58	J	10.5		2150		17900		27.6		407		4.3		7.9	J	1.07	J	103	
R117-004F	R117	12/21/2018	D	Primary	--	2635260.70	620875.62	2000	R117-004F(12212018) 2000	12/21/2018	3.41		2.04	J	12.0		479		26300		103		1070		3.4		7.5	J	0.887	J	569	
R117-005F	R117	12/21/2018	R	Field Duplicate	R117-002F	2635221.13	620910.23	2000	R117-005F(12212018) 2000	12/21/2018	1.96		1.11	J	7.62		2510		14800		16.9		286		1.4		8.0	J	0.214	J	60.0	
R118-001F	R118	12/10/2018	U	Primary	--	2632384.08	630795.22	2000	R118-001F(12102018) 2000	12/10/2018	4.56		< 4.00		19.0		393	J	55200		223		684		1.4		6.7	J	< 0.15	UJ	325	
R118-002F	R118	12/10/2018	R,U	Primary	--	2632342.26	630755.40	2000	R118-002F(12102018) 2000	12/10/2018	5.88		< 4.00		14.7		373		60500		196		856		1.2		6.1	J	< 0.15	UJ	313	
	R118	12/10/2018	R,U	Primary	--	2632342.26	630755.40	250	R118-002F(12102018) 250	12/10/2018	6.72		0.73	J	18.7		418		82200		285		1070		1.0		6.4	J	< 0.15	UJ	364	
R118-003F	R118	12/10/2018	R,U	Primary	--	2632386.64	630615.21	2000	R118-003F(12102018) 2000	12/10/2018	5.74		1.53	J	26.8		564		66800		261		1010		2.7		4.1	J	0.234	J	717	
R118-005F	R118	12/10/2018	D	Primary	--	2632245.82	630193.66	2000	R118-005F(12102018) 2000	12/10/2018	4.89		1.82	J	18.5		799		63800		218		987		1.4		6.4	J	0.473	J	707	
R118-006F	R118	12/10/2018	R,U	Field Duplicate	R118-002F	2632342.26	630755.40	2000	R118-006F(12102018) 2000	12/10/2018	6.57		0.65	J	14.5		363		57700		205		688		1.1		5.9	J	< 0.150	UJ	306	
	R118	12/10/2018	R,U	Field Duplicate	R118-002F	2632342.26	630755.40	250	R118-006F(12102018) 250	12/10/2018	6.50		0.60	J	17.7		382		76000		280		950		1.0		6.0	J	< 0.150	UJ	356	
R118-008F	R118	12/10/2018	R,D	Primary	--	2632281.21	630385.31	2000	R118-008F(12102018) 2000	12/10/2018	14.1		1.24	J	25.1		2240		74000		479		564		1.5		4.7	J	0.245	J	475	
R118-009F	R118	4/12/2019	R	Primary	--	2632257.79	630363.23	2000	R118-009F(04122019) 2000	04/12/2019	5.88		2.14		15.5		1710		39500		276		903		1.1		6.9				875	
R118-010F	R118	4/17/2019	F	Primary	--	2632396.29	630532.87	2000	R118-010F(04172019) 2000	04/17/2019	5.27		0.76		30.3		550		63700		323		679		1.6		4.1	J			515	
R118-011F	R118	4/17/2019	F	Primary	--	2632370.95	630702.11	2000	R118-011F(04172019) 2000	04/17/2019	3.14		0.83		11.5		722		33900		127		950		1.5		5.4	J			392	
	R118	4/17/2019	F	Primary	--	2632370.95	630702.11	250	R118-011F(04172019) 250	04/17/2019	4.06		0.83		20.2		891		52400		164		645		1.9		5.4	J			465	
R118-012F	R118	4/17/2019	F	Primary	--	2632316.29	630277.32	2000	R118-012F(04172019) 2000	04/17/2019	6.41		0.51		17.2		513		60400		359		631		1.4		5	J			370	
R118-013F	R118	4/17/2019	F	Primary	--	2632255.74	630177.99	2000	R118-013F(04172019) 2000	04/17/2019	3.05		0.28	J	13.8		666		75200		182		493		1.4		4.6	J			264	
R118-014F	R118	4/17/2019	F	Primary	--	2632143.87	630071.46	2000	R118-014F(04172019) 2000	04/17/2019	5.89		0.36	J	37.4		498		70500		238		622		2.8		4.5	J			348	
	R118	4/17/2019	F	Primary	--	2632143.87	630071.46	250	R118-014F(04172019) 250	04/17/2019	6.01		0.43		31.2		411		68900		249		717		1.5		4.6	J			341	
R120-001F	R120	12/11/2018	U	Primary	--	2632151.59	629648.45	2000	R120-001F(12112018) 2000	12/11/2018	5.12		0.89	J	14.4		547		50200		199		825		1.2		5.5	J	< 0.150	UJ	344	
R120-002F	R120	12/11/2018	R	Primary	--	2632152.82	629518.65	2000	R120-002F(12112018) 2000	12/11/2018	4.07		2.62	J	13.7		1090		38300		149		1090		1.1		7.7	J	0.552	J	833	
	R120	12/11/2018	R	Primary	--	2632152.82	629518.65	250	R120-002F(12112018) 250	12/11/2018	6.41		2.90	J	15.2		1290		42100		194		1130		1.0		7.6	J	0.527	J	1020	
R120-003F	R120	12/11/2018	DR	Primary	--	2632307.25	629301.63	2000	R120-003F(12112018) 2000	12/11/2018	4.73		1.99	J	16.5		668		52100		199		962		1.1		7.3	J	0.306	J	575	
R120-004F	R120	12/11/2018	DL	Primary	--	2632356.58	629337.10	2000	R120-004F(12112018) 2000	12/11/2018	4.61		1.23	J	13.5		465		48300		212		909		1.2		7.6	J	0.204	J	595	
R120-005F	R120	12/11/2018	DL	Field Duplicate	R120-004F	2632356.58	629337.10	2000	R120-005F(12112018) 2000	12/11/2018	4.46		1.68	J	13.0		480		47700		194		939		1.2		7.4	J	0.193	J	570	
	R120	12/11/2018	DL	Field Duplicate	R120-004F	2632356.58	629337.10	250	R120-005F(12112018) 250	12/11/2018	5.09		1.66	J	14.9		493		53700		220		1080		1.2		7.5	J	0.275	J	651	
R120-006F	R120	1/24/2019	F	Primary	--	2632147.13	629592.92	2000	R120-006F(01242019) 2000	01/24/2019	3.19		0.6		12.3		465		33800		150		442		2		4.7		0.452		667	
R120-007F	R120	1/24/2019	F	Primary	--	2632239.80	629520.55	2000	R120-007F(01242019) 2000	01/24/2019	5.31		< 4		11.4		354		70900		243		435		0.8		4.7		< 0.15		231	
R120-009F	R120	1/24/2019	F	Primary	--	2632222.11	629420.29	2000	R120-009F(01242019) 2000	01/24/2019	3.47		2.24		12.4		762		41200		146		1110		1.2		6.7		0.179		913	
R12-001F	R12	2/22/2019	U	Primary	--	2632458.45	633129.26	2000	R12-001F(02222019) 2000	02/22/2019	7.21		1.45		14.5		438		54500		238		813		2.1		5.4	J			629	
R12-002F	R12	2/22/2019	R65-002F	Primary	--	2632469.10	633106.86	2000	R12-002F(02222019) 2000	02/22/2019	5.04		1.42		18.2		608		56900		191		1050		2.3		5.4	J			727	
R12-003F	R12	2/22/2019	L	Primary	--	2632444.57	633093.04	2000	R12-003F(02222019) 2000	02/22/2019	3.92		3.18		13.8		455		34000		126		1510		2.6		6.4	J			998	
	R12	2/22/2019	L	Primary	--	2632444.57	633093.04	250	R12-003F(02222019) 250	02/22/2019	5.21		2.75		14.5		500		42600		184		1200		2.6		6.9	J			945	

ARCADIS Design & Consultancy for natural and built assets

Sample Location	Excavation ID	Sample Date	Excavation Collection Location[1]	Sample Type	Duplicate Parent Sample	X Coordinate[2]	Y Coordinate[2]	Sieve Size (µm)	Sample ID	Analyte	Arsenic		Cadmium		Chromium		Copper		Iron		Lead		Manganese		Percent Moisture		pH		Total Organic Carbon		Zinc	
										CAS	7440-38-2		7440-43-9		7440-47-3		7440-50-8		7439-89-6		7439-92-1		7439-96-5		ARC-Moist		ARC-pH		ARC-TOC		7440-66-6	
										Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		%		SU		%		mg/kg	
										Sample Date	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
R12-004F	R12	3/5/2019	F	Primary	--	2632454.14	633115.33	2000	R12-004F(03052019) 2000	03/05/2019	3.72		1.35		13.9		597		29000		115		1640		3		5				760	
R12-005F	R12	3/5/2019	F	Field Duplicate	R12-004F	2632454.14	633115.33	2000	R12-005F(03052019) 2000	03/05/2019	3.17		1.16		14.2		629		28700		94.3		1750		4.9		4.7				720	
R121-001F	R121	1/14/2019	R	Primary	--	2632235.00	629105.65	2000	R121-001F(01142019) 2000	01/14/2019	3.48		1.73	J	101		390		55700		103		1230		0.9		7.6	J	< 0.15		678	
	R121	1/14/2019	R	Primary	--	2632235.00	629105.65	250	R121-001F(01142019) 250	01/14/2019	3.65		1.52	J	101		381		66200		122		1150		0.9		7.7	J	< 0.15		620	
R122-001F	R122	12/12/2018	U	Primary	--	2632384.87	629218.98	2000	R122-001F(12122018) 2000	12/12/2018	5.57		0.75	J	17.8		476		49700		226		760		1.5		5.1	J	< 0.150	UJ	331	
R122-002F	R122	12/12/2018	R	Primary	--	2632591.23	629003.33	2000	R122-002F(12122018) 2000	12/12/2018	6.08		2.37	J	15.3		523		58200		220		572		1.2		5.2	J	< 0.150	UJ	374	
	R122	12/12/2018	R	Primary	--	2632591.23	629003.33	250	R122-002F(12122018) 250	12/12/2018	5.11		2.71	J	59.9		601		67200		191		873		1.2		5.1	J	0.215	J	502	
R122-003F	R122	12/12/2018	D	Primary	--	2632646.82	629056.57	2000	R122-003F(12122018) 2000	12/12/2018	4.62		0.64	J	14.8		481		52400		179		656		1.4		5.1	J	< 0.150	UJ	318	
R122-004F	R122	12/12/2018	L	Primary	--	2632541.32	629184.72	2000	R122-004F(12122018) 2000	12/12/2018	5.69		1.21	J	14.6		579		51100		224		742		1.0		6.0	J	< 0.150	UJ	433	
R122-005F	R122	12/12/2018	U	Field Duplicate	R122-001F	2632384.87	629218.98	2000	R122-005F(12122018) 2000	12/12/2018	4.97		0.72	J	16.0		457		50300		218		567		1.3		5.2	J	< 0.150	UJ	320	
	R122	12/12/2018	U	Field Duplicate	R122-001F	2632384.87	629218.98	250	R122-005F(12122018) 250	12/12/2018	6.65		1.40	J	54.8		517		71800		266		917		1.2		5.2	J	< 0.150	UJ	415	
R122-006F	R122	1/22/2019	F	Primary	--	2632525.60	629045.26	2000	R122-006F(01222019) 2000	01/22/2019	2.36		< 4		11.4		182		45900		69.5		247		2.2		4.5		< 0.15		158	
	R122	1/22/2019	F	Primary	--	2632525.60	629045.26	250	R122-006F(01222019) 250	01/22/2019	2.69										88.2				3.3		4.5					
R122-007F	R122	1/22/2019	F	Primary	--	2632506.77	629105.06	2000	R122-007F(01222019) 2000	01/22/2019	4.32		< 4		15		440		72800		204		423		1.3		4.5		< 0.15		313	
R122-008F	R122	1/22/2019	F	Primary	--	2632398.97	629136.40	2000	R122-008F(01222019) 2000	01/22/2019	2.41		< 4		11.2		257		47200		95.8		262		2		4.9		< 0.15		188	
R122-010F	R122	1/22/2019	F	Primary	--	2632626.11	629084.67	2000	R122-010F(01222019) 2000	01/22/2019	7.27		< 4		12		352		42000		301		398		1.2		4.5		< 0.15		285	
R14-001F	R14	11/20/2018	U	Primary	--	2636191.84	646438.31	2000	R14-001F(11202018) 2000	11/20/2018	1.69		0.75	J	10.5		210		26100		54.0		351		1.7		7.9	J	0.977	J	278	
	R14	11/20/2018	U	Primary	--	2636191.84	646438.31	250	R14-001F(11202018) 250	11/20/2018	1.77		0.76	J	14.4		260		29900		53.2		345		2.2		7.9	J	0.451	J	307	
R14-002F	R14	11/20/2018	R	Primary	--	2636057.44	646396.75	2000	R14-002F(11202018) 2000	11/20/2018	2.27		2.32	J	8.98		409		27100		102		1210		1.9		7.8	J	0.941	J	694	
R14-003F	R14	11/20/2018	D	Primary	--	2635971.53	646354.70	2000	R14-003F(11202018) 2000	11/20/2018	2.20		2.03	J	9.36		332		26100		98.8		1210		1.6		7.8	J	0.984	J	634	
R14-004F	R14	11/20/2018	L	Primary	--	2636106.96	646380.94	2000	R14-004F(11202018) 2000	11/20/2018	2.05		1.59	J	8.16		177		29200		60.3		2140		1.2		7.8	J	0.419	J	356	
	R14	11/20/2018	L	Primary	--	2636106.96	646380.94	250	R14-004F(11202018) 250	11/20/2018	2.61		2.14	J	11.0		290		34900		71.4		3370		1.8		7.8	J	0.69	J	467	
R14-005F	R14	11/20/2018	D	Field Duplicate	R14-003F	2635971.53	646354.70	2000	R14-005F(11202018) 2000	11/20/2018	2.21		1.73	J	9.45		290		24800		89.9		1240		1.5		7.8	J	0.778	J	552	
R14-006F	R14	11/30/2018	F	Primary	--	2636184.24	646415.65	2000	R14-006F(11302018) 2000	11/30/2018	4.4		1.97		16.4		1140		44900		238		1520		2.3		6.9		0.686		782	
	R14	11/30/2018	F	Primary	--	2636184.24	646415.65	250	R14-006F(12012018) 250	12/01/2018	3.5		1.83		12.3		898		40500		192		1150		1.7		6.9		0.567		626	
R15-001F	R15	11/20/2018	U	Primary	--	2636893.35	647230.80	2000	R15-001F(11202018) 2000	11/20/2018	3.59		1.47	J	31.3		845		82500		185		276		3.9		4.1	J	0.485	J	487	
R15-002F	R15	11/20/2018	R, U	Primary	--	2636784.93	647226.66	2000	R15-002F(11202018) 2000	11/20/2018	3.59		3.96	J	8.16		450		38300		145		1670		1.1		7.5	J	0.577	J	1270	
	R15	11/20/2018	R, U	Primary	--	2636784.93	647226.66	250	R15-002F(11202018) 250	11/20/2018	3.76		3.44	J	11.8		473		58200		170		1610		1.2		7.7	J	0.333	J	1330	
R15-003F	R15	11/20/2018	R	Primary	--	2636717.00	647023.64	2000	R15-003F(11202018) 2000	11/20/2018	3.24		3.46	J	8.20		419		38600		134		1520		0.8		7.6	J	0.274	J	1320	
R15-004F	R15	11/20/2018	R, D	Primary	--	2636549.88	646661.76	2000	R15-004F(11202018) 2000	11/20/2018	3.40		3.86	J	9.56		508		36800		165		1720		1.3		7.5	J	0.421	J	1470	
R15-005F	R15	11/20/2018	D	Primary	--	2636528.08	646557.10	2000	R15-005F(11202018) 2000	11/20/2018	1.86		1.82	J	4.96	J	194		15800		81.8		875		3.5		7.8	J	0.923	J	443	
	R15	11/20/2018	D	Primary	--	2636528.08	646557.10	250	R15-005F(11202018) 250	11/20/2018	1.89		1.66	J	7.84		245		20400		74.0		884		3.8		7.8	J	0.926	J	548	
R15-006F	R15	11/20/2018	L, D	Primary	--	2636638.95	646668.99	2000	R15-006F(11202018) 2000	11/20/2018	4.20		1.18	J	25.0		815		60600		179		690		1.6		6.1	J	0.177	J	480	
R15-007F	R15	11/20/2018	L,U	Primary	--	2636773.67	647013.33	2000	R15-007F(11202018) 2000	11/20/2018	2.87		3.48	J	8.35		386		39100		146		1650		0.7		7.6	J	< 0.15	UJ	1360	
R15-008F	R15	12/10/2018	F	Primary	--	2636720.47	646889.70	2000	R15-008F(12102018) 2000	12/10/2018	3.12		1.16		15.5		433		55800		146		659		2.1		5.7		< 0.150		394	
R15-009F	R15	12/10/2018	F	Primary	--	2636888.32	647240.25	2000	R15-009F(12102018) 2000	12/10/2018	3.45		3.64		11.1		466		37200		148		1350		1.7		7.3		0.590		1130	
R15-010F	R15	12/10/2018	F	Primary	--	2636620.87	646711.33	2000	R15-010F(12102018) 2000	12/10/2018	3.60		2.90		12.4		961		34900		158		1230		1.7		6.8		0.375		942	
	R15	12/10/2018	F	Primary	--	2636620.87	646711.33	250	R15-010F(12102018) 250	12/10/2018	5.26		2.96		15.8		1020		48200		170		1200		2.0		6.7		0.355		1080	
R15-011F	R15	1/9/2019	F	Primary	--	2636752.72	647038.38	2000	R15-011F(01092019) 2000	01/09/2019	3.71		1.48		88		431		52500		125		944		1.9		6.8		< 0.15		549	
	R15	1/9/2019	F	Primary	--	2636752.72	647038.38	250	R15-011F(01092019) 250	01/09/2019	4.49		2.13		73		639		81000		256		1040		3.5		6.7		0.237		795	
R18-001F	R18	11/28/2018	U	Primary	--	2634074.15	645889.09	2000	R18-001F(11282018) 2000	11/28/2018	2.99		2.88	U	10.9		291		29000		158		1300		0.6		7.8	J	< 0.15	UJ	1060	
	R18	11/28/2018	U	Primary	--	2634074.15	645889.09	250	R18-001F(11282018) 250	11/28/2018	3.54		3.05	J	12.9		352		58700		180		1570		0.9		7.8	J	0.152	J	1180	
	R18	11/28/2018	U	Primary	--	2634074.15	645889.09	2000	R18-001F(12012018) 2000	12/01/2018	9.05		3.63	J	17.2		763		67500		426		1840		1.4		7.2	J	0.444	J	1500	
R18-002F	R18	11/28/2018	R	Primary	--	2633909.56	645755.85	2000	R18-002F(11282018) 2000	11/28/2018	12.6		3.33	J	153		2180		128000		663		2450		1.5		7.5	J	0.347	J	1140	
R18-003F	R18	11/28/2018	D	Primary	--	2633758.88	645563.91	250	R18-003F(11282018) 250	11/28/2018	4.37		3.76	J	14		460		39700		185		1420		1.6		7.7	J	1.2	J	1260	
R18-004F	R18	11/28/2018	L	Primary	--	2634023.79	645814.44	250	R18-004F(11282018) 250	11/28/2018	4.04		2.48	J	10.4		298		29700		176		1520		1.5		7.7	J	4.2	J	879	
R18-005F	R18	3/30/2019	U	Primary	--	2634081.46	645957.24	2000	R18-005F(03302019) 2000	03/30/2019	3.85		0.85		17		441		57400		189		1150		0.5		7.6	J	0.844		485	
	R18	3/30/2019	U	Primary	--	2634081.46	645957.24	250	R18-005F(03302019) 250	03/30/2019	9.35		3.73		21.5		962		57100		417		1560		1.9		7.7	J			1550	
R18-008F	R18	3/30/2019	D	Primary	--	2633699.36	645530.13	2000	R18-008F(03302019) 2000	03/30/2019	4.16		4.16		12.4		1260		37700		252		1490		0.5		6.9	J	0.378		1680	
R18-009F	R18	3/30/2019	L,D	Primary	--	2633827.62	645656.15	2000	R18-009F(03302019) 2000	03/30/2019	5.5		0.65		20.3		547		72300		274		722		0.8		7.8	J	0.467		476	
R18-010F	R18	3/30/2019	L,U	Primary	--	2633950.55	645798.00	2000	R18-010F(03302019) 2000	03/30/2019	5.14		2.44		14.9		838		45800		208		1330		0.4		7.6	J	0.32	J	985	
	R18	3/30/2019	L,U	Primary	--	2633950.55	645798.00	250	R18-010F(03302019) 250	03/30/2019	6.45		3.16		23.8		868		50100		324		1600		1.4		7.5	J			1270	
R19-001F	R19	11/14/2018	U	Primary	--	2640638.03	647317.19	2000	R19-001F(11142018) 2000	11/14/2018	9.04	J	1.85	J	110		924		93700		414	J	1400		4.1		4.8	J	0.729	J	217	J
R19-002F	R19	11/14/2018	R	Primary	--	2640638.34	647335.73	2000	R19-002F(11142018) 2000	11/14/2018	5.98		7.29		26.7		3050		74200		528		1440		5.6		7.2	J	0.771	J	2440	
R19-003F	R19	11/14/2018	D, R	Primary	--	2640546.53	647456.28	2000	R19-003F(11142018) 2000	11/14/2018	3.26		4.32		10.7		907		25500		294		1620		3.4		6.5	J	1.13	J	1490	
	R19	11/14/2018	D, R	Primary	--	2640546.53	647456.28	250	R19-003F(11142018) 250	11/14/2018	3.83		3.29		11.2		1080		27500		306		1470		3.9		5.9	J	1.17	J	1230	
R19-004F	R19	11/14/2018	D, L	Primary	--	2640480.31	647485.45	2000	R19-004F(11142018) 2000	11/14/2018	1.54		0.55		5.25		189		13400		72.5		673		1.7		7.1	J	0.755	J	111	
R19-005F	R19	11/13/2018	F	Primary	--	2640618.10	647362.71	2000	R19-005F(11132018) 2000	11/13/2018	6.77		1.61		63.3		693		73900		424		324		4.1		4.9		0.181		318	
R19-006F	R19	11/14/2018	L	Primary	--	2640584.95	647387.99	2000	R19-006F(11142018) 2000	11/14/2018	1.04		0.40		4.96		124		12200		40.9	J	539		1.0		7.5	J	< 0.150	UJ	107	
	R19	11/14/2018	L	Primary	--	2640584.95	647387.99	250	R19-006F(11142018) 250	11/14/2018	1.36		0.43		7.40		207		14900		52.2		623		1.8		7.5	J	0.318	J	112	
R19-007F	R19	11/14/2018	L	Field Duplicate	R19-006F	2640584.95	647387.99	2000	R19-007F(11142018) 2000	11/14/2018	1.19		0.41		5.09		113		12300		90.9	J	582		1.1		7.5	J	< 0.150	UJ	113	
R19-008F	R19	5/16/2019	R	Primary	--	2640608.73	647433.46	2000	R19-008F(05162019) 2000	05/16/2019	6.19		4.24		35.3		2720		73800		365		1490		4.2		7.2	J			1440	
R19-009F	R19	5/16/2019	R	Field Duplicate	R19-008F	2640608.73	647433.46	2000	R19-009F(05162019) 2000	05/16/2019	7.48		4.96		40.8		3250		90500		368		1440		3.5		7.3	J			1730	
R19-010F	R19	5/16/2019	R	Primary	--	2640563.64	647469.98	2000	R19-010F(05162019) 2000	05/16/2019	4.71		1.62		23.5		1170		42800		155		916		4.8		6.1	J			584	
	R19	5/16/2019	R	Primary	--	2640563.64	647469.98	250	R19-010F(05162019) 250	05/16/2019	3.61		1.17		16.9		906		30700		132		853		4.7		5.2	J			409	
R19-011F	R19	5/16/2019	R	Field Duplicate	R19-010F	2640563.64	647469.98	2000	R19-011F(05162019) 2000	05/16/2019	3.87		1.23		20.4		964		37300		132		766		5.2		5.7	J			475	
R19-012F	R19	5/16/2019	R	Primary	--	2640537.66	647492.25	2000	R19-012F(05162019) 2000	05/16/2019	12.1		1.97		45.8		6370		75000		654		1010		3.5		6.3	J			925	
R19-013F	R19	5/16/2019	R	Field Duplicate	R19-012F	2640537.66	647492.25	2000	R19-013F(05162019) 2000	05/16/2019	10.7		2.11		48.8		7050		68800		718		1180		3.5		6.3	J			974	
	R19	5/16/2019	R	Field Duplicate	R19-012F	2640537.66	647492.25	250	R19-013F(05162019) 250	05/16/2019	12.2		2.21		44.5		6050		75300		759		1270		3.6		6.1	J			1140	
R19-014F	R19	5/16/2019	R	Primary	--	2640505.48	647514.55	2000	R19-014F(05162019) 2000	05/16/2019	11.1		26.4		13.7		2330		61700		1670		4010		1.8		6.7	J			9960	
R19-015F	R19	5/16/2019	R	Field Duplicate	R19-014F	2640505.48	647514.55	2000	R19-015F(05162019) 2000	05/16/2019	10.6		23.7		15.9		2130		63500		1120		3550		2		6.5	J			8770	
R20-001F	R20	11/14/2018	U	Primary	--	2639924.68	647766.61	2000	R20-001F(11142018) 2000	11/14/2018	2.92		1.56		11.4		413		48800		662		1230		2.2		4.7	J	0.236	J	1120	
R20-002F	R20	11/14/2018	R	Primary	--	2639895.10	647800.43	2000	R20-002F(11142018) 2000	11/14/2018	3.53		2.44		10.5		372		39800		363		1240		1.6		7.0	J	< 0.150	UJ	477	
	R20	11/14/2018	R	Primary	--	2639895.10	647800.43	250	R20-002F(11142018) 250	11/14/2018	4.34		2.43		13.3		564		43100		321		1320		2.3		7.1	J	0.375	J	529	
R20-003F	R20	11/14/2018	D	Primary	--	2639854.82	647816.34	2000	R20-003F(11142018) 2000	11/14/2018	3.28		1.89		11.8		384		42200		225		1040		1.4		6.1	J	< 0.15	UJ	485	
R20-004F	R20	11/14/2018	L	Primary	--	2639887.73	647786.16	2000	R20-004F(11142018) 2000	11/14/2018	3.33	J	1.60		11.9		538		45100		312		1200		1.5		4.6	J	< 0.150	UJ	678	
R20-005F	R20	11/13/2018	F	Primary	--	2639897.82	647789.40	2000	R20-005F(11132018) 2000	11/13/2018	4.96		2.69		32.5		812		117000		142		292		2.0		4.7		< 0.150		208	
	R20	11/13/2018	F	Primary	--	2639897.82	647789.40	250	R20-005F(11132018) 250	11/13/2018	5.62		0.58		41.6		1060		145000		190		297		2.7		4.7		0.389		199	
R20-006F	R20	11/13/2018	D	Field Duplicate	R20-003F	2639854.82	647816.34	2000	R20-006F(11132018) 2000	11/13/2018	3.54		1.77		12.0		358		42200		200		883		1.4		6.2	J	< 0.150	UJ	556	
R21-001F	R21	11/12/2018	U	Primary	--	2639758.94	647881.53	2000	R21-001F(11122018) 2000	11/12/2018	3.70		2.70		8.84		788		28400		148		962		1.7		7.7	J	< 0.150	UJ	432	
R21-002F	R21	11/12/2018	R	Primary	--	2639742.89	647896.07	2000	R21-002F(11122018) 2000	11/12/2018	3.19		2.26		11.8		580		41000		151		843		1.7		7.1	J	0.364	J	413	
	R21	11/12/2018	R	Primary	--	2639742.89	647896.07	250	R21-002F(11122018) 250	11/12/2018	3.41		1.97		12.3		827		41000		182		975		2.8		7.3	J	0.631	J	475	
R21-003F	R21	11/12/2018	D	Primary	--	2639727.67	647890.64	2000	R21-003F(11122018) 2000	11/12/2018	4.79		2.83		11.8		582		35700		161		991		2.2		7.4	J	0.719	J	544	
R21-004F	R21	11/12/2018	L	Primary	--	2639744.85	647876.04	2000	R21-004F(11122018) 2000	11/12/2018	3.11		1.84		10.2		415		34700		93.9		831		2.1		7.4	J	< 0.15	UJ	278	
R21-005F	R21	11/12/2018	F	Primary	--	2639744.65	647886.23	2000	R21-005F(11122018) 2000	11/12/2018	6.28		3.87		63.8		1360		196000		165		248		2.7		4.8		0.491		159	
	R21	11/12/2018	F	Primary	--	2639744.65	647886.23	250	R21-005F(11122018) 250	11/12/2018	6.92		0.72		75.8		1770		238000		198		274		3.2		4.9		0.288		157	
R22-001F	R22	11/12/2018	U	Primary	--	2639707.21	647923.48	2000	R22-001F(11122018) 2000	11/12/2018	2.75		2.63	J	23.4		972		99100		153		400		2.0		5.6	J	0.190	J	209	
R22-002F	R22	11/12/2018	R	Primary	--	2639667.84	647923.71	2000	R22-002F(11122018) 2000	11/12/2018	6.70		2.97	J	42.7		1020		106000		136		631		2.4		5.8	J	0.268	J	324	
R22-003F	R22	11/12/2018	D	Primary	--	2639638.36	647905.79	2000	R22-003F(11122018) 2000	11/12/2018	3.14		1.22		22.5		1150		115000		341		1220		1.8		5.5	J	0.179	J	455	
	R22	11/12/2018	D	Primary	--	2639638.36	647905.79	250	R22-003F(11122018) 250	11/12/2018	2.95		1.55		24.3		1370		127000		210		1400		2.2		5.8	J	0.299	J	516	
R22-004F	R22	11/12/2018	L	Primary	--	2639672.79	647905.54	2000	R22-004F(11122018) 2000	11/12/2018	3.78		0.50		35.2		1030		126000		175		327		2.4		5.6	J	0.260	J	187	
R22-005F	R22	11/12/2018	F	Primary	--	2639661.59	647912.44	2000	R22-005F(11122018) 2000	11/12/2018	3.17		0.69		23.0		931		104000		94.8		489		1.7		4.9		< 0.150		226	
R23-001F	R23	11/12/2018	U	Primary	--	2639677.29	647863.71	2000	R23-001F(11122018) 2000	11/12/2018	3.52		0.44		20.7		1120		59700		158		504		1.5		4.6	J	0.481	J	215	
	R23	11/12/2018	U	Primary	--	2639677.29	647863.71	250	R23-001F(11122018) 250	11/12/2018	3.23		0.45		19.0		1040		56600		150		429		1.5		5.3	J	0.771	J	211	
R23-002F	R23	11/12/2018	R	Primary	--	2639642.23	647876.24	2000	R23-002F(11122018) 2000	11/12/2018	3.37		1.24		11.7		541		35200		128		754		1.5		6.8	J	0.248	J	294	
R23-003F	R23	11/12/2018	D	Primary	--	2639608.54	647876.61	2000	R23-003F(11122018) 2000	11/12/2018	2.65	J	0.92	J	19.8		872		125000	J	128	J	593		1.7		5.8	J	0.162	J	336	J
R23-004F	R23	11/12/2018	L	Primary	--	2639647.63	647864.38	2000	R23-004F(11122018) 2000	11/12/2018	3.65		< 4.00		17.3		856		76500		107		568		1.3		5.0	J	0.263	J	292	
R23-005F	R23	11/12/2018	F	Primary	--	2639638.28	647871.20	2000	R23-005F(11122018) 2000	11/12/2018	2.76		< 4.00		17.7		709		97200		134		235		1.8		4.7		0.236		134	
	R23	11/12/2018	F	Primary	--	2639638.28	647871.20	250	R23-005F(11122018) 250	11/12/2018	3.17		2.01		20.3		893		111000		179		220		2.8		4.7		0.292		129	
R23-006F	R23	11/12/2018	R	Field Duplicate	R23-002F	2639642.23	647876.24	2000	R23-006F(11122018) 2000	11/12/2018	3.94		1.34		11.0		702		37500		132		934		1.9		7.1	J	0.374	J	346	
R24-001F	R24	11/14/2018	U	Primary	--	2639537.01	647836.27	2000	R24-001F(11142018) 2000	11/14/2018	3.65		< 4.00		29.2		887		83700		141		356		1.5		5.4	J	< 0.150	UJ	188	
R24-002F	R24	11/14/2018	R	Primary	--	2639511.42	647836.46	2000	R24-002F(11142018) 2000	11/14/2018	3.23		1.07	J	9.57		472		38400		139		1260		1.0		7.4	J	< 0.150	UJ	481	
R24-003F	R24	11/14/2018	D	Primary	--	2639473.68	647820.81	2000	R24-003F(11142018) 2000	11/14/2018	2.99		< 4.00		22.7		1020		91900		112		376		2.0		6.0	J	0.342	J	218	
	R24	11/14/2018	D	Primary	--	2639473.68	647820.81	250	R24-003F(11142018) 250	11/14/2018	3.42		2.54	J	24.9		1410		105000		154		495		3.3		6.1	J	0.313	J	262	
R24-004F	R24	11/14/2018	L	Primary	--	2639512.02	647827.45	2000	R24-004F(11142018) 2000	11/14/2018	6.18		0.79	J	27.7		956		82700		142		589		1.6		6.5	J	0.19	J	352	
R24-005F	R24	11/14/2018	F	Primary	--	2639506.24	647829.41	2000	R24-005F(11142018) 2000	11/14/2018	3.16		0.64		18.0		683		94600		101		404		1.6		5.8		< 0.150		246	
R24-006F	R24	11/14/2018	L	Field Duplicate	R24-004F	2639512.02	647827.45	2000	R24-006F(11142018) 2000	11/14/2018	3.71		0.89	J	25.2		856		69100		168		471		1.5		6.5	J	0.160	J	306	
	R24	11/14/2018	L	Field Duplicate	R24-004F	2639512.02	647827.45	250	R24-006F(11142018) 250	11/14/2018	3.55		2.25	J	22.9		1040		56800		198		684		2.4		6.5	J	0.301	J	382	
R25-001F	R25	11/16/2018	U	Primary	--	2639491.08	647775.90	2000	R25-001F(11162018) 2000	11/16/2018	4.36		< 4.00		42.1		1090		70700		104		459		1.6		5.9	J	0.246	J	252	
R25-002F	R25	11/14/2018	R	Primary	--	2639426.75	647793.76	2000	R25-002F(11142018) 2000	11/14/2018	3.50		1.53	J	11.7		498		42600		119		934		1.5		7.2	J	0.456	J	350	
R25-003F	R25	11/14/2018	D	Primary	--	2639348.76	647677.57	2000	R25-003F(11142018) 2000	11/14/2018	2.63		1.21	J	10.2		426		30900		107		1030		1.6		7.4	J	0.397	J	376	
	R25	11/14/2018	D	Primary	--	2639348.76	647677.57	250	R25-003F(11142018) 250	11/14/2018	2.92		1.77	J	9.77		501		30000		153		1130		1.8		7.5	J	0.288	J	400	
R25-004F	R25	11/14/2018	L	Primary	--	2639445.41	647666.52	2000	R25-004F(11142018) 2000	11/14/2018	3.36		< 4.00		20.2		1370		61000		142		579		1.1		6.1	J	< 0.150	UJ	241	

Sample Location	Excavation ID	Sample Date	Excavation Collection Location[1]	Sample Type	Duplicate Parent Sample	X Coordinate[2]	Y Coordinate[2]	Sieve Size (µm)	Sample ID	Analyte	Arsenic		Cadmium		Chromium		Copper		Iron		Lead		Manganese		Percent Moisture		pH		Total Organic Carbon		Zinc	
										CAS	7440-38-2		7440-43-9		7440-47-3		7440-50-8		7439-89-6		7439-92-1		7439-96-5		ARC-Moist		ARC-pH		ARC-TOC		7440-66-6	
										Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		%		SU		%		mg/kg	
										Sample Date	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
R25-005F	R25	11/14/2018	F,R	Primary	--	2639414.51	647747.86	2000	R25-005F(11142018) 2000	11/14/2018	4.01		< 4.00		20.1		843		118000		153		332		1.7		4.8		< 0.150		183	
R25-006F	R25	11/14/2018	F,L	Primary	--	2639410.40	647685.73	2000	R25-006F(11142018) 2000	11/14/2018	2.76		< 4.00		23.4		1220		77200		94.1		595		1.6		5.2		0.160		205	
	R25	11/14/2018	F,L	Primary	--	2639410.40	647685.73	250	R25-006F(11142018) 250	11/14/2018	4.14		1.96		26.6		1460		78400		138		584		2.6		5.3		0.270		213	
R26-001F	R26	11/12/2018	U	Primary	--	2639375.85	647582.08	2000	R26-001F(11122018) 2000	11/12/2018	4.28		< 4.00		21.9		1000		55000		247		628		1.2		5.7	J	0.214	J	243	
R26-002F	R26	11/12/2018	R	Primary	--	2639343.23	647529.83	2000	R26-002F(11122018) 2000	11/12/2018	3.85		< 4.00		29.7		946		109000		158		228		1.7		4.6	J	< 0.150	UJ	144	
R26-003F	R26	11/12/2018	D	Primary	--	2639316.84	647471.26	2000	R26-003F(11122018) 2000	11/12/2018	3.81		1.58	J	23.7		1640		114000		188		736		1.6		5.4	J	< 0.150	UJ	418	
	R26	11/12/2018	D	Primary	--	2639316.84	647471.26	250	R26-003F(11122018) 250	11/12/2018	3.62		3.06	J	21.2		1410		101000		298		918		2.3		5.6	J	0.260	J	459	
R26-004F	R26	11/12/2018	L	Primary	--	2639355.59	647533.36	2000	R26-004F(11122018) 2000	11/12/2018	4.23		< 4.00		27.1		825		64200		358		730		1.4		5.5	J	0.162	J	254	
R26-005F	R26	11/12/2018	F	Primary	--	2639344.47	647522.30	2000	R26-005F(11122018) 2000	11/12/2018	3.21		< 4.00		17.7		523		70700		211		283		2.0		4.4		< 0.150		184	
R26-006F	R26	11/12/2018	L	Field Duplicate	R26-005F	2639414.51	647747.86	2000	R26-006F(11122018) 2000	11/12/2018	3.61		0.83		20.3		746		117000		209		370		2.0		4.7		0.288		180	
	R26	11/12/2018	L	Field Duplicate	R26-005F	2639414.51	647747.86	250	R26-006F(11122018) 250	11/12/2018	3.85		3.21		23.8		1020		139000		208		519		2.6		5.0		0.271		241	
R27-001F	R27	11/12/2018	U	Primary	--	2639227.86	647343.99	2000	R27-001F(11122018) 2000	11/12/2018	3.12		< 4.00		19.0		751		86700		251		765		1.6		4.6	J	0.168	J	282	
R27-002F	R27	11/12/2018	R	Primary	--	2639212.34	647330.19	2000	R27-002F(11122018) 2000	11/12/2018	3.04		1.66	J	11.7		965		42300		220		1150		1.5		7.2	J	< 0.150	UJ	406	
R27-003F	R27	11/12/2018	D	Primary	--	2639200.73	647306.45	2000	R27-003F(11122018) 2000	11/12/2018	2.69		1.75	J	11.5		1390		35800		146		1020		1.8		7.2	J	< 0.150	UJ	417	
	R27	11/12/2018	D	Primary	--	2639200.73	647306.45	250	R27-003F(11122018) 250	11/12/2018	2.95		2.39	J	13.6		1180		36500		193		1050		1.7		7.3	J	0.238	J	439	
R27-004F	R27	11/15/2018	L	Primary	--	2639218.90	647319.75	2000	R27-004F(11152018) 2000	11/15/2018	3.60	J	0.57	J	20.7		1030		173000		110		178		2.3		4.5	J	< 0.150	UJ	118	
R27-005F	R27	11/15/2018	F	Primary	--	2639213.11	647322.35	2000	R27-005F(11152018) 2000	11/15/2018	3.12		0.88		18.3		1020		111000		162		688		2.0		5.2		< 0.150		247	
R28-001F	R28	11/12/2018	U	Primary	--	2639268.61	647431.99	2000	R28-001F(11122018) 2000	11/12/2018	3.12		< 4.00		32.1		905		149000		75.4		160		2.1		4.3	J	< 0.15	UJ	113	
	R28	11/12/2018	U	Primary	--	2639268.61	647431.99	250	R28-001F(11122018) 250	11/12/2018	3.01		4.59		50.3		1780		224000		125		458		3.6		4.6	J	0.157	J	235	
R28-002F	R28	11/12/2018	R	Primary	--	2639211.27	647387.59	2000	R28-002F(11122018) 2000	11/12/2018	4.46		0.70	J	36.1		1430		135000		156		450		2.0		4.4	J	< 0.150	UJ	203	
R28-003F	R28	11/12/2018	D	Primary	--	2639173.50	647332.38	2000	R28-003F(11122018) 2000	11/12/2018	3.54		0.65	J	21.4		989		90600		170		820		1.7		5.5	J	< 0.150	UJ	318	
R28-004F	R28	11/12/2018	L	Primary	--	2639233.87	647384.21	2000	R28-004F(11122018) 2000	11/12/2018	4.65		1.03	J	37.5		2260		127000		213		357		2.2		4.9	J	< 0.150	UJ	207	
	R28	11/12/2018	L	Primary	--	2639233.87	647384.21	250	R28-004F(11122018) 250	11/12/2018	5.54		3.30	J	42.4		2530		119000		262		544		2.7		5.3	J	0.177	J	271	
R28-005F	R28	11/14/2018	F	Primary	--	2639223.47	647382.34	2000	R28-005F(11142018) 2000	11/14/2018	4.43		< 4.00		34.7		1260		150000		131		218		2.0		4.5		< 0.150		142	
R29-001F	R29	11/15/2018	U	Primary	--	2639248.76	647492.75	2000	R29-001F(11152018) 2000	11/15/2018	2.70		< 4.00		25.7		950		130000		157		214		2.3		4.2	J	< 0.150	UJ	138	
R29-002F	R29	11/12/2018	R	Primary	--	2639214.05	647467.76	2000	R29-002F(11122018) 2000	11/12/2018	2.35		1.61	J	11.8		7800		29900		133		884		1.5		5.1	J	0.221	J	299	
	R29	11/12/2018	R	Primary	--	2639214.05	647467.76	250	R29-002F(11122018) 250	11/12/2018	2.87		3.21	J			11400		36900		148		987		2.1		5.2	J	0.54	J	396	
R29-003F	R29	11/15/2018	D	Primary	--	2639180.34	647422.92	2000	R29-003F(11152018) 2000	11/15/2018	1.42		< 4.00		12.0		778		53500		68.3		146		1.9		4.1	J	< 0.15	UJ	92.3	
R29-004F	R29	11/15/2018	L	Primary	--	2639225.57	647454.15	2000	R29-004F(11152018) 2000	11/15/2018	3.38		1.02	J	29.0		1390		109000		157		3410		1.7		5.5	J	< 0.150	UJ	333	
R29-005F	R29	11/15/2018	F	Primary	--	2639216.96	647456.98	2000	R29-005F(11152018) 2000	11/15/2018	3.55		< 4.00		47.6		1670		136000		146		234		2.4		4.0		< 0.150		126	
	R29	11/15/2018	F	Primary	--	2639216.96	647456.98	250	R29-005F(11152018) 250	11/15/2018	3.98		2.87		56.7		2040		151000		238		205		2.9		4.2		0.188		146	
R29-006F	R29	11/15/2018	D	Field Duplicate	R29-003F	2639180.34	647422.92	2000	R29-006F(11152018) 2000	11/15/2018	1.43		< 4.00		11.9		737		50100		74.3		140		2.0		4.1	J	0.311	J	86.8	
R30-001F	R30	11/16/2018	U	Primary	--	2639126.02	647295.98	2000	R30-001F(11162018) 2000	11/16/2018	3.70		0.94	J	25.5		1180		153000		95.8		630		1.9		5.0	J	0.228	J	296	
R30-002F	R30	11/16/2018	R	Primary	--	2639090.70	647275.28	2000	R30-002F(11162018) 2000	11/16/2018	5.36		0.90	J	45.8		1950		220000		137		285		3.0		4.7	J	0.199	J	208	
	R30	11/16/2018	R	Primary	--	2639090.70	647275.28	250	R30-002F(11162018) 250	11/16/2018	6.27		6.09		58.6		2600		272000		160		446		4.0		4.8	J	0.179	J	311	
R30-003F	R30	11/16/2018	D	Primary	--	2639050.79	647253.88	2000	R30-003F(11162018) 2000	11/16/2018	3.00		1.89	J	22.4		2460		78500		149		778		1.8		7.1	J	0.151	J	384	
R30-004F	R30	11/16/2018	L	Primary	--	2639108.62	647262.84	2000	R30-004F(11162018) 2000	11/16/2018	4.89		< 4.00		26.7		770		138000		142		161		2.8		4.3	J	< 0.15	UJ	126	
R30-005F	R30	11/16/2018	F	Primary	--	2639096.39	647266.71	2000	R30-005F(11162018) 2000	11/16/2018	3.06		< 4.00		26.3		1200		170000		114		220		3.2		5.2		0.209		150	
	R30	11/16/2018	F	Primary	--	2639096.39	647266.71	250	R30-005F(11162018) 250	11/16/2018	2.80		< 4.00		26.4		1400		182000		139		304		3.1		5.1		0.327		184	
R30-006F	R30	11/16/2018	L	Field Duplicate	R30-004F	2639108.62	647262.84	2000	R30-006F(11162018) 2000	11/16/2018	5.50		< 4.00		28.0		885		152000		131		141		2.9		4.2	J	< 0.150	UJ	104	
R303-005F	R303	3/12/2019	L	Field Duplicate	R303-004F	2631381.19	636711.10	2000	R303-005F(03122019) 2000	03/12/2019	3.45		0.59		9.29		799		21500		107		662		4.3		4.9	J			469	
R303-006F	R303	4/4/2019	F	Primary	--	2631357.46	636709.41	2000	R303-006F(04042019) 2000	04/04/2019	2.14		0.34	J	12		384		28300		59.1		633		2.5		4.4	J			314	
	R303	4/4/2019	F	Primary	--	2631357.46	636709.41	250	R303-006F(04042019) 250	04/04/2019	2.06		0.32	J	13.8		427		32800		56.5		603		1.9		4.4	J			334	
R304-001F	R304	3/12/2019	U	Primary	--	2631426.79	638474.35	2000	R304-001F(03122019) 2000	03/12/2019	3.47		2.27		11.2		1250		24900		123		1570		2.7		5.3	J			1090	
R304-003F	R304	3/12/2019	D	Primary	--	2631272.45	638217.38	2000	R304-003F(03122019) 2000	03/12/2019	5.18		1.25		14.9		676		38000		333		938		2.8		4.9	J			732	
R305-002F	R305	3/26/2019	R	Primary	--	2630993.41	637167.40	2000	R305-002F(03262019) 2000	03/26/2019	3.76		1.97		14.2		418		47800		151		1150		1.1		7.8	J	0.191		917	
	R305	3/26/2019	R	Primary	--	2630993.41	637167.40	250	R305-002F(03262019) 250	03/26/2019	5.17		2.45		15.5		453		57200		215		1420		1.7		7.7	J			1040	
R305-003F	R305	3/26/2019	D	Primary	--	2631023.31	637120.99	2000	R305-003F(03262019) 2000	03/26/2019	8.15		5.18		15		1160		46200		371		1510		1.9		5.7	J	0.717		1970	
R305-005F	R305	3/29/2019	F	Primary	--	2631004.96	637173.95	2000	R305-005F(03292019) 2000	03/29/2019	2.22		0.59		12.8		282		34900		58.4		487		2.4		4.5		0.393		377	
	R305	3/29/2019	F	Primary	--	2631004.96	637173.95	250	R305-005F(03292019) 250	03/29/2019	2.51		0.65		17.1		390		43000		75.1		482		3.2		4.5				462	
R306-001F	R306	3/28/2019	U	Primary	--	2632019.95	632585.06	2000	R306-001F(03282019) 2000	03/28/2019	2.51		0.63		14.1		887		22600		53.8		1710		5.4		4.5	J	0.419		454	
R306-003F	R306	3/28/2019	D	Primary	--	2631965.30	632431.74	2000	R306-003F(03282019) 2000	03/28/2019	4.92		4.11		17.3		759		41700		170		1060		3.4		5.9	J	0.693		1440	
	R306	3/28/2019	D	Primary	--	2631965.30	632431.74	250	R306-003F(03282019) 250	03/28/2019	5.77		3.55		16.8		722		41700		209		874		3.6		5.9	J			1350	
R306-004F	R306	3/28/2019	L	Primary	--	2631997.27	632500.78	2000	R306-004F(03282019) 2000	03/28/2019	4.05		2.54		16		639		36400		156		1170		2.8		7	J	0.753		972	
R306-005F	R306	4/18/2019	F	Primary	--	0.00	0.00	2000	R306-005F(04182019) 2000	04/18/2019	2.48		1.36		12.8		577		39700		103		885		2.3		6.6	J			483	
R307-001F	R307	3/29/2019	U	Primary	--	2632679.36	640983.93	2000	R307-001F(03292019) 2000	03/29/2019	8.03		2.46		14.9		721		57300		304		1430		1.3		6.5	J	0.264		1160	
R307-002F	R307	3/29/2019	R	Primary	--	2632676.15	640879.28	2000	R307-002F(03292019) 2000	03/29/2019	7.98		0.7		16.9		504		63100		266		847		1.3		6.4	J	0.276		479	
	R307	3/29/2019	R	Primary	--	2632676.15	640879.28	250	R307-002F(03292019) 250	03/29/2019	8.92		0.74		19.2		552		74600		317		886		1.7		6.4	J			522	
R307-003F	R307	3/29/2019	D	Primary	--	2632719.11	640760.73	2000	R307-003F(03292019) 2000	03/29/2019	6.02		3.54		17.6		745		64500		258		1690		1.6		7.6	J	0.188		1480	
R307-004F	R307	3/29/2019	L	Primary	--	2632709.74	640836.62	2000	R307-004F(03292019) 2000	03/29/2019	7.16		1.86		15.2		588		60400		251		1280		1		7.4	J	0.231	J	883	
R307-005F	R307	5/1/2019	F	Primary	--	2632690.44	640856.44	2000	R307-005F(05012019) 2000	05/01/2019	5.52	J	0.99		12.9		848		64800		273		945		1.6		5.7	J			531	
	R307	5/1/2019	F	Primary	--	2632690.44	640856.44	250	R307-005F(05012019) 250	05/01/2019	7.83		1.61		18.9		1270		99500	J	476		1410	J	1.5		5.8	J			706	
R308-005F	R308	5/3/2019	F	Primary	--	2632567.16	641692.23	2000	R308-005F(05032019) 2000	05/03/2019	7.84		0.59		15.6		465		91700		259		1140		1.4		4.8				426	
R309-001F	R309	5/3/2019	F	Primary	--	0.00	0.00	2000	R309-001F(05032019) 2000	05/03/2019	6.29		1.21		22.2		599		79400		290		908		1.8		5.8				598	
R310-001F	R310	3/30/2019	U	Primary	--	2633182.23	645104.86	2000	R310-001F(03302019) 2000	03/30/2019	3.58		3.33		11.4		290		37800		340		2220		1.7		6.6	J	0.477	J	1260	
	R310	3/30/2019	U	Primary	--	2633182.23	645104.86	250	R310-001F(03302019) 250	03/30/2019	4.46		3.2		12.1		358		40300		355		1600		2.2		6.6	J			1180	
R310-002F	R310	3/30/2019	R	Primary	--	2633158.37	645092.85	2000	R310-002F(03302019) 2000	03/30/2019	4.97		4.74		12.6		604		34400		264		1970		2		6.1	J	4.26		1300	
R310-003F	R310	3/30/2019	D	Primary	--	2633160.39	645060.95	2000	R310-003F(03302019) 2000	03/30/2019	7.61		1.27		12.3		344		49700		442		1260		1.1		6.3	J	0.252		761	
R310-004F	R310	3/30/2019	L	Primary	--	2633176.49	645083.04	2000	R310-004(03302019) 2000	03/30/2019	6.17		1.77		12.7		288		38700		499		1280		1.1		7	J	0.22		1530	
	R310	3/30/2019	L	Primary	--	2633176.49	645083.04	250	R310-004F(03302019) 250	03/30/2019	9.01		2.25		14.7		469		51300		766		1450		1.7		6.6	J			1140	
R310-005F	R310	5/9/2019	F	Primary	--	2633163.92	645086.19	2000	R310-005F(05092019) 2000	05/09/2019	4.85		4.46		12		515		36100		308		2650		2.8		5.8				1700	
R31-001F	R31	11/13/2018	U	Primary	--	2639047.30	647274.60	2000	R31-001F(11132018) 2000	11/13/2018	2.91		0.85	J	16.6		1540		53600		171		825		2.1		7	J	0.209	J	333	
R31-002F	R31	11/13/2018	R	Primary	--	2639025.35	647279.08	2000	R31-002F(11132018) 2000	11/13/2018	4.25		< 4.00		30.0		1030		98300		1970		337		2.5		4.5	J	0.304	J	225	
	R31	11/13/2018	R	Primary	--	2639025.35	647279.08	250	R31-002F(11132018) 250	11/13/2018	4.67		< 4.00		34.4		1110		103000		254		338		2.8		4.5	J	0.261	J	238	
R31-003F	R31	11/13/2018	D	Primary	--	2639007.99	647263.96	2000	R31-003F(11132018) 2000	11/13/2018	5.07		< 4.00		19.4		1000		55000		134		417		1.7		5.5	J	0.151	J	235	
R31-004F	R31	11/13/2018	L	Primary	--	2639033.93	647260.06	2000	R31-004F(11132018) 2000	11/13/2018	3.10		< 4.00		46.5		1130		156000		115		268		3.6		5.3	J	< 0.150	UJ	190	
R31-005F	R31	11/16/2018	F	Primary	--	2639025.58	647269.23	2000	R31-005F(11162018) 2000	11/16/2018	3.79		< 4.00		48.4		863		118000		186		229		2.5		4.1		< 0.150		160	
	R31	11/16/2018	F	Primary	--	2639025.58	647269.23	250	R31-005F(11162018) 250	11/16/2018	4.82		< 4.00		69.2		1200		151000		283		195		3.7		4.1		0.322		147	
R31-006F	R31	11/13/2018	F	Field Duplicate	R31-005F	2639025.58	647269.23	2000	R31-006F(11132018) 2000	11/13/2018	4.36		< 4.00		41.7		821		106000		159		245		2.2		4.2		0.454		150	
R32-001F	R32	11/13/2018	U	Primary	--	2638972.96	647295.30	2000	R32-001F(11132018) 2000	11/13/2018	3.34		1.95	J	17.4		869		49600		219		1630		2.2		6.3	J	0.208	J	804	
R32-002F	R32	11/15/2018	R	Primary	--	2638948.04	647300.84	2000	R32-002F(11152018) 2000	11/15/2018	3.30		0.94	J	18.4		822		49800		193		1040		2.0		5.7	J	0.664	J	540	
	R32	11/15/2018	R	Primary	--	2638948.04	647300.84	250	R32-002F(11152018) 250	11/15/2018	4.01		0.99	J	19.9		973		49200		267		871		2.7		5.6	J	0.384	J	514	
R32-003F	R32	11/15/2018	D	Primary	--	2638929.05	647284.13	2000	R32-003F(11152018) 2000	11/15/2018	2.66		1.41	J	9.74		763		33600		157		1180		2.2		6.8	J	< 0.150	UJ	463	
R32-004F	R32	11/13/2018	L	Primary	--	2638950.77	647278.01	2000	R32-004F(11132018) 2000	11/13/2018	2.80		1.54	J	11.2		740		41000		828		1080		1.9		6.7	J	0.273	J	444	
R32-005F	R32	11/19/2018	F	Primary	--	2638950.16	647288.73	2000	R32-005F(11192018) 2000	11/19/2018	3.72		1.71		16.0		1030		46600		343		1070		2.8		6.9		0.476		772	
	R32	11/19/2018	F	Primary	--	2638950.16	647288.73	250	R32-005F(11192018) 250	11/19/2018	3.74		1.66		17.3		1160		45100		384		1080		3.1		6.4		0.601		792	
R33-001F	R33	11/16/2018	U	Primary	--	2638522.55	648168.08	2000	R33-001F(11162018) 2000	11/16/2018	9.02		1.05	J	9.58		445		60700		271		755		1.9		7.5	J	0.534	J		
R33-002F	R33	11/16/2018	R	Primary	--	2638507.24	648167.75	2000	R33-002F(11162018) 2000	11/16/2018	3.84		2.98	J	9.19		522		42500		140		2160		0.9		7.6	J	0.365	J	1510	
R33-003F	R33	11/16/2018	D	Primary	--	2638508.87	648103.86	2000	R33-003F(11162018) 2000	11/16/2018	5.12		2.88	J	8.72		539		45000		154		2200		0.9		7.3	J	< 0.15	UJ	1650	
	R33	11/16/2018	D	Primary	--	2638508.87	648103.86	250	R33-003F(11162018) 250	11/16/2018	8.74		3.33	J	10.1		697		64400		308		1290		1.4		6.9	J	< 0.15	UJ	1230	
R33-004F	R33	11/16/2018	L	Primary	--	2638524.78	648110.93	2000	R33-004F(11162018) 2000	11/16/2018	10.8		1.05	J	9.97		404		53800		392		752		2.2		4.6	J	0.548	J	536	
R33-005F	R33	11/16/2018	L	Field Duplicate	R33-004F	2638524.78	648110.93	2000	R33-005F(11162018) 2000	11/16/2018	11.1		0.77	J	9.68		457		53200		450		780		2.2		4.5	J	0.493	J	554	
R33-006F	R33	12/20/2018	F	Primary	--	2638503.37	648140.35	2000	R33-006F(12202018) 2000	12/20/2018	3.67		6.81		7.16		333		39300		138		2220		1.0		7.4		< 0.150		2900	
R34-001F	R34	11/14/2018	U	Primary	--	2638282.08	647178.59	2000	R34-001F(11142018) 2000	11/14/2018	6.60		4.08		19.1		1860		56000		299		1370		1.6		6.8	J	0.957	J	1220	
	R34	11/14/2018	U	Primary	--	2638282.08	647178.59	250	R34-001F(11142018) 250	11/14/2018	9.32		3.20	J	19.8		2070		57400		407		1180		1.6		6.6	J	0.774	J	1310	
R34-002F	R34	11/19/2018	R	Primary	--	2638256.61	647187.82	2000	R34-002F(11192018) 2000	11/19/2018	7.35		0.98	J	16.5		569		65600		640		1040		2.5		5.6	J	0.174	J	586	
R34-003F	R34	11/14/2018	D	Primary	--	2638238.09	647180.03	2000	R34-003F(11142018) 2000	11/14/2018	5.85		4.47		13.9		743		54200		267		1610		1.5		7	J	0.564	J	1540	
R34-004F	R34	11/14/2018	L	Primary	--	2638262.32	647166.84	2000	R34-004F(11142018) 2000	11/14/2018	7.38		2.92	J	16.7		553		55500		393		1520		2.2		6.3	J	0.153	J	1160	
	R34	11/14/2018	L	Primary	--	2638262.32	647166.84	250	R34-004F(11142018) 250	11/14/2018	10.4		2.76	J	16.4		654		61300		549		1450		2.6		6.1	J	0.254	J	1270	
R34-005F	R34	1/14/2019	F	Primary	--	2638259.99	647178.09	2000	R34-005F(01142019) 2000	01/14/2019	5.83		4.47		114		614		78300		271		1640		1.7		6.2		0.192		1630	
R35-003F	R35	11/15/2018	D	Primary	--	2638244.21	647211.88	2000	R35-003F(11152018) 2000	11/15/2018	7.44		3.34	J	26.2		3540		56000		356		799		2.9		6.7	J	0.358	J	1120	
R35-007F	R35	11/15/2018	L	Primary	--	2638256.02	647203.26	2000	R35-007F(11152018) 2000	11/15/2018	3.57		3.09	J	13.3		1580		36100		159		1150		1.4		7.9	J	0.576	J	898	
R35-008F	R35	11/19/2018	R	Primary	--	2638271.71	647233.31	2000	R35-008F(11192018) 2000	11/19/2018	5.63		6.29		18.5		4860		42500		269		1030		2.7		7.7	J	3.68	J	1300	
	R35	11/19/2018	R	Primary	--	2638271.71	647233.31	250	R35-008F(11192018) 250	11/19/2018	6.56		5.91		20.1		5430		41400		346		962		2.4		7.6	J	2.83	J	1600	
R35-010F	R35	11/19/2018	U	Primary	--	2638317.49	647211.42	2000	R35-010F(11192018) 2000	11/19/2018	8.01		6.38		19.6		4310		52500		458		1700		1.5		7.2	J	1.16	J	1990	
R35-011F	R35	11/19/2018	L	Field Duplicate	R35-007F	2638256.02	647203.26	2000	R35-011F(11192018) 2000	11/19/2018	3.70		3.40	J	14.6		1950		38100		173		1130		1.3		7.7	J	0.593	J	909	
R35-012F	R35	1/14/2019	F	Primary	--	2638273.77	647212.40	2000	R35-012F(01142019) 2000	01/14/2019	10.6		2.04		76.7		1230		72400		951		1100		3.3		4.7		0.644		1390	
R36-001F	R36	11/16/2018	U	Primary	--	2638031.60	647177.68	2000	R36-001F(11162018) 2000	11/16/2018	4.09		1.49	J	21.6		1750		52400		194		609		2.5		4.9	J	0.558	J	541	
	R36	11/16/2018	U	Primary	--	2638031.60	647177.68	250	R36-001F(11162018) 250	11/16/2018	4.39		1.15	J	21.6		1930		46800		230		539		2.3		5.2	J	0.469	J	584	
R36-002F	R36	11/16/2018	R	Primary	--	2638016.83	647185.36	2000	R36-002F(11162018) 2000	11/16/2018	3.17		2.15	J	22.3		965		43000		145		1030		2.6		6.0	J	0.696	J	782	
R36-003F	R36	11/16/2018	D	Primary	--	2638005.01	647174.01	2000	R36-003F(11162018) 2000	11/16/2018	3.92		2.62	J	16.1		1490		58400		205		1020		1.8		7.3	J	0.571	J	816	
R36-004F	R36	11/16/2018	L	Primary	--	2638020.59	647164.96	2000	R36-004F(11162018) 2000	11/16/2018	5.83		1.68	J	23.2		2460		52800		323		705		3.0		5.1	J	0.546	J	616	
	R36	11/16/2018	L	Primary	--	2638020.59	647164.96	250	R36-004F(11162018) 250	11/16/2018	6.44		1.73	J	24.5		2670		52200		346		645		3.0		4.9	J	0.514	J	675	

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Sample Location	Excavation ID	Sample Date	Excavation Collection Location[1]	Sample Type	Duplicate Parent Sample	X Coordinate[2]	Y Coordinate[2]	Sieve Size (µm)	Sample ID	Analyte / CAS / Units / Sample Date	Arsenic 7440-38-2 mg/kg Result	Qual	Cadmium 7440-43-9 mg/kg Result	Qual	Chromium 7440-47-3 mg/kg Result	Qual	Copper 7440-50-8 mg/kg Result	Qual	Iron 7439-89-6 mg/kg Result	Qual	Lead 7439-92-1 mg/kg Result	Qual	Manganese 7439-96-5 mg/kg Result	Qual	Percent Moisture ARC-Moist % Result	Qual	pH ARC-pH SU Result	Qual	Total Organic Carbon ARC-TOC % Result	Qual	Zinc 7440-66-6 mg/kg Result	Qual
R36-005F	R36	1/14/2019	F	Primary	--	2638019.51	647174.56	250	R36-005(01142019) 250	01/14/2019	2.5		0.61	J	44		991		30300		43.6		331		2.6		4.6	J	0.918		357	
	R36	1/14/2019	F	Primary	--	2638019.51	647174.56	2000	R36-005F(01142019) 2000	01/14/2019	2.6		0.84		61.6		1110		33100		46.4		437		3.3		4.6		0.828		416	
R37-001F	R37	11/16/2018	U	Primary	--	2637673.91	647238.77	2000	R37-001F(11162018) 2000	11/16/2018	2.47		0.67	J	36.9		447		50400		55.7		267		3.2		4.3	J	0.289	J	271	
R37-002F	R37	11/16/2018	R	Primary	--	2637558.25	647297.79	2000	R37-002F(11162018) 2000	11/16/2018	6.64		0.88	J	15.7		1400		48300		270		565		1.5		4.4	J	0.379	J	444	
R37-004F	R37	11/16/2018	D	Primary	--	2637431.69	647259.07	2000	R37-004F(11162018) 2000	11/16/2018	6.82		1.51	J	14.2		1220		56700		418		971		1.0		7.2	J	0.325	J	592	
	R37	11/16/2018	D	Primary	--	2637431.69	647259.07	250	R37-004F(11162018) 250	11/16/2018	5.93		1.57	J	15.4		1360		63100		237		1140		1.0		7	J	< 0.15	UJ	769	
R37-005F	R37	11/16/2018	L	Primary	--	2637562.45	647201.54	2000	R37-005F(11162018) 2000	11/16/2018	6.04		1.84	J	30.8		2740		48500		259		694		1.8		5.8	J	0.344	J	698	
R37-006F	R37	11/16/2018	R, D	Primary	--	2637448.14	647323.81	2000	R37-006F(11162018) 2000	11/16/2018	3.49		2.06	J	12.1		1840		31000		890		852		1.1		7.1	J	0.729	J	654	
R37-007F	R37	11/16/2018	L	Field Duplicate	R37-005F	2637562.45	647201.54	2000	R37-007F(11162018) 2000	11/16/2018	6.10		1.66	J	31.3		2550		50400		226		673		1.3		5.9	J	0.199	J	683	
	R37	11/16/2018	L	Field Duplicate	R37-005F	2637562.45	647201.54	250	R37-007F(11162018) 250	11/16/2018	7.86		1.77	J	35.5		3030		52100		252		753		2.2		5.7	J	0.417	J	795	
R37-008F	R37	12/11/2018	F	Primary	--	2637516.58	647281.46	2000	R37-008F(12112018) 2000	12/11/2018	2.90		1.08		12.5		453		32900		68.0		924		1.3		7.5		0.253		560	
R37-009F	R37	12/14/2018	F	Primary	--	2637587.96	647241.50	2000	R37-009F(12142018) 2000	12/14/2018	5.41		2.01		17.4		2040		31700		119		993		1.9		6.8		0.463		587	
	R37	12/14/2018	F	Primary	--	2637587.96	647241.50	250	R37-009F(12142018) 250	12/14/2018	6.58		2.73		56.8		3080		40400		162		1020		2.5		6.8		0.450		828	
R38-001F	R38	11/19/2018	U	Primary	--	2637231.62	647296.99	2000	R38-001F(11192018) 2000	11/19/2018	3.98		5.79		10.7		661		42900		181		1820		1.6		7.5	J	0.84	J	1980	
R38-002F	R38	11/19/2018	R	Primary	--	2637190.25	647316.85	2000	R38-002F(11192018) 2000	11/19/2018	7.15		2.89	J	12.9		685		68100		240		1240		1.9		6.5	J	0.245	J	965	
R38-003F	R38	11/19/2018	D	Primary	--	2637059.08	647345.18	2000	R38-003F(11192018) 2000	11/19/2018	5.50		3.73	J	12.2		672		71200		248		1530		1.4		6.9	J	< 0.150	UJ	926	
	R38	11/19/2018	D	Primary	--	2637059.08	647345.18	250	R38-003F(11192018) 250	11/19/2018	7.90		3.98	J	15.0		897		92900		356		1330		1.7		6.8	J	0.459	J	1310	
R38-004F	R38	11/19/2018	L	Primary	--	2637162.27	647316.44	2000	R38-004F(11192018) 2000	11/19/2018	6.06		3.65	J	12.7		630		59400		249		1400		1.3		6.7	J	< 0.150	UJ	1140	
R38-005F	R38	11/19/2018	U	Field Duplicate	R38-001F	2637231.62	647296.99	2000	R38-005F(11192018) 2000	11/19/2018	3.76		5.35		10.9		587		41100		162		1820		1.4		7.6	J	0.618	J	1890	
R38-006F	R38	12/3/2018	F	Primary	--	2637163.08	647319.32	2000	R38-006F(12032018) 2000	12/03/2018	5.98		1.14		13.7		466		66700		275		820		1.8		5.5		< 0.150		589	
R40-001F	R40	11/19/2018	U	Primary	--	2637298.88	647267.47	2000	R40-001F(11192018) 2000	11/19/2018	6.77		4.34		13.0		1140		57500		215		1410		1.3		6.7	J	0.656	J	1210	
	R40	11/19/2018	U	Primary	--	2637298.88	647267.47	250	R40-001F(11192018) 250	11/19/2018	8.43		3.90	J	12.7		849		73000		252		1730		1.4		6.8	J	0.448	J	1460	
R40-002F	R40	11/19/2018	R	Primary	--	2637285.45	647300.84	2000	R40-002F(11192018) 2000	11/19/2018	2.96		3.89	J	9.84		476		40100		211		2120		1.0		7.7	J	0.225	J	1370	
R04-001F	R04	12/10/2018	U	Primary	--	2632159.02	631565.00	2000	R4-001F(12102018) 2000	12/10/2018	2.47	J	1.57	J	10.8		830		25100		85.6		886		0.8		7.9	J	0.450	J	474	
R04-005F	R04	12/10/2018	L,D	Field Duplicate	R04-003F	2632259.66	631460.54	2000	R4-005F(12102018) 2000	12/10/2018	2.82		0.58	J	14.5		384		33600		68.6		321		3.5		4.1	J	0.410	J	295	
R404-001F	R404	5/2/2019	F	Primary	--	0.00	0.00	2000	R404-001F(05022019) 2000	05/02/2019	2.43		1.22		16.2		491		34800		81.8		1000		1.4		7.6				587	
R41-001F	R41	11/19/2018	U	Primary	--	2637121.76	647375.49	2000	R41-001F(11192018) 2000	11/19/2018	3.57		3.47	J	13.0		602		51400		194		1470		1.6		7.3	J	0.244	J	1170	
R41-002F	R41	11/19/2018	R	Primary	--	2637009.06	647411.15	2000	R41-002F(11192018) 2000	11/19/2018	4.00		3.38	J	16.7		651		66400		222		1210		1.3		6.9	J	< 0.150	UJ	1010	
R41-003F	R41	11/19/2018	R,D	Primary	--	2636919.38	647412.29	2000	R41-003F(11192018) 2000	11/19/2018	2.83		3.92	J	11.1		461		40400		140		1730		1.0		7.9	J	< 0.150	UJ	1360	
	R41	11/19/2018	R,D	Primary	--	2636919.38	647412.29	250	R41-003F(11192018) 250	11/19/2018	3.67		3.53	J	10.1		489		50500		173		1660		1.5		7.9	J	0.229	J	1370	
R41-004F	R41	11/19/2018	D	Primary	--	2636884.28	647377.65	2000	R41-004F(11192018) 2000	11/19/2018	3.59		4.52		9.71		546		39600		207		1740		1.4		7.8	J	0.64	J	1700	
R41-005F	R41	11/19/2018	L	Primary	--	2636999.53	647395.69	2000	R41-005F(11192018) 2000	11/19/2018	3.28		1.98	J	18.6		635		61900		211		864		1.6		6.7	J	< 0.15	UJ	478	
R41-006F	R41	11/19/2018	R	Field Duplicate	R41-002F	2637009.06	647411.15	2000	R41-006F(11192018) 2000	11/19/2018	4.03		3.24	J	16.3		619		65200		210		1150		1.3		7	J	0.282	J	896	
	R41	11/19/2018	R	Field Duplicate	R41-002F	2637009.06	647411.15	250	R41-006F(11192018) 250	11/19/2018	5.56		3.36	J	20.3		877		93500		297		1700		1.7		7.2	J	0.401	J	1440	
R41-007F	R41	12/3/2018	F	Primary	--	2637011.66	647402.35	2000	R41-007F(12032018) 2000	12/03/2018	3.15		1.56		12.4		847		64000		232		1010		1.7		6.9		0.179		743	
	R41	12/3/2018	F	Primary	--	2637011.66	647402.35	250	R41-007F(12032018) 250	12/03/2018	3.89		2.38		15.3		1020		74000		189		1220		2.1		7.0		0.373		930	
R42-001F	R42	11/20/2018	U	Primary	--	2636138.14	646317.22	2000	R42-001F(11202018) 2000	11/20/2018	4.32		5.32		11.8		632		39100		159		1690		2.2		7.5	J	1.16	J	1790	
R42-002F	R42	11/20/2018	R	Primary	--	2636090.83	646300.36	2000	R42-002F(11202018) 2000	11/20/2018	3.85		3.78	J	7.91		475		33300		146		1540		2.3		7.3	J	0.387	J	1300	
R42-003F	R42	11/20/2018	D	Primary	--	2636061.91	646286.39	2000	R42-003F(11202018) 2000	11/20/2018	5.61		1.69	J	12.3		628		38600		240		1560		2.2		5.9	J	0.151	J	658	
	R42	11/20/2018	D	Primary	--	2636061.91	646286.39	250	R42-003F(11202018) 250	11/20/2018	7.16		1.27	J	14.5		690		51600		295		1680		2.2		5.6	J	0.154	J	722	
R42-004F	R42	11/20/2018	L	Primary	--	2636137.08	646287.17	2000	R42-004F(11202018) 2000	11/20/2018	4.53		6.42		7.86		935		34100		227		1920		1.6		6.5	J	0.244	J	2680	
R42-005F	R42	12/3/2018	F	Primary	--	2636105.30	646294.27	2000	R42-005F(12032018) 2000	12/03/2018	5.33		1.03		9.74		405		48400		165		1070		2.6		6.6		0.353		594	
R44-001F	R44	11/28/2018	U	Primary	--	2634139.55	645841.66	250	R44-001F(11282018) 250	11/28/2018	2.18		4		3.59	J	79.1		12600		48.3		405		1.9		7.7	J	1.03	J	59.3	
R44-002F	R44	11/28/2018	R	Primary	--	2634126.77	645837.58	250	R44-002F(11282018) 250	11/28/2018	5.26		1.24	J	29.4		453		78200		226		763		2.6		6.1	J	0.15	UJ	252	
R44-003F	R44	11/28/2018	D	Primary	--	2634107.78	645817.07	2000	R44-003F(11282018) 2000	11/28/2018	1.93		1.43	J	11.4		357		26600		49.1		828		2.2		6.7	J	0.774	J	605	
	R44	11/28/2018	D	Primary	--	2634107.78	645817.07	250	R44-003F(11282018) 250	11/28/2018	1.84		0.59	J	6.25		176		17300		47.4		555	J	1.5		6.7	J	0.224	J	277	
R44-004F	R44	11/28/2018	L	Primary	--	2634131.59	645823.27	250	R44-004F(11282018) 250	11/28/2018	3.56		1.44	J	9.21		408		28000		90.8		984		1.5		5.9	J	1.93	J	226	
R44-005F	R44	11/28/2018	D	Field Duplicate	R44-003F	2634107.78	645817.07	250	R44-005F(11282018) 250	11/28/2018	2.05		0.81	J	7.35		220		21700		49.5		835	J	1.7		6	J	0.733	J	271	
R44-006F	R44	5/7/2019	F	Primary	--	2634127.12	645829.13	2000	R44-006F(05072019) 2000	05/07/2019	3.44		0.62		14.6		283		33900		89		715		1.8		6.8				309	
R46-001F	R46	11/29/2018	U	Primary	--	2633627.46	645251.53	250	R46-001F(11292018) 250	11/29/2018	5.76		1.44	J	13.5		348		50400		294		865		1.5		7.2	J	0.206	J	387	
R46-002F	R46	11/29/2018	R	Primary	--	2633511.78	645219.13	2000	R46-002F(11292018) 2000	11/29/2018	2.73		4.8		7.42		197		33800		566		2730		1.2		7.8	J	0.332	J	1770	
	R46	11/29/2018	R	Primary	--	2633511.78	645219.13	250	R46-002F(11292018) 250	11/29/2018	2.26		1.87	J	2.34	J	66.6		22300		646		2340		1.4		8	J	0.332	J	888	
R46-003F	R46	11/29/2018	D	Primary	--	2633454.67	645199.13	250	R46-003F(11292018) 250	11/29/2018	4.18		1.88	J	6.92		252		28900		242		1190		1.6		7.7	J	0.924	J	691	
R46-004F	R46	11/29/2018	L	Primary	--	2633570.65	645211.89	250	R46-004F(11292018) 250	11/29/2018	3.58		3.02	J	12.5		299	J	38300		183		1440		1		7.9	J	0.213	J	1260	J
R46-005F	R46	11/29/2018	L	Field Duplicate	R46-004F	2633570.65	645211.89	2000	R46-005F(11292018) 2000	11/29/2018	4.05		3.36	J	13.1		394		53700		229		1560		0.7		7.9	J	0.235	J	1280	
	R46	11/29/2018	L	Field Duplicate	R46-004F	2633570.65	645211.89	250	R46-005F(11292018) 250	11/29/2018	3.07		1.13	J	5.68	J	147	J	30200		190		1010		1		7.9	J	0.175	J	307	J
R46-006F	R46	5/9/2019	F	Primary	--	2633539.03	645215.47	2000	R46-006F(05092019) 2000	05/09/2019	2.61		1.14		14.8		517		31000		145		592		2.8		6.2				851	
R47-001F	R47	12/1/2018	U	Primary	--	2632822.01	644615.48	250	R47-001F(12012018) 250	12/01/2018	5.72		4.55		12.8		637		47200		292		1840		1.7		7.4	J	1.19	J	1730	
R47-002F	R47	12/1/2018	R	Primary	--	2632773.60	644420.84	250	R47-002F(12012018) 250	12/01/2018	5.29		3.47	J	13.6		494		46800		340		1390		1.5		7.6	J	0.662	J	1240	
R47-003F	R47	12/1/2018	D	Primary	--	2632726.45	644369.79	2000	R47-003F(12012018) 2000	12/01/2018	4.62		0.95	J	31.1		1160		178000		469		456		5.2		5.2	J	0.619	J	462	
	R47	12/1/2018	D	Primary	--	2632726.45	644369.79	250	R47-003F(12012018) 250	12/01/2018	4.08		0.75	J	33.3		1280		193000		285		281		3.3		4.6	J	0.268	J	280	
R47-004F	R47	12/1/2018	L	Primary	--	2632779.42	644397.42	250	R47-004F(12012018) 250	12/01/2018	5.58		1.51	J	16.4		947		85100		333		938		1.1		6.9	J	0.244	J	679	
R47-005F	R47	12/1/2018	R	Field Duplicate	R47-002F	2632773.60	644420.84	250	R47-005F(12012018) 250	12/01/2018	4.72		3.32	J	14.8		421		40500		296		1390		1.6		7.7	J	1.02	J	1160	
R47-006F	R47	5/8/2019	F	Primary	--	2632797.96	644463.16	2000	R47-006F(05082019) 2000	05/08/2019	8.68		0.59		19.8		460		69500		298		969		1.7		5.5				403	
	R47	5/8/2019	F	Primary	--	2632797.96	644463.16	250	R47-006F(05082019) 250	05/08/2019	10.3		0.87		24.5		631		122000		447		1490		1.6		5.3				411	
R47-007F	R47	5/8/2019	F	Field Duplicate	R47-006F	2632797.96	644463.16	2000	R47-007F(05082019) 2000	05/08/2019	6.85		0.91		19.8		583		80900		264		1140		1.8		5.3	J			540	
R48-001F	R48	12/1/2018	U	Primary	--	2632640.99	644343.43	2000	R48-001F(12012018) 2000	12/01/2018	9.05		3.63	J	17.2		763		67500		426		1840		1.4		7.2	J	0.444	J	1500	
	R48	12/1/2018	U	Primary	--	2632640.99	644343.43	250	R48-001F(12012018) 250	12/01/2018	8.12		2.96	J	18.1		590		57300		339		1490		1.3		7.3	J	0.558	J	1170	
R48-002F	R48	12/1/2018	R	Primary	--	2632555.45	644332.87	250	R48-002F(12012018) 250	12/01/2018	4.49		1.37	J	18.9		480		52800		224		815		1		7	J	0.855	J	673	
R48-003F	R48	12/1/2018	D	Primary	--	2632551.51	644278.28	250	R48-003F(12012018) 250	12/01/2018	3.27		2.19	J	13.7		275		37700		187		1250		1		7.6	J	0.15	UJ	1060	
R48-004F	R48	12/1/2018	L	Primary	--	2632610.16	644311.81	2000	R48-004F(12012018) 2000	12/01/2018	3.99		2.59	J	15		436		47600		249		1420		1.1		7.5	J	0.235	J	1100	
	R48	12/1/2018	L	Primary	--	2632610.16	644311.81	250	R48-004F(12012018) 250	12/01/2018	3.73		3.11	J	13.1		326		43700		221		1410		1		7.5	J	0.176	J	1160	
R48-005F	R48	5/7/2019	F	Primary	--	2632567.10	644327.80	2000	R48-005F(05072019) 2000	05/07/2019	8.82		0.9		24.4		537		64500		400		1000		1.9		4.2				517	
R50-001F	R50	12/1/2018	U	Primary	--	2632595.69	643576.37	250	R50-001F(12012018) 250	12/01/2018	1.88		0.82	J	11		197		64500		288		623		3.3		5	J	0.15	UJ	538	
R50-002F	R50	12/1/2018	R	Primary	--	2632591.53	643556.28	250	R50-002F(12012018) 250	12/01/2018	3.64		3.22	J	12.3		394		39200		281		1540		1.1		7.8	J	0.515	J	1190	
R50-003F	R50	12/1/2018	D	Primary	--	2632593.40	643537.44	2000	R50-003F(12012018) 2000	12/01/2018	3.79		3.34	J	14		432		41300		167		1520		1.3		7.8	J			1320	
	R50	12/1/2018	D	Primary	--	2632593.40	643537.44	250	R50-003F(12012018) 250	12/01/2018	3.71		3.11	J	13.4		422		37500		158		1450		1.8		7.7	J	1.04	J	1260	
R50-004F	R50	12/1/2018	L	Primary	--	2632598.20	643561.09	250	R50-004F(12012018) 250	12/01/2018	3.84		2.42	J	10.9		331		35300		190		1520		2.2		7.5	J	0.176	J	1030	
R50-005F	R50	3/30/2019	U	Primary	--	2632594.89	643660.84	2000	R50-005F(03302019) 2000	03/30/2019	4.46		0.97		16.5		401		70700		149		983		0.3		6.9	J	0.329		505	
R50-006F	R50	5/6/2019	F	Primary	--	2632594.51	643558.43	2000	R50-006F(05062019) 2000	05/06/2019	1.51		0.78		10		128		31100		199		1170		4.3		4.2	J			539	
	R50	5/6/2019	F	Primary	--	2632594.51	643558.43	250	R50-006F(05062019) 250	05/06/2019	1.59		0.81		10.4		160		27700		201		1190		5.3		4.2	J			534	
R51-001F	R51	12/1/2018	U	Primary	--	2632578.49	643453.29	250	R51-001F(12012018) 250	12/01/2018	2.86		2.82	J	12.1		296		34700		217		1340		1.1		7.8	J	0.223	J	1080	
R51-002F	R51	12/1/2018	R	Primary	--	2632575.51	643428.22	2000	R51-002F(12012018) 2000	12/01/2018	4.13		3.59	J	13.8		473		42800		204		1580		1.4		7.8	J	0.552	J	1420	
	R51	12/1/2018	R	Primary	--	2632575.51	643428.22	250	R51-002F(12012018) 250	12/01/2018	3.73		3.28	J	13.3		413		38200		203		1440		2		7.7	J	0.471	J	1270	
R51-003F	R51	12/1/2018	D	Primary	--	2632580.39	643405.90	2000	R51-003F(12012018) 2000	12/01/2018	9.5		3.29	J	13.5		627		78800		362		1840		1.2		7.2	J	0.181	J	1270	
	R51	12/1/2018	D	Primary	--	2632580.39	643405.90	250	R51-003F(12012018) 250	12/01/2018	6.99		2.26	J	11.2		536		54600		266		1530		1.3		7.2	J	0.181	J	1000	
R51-004F	R51	12/1/2018	L	Primary	--	2632582.37	643428.69	250	R51-004F(12012018) 250	12/01/2018	6.22		1.75	J	11						234		1240		1.4		7.5	J	0.208	J	744	
R51-005F	R51	12/1/2018	L	Field Duplicate	R51-004F	2632582.37	643428.69	250	R51-005F(12012018) 250	12/01/2018	4.64		2.63	J	11.6		508		48700		208		1770		1.5		7.5	J	0.233	J	875	
R51-006F	R51	5/6/2019	F	Primary	--	2632578.24	643428.69	2000	R51-006F(05062019) 2000	05/06/2019	6.65		0.75		31		453		93500		360		918		1.7		5.3	J			418	
R52-001F	R52	12/1/2018	U	Primary	--	2632595.37	643088.49	2000	R52-001F(12012018) 2000	12/01/2018	9.51		1.45	J	16		632		81200		329		1460		1.5		6.8	J	0.168	J	789	
	R52	12/1/2018	U	Primary	--	2632595.37	643088.49	250	R52-001F(12012018) 250	12/01/2018	6.23		1.2	J	13.1		487		58800		317		1240		1.6		6.8	J	0.242	J	699	
R52-002F	R52	12/1/2018	R	Primary	--	2632573.81	643001.25	250	R52-002F(12012018) 250	12/01/2018	3.53		3.29	J	11.9		447		45000		162		1850		1.4		7.7	J	0.274	J	1190	
R52-003F	R52	12/1/2018	D	Primary	--	2632610.38	642805.27	250	R52-003F(12012018) 250	12/01/2018	6.22		0.59	J	17.1		415		55400		221		737		1.8		6.3	J	0.193	J	372	
R52-004F	R52	12/18/2018	L	Primary	--	2632617.54	642974.67	2000	R52-004F(12182018) 2000	12/18/2018	6.11		1.06	J	17.0		390		56500		239		996		1.2		6.8	J	< 0.15	UJ	572	
	R52	12/18/2018	L	Primary	--	2632617.54	642974.67	250	R52-004F(12182018) 250	12/18/2018	8.90		1.28	J	17.9		454		72900		312		1340		1.3		6.7	J	< 0.15	UJ	708	
R52-005F	R52	12/1/2018	R	Field Duplicate	R52-002F	2632573.81	643001.25	2000	R52-005F(12012018) 2000	12/01/2018	8.85		2.94	J	14.3		453		51500		311		1510		1.5		7.4	J	0.389	J	1140	
	R52	12/1/2018	R	Field Duplicate	R52-002F	2632573.81	643001.25	250	R52-005F(12012018) 250	12/01/2018	3.92		2.18	J	11.6		329		34500		158		1250		1.3		7.7	J	0.265	J	954	
R52-006F	R52	5/3/2019	F	Primary	--	2632617.00	642924.36	2000	R52-006F(05032019) 2000	05/03/2019	5.42		0.69		20.9		585		80300		268		724		2.1		4.8				435	
R52A-001F	R52A	3/30/2019	U	Primary	--	2632592.95	643222.87	2000	R52A-001F(03302019) 2000	03/30/2019	4.79		1.37	J			577		56100		205		1040		0.6		7	J	0.296		673	J
R52A-002F	R52A	3/30/2019	R	Primary	--	2632585.95	643210.89	2000	R52A-002F(03302019) 2000	03/30/2019	4.39		1.17		17.1		547		55300		163		1280		0.6		7.6	J	0.434		706	
	R52A	3/30/2019	R	Primary	--	2632585.95	643210.89	250	R52A-002F(03302019) 250	03/30/2019	6.39		3.67		15		638		56400		231		1650		1.3		7.4	J			1430	
R52A-003F	R52A	3/30/2019	D	Primary	--	2632597.76	643203.21	2000	R52A-003F(03302019) 2000	03/30/2019	5.97		1.8		17		717		51400		229		1040		0.6		6.8	J	0.456		791	
R52A-004F	R52A	3/30/2019	L	Primary	--	2632613.52	643222.77	2000	R52A-004F(03302019) 2000	03/30/2019	4.52		2.18		14.1		512		45200		192		1200		0.4		5.1	J	0.262	J	923	
R52A-005F	R52A	3/30/2019	U	Field Duplicate	R52A-001F	2632592.95	643222.87	2000	R52A-005F(03302019) 2000	03/30/2019	4.24		3.25	J	14		484		43200		195		1440		0.7		7.4	J	0.488		1240	J
	R52A	3/30/2019	U	Field Duplicate	R52A-001F	2632592.95	643222.87	250	R52A-005F(03302019) 250	03/30/2019	5.87		3.68		14.4		624		51800		231		1630		1.3		7.5	J			1420	
R55-001F	R55	12/1/2018	U	Primary	--	2632588.10	642193.31	250	R55-001F(12012018) 250	12/01/2018	4.74		1.97	J	13.3		486		42600		170		997		2.2		7.3	J	0.154	J	862	
R55-002F	R55	12/1/2018	R	Primary	--	2632570.48	642143.22	250	R55-002F(12012018) 250	12/01/2018	3.99		1.21	J	12.8		439		34800		139		877		2.1		7.6	J	0.755	J	531	
R55-003F	R55	12/1/2018	D	Primary	--	2632594.03	642094.37	2000	R55-003F(12012018) 2000	12/01/2018	11.2		1.86	J	14.3		636		64600		387		977		2		7	J	0.27	J	916	
	R55	12/1/2018	D	Primary	--	2632594.03	642094.37	250	R55-003F(12012018) 250	12/01/2018	8.05		1.74	J	15		576		58500		307		1010		2.2		6.9	J	0.24	J	814	
R55-004F	R55	12/1/2018	L	Primary	--	2632602.04	642147.68	250	R55-004F(12012018) 250	12/01/2018	9.37		1.98	J	13.2		594		52300		319		1000		2.3		6.9	J	0.257	J	924	
R55-005F	R55	12/1/2018	D	Field Duplicate	R55-003F	2632594.03	642094.37	250	R55-005F(12012018) 250	12/01/2018	5.94		2.2	J	12.8		514		52900		253		1330		1.2		7.2	J	0.15	UJ	1070	
R55M-001F	R55M	3/29/2019	U	Primary	--	2632546.99	642206.43	2000	R55M-001F(03292019) 2000	03/29/2019	8.42		4.28		12.8		778		50400		288		1450		1.2		7.5	J	0.815		1650	
R55M-002F	R55M	3/29/2019	R	Primary	--	2632540.53	642130.53	2000	R55M-002F(03292019) 2000	03/29/2019	8.19	J	0.5	J	12		498		52600		287	J	779		1.3		7.3	J	0.599		565	

ARCADIS Design & Consultancy for natural and built assets

Sample Location	Excavation ID	Sample Date	Excavation Collection Location[1]	Sample Type	Duplicate Parent Sample	X Coordinate[2]	Y Coordinate[2]	Sieve Size (µm)	Sample ID	Analyte	Arsenic		Cadmium		Chromium		Copper		Iron		Lead		Manganese		Percent Moisture		pH		Total Organic Carbon		Zinc	
										CAS	7440-38-2		7440-43-9		7440-47-3		7440-50-8		7439-89-6		7439-92-1		7439-96-5		ARC-Moist		ARC-pH		ARC-TOC		7440-66-6	
										Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		%		SU		%		mg/kg	
										Sample Date	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
R55M-003F	R55M	3/29/2019	D	Primary	--	2632553.74	642074.76	2000	R55M-003F(03292019) 2000	03/29/2019	4.5		2.87		14.8		471		43800		181		1410		0.6		7.9	J	0.696	J	1130	
	R55M	3/29/2019	D	Primary	--	2632553.74	642074.76	250	R55M-003F(03292019) 250	03/29/2019	3.32		1.04		16.4		320		34100		130		830		1.7		7.8	J			404	
R55M-004F	R55M	3/29/2019	L	Primary	--	2632555.77	642140.49	2000	R55M-004F(03292019) 2000	03/29/2019	4.23		3.07		13.4		455		44600		176		1500		0.8		7.3	J	1.04	J	1230	
R55M-005F	R55M	3/29/2019	R	Field Duplicate	R55M-002F	2632540.53	642130.53	2000	R55M-005F(03292019) 2000	03/29/2019	4	J	1.86	J	14.8		405		34400		115	J	970		0.9		7.4	J	0.706		761	
R55M-006F	R55M	5/21/2019	F	Primary	--	2632549.98	642132.68	2000	R55M-006F(05212019) 2000	05/21/2019	5.6		0.75		24.7		580		78500		295		772		2.1		5.4				499	
	R55M	5/21/2019	F	Primary	--	2632549.98	642132.68	250	R55M-006F(05212019) 250	05/21/2019	7.23		0.97		30		621		90900		406		1130		3.4		5.3				509	
R55M-007F	R55M	5/21/2019	F	Field Duplicate	R55M-006F	2632549.98	642132.68	2000	R55M-007F(05212019) 2000	05/21/2019	5.66		0.78		28.8		596		90000		275		957		2.2		5.1				467	
R56-001F	R56	12/3/2018	U	Primary	--	2632572.24	642080.70	2000	R56-001F(12032018) 2000	12/03/2018	6.79		1.44	J	15.2		616		67800		231		1650		1.1		6.8	J	0.321	J	884	
R56-002F	R56	12/3/2018	R	Primary	--	2632542.28	642020.36	2000	R56-002F(12032018) 2000	12/03/2018	3.55		2.07	J	14.8		321		33500		126		968		1.2		7.7	J	0.999	J	771	
	R56	12/3/2018	R	Primary	--	2632542.28	642020.36	250	R56-002F(12032018) 250	12/03/2018	4.19		2.62	J	17.4		422		37900		173		1300		1.7		7.9	J	1.22	J	1100	
R56-003F	R56	12/3/2018	D	Primary	--	2632543.24	641893.42	2000	R56-003F(12032018) 2000	12/03/2018	3.55		1.48	J	12.9		561		33600		113		1330		1.4		7.7	J	0.702	J	678	
R56-004F	R56	12/3/2018	L	Primary	--	2632584.38	641986.10	2000	R56-004F(12032018) 2000	12/03/2018	6.76		3.17	J	14.8		817		60900		255		1780		1.0		7.3	J	0.650	J	1390	
R56-005F	R56	12/3/2018	L	Field Duplicate	R56-004F	2632584.38	641986.10	2000	R56-005F(12032018) 2000	12/03/2018	6.65		3.02	J	14.9		743		56000		249		1630		1.0		7.3	J	0.685	J	1270	
	R56	12/3/2018	L	Field Duplicate	R56-004F	2632584.38	641986.10	250	R56-005F(12032018) 250	12/03/2018	7.77		3.8	J	17.8		942		62200		314		1680		1.5		7.4	J	0.743	J	1680	
R56-006F	R56	5/21/2019	F	Primary	--	2632563.39	641976.83	2000	R56-006F(05212019) 2000	05/21/2019	7.26		0.69		23.9		462		70800		265		1080	J	1.5		5.1	J			499	
R56-007F	R56	5/21/2019	F	Field Duplicate	R56-006F	2632563.39	641976.83	2000	R56-007F(05212019) 2000	05/21/2019	5.99		0.96		21.6		475		64200		254		1950	J	1.4		4.9	J			534	
	R56	5/21/2019	F	Field Duplicate	R56-006F	2632563.39	641976.83	250	R56-007F(05212019) 250	05/21/2019	8.3		0.78		26.3		561		77400		351		794		2.5		4.7	J			573	
R57-001F	R57	12/3/2018	U	Primary	--	2632625.24	641692.48	2000	R57-001F(12032018) 2000	12/03/2018	4.95		2.50	J	13.6		441		51400		145		1410		0.7		7.8	J	0.17	J	1100	
R57-002F	R57	12/3/2018	R	Primary	--	2632648.15	641514.95	2000	R57-002F(12032018) 2000	12/03/2018	4.86		3.51	J	13.4		477		55600		223		1540		0.7		7.8	J	0.454	J	1300	
R57-003F	R57	12/3/2018	D	Primary	--	2632700.60	641307.82	2000	R57-003F(12032018) 2000	12/03/2018	4.80		2.43	J	13.3		490		52800		187		1410		0.7		7.6	J	0.189	J	959	
	R57	12/3/2018	D	Primary	--	2632700.60	641307.82	250	R57-003F(12032018) 250	12/03/2018	5.90		2.63	J	15.9		492		75700		231		1630		1.1		7.7	J	0.240	J	1160	
R57-004F	R57	12/3/2018	L	Primary	--	2632667.91	641518.40	2000	R57-004F(12032018) 2000	12/03/2018	4.80		3.43	J	11.9		501		57700		174		1600		0.7		7.8	J	0.151	J	1280	
R58-001F	R58	12/4/2018	U	Primary	--	2632796.30	640035.47	2000	R58-001F(12042018) 2000	12/04/2018	5.09		2.39	J	11.4		684		41300		168		1030		2.2		7.5	J	0.943	J	850	
R58-002F	R58	12/4/2018	R	Primary	--	2632801.89	639955.59	2000	R58-002F(12042018) 2000	12/04/2018	5.15		1.61	J	11.4		670		39600		169		1400		0.7		7.6	J	0.151	J	864	
	R58	12/4/2018	R	Primary	--	2632801.89	639955.59	250	R58-002F(12042018) 250	12/04/2018	5.87		2.5	J	16.1		917		52300		244		1570		1.5		7.6	J	0.286	J	1080	
R58-003F	R58	12/4/2018	D	Primary	--	2632815.38	639955.28	2000	R58-003F(12042018) 2000	12/04/2018	5.91		1.82	J	12.7		726		49400		217		1340		0.8		7.8	J	< 0.150	UJ	827	
R58-004F	R58	12/4/2018	L	Primary	--	2632824.81	640024.40	2000	R58-004F(12042018) 2000	12/04/2018	3.54		< 4.00		10.4		394		28700		134		2770		2.1		7	J	0.192	J	473	
R58-005F	R58	5/1/2019	F	Primary	--	0.00	0.00	2000	R58-005F(05012019) 2000	05/01/2019	3.71		3.19		11.2		1090		51100		137		2460		3.4		5.7				1100	
	R58	5/1/2019	F	Primary	--	0.00	0.00	250	R58-005F(05012019) 250	05/01/2019	3.46		3.94		13.7		1560		72900		137		3050		4.3		5.2				1410	
R59-001F	R59	3/25/2019	U	Primary	--	2631803.85	639023.73	2000	R59-001F(03252019) 2000	03/25/2019			2.83		13.4		548		38200				2350		1.1						1240	
	R59	3/25/2019	U	Primary	--	2631803.85	639023.73	250	R59-001F(03252019) 250	03/25/2019	4.8	J	3.26		15		519		46600		215		1470		1.7		7.8	J			1210	
R59-002F	R59	3/25/2019	R	Primary	--	2631704.07	638960.96	2000	R59-002F(03252019) 2000	03/25/2019	7.81		6.73		11.7		1040		33500		267		1570		2.3		7.5	J			2160	
R59-003F	R59	3/25/2019	D	Primary	--	2631617.23	638891.17	2000	R59-003F(03252019) 2000	03/25/2019	5.22		3.36		13		575		38700		226		1370		1.7		7.5	J			1290	
R6/71-002F	R6/71	3/4/2019	F	Primary	--	2632045.26	631734.06	2000	R6/71-002F(03042019) 2000	03/04/2019	2.61		2.09		11.5		1040		35300		94.4		1290		0.9		7.5				885	
R6/71-003F	R6/71	3/4/2019	F	Field Duplicate	R6/71-002F	2632045.26	631734.06	2000	R6/71-003F(03042019) 2000	03/04/2019	3.46		2.04		12.3		866		35700		215		1270		0.9		7.5				1020	
R6/71-004F	R6/71	3/4/2019	F	Primary	--	2632039.94	631801.55	2000	R6/71-004F(03042019) 2000	03/04/2019	3.57		2.05		13		1520		38000		148		1250		1.1		6.7				849	
	R6/71	3/4/2019	F	Primary	--	2632039.94	631801.55	250	R6/71-004F(03042019) 250	03/04/2019	5.84		2.67		15.5		1000		50700		245		1260		1.7		6.8				1170	
R6/71-005F	R6/71	3/4/2019	F	Primary	--	2632073.12	632032.95	2000	R6/71-005F(03042019) 2000	03/04/2019	2.62		0.56		13.6		294		52100		75.4		574		1.6		5.6				361	
R6/71-006F	R6/71	3/4/2019	F	Primary	--	2632090.88	632095.24	2000	R6/71-006F(03042019) 2000	03/04/2019	1.76		0.53		8.12		102		23800		44.5		887		1.2		7.7				288	
R6/71-007F	R6/71	3/4/2019	F	Field Duplicate	R6/71-006F	2632090.88	632095.24	2000	R6/71-007F(03042019) 2000	03/04/2019	1.67		0.45		7.98		123		25500		37.5		816		0.9		7.7				215	
	R6/71	3/4/2019	F	Field Duplicate	R6/71-006F	2632090.88	632095.24	250	R6/71-007F(03042019) 250	03/04/2019	1.82		0.56		13.4		152		31200		57		728		1.8		7.7				238	
R6/71-008F	R6/71	3/12/2019	D	Primary	--	2632073.69	631440.37	2000	R6/71-008F(03122019) 2000	03/12/2019	5.89		1.84		16.8		745		53000		245		1050		1.5		7.1	J			775	
R6/71-009F	R6/71	3/12/2019	U	Primary	--	2632030.83	631984.61	2000	R6/71-009F(03122019) 2000	03/12/2019	4.5		2.05		13.8		494		42000		194		1070		1.4		7.7	J			835	
R60-001F	R60	12/4/2018	U	Primary	--	2631847.72	638946.24	2000	R60-001F(12042018) 2000	12/04/2018	3.13		2.75	J	12.4		349	J	36400		171		1780		1.2		7.5	J	0.435	J	901	
	R60	12/4/2018	U	Primary	--	2631847.72	638946.24	250	R60-001F(12042018) 250	12/04/2018	3.82		2.64	J	14.8		394		49500		226		1460		1.8		7.7	J	0.951	J	979	
R60-002F	R60	12/4/2018	D	Primary	--	2631775.81	638899.69	2000	R60-002F(12042018) 2000	12/04/2018	3.50		3.08	J	11.5		415		36600		177		1300		1.5		7.7	J	0.345	J	1100	
R60-003F	R60	3/27/2019	F	Primary	--	2631783.02	638903.44	2000	R60-003F(03272019) 2000	03/27/2019	6.15		2.89		15.2		734		39800		180		1170		0.6		5.2		0.163		1170	
	R60	3/27/2019	F	Primary	--	2631783.02	638903.44	250	R60-003F(03272019) 250	03/27/2019	6.45		1.73		27.1		754		86900		552		825		2.5		5.2				854	
R06-001F	R06	12/10/2018	U	Primary	--	2632245.29	632564.42	2000	R6-001F(12102018) 2000	12/10/2018	2.86		2.11	J	11.8		693		29300		107		908		1.2		7.6	J	0.452	J	628	
	R06	12/10/2018	U	Primary	--	2632245.29	632564.42	250	R6-001F(12102018) 250	12/10/2018	3.14		1.81	J	13.9		732		33000		128		1030		1.5		7.6	J	0.599	J	663	
R6-002F	R06	12/10/2018	D	Primary	--	2632133.43	632026.80	2000	R6-002F(12102018) 2000	12/10/2018	4.69		2.69	J	14.5		979		38700		190		928		1.1		7.3	J	0.669	J	994	
R6-003F	R06	12/10/2018	L,D	Primary	--	2632175.01	632213.42	2000	R6-003F(12102018) 2000	12/10/2018	4.96		1.50	J	7.40		489		24500		186		747		1.3		6.7	J	1.05	J	474	
R6-004F	R06	12/10/2018	L,U	Primary	--	2632228.36	632474.38	2000	R6-004F(12102018) 2000	12/10/2018	3.27		2.67	J	12.5		639		34100		118		998		1.3		7.6	J	0.648	J	826	
	R06	12/10/2018	L,U	Primary	--	2632228.36	632474.38	250	R6-004F(12102018) 250	12/10/2018	3.67		3.58	J	14.2		699		35800		130		1100		1.6		7.6	J	0.679	J	1120	
R61-001F	R61	3/12/2019	R, U	Primary	--	2631469.99	638769.53	2000	R61-001F(03122019) 2000	03/12/2019	4.61		3.09		15.7		883		35600		179		1190		2.5		7.7	J			1110	
R61-002F	R61	3/12/2019	R, D	Primary	--	2631342.78	638607.07	2000	R61-002F(03122019) 2000	03/12/2019	4		5.02		23.2		809		55300		178		1260		2.4		7.2	J			1620	
R61-003F	R61	3/28/2019	F	Primary	--	2631451.40	638722.06	2000	R61-003F(03282019) 2000	03/28/2019	6.8		2.37		15.1		602		48200		350		1200		1		6.9		0.696		1040	
R62-004F	R62	12/5/2018	L	Primary	--	2631236.96	638157.71	2000	R62-004F(12052018) 2000	12/05/2018	6.31		0.75	J	28.6		666		64800		267		651		1.5		4.9	J	0.279	J	402	
R62-005F	R62	3/28/2019	F	Primary	--	2631235.21	638239.13	2000	R62-005F(03282019) 2000	03/28/2019	5		1.72		16.5		635		70900		196		930		1.2		5.2		< 0.15		795	
R62-006F	R62	3/28/2019	F	Primary	--	2631218.17	638153.56	2000	R62-006F(03282019) 2000	03/28/2019	3.79		0.44		13.2		422		48400		141		876		0.3		5.4		< 0.15		456	
	R62	3/28/2019	F	Primary	--	2631218.17	638153.56	250	R62-006F(03282019) 250	03/28/2019	5.82		0.79		22		547		93800		302		824		1.6		5.7				413	
R62-007F	R62	3/28/2019	F	Primary	--	2631133.75	638127.48	2000	R62-007F(03282019) 2000	03/28/2019	2.46		0.52		14.9		400		44500		81.4		869		0.5		7.1		0.195		383	
R62-008F	R62	3/28/2019	F	Primary	--	2631057.88	637988.98	2000	R62-008F(03282019) 2000	03/28/2019	3.98		0.34		18.4		369		47100		135		732		1.2		7		< 0.15		354	
R63-001F	R63	12/5/2018	U	Primary	--	2630967.20	637512.15	2000	R63-001F(12052018) 2000	12/05/2018	3.26		3.54	J	16.3		491		45900		168		1340		1.2		7.9	J	0.177	J	1070	
	R63	12/5/2018	U	Primary	--	2630967.20	637512.15	250	R63-001F(12052018) 250	12/05/2018	3.81		3.52	J	15.3		550		45600		223		1610		14.0		7.8	J	0.882	J	1410	
R63-002F	R63	12/5/2018	R	Primary	--	2630900.08	637474.76	2000	R63-002F(12052018) 2000	12/05/2018	3.76		3.38	J	15.0		428		38000		202		1720		1.6		7.4	J	0.947	J	1010	
R63-003F	R63	12/5/2018	D	Primary	--	2630929.51	637324.18	2000	R63-003F(12052018) 2000	12/05/2018	3.70		2.26	J	13.6		323		36700		182		1080		1.1		7.7	J	0.233	J	836	
R63-004F	R63	12/5/2018	L	Primary	--	2630959.05	637329.53	2000	R63-004F(12052018) 2000	12/05/2018	5.54		5.42		18.4		489		56500		187		1010		0.9		6.6	J	< 0.150	UJ	553	
	R63	12/5/2018	L	Primary	--	2630959.05	637329.53	250	R63-004F(12052018) 250	12/05/2018	7.84		1.26	J	18.2		734		91400		275		1430		1.2		6.5	J	< 0.15	UJ	708	
R63-005F	R63	3/25/2019	F	Primary	--	2630920.35	637513.01	2000	R63-005F(03252019) 2000	03/25/2019	8.44		0.33		15.3		513		74500		351		520		1.5		5.2				298	
R63-006F	R63	3/25/2019	F	Primary	--	2630938.37	637345.22	2000	R63-006F(03252019) 2000	03/25/2019	3.1		0.21		14.6		295		59800		148		344		1.3		5.1				233	
R64-001F	R64	3/20/2019	R	Primary	--	2630828.13	637474.00	2000	R64-001F(03202019) 2000	03/20/2019			2.12		13		418		38700				1100		1.2						900	
	R64	3/20/2019	R	Primary	--	2630828.13	637474.00	250	R64-001F(03202019) 250	03/20/2019	5.14		2.26		14.2		463		49400		228		1270		1.5		7.3	J			981	
R64-002F	R64	3/21/2019	F	Primary	--	2630828.26	637513.53	2000	R64-002F(03212019) 2000	03/21/2019	4.98		0.31		20.1		455		66200		196		578		2.1		5.1				376	
R65-001F	R65	3/20/2019	U	Primary	--	2631084.22	636844.43	2000	R65-001F(03202019) 2000	03/20/2019	3.33		2.53		14.2		405		37800		137		1250		0.8		7.6	J			931	
R65-002F	R65	3/20/2019	R	Primary	--	2631079.98	636806.22	2000	R65-002F(03202019) 2000	03/20/2019			2.87		13.8		433		37700				1460		1.5						1060	
	R65	3/20/2019	R	Primary	--	2631079.98	636806.22	250	R65-002F(03202019) 250	03/20/2019	4.21		2.89		14.9		432		47800		215		1480		1.6		7.9	J			1090	
R65-003F	R65	3/20/2019	D	Primary	--	2631102.04	636765.74	2000	R65-003F(03202019) 2000	03/20/2019	3.69		2.16		12.4		388		38000		178		1110		1		7.7	J			926	
R65-004F	R65	3/26/2019	F	Primary	--	2631106.49	636783.29	2000	R65-004F(03262019) 2000	03/26/2019	5.06		1.86		12.6		485		50200		174		1230		0.9		7.6		0.347		795	
	R65	3/26/2019	F	Primary	--	2631106.49	636783.29	250	R65-004F(03262019) 250	03/26/2019	4.32		2.6		14.8		477		47600		190		1400		1.3		7.7				1080	
R67-001F	R67	3/18/2019	R	Primary	--	2631783.90	635667.71	2000	R67-001F(03182019) 2000	03/18/2019	5.97		2.42		16		609		39700		200		1280		2		6.6	J			904	
R67-002F	R67	3/16/2019	F	Primary	--	2631811.79	635627.67	2000	R67-002F(03162019) 2000	03/16/2019			0.32		10.6		199		37200				599		1.8						251	
	R67	3/16/2019	F	Primary	--	2631811.79	635627.67	250	R67-002F(03162019) 250	03/16/2019	3.02		0.35		19		367		78000		180		370		3.6		4.5				225	
R68-001F	R68	3/18/2019	U	Primary	--	2631812.25	635567.66	2000	R68-001F(03182019) 2000	03/18/2019	7.61		1.08		16		736		44300		342		1200		2.5		4.5	J			841	
R68-002F	R68	3/18/2019	R	Primary	--	2631782.70	635498.40	2000	R68-002F(03182019) 2000	03/18/2019	9.24		1.56		16.6		755		49300		455		922		1.9		6.9	J			861	
R68-003F	R68	3/18/2019	D	Primary	--	2631827.63	635476.56	2000	R68-003F(03182019) 2000	03/18/2019	5.21	J	0.76		19		487		60600		209		1090		1.4		6.2	J			473	
	R68	3/18/2019	D	Primary	--	2631827.63	635476.56	250	R68-003F(03182019) 250	03/18/2019	6.41		1.1		21.3		540		77600		278		1140		1.6		6.3	J			562	
R68-004F	R68	3/18/2019	F	Primary	--	2631803.33	635512.04	2000	R68-004F(03182019) 2000	03/18/2019	4.18		3.65		12.1		1240		31800		196		1450		1.3		7.1				1460	
R69-001F	R69	3/18/2019	U	Primary	--	2631830.03	635457.94	2000	R69-001F(03182019) 2000	03/18/2019	5.64		0.54		21.3		565		74600		252		739		2		5.3	J			442	
R69-002F	R69	3/18/2019	R	Primary	--	2631844.51	635411.51	2000	R69-002F(03182019) 2000	03/18/2019	4.81		2.45		14.8		933		47500		184		1360		1.3		7.2	J			1070	
	R69	3/18/2019	R	Primary	--	2631844.51	635411.51	250	R69-002F(03182019) 250	03/18/2019	7.41		3.21		17.3		1100		59200		277		1450		1.5		7.2	J			1150	
R69-003F	R69	3/18/2019	D	Primary	--	2631945.03	635279.75	2000	R69-003F(03182019) 2000	03/18/2019	3.86		0.96		16.7		392		64400		126		844		0.9		7.1	J			481	
R69-004F	R69	3/18/2019	F	Primary	--	2631895.40	635358.19	2000	R69-004F(03182019) 2000	03/18/2019	4.69		1.6		14.5		530		50500		180		970		1.2		6.8				721	
R69-005F	R69	3/18/2019	F	Field Duplicate	R69-004F	2631895.40	635358.19	2000	R69-005F(03182019) 2000	03/18/2019	5.09		1.23		14.7		552		49200		208		908		1.3		6.7				636	
	R69	3/18/2019	F	Field Duplicate	R69-004F	2631895.40	635358.19	250	R69-005F(03182019) 250	03/18/2019	7.98		1.45		17.6		634		70100		262		1180		1.5		6.5				694	
R75-003F	R75	12/14/2018	D	Primary	--	2633107.05	626939.96	2000	R75-003F(12142018) 2000	12/14/2018	5.30		1.18	J	15.8		524		48300		201		988		1.4		5.6	J	0.326	UJ	596	
	R75	12/14/2018	D	Primary	--	2633107.05	626939.96	250	R75-003F(12142018) 250	12/14/2018	5.36		1.76	J	52.9		618		55700		220		1240		1.7		5.8	J	0.293	J	807	
R75-004F	R75	12/14/2018	R	Primary	--	2633005.66	627123.35	2000	R75-004F(12142018) 2000	12/14/2018	4.41		1.27	J	13.8		436		52300		147		789		0.9		6.4	J	< 0.150	UJ	501	
R75M-006F	R75M	1/24/2019	U	Primary	--	2632978.22	627171.72	2000	R75M-006F(01242019) 2000	01/24/2019	5.02		0.65	J	17		436		48300		205		936		1.3		5.4	J	0.225		440	
R77M-001F	R77M	1/23/2019	D	Primary	--	2633423.21	626283.74	2000	R77M-001F(01232019) 2000	01/23/2019	6.75		0.78	J	18.2		494		47800		415		567		1.3		4.5	J	0.245		470	
R77M-003F	R77M	1/23/2019	U	Primary	--	2633304.52	626566.22	2000	R77M-003F(01232019) 2000	01/23/2019	4.03		1.56	J	18.2		456		60400		148		1040		1.1		7.2	J	0.47		644	
R77M-004F	R77M	1/23/2019	U	Field Duplicate	R77M-003F	2633304.52	626566.22	2000	R77M-004F(01232019) 2000	01/23/2019	3.69		1.53	J	18.2		445		64000		141		983		1.2		7.1	J	0.394		623	
R78-001F	R78	12/6/2018	U	Primary	--	2631685.62	636168.90	2000	R78-001F(12062018) 2000	12/06/2018	3.40		1.33	J	10.1		481		30100		164		1110		1.5		7.7	J	0.206	J	445	
R78-002F	R78	12/6/2018	R	Primary	--	2631681.44	636103.37	2000	R78-002F(12062018) 2000	12/06/2018	3.49		1.06	J	12.1		340		39600		128		1040		1.9		7.6	J	0.216	J	404	
R78-003F	R78	12/6/2018	D	Primary	--	2631697.67	636053.61	2000	R78-003F(12062018) 2000	12/06/2018	4.36		0.89	J	11.7		481		52500		201		1050		1.6		5.5	J	< 0.150	UJ	419	
	R78	12/6/2018	D	Primary	--	2631697.67	636053.61	250	R78-003F(12062018) 250	12/06/2018	6.71		0.67	J	15.0		585		77800		282		1590		2.2		5.2	J	< 0.15	UJ	512	
R78-004F	R78	12/6/2018	L	Primary	--	2631704.75	636080.80	2000	R78-004F(12062018) 2000	12/06/2018	5.01		0.99	J	12.1		409		39900		194		973		1.4		7.7	J	0.204	J	440	
R78-005F	R78	12/6/2018	D	Field Duplicate	R78-003F	2631697.67	636053.61	2000	R78-005F(12062018) 2000	12/06/2018	3.87		0.75	J	12.2		450		42400		183		1050		1.6		5.2	J	< 0.15	UJ	383	
R78-006F	R78	4/5/2019	F	Primary	--	2631681.17	636142.87	2000	R78-006F(04052019) 2000	04/05/2019	5.66		0.33		16.3		527		70400		222		772		1.3		5.5				334	
R79-001F	R79	11/20/2018	U	Primary	--	2636186.17	646493.82	2000	R79-001F(11202018) 2000	11/20/2018	2.58		1.66	J	9.11		382		29300		174		1460		1.6		7.4	J	1.2	J	476	
R79-002F	R79	11/20/2018	R	Primary	--	2636121.33	646479.21	2000	R79-002F(11202018) 2000	11/20/2018	1.96		1.77	J	5.96	J	269		22800		161		1570		1.4		7.6	J	0.376	J	420	
	R79	11/20/2018	R	Primary	--	2636121.33	646479.21	250	R79-002F(11202018) 250	11/20/2018	1.86		1.05	J			266		22200		122		1280		1.3		7.4	J	0.373	J	374	
R79-003F	R79	11/20/2018	D	Primary	--	2636080.56	646454.49	2000	R79-003F(11202018) 2000	11/20/2018	2.23		2.07	J	7.26		365		25700		141		1430		1.4		7.5	J	0.684	J	564	

Sample Location	Excavation ID	Sample Date	Excavation Collection Location[1]	Sample Type	Duplicate Parent Sample	X Coordinate[2]	Y Coordinate[2]	Sieve Size (µm)	Sample ID	Analyte	Arsenic		Cadmium		Chromium		Copper		Iron		Lead		Manganese		Percent Moisture		pH		Total Organic Carbon		Zinc	
										CAS	7440-38-2		7440-43-9		7440-47-3		7440-50-8		7439-89-6		7439-92-1		7439-96-5		ARC-Moist		ARC-pH		ARC-TOC		7440-66-6	
										Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		%		SU		%		mg/kg	
										Sample Date	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
R79-004F	R79	11/20/2018	L	Primary	--	2636139.68	646476.69	2000	R79-004F(11202018) 2000	11/20/2018	2.54		2.70	J			506		25400		174		1620		1.8		7.5	J	0.524	J	743	
R79-005F	R79	12/3/2018	F	Primary	--	2636166.64	646486.22	2000	R79-005F(12032018) 2000	12/03/2018	2.48		1.31		11.2		295		27900		112		1220		1.5		7.6		0.840		352	
	R79	12/3/2018	F	Primary	--	2636166.64	646486.22	250	R79-005F(12032018) 250	12/03/2018	2.65		1.05		15.8		423		35500		95.6		1530		2.4		7.5		1.12		419	
R80-001F	R80	12/3/2018	U	Primary	--	2632948.43	640872.16	2000	R80-001F(12032018) 2000	12/03/2018	5.97		2.16	J			548		52700		222		1150		0.9		7	J	0.313	J	947	
R80-002F	R80	12/3/2018	R	Primary	--	2632951.52	640615.19	2000	R80-002F(12032018) 2000	12/03/2018	10.7		1.28	J	16.2		644		63800		438		939		1.1		5.6	J	0.242	J	610	
R80-003F	R80	12/3/2018	R	Primary	--	2632982.72	640431.84	2000	R80-003F(12032018) 2000	12/03/2018	9.46		1.04	J	14.0		680		53200		300		1460		1.1		6.8	J	0.277	J	720	
	R80	12/3/2018	R	Primary	--	2632982.72	640431.84	250	R80-003F(12032018) 250	12/03/2018	16.4		2.12	J	17.1		976		86800		481		2000		1.5		6.9	J	0.334	J	1040	
R80-004F	R80	12/3/2018	D	Primary	--	2632987.06	640199.43	2000	R80-004F(12032018) 2000	12/03/2018	4.85		1.57	J	13.5		919		40100		191		1260		1.3		7.1	J	0.157	J	750	
R80-005F	R80	12/3/2018	U	Field Duplicate	R80-001F	2632948.43	640872.16	2000	R80-005F(12032018) 2000	12/03/2018	6.87		2.11	J	15.6		573		54100		247		1320		1.1		6.9	J	0.232	J	964	
R80-006F	R80	12/3/2018	L	Primary	--	2633070.64	640672.39	2000	R80-006F(12032018) 2000	12/03/2018	4.51		3.33	J	10.3		805		35600		160		1090		1.0		7.8	J	0.286	J	1480	
	R80	12/3/2018	L	Primary	--	2633070.64	640672.39	250	R80-006F(12032018) 250	12/03/2018	5.91		5.04		14.6		1070		52600		230		1510		1.3		7.8	J	0.22	J	2080	
R80-007F	R80	3/29/2019	D	Primary	--	2632955.52	640062.52	2000	R80-007F(03292019) 2000	03/29/2019	6		1.74		14.2		693		41900		263		1500		1.8		6.8	J	1.08	J	939	
	R80	3/29/2019	D	Primary	--	2632955.52	640062.52	250	R80-007F(03292019) 250	03/29/2019	10.2		2		17.5		756		55800		331		1560		2		6.9	J			1030	
R80-008F	R80	3/29/2019	R,D	Primary	--	2632905.41	640303.20	2000	R80-008F(03292019) 2000	03/29/2019	4.09		2.79		13.7		439		45700		182		1650		1.1		7.7	J	0.173	J	1200	
R80-009F	R80	3/29/2019	R	Primary	--	2632870.76	640517.77	2000	R80-009F(03292019) 2000	03/29/2019	3.23		2.75		13.5		376		43000		151		1320		1		7.7	J	< 0.15		1110	
R80-010F	R80	3/29/2019	R,U	Primary	--	2632841.61	640761.61	2000	R80-010F(03292019) 2000	03/29/2019	4.87		2.48		16.6		411		57700		155		1300		1.2		7.7	J	0.267	J	1070	
	R80	3/29/2019	R,U	Primary	--	2632841.61	640761.61	250	R80-010F(03292019) 250	03/29/2019	4.29		3.28		16.4		519		47700		203		1590		2		7.8	J			1320	
R80-011F	R80	3/29/2019	U	Primary	--	2632839.32	640969.96	2000	R80-011F(03292019) 2000	03/29/2019	4.9		3.04		14.9		454		59600		188		1540		1.2		7.8	J	0.224	J	1270	
R80-012F	R80	3/29/2019	L,U	Primary	--	2633008.41	640845.01	2000	R80-012F(03292019) 2000	03/29/2019	6.97		1.98		15.7		589		57300		271		1270		1.3		7.1	J	0.421	J	931	
R80-013F	R80	3/29/2019	L	Primary	--	2632997.53	640560.47	2000	R80-013F(03292019) 2000	03/29/2019	7.69		2.93		13.8		1250		52400		312		1460		1		7.2	J	0.155		1340	
	R80	3/29/2019	L	Primary	--	2632997.53	640560.47	250	R80-013F(03292019) 250	03/29/2019	10.6		3.85		16.9		1520		64200		344		1570		1.4		7.2	J			1530	
R80-014F	R80	3/29/2019	L,D	Primary	--	2632967.37	640289.51	2000	R80-014F(03292019) 2000	03/29/2019	7.65		1.73		16.1		673		56700		263		1870		2.2		6.9	J	0.25		882	
R80-015F	R80	3/29/2019	L,D	Field Duplicate	R80-014F	2632967.37	640289.51	2000	R80-015F(03292019) 2000	03/29/2019	5.94		1.4		15.6		645		51300		387		1270		2		6.9	J	0.285	J	817	
R80-016F	R80	4/23/2019	F	Primary	--	2632855.45	640892.91	2000	R80-016F(04232019) 2000	04/23/2019	6.28		0.56		20.9		601		69200		292		795		1.4		5.9	J			600	
	R80	4/23/2019	F	Primary	--	2632855.45	640892.91	250	R80-016F(04232019) 250	04/23/2019	8.46		2.49		22.8		992		81900		417		1630		2.2		6	J			1180	
R80-017F	R80	4/23/2019	F	Primary	--	2632867.75	640817.99	2000	R80-017F(04232019) 2000	04/23/2019	3.68		0.26	J	22.8		454		77900		199		489		2.6		5.6	J			297	
R80-018F	R80	4/23/2019	F	Primary	--	2632876.90	640718.28	2000	R80-018F(04232019) 2000	04/23/2019	3.44		0.27	J	14.5		368		68000		185		459		2		5.8	J			324	
R80-019F	R80	4/24/2019	F	Primary	--	2632882.72	640603.05	2000	R80-019F(04242019) 2000	04/24/2019	2.82		0.16	J	11.7		227		53700		133		386		1.3		5.2	J			249	
	R80	4/24/2019	F	Primary	--	2632882.72	640603.05	250	R80-019F(04242019) 250	04/24/2019	3.49		3.15		19.6		1080		86200		174		1600		3.4		5.1	J			1220	
R80-020F	R80	4/24/2019	F	Primary	--	2632936.71	640724.96	2000	R80-020F(04242019) 2000	04/24/2019	3.83		0.13	J	12.6		420		67900		278		629		1.5		5.2	J			270	
R80-021F	R80	4/24/2019	F	Primary	--	2632987.34	640824.57	2000	R80-021F(04242019) 2000	04/24/2019	9.76		3.07		18.3		1050		62900		351		1630		1.1		6.9	J			1340	
R80-022F	R80	4/24/2019	F	Primary	--	2633021.03	640759.84	2000	R80-022F(04242019) 2000	04/24/2019	8.11		1.75		19.8		795		59200		307		1380		0.8		6.1	J			1090	
	R80	4/24/2019	F	Primary	--	2633021.03	640759.84	250	R80-022F(04242019) 250	04/24/2019	9.55		2.28		19.1		1200		64900		399		1500		1.1		6	J			981	
R80-023F	R80	4/25/2019	F	Primary	--	2633016.62	640722.56	2000	R80-023F(04252019) 2000	04/25/2019	13.3		0.77		17.9		694		70700		607		1140		1		5.8	J			526	
R80-024F	R80	4/25/2019	F	Primary	--	2632985.11	640591.61	2000	R80-024F(04252019) 2000	04/25/2019	6.69		1.58		15.9		767		64800		293		1130		1		6.3	J			819	
R80-025F	R80	4/25/2019	F	Field Duplicate	R80-024F	2632985.11	640591.61	2000	R80-025F(04252019) 2000	04/25/2019	6.07		2.02		15.1		839		58500		296		1450		0.9		6.6	J			998	
	R80	4/25/2019	F	Field Duplicate	R80-024F	2632985.11	640591.61	250	R80-025F(04252019) 250	04/25/2019	9.39		3.15		19.6		1080		86200		381		1600		1.2		6.5	J			1220	
R80-026F	R80	4/26/2019	F	Primary	--	2633001.93	640370.52	2000	R80-026F(04262019) 2000	04/26/2019	4.4		10		12		3010		55900		246		4610		0.6		7.4	J			2330	
R81-001F	R81	3/25/2019	U	Primary	--	2631934.30	639120.77	2000	R81-001F(03252019) 2000	03/25/2019	4.21		3.28		14.2		481		41000		181		1400		1.7		7.4	J			1220	
	R81	3/25/2019	U	Primary	--	2631934.30	639120.77	250	R81-001F(03252019) 250	03/25/2019	4.73		3.47		15		480		48900		199		1500		1.7		7.4	J			1290	
R81-002F	R81	3/25/2019	R	Primary	--	2631897.27	639098.86	2000	R81-002F(03252019) 2000	03/25/2019	7.55		4.63		12.9		828		46100		283		1480		2.1		6.6	J			1590	
R81-003F	R81	3/25/2019	D	Primary	--	2631852.07	639069.05	2000	R81-003F(03252019) 2000	03/25/2019	7.63		0.48		14		502		50300		281		877		2.3		4.3	J			539	
R81-004F	R81	3/25/2019	L	Primary	--	2631886.08	639079.59	2000	R81-004F(03252019) 2000	03/25/2019	3.97		2.84		12.9		452		38300		178		1450		1.5		7.6	J			1070	
	R81	3/25/2019	L	Primary	--	2631886.08	639079.59	250	R81-004F(03252019) 250	03/25/2019	4.8		3.42		15		528		46100		238		1500		1.8		7.5	J			1230	
R81-005F	R81	3/25/2019	U	Field Duplicate	R81-001F	2631934.30	639120.77	2000	R81-005F(03252019) 2000	03/25/2019	4.19		3.28		14.4		513		39900		169		1440		1.5		7.5	J			1210	
R81-006F	R81	3/27/2019	F	Primary	--	2631886.57	639085.22	2000	R81-006F(03272019) 2000	03/27/2019	5.71		0.63		22.1		487		53600		253		774		2.3		5		0.25		477	
	R81	3/27/2019	F	Primary	--	2631886.57	639085.22	250	R81-006F(03272019) 250	03/27/2019	6.68		0.9		20.7		536		58900		325		896		2.8		5.2				559	
R82-001F	R82	3/20/2019	U	Primary	--	2631397.75	636131.98	2000	R82-001F(03202019) 2000	03/20/2019	4.02		2.07		14		446		33400		113		947		2.2		7.6	J			733	
R82-002F	R82	3/20/2019	R	Primary	--	2631465.14	636071.81	2000	R82-002F(03202019) 2000	03/20/2019	5.46		3.12		14.9		746		36900		167		1590		1.6		7.6	J			1110	
	R82	3/20/2019	R	Primary	--	2631465.14	636071.81	250	R82-002F(03202019) 250	03/20/2019	6.8		3.13		16.7		797		42200		205		1290		1.8		7.5	J			1170	
R82-003F	R82	3/20/2019	D	Primary	--	2631522.24	636029.21	2000	R82-003F(03202019) 2000	03/20/2019	6.99		2.35		15.4		626		45700		357		1150		1.8		7.1	J			959	
R82-004F	R82	3/20/2019	F	Primary	--	2631472.65	636072.10	2000	R82-004F(03202019) 2000	03/20/2019	5		1.66		16.3		639		74200		175		909		2.2		6.4				714	
R83-001F	R83	12/5/2018	U	Primary	--	2631198.00	636749.10	2000	R83-001F(12052018) 2000	12/05/2018	5.61		1.69	J	16.2		501		59500		238		1210		0.9		7	J	0.276	J	720	
R83-002F	R83	12/5/2018	D	Primary	--	2631434.49	636553.66	2000	R83-002F(12052018) 2000	12/05/2018	3.85		1.58	J	11.0		518		36700		159		1220		1.3		7.2	J	0.204	J	749	
R83-003F	R83	12/5/2018	L	Primary	--	2631478.12	636444.74	2000	R83-003F(12052018) 2000	12/05/2018	7.63		4.38		11.4		967		41300		257		1240		0.7		6.9	J	0.389	J	1550	
	R83	12/5/2018	L	Primary	--	2631478.12	636444.74	250	R83-003F(12052018) 250	12/05/2018	10.5		5.52		15.3		1260		61000		365		1510		1.0		6.9	J	0.284	J	1860	
R83-004F	R83	12/5/2018	L	Primary	--	2631582.88	636187.28	2000	R83-004F(12052018) 2000	12/05/2018	5.57		1.05	J	12.4		530		56800		249		1250		0.7		5.8	J	0.156	J	489	
R83-005F	R83	4/2/2019	F	Primary	--	2631246.01	636670.19	2000	R83-005F(04022019) 2000	04/02/2019	2.14		1.26		13.3		1140		43100		150		1130		0.6		8				478	
R83-006F	R83	4/2/2019	F	Primary	--	2631286.26	636608.05	2000	R83-006F(04022019) 2000	04/02/2019	3.3		1.97		14.6		1100		51500		194		1160		0.8		7.5	J			765	
	R83	4/2/2019	F	Primary	--	2631286.26	636608.05	250	R83-006F(04022019) 250	04/02/2019	4.69		2.28		19.1		1200		64900		296		1500		0.7		7.5	J			981	
R83-007F	R83	4/2/2019	F	Primary	--	2631345.35	636465.57	2000	R83-007F(04022019) 2000	04/02/2019	2.72		1.16		10.8		1240		34400		88.1		1470		0.6		7.2	J			519	
R83-008F	R83	4/3/2019	F	Primary	--	2631411.60	636464.53	2000	R83-008F(04032019) 2000	04/03/2019	2.69		1.51		11		1410		28600		124		1390		0.8		7	J			597	
R83-009F	R83	4/3/2019	F	Primary	--	2631434.34	636313.91	2000	R83-009F(04032019) 2000	04/03/2019	3.75		0.88		13.9		878		71200		285		1170		1.3		5.7	J			421	
	R83	4/3/2019	F	Primary	--	2631434.34	636313.91	250	R83-009F(04032019) 250	04/03/2019	4.83		1.26		19.7		1300		116000		373		2010		1.2		5.6	J			584	
R83-010F	R83	4/3/2019	F	Primary	--	2631517.90	636217.56	2000	R83-010F(04032019) 2000	04/03/2019	4.17		0.68		15.8		623		71700		232		796		1.2		5.5	J			372	
R83-011F	R83	4/3/2019	F	Primary	--	2631406.84	636574.72	2000	R83-011F(04032019) 2000	04/03/2019	2.55		0.25	J	11.3		208		51600		121		296		1.6		4.8	J			163	
R84-001F	R84	12/5/2018	U	Primary	--	2632341.03	634743.22	2000	R84-001F(12062018) 2000	12/06/2018	5.94		0.91	J	16.7		445		57000		216		903		1.1		5.7	J	0.155	J	470	
R84-002F	R84	12/5/2018	R	Primary	--	2632470.37	634377.95	2000	R84-002F(12062018) 2000	12/06/2018	4.49		1.86	J	11.5		637		32700		181		1920		2.4		6.4	J	1.85	J	768	
	R84	12/5/2018	R	Primary	--	2632470.37	634377.95	250	R84-002F(12062018) 250	12/06/2018	5.25		2.33	J	15.7		803		46700		205		2220		2.1		6.6	J	0.314	J	1060	
R84-003F	R84	12/5/2018	D	Primary	--	2632427.99	634658.98	2000	R84-003F(12062018) 2000	12/06/2018	7.42		1.21	J	12.3		775		45000		239		1010		0.8		6	J	0.293	J	591	
R84-004F	R84	12/5/2018	L	Primary	--	2632559.17	634586.57	2000	R84-004F(12062018) 2000	12/06/2018	4.77		3.45	J	11.7		1090		41600		210		1120		0.8		7.4	J	0.737	J	1450	J
R84-005F	R84	12/5/2018	L	Primary	--	2632383.66	634829.56	2000	R84-005F(12062018) 2000	12/06/2018	5.33		4.38		11.2		1200		43400		230		1300		0.8		7.3	J	1.91	J	1680	
	R84	12/5/2018	L	Primary	--	2632383.66	634829.56	250	R84-005F(12062018) 250	12/06/2018	6.87		5.35		15.3		1400		55500		256		1460		1.0		7.3	J	0.381	J	1950	
R84-006F	R84	12/5/2018	L	Field Duplicate	R84-004F	2632559.17	634586.57	2000	R84-006F(12062018) 2000	12/06/2018	4.54		1.31	J	9.66		736		35100		193		1300		2.7		5.5	J	< 0.150	UJ	667	J
R84-007F	R84	3/6/2019	U	Primary	--	2632407.47	634845.16	2000	R84-007F(03062019) 2000	03/06/2019	4.06	J	1.16		16.8		427		60000		127		983		0.9		7.2	J			576	
R84-008F	R84	3/6/2019	L	Primary	--	2632494.93	634840.69	2000	R84-008F(03062019) 2000	03/06/2019	5.42		0.44		14.7		454		49200		195		604		1.3		5.2	J			352	
R84-009F	R84	3/6/2019	D	Primary	--	2632493.38	634464.75	2000	R84-009F(03062019) 2000	03/06/2019	2.97		0.41		10.7		410		30800		148		2280		1.8		4.9	J			409	
	R84	3/6/2019	D	Primary	--	2632493.38	634464.75	250	R84-009F(03062019) 250	03/06/2019	3.69		0.45		13.1		483		40200		181		2090		2		4.9	J			494	
R84-010F	R84	3/6/2019	D	Field Duplicate	R84-009F	2632493.38	634464.75	2000	R84-010F(03062019) 2000	03/06/2019	2.97		0.4		10.5		402		30700		160		2270		1.9		4.9	J			439	
R84-011F	R84	3/15/2019	F	Primary	--	2632509.01	634668.56	2000	R84-011F(03152019) 2000	03/15/2019	2.82		1.5		12.2		909		32300		114		1660		2.3		6		0.305		794	
	R84	3/15/2019	F	Primary	--	2632509.01	634668.56	250	R84-011F(03152019) 250	03/15/2019	3.13		1.34		12.3		880		33900		114		1290		2.1		5.9				753	
R84-012F	R84	3/15/2019	F	Primary	--	2632490.79	634750.74	2000	R84-012F(03152019) 2000	03/15/2019	4.51		0.45		14.9		429		39600		260		654		2.1		4.6		< 0.15		421	
R84-013F	R84	3/15/2019	F	Primary	--	2632350.23	634806.04	2000	R84-013F(03152019) 2000	03/15/2019	4.16		0.39		28.9		397		65900		262		646		1.4		4.5		< 0.15		325	
R84-014F	R84	3/15/2019	F	Primary	--	2632420.47	634709.55	2000	R84-014F(03152019) 2000	03/15/2019	2.33		1.41		9.94		331		22800		64.3		1170		1.6		7.1		0.516		580	
	R84	3/15/2019	F	Primary	--	2632420.47	634709.55	250	R84-014F(03152019) 250	03/15/2019	2.67		1.56		12.1		429		26500		72.2		1260		1.8		7.1				677	
R84-015F	R84	3/15/2019	F	Field Duplicate	R84-014F	2632420.47	634709.55	2000	R84-015F(03152019) 2000	03/15/2019	2.02		1.57		9.35		295		22400		55.8		1290		1.8		7.3		0.457		576	
R84-016F	R84	3/15/2019	F	Primary	--	2632403.52	634565.95	2000	R84-016F(03152019) 2000	03/15/2019	2.12		1.19		10.1		969		24000		94.8		869		0.8		7.6		< 0.15		509	
R84-017F	R84	3/15/2019	F	Primary	--	2632420.04	634461.43	2000	R84-017F(03152019) 2000	03/15/2019	2.55		1.56		12.2		1020		39500		145		1010		0.6		7.7		< 0.15		600	
	R84	3/15/2019	F	Primary	--	2632420.04	634461.43	250	R84-017F(03152019) 250	03/15/2019	3.49		1.66		14.6		1170		47300		192		1140		0.8		7.6				706	
R85-001F	R85	12/6/2018	U	Primary	--	2632141.05	634735.90	2000	R85-001F(12062018) 2000	12/06/2018	5.01		1.42	J	15.4		489		52700		181		908		1.1		6.8	J	< 0.150	UJ	593	
R85-002F	R85	12/6/2018	R	Primary	--	2632234.76	634490.95	2000	R85-002F(12062018) 2000	12/06/2018	3.49		1.85	J	14.2		482		47200		153		1200		1.2		7.2	J	0.282	J	639	
R85-003F	R85	12/6/2018	D+D51	Primary	--	2632264.69	634510.71	2000	R85-003F(12062018) 2000	12/06/2018	4.25		1.67	J	13.6		494		52500		164		1080		0.9		7	J	< 0.150	UJ	564	
	R85	12/6/2018	D+D51	Primary	--	2632264.69	634510.71	250	R85-003F(12062018) 250	12/06/2018	4.53		1.67	J	16.9		506		62000		188		1370		1.2		7.2	J	< 0.150	UJ	745	
R85-004F	R85	12/6/2018	L	Primary	--	2632249.01	634719.75	2000	R85-004F(12062018) 2000	12/06/2018	5.31		0.88	J	14.2		422		64700		206		833		1.0		6	J	< 0.15	UJ	377	
R85-005F	R85	3/7/2019	F	Primary	--	2632170.55	634726.93	2000	R85-005F(03072019) 2000	03/07/2019	5.75		1.06		14.1		530		58900		231		1280		0.7		5.9				375	
R85-006F	R85	3/7/2019	F	Field Duplicate	R85-005F	2632170.55	634726.93	2000	R85-006F(03072019) 2000	03/07/2019	6.63		1		13.8		527		54600		288		1350		0.7		5.9				415	
	R85	3/7/2019	F	Field Duplicate	R85-005F	2632170.55	634726.93	250	R85-006F(03072019) 250	03/07/2019	10.4		1.39		17.4		644		77400		430		1730		1.2		5.6				450	
R85-007F	R85	3/8/2019	F	Primary	--	2632190.06	634628.22	2000	R85-007F(03082019) 2000	03/08/2019	6.65		1.03		12.7		552		57800		225		1030		0.9		5.4				408	
R85-008F	R85	3/8/2019	F	Primary	--	2632230.32	634550.00	2000	R85-008F(03082019) 2000	03/08/2019	5.6		0.36		12.8		490		57900		239		761		0.7		5.1				290	
R86-001F	R86	12/6/2018	U	Primary	--	2631905.19	635262.27	2000	R86-001F(12062018) 2000	12/06/2018	5.13		1.4	J	14.8		378		59300		189		887		0.7		7	J	< 0.15	UJ	494	
R86-002F	R86	12/6/2018	R	Primary	--	2631829.87	635215.08	2000	R86-002F(12062018) 2000	12/06/2018	8.64		1.36	J	13.1						278		513		2.4		4	J	1.21	J	595	
	R86	12/6/2018	R	Primary	--	2631829.87	635215.08	250	R86-002F(12062018) 250	12/06/2018	8.40		1.40	J	15.3		555		55900		284		557		2.4		4.3	J	0.464	J	639	
R86-003F	R86	12/6/2018	R	Primary	--	2631821.86	635120.25	2000	R86-003F(12062018) 2000	12/06/2018	8.15		0.79	J	14.4		637		58500		286		668		2.0		4.2	J	1.2	J	494	
R86-004F	R86	12/6/2018	D	Primary	--	2631880.11	634855.35	2000	R86-004F(12062018) 2000	12/06/2018	3.89		1.69	J	12.8		373		45500		146		771		0.8		7.3	J	< 0.150	UJ	629	
R86-005F	R86	3/20/2019	F	Primary	--	2631947.11	635179.11	2000	R86-005F(03202019) 2000	03/20/2019	4.3		0.38		12.8		390		45000		148		731		0.9		4.9				400	
	R86	3/20/2019	F	Primary	--	2631947.11	635179.11	250	R86-005F(03202019) 250	03/20/2019	7.68		0.59		18.4		476		85900		227		1260		1.2		5.6				435	
R86-006F	R86	3/20/2019	F	Primary	--	2631981.96	635034.33	2000	R86-006F(03202019) 2000	03/20/2019	2.19		0.49		14		359		40500		69.1		757		1.3		6.3				457	
R86-007F	R86	3/20/2019	F	Primary	--	2631953.35	634934.91	2000	R86-007F(03202019) 2000	03/20/2019	4.38		0.32		16		348		42800		182		786		0.9		5.2				326	
R86-008F	R86	3/20/2019	F	Primary	--	2631937.66	634864.06	2000	R86-008F(03202019) 2000	03/20/2019	4.81		1.68		11.8		457		43400		168		1040		0.9		7.1				738	
	R86	3/20/2019	F	Primary	--	2631937.66	634864.06	250	R86-008F(03202019) 250	03/20/2019	6.68		3.06		16.1		624		79200		255		1970		1.1		7.2				965	
R86-009F	R86	3/20/2019	F	Field Duplicate	R86-008F	2631937.66	634864.06	2000	R86-009F(03202019) 2000	03/20/2019	4.46		1.93		15.3		516		59300		164		1550		1.1		6.9		< 0.15		983	
R86-010F	R86	3/20/2019	F	Primary	--	2631893.63	635011.67	2000	R86-010F(03202019) 2000	03/20/2019	6.68		1.74		15		513		48000		249		1090		1		7.6		< 0.15		842	
R86-011F	R86	3/21/2019	F	Primary	--	2631852.53	635089.13	2000	R86-011F(03212019) 2000	03/21/2019	4.23		0.81		19		626		49800		179		853		1.5		5.4		< 0.15		552	

Sample Location	Excavation ID	Sample Date	Excavation Collection Location[1]	Sample Type	Duplicate Parent Sample	X Coordinate[2]	Y Coordinate[2]	Sieve Size (µm)	Sample ID	Analyte	Arsenic		Cadmium		Chromium		Copper		Iron		Lead		Manganese		Percent Moisture		pH		Total Organic Carbon		Zinc	
										CAS	7440-38-2		7440-43-9		7440-47-3		7440-50-8		7439-89-6		7439-92-1		7439-96-5		ARC-Moist		ARC-pH		ARC-TOC		7440-66-6	
										Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		%		SU		%		mg/kg	
										Sample Date	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
	R86	3/21/2019	F	Primary	--	2631852.53	635089.13	250	R86-011F(03212019) 250	03/21/2019	6.28		1.13		21		798		61700		278		1060		2.4		5.3				655	
R86-012F	R86	3/22/2019	F	Primary	--	2631867.83	635200.98	2000	R86-012F(03222019) 2000	03/22/2019	3.17		1.41		18.6		610		61700		244		1530		1.1		6.4		< 0.15		628	
R86-013F	R86	3/22/2019	F	Field Duplicate	R86-012F	2631867.83	635200.98	2000	R86-013F(03222019) 2000	03/22/2019	3.57		0.74		18.1		492		58700		155		877		1.2		5.8		< 0.15		483	
R87-001F	R87	12/6/2018	U	Primary	--	2632087.35	635149.44	2000	R87-001F(12062018) 2000	12/06/2018	5.46		1.74	J	25.2		407		110000		177		1330		0.9		7	J	< 0.150	UJ	530	
R87-002F	R87	12/6/2018	L	Primary	--	2632212.34	634890.39	2000	R87-002F(12062018) 2000	12/06/2018	4.55		0.83	J	18.5		477		68400		171		1200		1.0		6	J	< 0.150	UJ	451	
	R87	12/6/2018	L	Primary	--	2632212.34	634890.39	250	R87-002F(12062018)_250	12/06/2018	6.59		1.31	J	18.0		534		78700		244		1560		1.1		6.2	J	0.152	J	568	
R87-003F	R87	12/6/2018	L	Primary	--	2632213.68	634980.09	2000	R87-003F(12062018) 2000	12/06/2018	4.76		0.85	J	20.6		486		81200		196		980		1.2		5.8	J	< 0.150	UJ	436	
R87-004F	R87	12/6/2018	D	Primary	--	2632163.57	635124.04	2000	R87-004F(12062018) 2000	12/06/2018	6.92		< 4.00		18.9		410		69700		446		788		0.9		5.4	J	< 0.150	UJ	368	
R87-005F	R87	3/7/2019	L	Primary	--	2632027.28	635390.75	2000	R87-005F(03072019) 2000	03/07/2019	5.75		0.96		18.2		506		57500		191		899		0.7		6.7	J			513	
	R87	3/7/2019	L	Primary	--	2632027.28	635390.75	250	R87-005F(03072019) 250	03/07/2019	6.13		1.11		18.1		563		61900		257		1100		1.3		6.5	J			559	
R87-006F	R87	3/7/2019	U	Primary	--	2632029.59	635313.54	2000	R87-006F(03072019) 2000	03/07/2019	4.79		2.32		14		721		55500		236		1120		0.8		7.6	J			954	
R87-007F	R87	3/11/2019	F	Primary	--	2632037.47	635311.74	2000	R87-007F(03112019) 2000	03/11/2019	5.24		0.31		20.4		516		75000		251		713		1.5		5.1				253	
R87-009F	R87	3/11/2019	F	Primary	--	2632100.08	635045.86	2000	R87-009F(03112019) 2000	03/11/2019	5.8		0.6		18.9		444		65100		202		1100		1.4		5.7				365	
R87-010F	R87	3/11/2019	F	Primary	--	2632125.81	634944.86	2000	R87-010F(03112019) 2000	03/11/2019	7.02		0.26		20		427		54600		236		595		1.9		4.7				304	
R89-001F	R89	12/10/2018	U	Primary	--	2632265.26	631093.38	2000	R89-001F(12102018) 2000	12/10/2018	2.24		< 4.00		21.7		162		36300		26.3		906		1.7		8.0	J	0.954	J	125	
	R89	12/10/2018	U	Primary	--	2632265.26	631093.38	250	R89-001F(12102018) 250	12/10/2018	2.23		< 4.00		17.9		192		29900		31.4		814		2.2		8	J	0.164	J	136	
R89-002F	R89	12/10/2018	R	Primary	--	2632327.66	630890.24	2000	R89-002F(12102018) 2000	12/10/2018	8.66		0.74	J	23.2				75800		451		1060		1.4		5.3	J	< 0.150	UJ		
R89-003F	R89	12/10/2018	D	Primary	--	2632391.18	630754.15	2000	R89-003F(12102018) 2000	12/10/2018	4.24		1.78	J	19.2		475		50800		164		1230		1.6		7.6	J	4.73	J	735	
R89-004F	R89	12/10/2018	L	Primary	--	2632421.62	630772.53	2000	R89-004F(12102018) 2000	12/10/2018	3.02		0.79	J	21.7		210		47800		57.7		964		0.8		7.8	J	< 0.150	UJ	320	
	R89	12/10/2018	L	Primary	--	2632421.62	630772.53	250	R89-004F(12102018) 250	12/10/2018	3.38		1.19	J	25.5		306		51200		108		955		1.1		7.6	J	< 0.150	UJ	419	
R89-005F	R89	2/22/2019	F	Primary	--	2632316.48	630992.53	2000	R89-005F(02222019) 2000	02/22/2019	5.39		0.65		20.1		410		62000		215		795		0.8		5				405	
R89-006F	R89	2/22/2019	F	Primary	--	2632376.19	630832.86	2000	R89-006F(02222019) 2000	02/22/2019	5.38		0.77		19.4		501		52700		180		754		1		4.8				427	
	R89	2/22/2019	F	Primary	--	2632376.19	630832.86	250	R89-006F(02222019) 250	02/22/2019	6.89		0.92		19.2		507		62900		241		937		1.5		4.9				478	
R89A-001F	R89A	2/22/2019	U	Primary	--	2632283.19	630870.02	2000	R89A-001F(02222019) 2000	02/22/2019	5.21		2.09		16		777		42900		224		985		1.3		7.5	J			728	
R89A-002F	R89A	2/22/2019	R	Primary	--	2632310.20	630799.60	2000	R89A-002F(02222019) 2000	02/22/2019	6.28		1.34		15.9		700		45300		283		650		1.5		5.1	J			602	
R89A-003F	R89A	2/22/2019	D	Primary	--	2632340.38	630757.46	2000	R89A-003F(02222019) 2000	02/22/2019	4.99		0.71		18		487		57100		195		709		1		6	J			383	
	R89A	2/22/2019	D	Primary	--	2632340.38	630757.46	250	R89A-003F(02222019) 250	02/22/2019	5.81		0.86		18.8		516		58000		233		811		1.8		6.3	J			426	
R89A-004F	R89A	2/22/2019	L	Primary	--	2632348.57	630788.58	2000	R89A-004F(02222019) 2000	02/22/2019	4.05		1.43		14.7		584		40000		151		834		1.3		7.6	J			455	
R89A-005F	R89A	2/22/2019	L	Field Duplicate	R89A-004F	2632348.57	630788.58	2000	R89A-005F(02222019) 2000	02/22/2019	4.2		1.47		15.3		602		40600		148		857		1.3		7.6	J			478	
R89A-006F	R89A	3/1/2019	F	Primary	--	2632322.28	630808.97	2000	R89A-006F(03012019) 2000	03/01/2019	4.43		0.56		18		608		86500		255		515		2.2		4.4				341	
	R89A	3/1/2019	F	Primary	--	2632322.28	630808.97	250	R89A-006F(03012019)_250	03/01/2019	5.89		0.56		18.4		658		94600		334		532		3.4		4.4				385	
R90-001F	R90	12/11/2018	U,R	Primary	--	2632424.65	629309.58	2000	R90-001F(12112018) 2000	12/11/2018	4.30		2.37	J	20.6		682		94600		200		1660		0.7		6.6	J	< 0.15	UJ	798	
R90-002F	R90	12/11/2018	U,L	Primary	--	2632432.98	629322.00	2000	R90-002F(12112018) 2000	12/11/2018	4.37		0.79	J	17.9		444		57100		297		901		1.0		7.2	J	0.178	J	362	
R90-003F	R90	12/11/2018	D,L	Primary	--	2632482.26	629278.63	2000	R90-003F(12112018) 2000	12/11/2018	4.86		1.48	J	16.8		584		58300		174		1260		0.9		6.2	J	< 0.150	UJ	523	
	R90	12/11/2018	D,L	Primary	--	2632482.26	629278.63	250	R90-003F(12112018) 250	12/11/2018	6.54		1.48	J	15.9		684		55800		245		1380		1.2		5.9	J	0.191	J	615	
R90-004F	R90	12/11/2018	D,R	Primary	--	2632484.43	629258.77	2000	R90-004F(12112018) 2000	12/11/2018	3.83		2.35	J	36.9		551		61700		357		1090		0.7		7.2	J	< 0.150	UJ	788	
R91-001F	R91	12/14/2018	U	Primary	--	2632580.43	628531.05	2000	R91-001F(12142018) 2000	12/14/2018	5.77		1.04	J	16.9		501		49300		240		664		1.2		5.8	J	0.186	UJ	408	
	R91	12/14/2018	U	Primary	--	2632580.43	628531.05	250	R91-001F(12142018) 250	12/14/2018	6.47		1.44	J	60.2		630		63500		261		898		1.6		5.9	J	0.346	J	571	
R91-002F	R91	12/14/2018	R	Primary	--	2632506.36	628388.30	2000	R91-002F(12142018) 2000	12/14/2018	3.88	J	1.42	J	12.9								825		1.3		7.3	J	0.778	J	467	
R91-003F	R91	12/14/2018	D	Primary	--	2632580.65	628406.07	2000	R91-003F(12142018) 2000	12/14/2018	6.02		0.97	J	15.4		390		51300		188		690		1.7		5.9	J	0.289	J	318	
	R91	12/14/2018	D	Primary	--	2632580.65	628406.07	250	R91-003F(12142018) 250	12/14/2018	6.65		0.82	J	58.6		434		61900		220		852		1.6		5.6	J	0.16	J	365	
R91-004F	R91	12/14/2018	L	Primary	--	2632596.58	628520.53	2000	R91-004F(12142018) 2000	12/14/2018	4.53		1.66	J	12.8		398		55400		201		833		1.6		7	J	0.355	J	489	
R91-005F	R91	12/14/2018	R	Field Duplicate	R91-002F	2632506.36	628388.30	2000	R91-005F(12142018) 2000	12/14/2018	3.82		1.22	J	13.1		451		39800		128		766		1.4		6.6	J	0.525	J	394	
R91-006F	R91	1/15/2019	F	Primary	--	2632569.96	628468.37	2000	R91-006F(01152019) 2000	01/15/2019	4.38		0.67		92		415		57300		155		840		1.8		4.8		0.271		349	
R92-001F	R92	12/14/2018	U	Primary	--	2632559.51	628360.88	2000	R92-001F(12142018) 2000	12/14/2018	4.56		1.04	J	12.6		477		43100		170		523		1.4		5.7	J	0.347	J	313	
	R92	12/14/2018	U	Primary	--	2632559.51	628360.88	250	R92-001F(12142018) 250	12/14/2018	6.45		0.87	J	51.8		584		52400		262		734		1.6		5.6	J	0.253	J	382	
R92-002F	R92	12/14/2018	R	Primary	--	2632471.72	628306.58	2000	R92-002F(12142018) 2000	12/14/2018	2.93		1.26	J	11.8		1310		26600		71.3		1540		3.1		5	J	0.485	J	411	
R92-003F	R92	12/14/2018	D	Primary	--	2632476.15	628253.88	2000	R92-003F(12142018) 2000	12/14/2018	5.24		0.71	J	11.4		677		60600		180		481		2.4		4.9	J	< 0.150	UJ	251	
R92-004F	R92	12/14/2018	L	Primary	--	2632545.08	628296.21	2000	R92-004F(12142018) 2000	12/14/2018	2.62		1.21	J	17.8		250		37800		51.8		650		3.7		4.4	J	< 0.150	UJ	316	
R92-005F	R92	1/10/2019	F	Primary	--	2632505.92	628299.26	2000	R92-005F(01102019) 2000	01/10/2019	4.58		0.62		78.4		441		95500		173		518		3		4		< 0.15		271	
R93-001F	R93	12/11/2018	U	Primary	--	2632222.45	630114.55	2000	R93-001F(12112018) 2000	12/11/2018	4.84		0.92	J	23.4		651		83600		205		802		0.9		6.1	J	< 0.150	UJ	465	
R93-002F	R93	12/11/2018	R,U	Primary	--	2632165.25	630065.61	2000	R93-002F(12112018) 2000	12/11/2018	6.61		1.00	J	18.1		475		79200		242		795		0.7		5.2	J	< 0.150	UJ	358	
	R93	12/11/2018	R,U	Primary	--	2632165.25	630065.61	250	R93-002F(12112018) 250	12/11/2018	7.32		0.58	J	18.1		482		78300		379		804		1.3		5	J	0.246	J	378	
R93-003F	R93	12/11/2018	R,D	Primary	--	2632074.26	629989.77	2000	R93-003F(12112018) 2000	12/11/2018	6.03		2.00	J	21.9		587		66500		275		1110		3.9		7	J	0.322	J	644	
R93-004F	R93	12/11/2018	D	Primary	--	2632008.46	629897.54	2000	R93-004F(12112018) 2000	12/11/2018	7.16		1.96	J	19.0		727		52600		349		705		2.2		5.1	J	0.958	J	686	
R93-005F	R93	12/11/2018	R,D	Field Duplicate	R93-003F	2632074.26	629989.77	2000	R93-005F(12112018)_2000	12/11/2018	5.64		1.35	J	16.5		542		56400		262		753		1.6		6.6	J	0.370	J	574	
	R93	12/11/2018	R,D	Field Duplicate	R93-003F	2632074.26	629989.77	250	R93-005F(12112018) 250	12/11/2018	6.29		1.37	J	19.0		574		61800		293		895		1.8		6.6	J	0.298	J	643	
R93-006F	R93	4/18/2019	F	Primary	--	2632186.33	630065.26	2000	R93-006F(04182019) 2000	04/18/2019	3.68		0.6		16.9		426		61300		177		609		1.2		5.1				342	
	R93	4/18/2019	F	Primary	--	2632186.33	630065.26	250	R93-006F(04182019) 250	04/18/2019	5.82		0.84		22.7		498		83800		260		814		1.3		5.2				432	
R93-007F	R93	4/18/2019	F	Primary	--	2632067.06	629922.13	2000	R93-007F(04182019) 2000	04/18/2019	5.44		0.75		19.3		515		54600		186		827		1.2		5	J			445	
R93A-001F	R93A	4/18/2019	F	Primary	--	2632193.47	629853.98	2000	R93A-001F(04182019) 2000	04/18/2019	5.78		1.06		25.6		566		67700		218		827		3		4.3	J			556	
R94-001F	R94	12/11/2018	R	Primary	--	2632161.31	629768.80	2000	R94-001F(12112018) 2000	12/11/2018	4.90		< 4.00		20.3		426		82100		229		628		1.7		4.7	J	0.297	J	386	
R94-002F	R94	12/11/2018	U	Primary	--	2632190.19	629813.25	2000	R94-002F(12112018) 2000	12/11/2018	4.21		< 4.00		15.8		433		74400		212		541		1.4		5.3	J	< 0.150	UJ	323	
R94-003F	R94	12/11/2018	L	Primary	--	2632255.62	629657.19	2000	R94-003F(12112018) 2000	12/11/2018	5.58		4.70		14.7		1090		42500		208		1240		1.3		6.5	J	0.497	J	1600	
	R94	12/11/2018	L	Primary	--	2632255.62	629657.19	250	R94-003F(12112018) 250	12/11/2018	7.10		5.41		18.3		1250		51100		270		1440		1.6		6.3	J	0.481	J	1890	
R94-004F	R94	12/11/2018	D	Primary	--	2632382.72	629398.09	2000	R94-004F(12112018) 2000	12/11/2018	4.64		2.61	J	16.0		762		41700		192		1140		1.7		7.5	J	1.16	J	867	
R94-005F	R94	1/18/2019	F	Primary	--	2632216.78	629706.27	2000	R94-005F(01182019) 2000	01/18/2019	3.73		2		13.8		850		41400		136		1120		1.1		6		< 0.15		865	
R94-006F	R94	1/18/2019	F	Primary	--	2632317.90	629485.10	2000	R94-006F(01182019) 2000	01/18/2019	2.86		0.87		12.2		455		35800		129		677		1.2		4.9		< 0.15		339	
R94-007F	R94	1/18/2019	F	Field Duplicate	R94-006F	2632317.90	629485.10	2000	R94-007F(01182019) 2000	01/18/2019	3.29		0.6		12.3		460		35400		152		642		1.7		4.9		< 0.15		346	
	R94	1/18/2019	F	Field Duplicate	R94-006F	2632317.90	629485.10	250	R94-007F(01182019) 250	01/18/2019	3.50		< 4.00		17.2		648		46900		135		528		3.4				0.152		355	
R95-001F	R95	12/11/2018	U	Primary	--	2632292.12	629972.31	2000	R95-001F(12112018) 2000	12/11/2018	5.67		3.98	J	13.5		726		43800		212		1330		1.0		6.7	J	0.561	J	1380	
R95-002F	R95	12/11/2018	D	Primary	--	2632216.64	629874.00	2000	R95-002F(12112018) 2000	12/11/2018	2.34		1.34	J	10.1		792		26600		77.8		965		0.8		7.7	J	0.425	J	545	
	R95	12/11/2018	D	Primary	--	2632216.64	629874.00	250	R95-002F(12112018) 250	12/11/2018	2.87		2.02	J	14.1		828		35600		103		951		1.1		7.6	J	0.527	J	654	
R95-003F	R95	4/17/2019	F	Primary	--	2632240.25	629915.30	2000	R95-003F(04172019) 2000	04/17/2019	2.66		0.72		13.3		309		51900		103		690		2.1		4.8	J			305	
R97-001F	R97	12/17/2018	U	Primary	--	2633677.32	626350.01	2000	R97-001F(12172018) 2000	12/17/2018	4.23		1.50	J	16.1		367		45800		151		783		1.1		7.1	J	< 0.150	UJ	504	
R97-002F	R97	12/17/2018	UL	Primary	--	2633875.06	626196.12	2000	R97-002F(12172018) 2000	12/17/2018	2.59		0.96	J	10.2		390		24900		77.7		1080		1.8		8.0	J	0.421	J	405	
R97-003F	R97	12/17/2018	L	Primary	--	2633971.19	626101.92	2000	R97-003F(12172018) 2000	12/17/2018	3.55		1.17	J	10.8		572		31300		93.3		1110		1.1		7.5	J	< 0.150	UJ	432	
	R97	12/17/2018	L	Primary	--	2633971.19	626101.92	250	R97-003F(12172018) 250	12/17/2018	4.37		1.79	J	17.8		724		49600		163		1430		2.1		5	J	0.533	J	667	
R97-004F	R97	12/17/2018	L	Primary	--	2633993.47	626001.40	2000	R97-004F(12172018) 2000	12/17/2018	4.18		1.4	J	14.5		539		44000		149		1050		1.4		7.6	J	0.516	J	541	
R97-005F	R97	12/17/2018	L	Primary	--	2634102.09	625911.28	2000	R97-005F(12172018) 2000	12/17/2018	4.89		0.71	J	16.8		564		53200		187		710		1.5		4.8	J	0.164	J	333	
	R97	12/17/2018	L	Primary	--	2634102.09	625911.28	250	R97-005F(12172018)_250	12/17/2018	5.13		0.72	J	17.5		571		56500		196		718		1.4		5.0	J	0.232	J	363	
R97-006F	R97	12/17/2018	DL	Primary	--	2634137.55	625806.17	2000	R97-006F(12172018) 2000	12/17/2018	3.94		2.07	J	14.7		445		40400		152		1280		2.1		7.4	J	0.863	J	740	
R97-007F	R97	12/17/2018	U	Field Duplicate	R97-001F	2633677.32	626350.01	2000	R97-007F(12172018) 2000	12/17/2018	3.85		0.84	J	15.4		397		44400		156		706		1.2		7.2	J	0.240	J	477	
R97-008F	R97	4/8/2019	F	Primary	--	2633656.70	626203.17	2000	R97-008F(04082019) 2000	04/08/2019	2.61		0.23		16		235		56400		134		325		1.6		4.6				165	
	R97	4/8/2019	F	Primary	--	2633656.70	626203.17	250	R97-008F(04082019) 250	04/08/2019	2.7		0.3		20.4		317		81600		189		393		2		4.4				191	
R97-009F	R97	4/8/2019	F	Primary	--	2633728.25	626106.20	2000	R97-009F(04082019) 2000	04/08/2019	3.05		0.26		13.9		172		47300		140		411		1.4		4.8				195	
R97-010F	R97	4/8/2019	F	Field Duplicate	R97-009F	2633728.25	626106.20	2000	R97-010F(04082019) 2000	04/08/2019	2.39		0.24		16.1		161		54200		144		390		1.1		4.8				178	
R97-011F	R97	4/8/2019	F	Primary	--	2633866.90	625956.65	2000	R97-011F(04082019) 2000	04/08/2019	2.61		0.38	J	14		204		50900		94.1		475		1		5.1	J			239	
	R97	4/8/2019	F	Primary	--	2633866.90	625956.65	250	R97-011F(04082019) 250	04/08/2019	3.21		0.37	J	26.3		285		86000		232		513		1		4.7	J			218	
R97-012F	R97	4/8/2019	F	Primary	--	2633993.37	625890.03	2000	R97-012F(04082019) 2000	04/08/2019	3.27		0.62		14.6		300		43600		127		605		1.4		5.4	J			323	
R97-013F	R97	4/9/2019	F	Primary	--	2633729.96	626262.28	2000	R97-013F(04092019) 2000	04/09/2019	3.9		0.37	J	14.8		289		54300		203		591		0.8		4.9	J			293	
R97-014F	R97	4/10/2019	F	Primary	--	2633907.45	626077.91	2000	R97-014F(04102019) 2000	04/10/2019	2.51		0.41		12		298		35800		144		751		1.2		4.7	J			277	
	R97	4/10/2019	F	Primary	--	2633907.45	626077.91	250	R97-014F(04102019) 250	04/10/2019	3.34		0.38	J	18		442		56400		263		619		1.8		4.5	J			276	
R97-015F	R97	4/10/2019	F	Primary	--	2634013.79	625952.53	2000	R97-015F(04102019) 2000	04/10/2019	2.47		0.37	J	18.8		401		63300		105		574		1.4		4.5	J			253	
R97-016F	R97	4/10/2019	F	Primary	--	2633902.91	626022.65	2000	R97-016F(04102019) 2000	04/10/2019	2.59		0.29	J	14.8		283		48100		154		436		1.2		4.4	J			206	
R97-017F	R97	4/10/2019	F	Primary	--	2633806.78	626137.82	2000	R97-017F(04102019) 2000	04/10/2019	3.36		0.42		16.8		285		59700		156		451		1.4		4.7	J			265	
	R97	4/10/2019	F	Primary	--	2633806.78	626137.82	250	R97-017F(04102019) 250	04/10/2019	3.78		0.41		23.7		446		103000		283		562		1.6		4.5	J			287	
R98-001F	R98	12/17/2018	U	Primary	--	2634074.99	625723.35	2000	R98-001F(12172018) 2000	12/17/2018	4.04		1.81	J	11.6		625		34700		193		1060		0.8		7.7	J	< 0.150	UJ	715	
	R98	12/17/2018	U	Primary	--	2634074.99	625723.35	250	R98-001F(12172018) 250	12/17/2018	7.48		2.61	J	14.0		703		53600		221		1350		0.9		7.7	J	0.154	J	750	
R98-002F	R98	12/17/2018	R	Primary	--	2634170.43	625647.95	2000	R98-002F(12172018) 2000	12/17/2018	4.18		0.88	J	16.7		556		49200		168		770		1.1		5.4	J	< 0.150	UJ	369	
R98-003F	R98	12/17/2018	R	Primary	--	2634308.94	625517.57	2000	R98-003F(12172018) 2000	12/17/2018	3.16		0.96	J	15.7		365		53600		103		906		1.1		6.8	J	< 0.150	UJ	464	
R98-004F	R98	12/17/2018	D	Primary	--	2634366.78	625440.16	2000	R98-004F(12172018) 2000	12/17/2018	2.77		0.94	J	13.2		335		44700		85.5		685		1.1		6.7	J	0.192	J	488	
	R98	12/17/2018	D	Primary	--	2634366.78	625440.16	250	R98-004F(12172018) 250	12/17/2018	5.12		1.54	J	18.2		403		69300		167		1060		1.1		7	J	0.23	J	537	
R98-005F	R98	2/20/2019	F	Primary	--	2634164.39	625659.95	2000	R98-005F(02202019) 2000	02/20/2019	3.81		0.28		19.4		341		67500		158		422		1		4.7				202	
R98-006F	R98	2/20/2019	F	Primary	--	2634283.84	625564.77	2000	R98-006F(02202019) 2000	02/20/2019	3.47		0.5		19.6		366		61400		148		557		1.1		5.3				289	
R98-007F	R98	2/20/2019	F	Primary	--	2634345.26	625514.29	2000	R98-007F(02202019)_2000	02/20/2019	3.91		0.73		17.6		533		59300		181		1160		1		5.3				391	
	R98	2/20/2019	F	Primary	--	2634345.26	625514.29	250	R98-007F(02202019) 250	02/20/2019	5.06		0.61		20.6		539		66800		218		1030		1.8		5.5				400	
R98-008F	R98	2/20/2019	F	Primary	--	2634309.02	625586.28	2000	R98-008F(02202019) 2000	02/20/2019	3.83		0.5		15.9		448		63900		177		557		1.4		5.5				478	
TC East 001F	TC East	2/20/2019	U	Primary	--	2632770.99	628597.65	2000	TC EAST 001F(02202019) 2000	02/20/2019	2.55		0.42		11.6		700	J	25600	J	50.9		278	J	3.2		4.3	J			222	J
TC East 002F	TC East	2/20/2019	R	Primary	--	2632739.39	628552.53	2000	TC EAST 002F(02202019) 2000	02/20/2019	3.04		2.13		12.8		1790		35900		150		1120		1.8		5.3	J			405	

Sample Location	Excavation ID	Sample Date	Excavation Collection Location[1]	Sample Type	Duplicate Parent Sample	X Coordinate[2]	Y Coordinate[2]	Sieve Size (µm)	Sample ID	Analyte	Arsenic		Cadmium		Chromium		Copper		Iron		Lead		Manganese		Percent Moisture		pH		Total Organic Carbon		Zinc	
										CAS	7440-38-2		7440-43-9		7440-47-3		7440-50-8		7439-89-6		7439-92-1		7439-96-5		ARC-Moist		ARC-pH		ARC-TOC		7440-66-6	
										Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		%		SU		%		mg/kg	
										Sample Date	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
TC East 003F	TC East	2/20/2019	D	Primary	--	2632745.37	628479.07	2000	TC EAST 003F(02202019)_2000	02/20/2019	3.47		1.83		12.9		1370		28800		130		980		1.6		7.2	J			436	
TC East 004F	TC East	2/20/2019	D	Field Duplicate	TC East-003F	2632745.37	628479.07	2000	TC EAST 004F(02202019)_2000	02/20/2019	3.51		1.82		12.9		1430		27100		133		945		1.6		7.2	J			441	
TC East 005F	TC East	2/20/2019	L	Primary	--	2632776.52	628561.44	2000	TC EAST 005F(02202019)_2000	02/20/2019	4.96		3.99		15.2		2440		30100		577		2110		2.3		6.5	J			607	
TC East 006F	TC East	2/25/2019	F	Primary	--	2632759.77	628550.43	2000	TC EAST 006F(02252019)_2000	02/25/2019	2.85		3.65		14.5		637		22600		78.2		1830		3.8		6.8				631	
TC West 001F	TC West	2/20/2019	U	Primary	--	2632470.10	628196.97	2000	TC WEST 001F(02202019)_2000	02/20/2019	6.65		0.51		17.8		517		70600		225		482		3.5		4.4	J			261	
TC West 002F	TC West	2/20/2019	R	Primary	--	2632444.45	628137.82	2000	TC WEST 002F(02202019)_2000	02/20/2019	4.51		0.41		13.3		570		41200		305		557		3.3		4.5	J			284	
TC West 003F	TC West	2/20/2019	D	Primary	--	2632452.12	628075.68	2000	TC WEST 003F(02202019)_2000	02/20/2019	4.63		0.55		13.6		466		53000		186		590		2		6	J			327	
TC West 004F	TC West	2/20/2019	L	Primary	--	2632471.58	628142.14	2000	TC WEST 004F(02202019)_2000	02/20/2019	4.94		0.84		15.7		444		61600		163		591		1.7		5.7	J			390	
TC West 005F	TC West	2/22/2019	F	Primary	--	2632456.91	628145.67	2000	TC WEST 005F(02222019)_2000	02/22/2019	5		0.4		14.1		360		54200		218		515		1.5		5.1				308	
R01-007F	R01	3/30/2019	R,U	Primary	--	2633309.70	645037.26	2000	R01-007F(03302019)_2000	03/30/2019	6.1		2.76		27.1		684		44200		350		1230		2		7.2	J	1.28	J	1170	
R09M-008F	R09M	1/23/2019	U	Primary	--	2633344.00	626824.92	2000	R09M-008F(01232019)_2000	01/23/2019	4.46		0.62	J	25.5		634		88300		170		302		2.3		4	J	0.244		284	
	R09M	1/23/2019	U	Primary	--	2633344.00	626824.92	250	R09M-008F(01232019)_250	01/23/2019	4.82		< 4.00		27.3		632		90000		173		361						0.225		321	
R09M-015F	R09M	1/31/2019	F	Primary	--	2633355.15	626840.62	2000	R09M-015F(01312019)_2000	01/31/2019	2.19		< 4		14.5		244		61900		105		402		1.8		4.8		< 0.15		206	
	R09M	1/31/2019	F	Primary	--	2633355.15	626840.62	250	R09M-015F(01312019)_250	01/31/2019															2.2				< 0.150			
R120-008F	R120	1/24/2019	F	Primary	--	2632199.58	629591.03	2000	R120-008F(01242019)_2000	01/24/2019	5.9		< 4		11.9		360		73400		281		450		0.9		4.6		< 0.15		227	
	R120	1/24/2019	F	Primary	--	2632199.58	629591.03	250	R120-008F(01242019)_250	01/24/2019			< 4.00		14.4		405		87200				488						< 0.150		230	
R122-009F	R122	1/22/2019	F	Primary	--	2632485.29	629200.92	2000	R122-009F(01222019)_2000	01/22/2019	3.91		1.06		15.6		418		65000		185		604		1.2		5.6		< 0.15		379	
	R122	1/22/2019	F	Primary	--	2632485.29	629200.92	250	R122-009F(01222019)_250	01/22/2019			1.56		19.5		545		82100				822						< 0.150		415	
R305-004F	R305	3/26/2019	L	Primary	--	2631017.87	637172.30	2000	R305-004F(03262019)_2000	03/26/2019	6.66		2.65		15.4		845		48300		317		1140		1.6		5.6	J	0.472		1190	
R90-005F	R90	1/21/2019	F	Primary	--	2632464.30	629274.53	2000	R90-005F(01212019)_2000	01/21/2019	2.8		0.65		11.2		384		45500		159		713		0.8		5.9		< 0.15		344	
	R90	1/21/2019	F	Primary	--	2632464.30	629274.53	250	R90-005F(01212019)_250	01/21/2019	3.38		< 4.00		13.3		510		55400		281		723						< 0.150		371	
R03A-006F	R03A	2/7/2019	F	Primary	--	2633352.13	626265.48	2000	R03A-006F(02072019)_2000	02/07/2019	3.2		1.76		14.7		285		30800		132		1000		2.4		6.1				396	
	R03A	2/7/2019	F	Primary	--	2633352.13	626265.48	250	R03A-006F(02072019)_250	02/07/2019	3.28		1.4		14.7		294		28600		141		998		2.3		6.2				437	
R03B-008F	R03B	2/8/2019	F	Primary	--	2633726.48	625820.36	2000	R03B-008F(02082019)_2000	02/08/2019	3.39		0.76		18		917		65200		4470		469		2.3		4.4				268	
R03B-013F	R03B	2/7/2019	F	Primary	--	2633611.67	625943.25	2000	R03B-013F(02072019)_2000	02/07/2019	2.03		0.96		10.2		445		35200		64.2		1270		1.2		6.9				394	
	R03B	2/7/2019	F	Primary	--	2633611.67	625943.25	250	R03B-013F(02072019)_250	02/07/2019	2.62		1.26		12.6		653		41700		90.9		1030		1.6		6.8				414	
R303-004F	R303	3/12/2019	R	Primary	--	2631381.19	636711.10	2000	R303-004F(03122019)_2000	03/12/2019	3.63		0.6		9.09		909		20100		108		462		4.6		4.9	J			450	
	R303	3/12/2019	R	Primary	--	2631381.19	636711.10	250	R303-004F(03122019)_250	03/12/2019			0.64		8.98		851		23300				410				4.8	J			412	
R304-002F	R304	3/12/2019	L	Primary	--	2631312.34	638370.86	2000	R304-002F(03122019)_2000	03/12/2019	4.95		1.9		21.7		533		69200		226		977		2.2		7.2	J			678	
	R304	3/12/2019	L	Primary	--	2631312.34	638370.86	250	R304-002F(03122019)_250	03/12/2019			2.74		21.1		539		61300				1250				7.3	J			949	
R306-002F	R306	3/28/2019	R	Primary	--	2631951.79	632511.22	2000	R306-002F(03282019)_2000	03/28/2019	2.14		1.79		10.5		466		25600		47.1		2350		2.3		5.9	J	< 0.15		635	
R77M-002F	R77M	1/23/2019	R	Primary	--	2633379.40	626332.12	2000	R77M-002F(01232019)_2000	01/23/2019	6.61		1.83	J	16.1		781		45200		246		702		1.9		4.5	J	0.499		769	
	R77M	1/23/2019	R	Primary	--	2633379.40	626332.12	250	R77M-002F(01232019)_250	01/23/2019	7.30		1.86	J	21.3		956		55600		291		732				4.4	J			877	
R87-008F	R87	3/11/2019	F	Primary	--	2632090.92	635183.77	2000	R87-008F(03112019)_2000	03/11/2019	4.5		0.41		19.7		386		54000		167		687		1.5		4.7				331	
	R87	3/11/2019	F	Primary	--	2632090.92	635183.77	250	R87-008F(03112019)_250	03/11/2019			0.52		22.7		409		67000				869				4.7				355	
R87-011F	R87	3/12/2019	F	Primary	--	2632161.28	634876.72	2000	R87-011(03122019)_2000	03/12/2019	8.24		0.93		19.6		486		59700		418		1310		1.2		5.9				478	
	R87	3/12/2019	F	Primary	--	2632161.28	634876.72	250	R87-011(03122019)_250	03/12/2019																	6.1					
R09M-011F	R09M	1/24/2019	D	Primary	--	2633571.47	626282.22	2000	R09M-011F(01242019)_2000	01/24/2019	3.19		1.44	J	16.2		374		51900		110		802		0.9		5.8	J	< 0.15		390	
	R09M	1/24/2019	D	Primary	--	2633571.47	626282.22	250	R09M-011F(01242019)_250	01/24/2019			0.99	J	27.6		445		89000				1190						< 0.150		537	
R09M-014F	R09M	1/24/2019	LU	Primary	--	2633454.15	626705.56	2000	R09M-014F(01242019)_2000	01/24/2019	3.62		1.04	J	18.8		361		51500		138		1010		0.9		6.1	J	< 0.15		495	
	R09M	1/24/2019	LU	Primary	--	2633454.15	626705.56	250	R09M-014F(01242019)_250	01/24/2019			1.2	J	19.6		402		65500				1060						0.179		540	
R09M-018F	R09M	1/31/2019	F	Primary	--	2633442.48	626692.74	2000	R09M-018F(01312019)_2000	01/31/2019	2.44		< 4		10.9		232		36100		86.5		703		2		5.4		< 0.15		257	
	R09M	1/31/2019	F	Primary	--	2633442.48	626692.74	250	R09M-018F(01312019)_250	01/31/2019			0.67		16.0		296		53900				627				5.3		< 0.150		283	
R302-001F	R302	3/11/2019	U	Primary	--	2631493.97	636164.03	2000	R302-001F(03112019)_2000	03/11/2019	3.39		1.88		12.4		750		48900		125		1230		1.1		7.6	J			744	
	R302	3/11/2019	U	Primary	--	2631493.97	636164.03	250	R302-001F(03112019)_250	03/11/2019			2.31		17		501		60500				1390				7.6	J			892	
R302-004F	R302	3/11/2019	D	Primary	--	2631688.44	635982.42	2000	R302-004F(03112019)_2000	03/11/2019	3.6		0.98		12.7		462		43300		133		807		1.8		7	J			474	
	R302	3/11/2019	D	Primary	--	2631688.44	635982.42	250	R302-004F(03112019)_250	03/11/2019			1.21		14.3		496		60500				825				7.1	J			538	
R303-001F	R303	3/12/2019	U	Primary	--	2631326.17	636750.67	2000	R303-001F(03122019)_2000	03/12/2019	3.27		3.59		10.6		905		26000		153		1350		1		7.9	J			1090	

Sample Location	Excavation ID	Sample Date	Excavation Collection Location[1]	Sample Type	Duplicate Parent Sample	X Coordinate[2]	Y Coordinate[2]	Sieve Size (µm)	Sample ID	Analyte	Arsenic		Cadmium		Chromium		Copper		Iron		Lead		Manganese		Percent Moisture		pH		Total Organic Carbon		Zinc	
										CAS	7440-38-2		7440-43-9		7440-47-3		7440-50-8		7439-89-6		7439-92-1		7439-96-5		ARC-Moist		ARC-pH		ARC-TOC		7440-66-6	
										Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		%		SU		%		mg/kg	
										Sample Date	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
	R303	3/12/2019	U	Primary	--	2631326.17	636750.67	250	R303-001F(03122019)_250	03/12/2019			3.88		12.2		1080		33400				1310				7.9	J			1320	
R304-005F	R304	3/12/2019	D	Field Duplicate	R304-003F	2631272.45	638217.38	2000	R304-005F(03122019)_2000	03/12/2019	5.14		1.33		15.3		699		38800		356		899		2.8		4.8	J			754	
	R304	3/12/2019	D	Field Duplicate	R304-003F	2631272.45	638217.38	250	R304-005F(03122019)_250	03/12/2019			1.21		13.3		632		37000				791				5	J			744	
R40-005F	R40	12/3/2018	F	Primary	--	2637271.33	647288.12	2000	R40-005F(12032018)_2000	12/03/2018	5.82		1.45		25.7		719		92000		272		768		2.3		5.7		0.257		607	
R04-004F	R04	12/10/2018	L,U	Primary	--	2632218.79	631509.53	2000	R4-004F(12102018)_2000	12/10/2018	3.34		1.25	J	8.57		729		27600		166		638		0.9		7.7	J	0.334	J	352	
R6/71-001F	R6/71	3/4/2019	F	Primary	--	2632045.02	631662.65	2000	R6/71-001F(03042019)_2000	03/04/2019	3.43		4.21		11		1560		29500		122		1330		0.9		7.4				1630	
	R6/71	3/4/2019	F	Primary	--	2632045.02	631662.65	250	R6/71-001F(03042019)_250	03/04/2019	3.04		5.17		13.3		944		31300		151		1310		1.1		7.6				2160	
R01-006F	R01	3/30/2019	U	Primary	--	2633501.27	645139.45	2000	R01-006F(03302019)_2000	03/30/2019	3.55		3.26		11.7		414		34700		167		1490		1.1		7.7	J	0.406	J	1360	
R01-008F	R01	3/30/2019	R	Primary	--	2633129.98	644956.26	2000	R01-008F(03302019)_2000	03/30/2019	3.89		3.74		14.7		581		43100		165		1560		1.2		7.4	J	0.62		1520	
	R01	3/30/2019	R	Primary	--	2633129.98	644956.26	250	R01-008F(03302019)_250	03/30/2019	4.23		4		14.7		583		44500		176		1600		1.8		7.5	J			1610	
R01-009F	R01	3/30/2019	R	Field Duplicate	R01-008F	2633129.98	644956.26	2000	R01-009F(03302019)_2000	03/30/2019	3.79		3.53		14.5		533		41200		163		1510		1.5		7.5	J	0.696		1510	
R01-010F	R01	3/30/2019	R,D	Primary	--	2632933.80	644818.55	2000	R01-010F(03302019)_2000	03/30/2019	3.32		2.93		12.5		318		46700		189		1590		0.6		7.9	J	< 0.15		1240	
R01-011F	R01	3/30/2019	D	Primary	--	2632907.17	644707.42	2000	R01-011F(03302019)_2000	03/30/2019	4.65		3.07		16.1		578		44300		206		1330		1.1		7.6	J	0.522		1190	
	R01	3/30/2019	D	Primary	--	2632907.17	644707.42	250	R01-011F(03302019)_250	03/30/2019	5.4		3.01		14.4		604		50900		227		1360		1.3		7.7	J			1250	
R01-012F	R01	3/30/2019	L,D	Primary	--	2633211.05	644927.44	2000	R01-012F(03302019)_2000	03/30/2019	1.68		0.62		15		373		30900		78.5		748		1.7		7	J	0.338	J	326	
R01-013F	R01	3/30/2019	L	Primary	--	2633377.40	645044.83	2000	R01-013F(03302019)_2000	03/30/2019	5.86		3.33		15.6		667		36100		310		1420		1.8		5.3	J	1.45	J	988	
R01-014F	R01	5/13/2019	F	Primary	--	2633395.10	645102.09	2000	R01-014F(05132019)_2000	05/13/2019	2.13		0.31	J	19.3		350		48200	J	175		375	J	1.8		5.5	J			292	J
	R01	5/13/2019	F	Primary	--	2633395.10	645102.09	250	R01-014F(05132019)_250	05/13/2019	2.7		0.49		35.9		526		75100		284		360	J	2.8		5.4	J			352	
R01-015F	R01	5/13/2019	F	Primary	--	2633212.47	644977.44	2000	R01-015F(05132019)_2000	05/13/2019	2.41		0.46		21.4		481		67000		158		416		1.5		7.1	J			315	
R01-016F	R01	5/13/2019	F	Primary	--	2633077.42	644912.18	2000	R01-016F(05132019)_2000	05/13/2019	2.23		0.34	J	18.9		423		64800		142		338		1.8		6.8	J			390	
R01-017F	R01	5/13/2019	F	Primary	--	2633672.90	645461.81	2000	R01-017F(05132019)_2000	05/13/2019	3.94		0.9		26		969		49100		219		801		2.7		6	J			459	
	R01	5/13/2019	F	Primary	--	2633672.90	645461.81	250	R01-017F(05132019)_250	05/13/2019	3.84		0.9		29.2		995		52600		249		772		1.7		6.2	J			459	
R03B-009F	R03B	2/6/2019	F	Primary	--	2633744.74	625803.59	2000	R03B-009F(02062019)_2000	02/06/2019	2.18		< 4		11.7		298		58200		122		463		2		4.7				221	
R03B-011F	R03B	2/7/2019	F	Primary	--	2633676.64	625882.32	2000	R03B-011F(02072019)_2000	02/07/2019	3.2		0.69		14.9		266		62600		190		456		1.6		4.7				229	
R03B-012F	R03B	2/7/2019	F	Primary	--	2633489.87	626163.67	2000	R03B-012F(02072019)_2000	02/07/2019	4.18		0.71		13.7		334		50300		127		626		2		4.3				325	
R09M-012F	R09M	1/24/2019	LD	Primary	--	2633578.72	626464.83	2000	R09M-012F(01242019)_2000	01/24/2019	3.73		1.16	J	16.2		412		51600		146		782		0.9		6.1	J	< 0.15		542	
R09M-013F	R09M	1/24/2019	L	Primary	--	2633566.26	626564.82	2000	R09M-013F(01242019)_2000	01/24/2019	4.06		1.42	J	20.3		549		79200		179		1280		1.3		6.1	J	0.188		589	
R09M-016F	R09M	1/31/2019	F	Primary	--	2633428.62	626637.45	2000	R09M-016F(01312019)_2000	01/31/2019	2.51		< 4		15.3		302		74100		122		344		1.7		4.5		< 0.15		194	
R09M-017F	R09M	1/31/2019	F	Primary	--	2633562.60	626359.18	2000	R09M-017F(01312019)_2000	01/31/2019	2.7		< 4		14.4		297		54600		113		362		2.7		4.2		< 0.15		299	
R10-005F	R10	2/26/2019	F	Primary	--	2632216.00	631180.08	2000	R10-005F(02262019)_2000	02/26/2019	4.99		0.66		18.7		451		61200		245		692		1.8		5.4				456	
	R10	2/26/2019	F	Primary	--	2632216.00	631180.08	250	R10-005F(02262019)_250	02/26/2019	6.31		0.75		20.5		503		69700		326		826		2.1		5.5				457	
R10-006F	R10	2/27/2019	F	Primary	--	2632057.46	631364.38	2000	R10-006F(02272019)_2000	02/27/2019	5.13		0.95		21.2		556		61800		210		757		2.2		6.2				460	
R10-007F	R10	2/27/2019	F	Primary	--	2632095.32	631295.78	2000	R10-007F(02272019)_2000	02/27/2019	7.89		1.06		15.3		534		47100		189		751		2		4.2				573	
R101-001F	R101	2/12/2019	R	Primary	--	2634490.72	624039.27	2000	R101-001F(02122019)_2000	02/12/2019	4.04		1.38	J	14.5		445		53900		151		830		0.9		6.8	J			518	
	R101	2/12/2019	R	Primary	--	2634490.72	624039.27	250	R101-001F(02122019)_250	02/12/2019	5.25		1.43	J	16.4		464		71200		171		1080		0.9		6.9	J			553	
R101-002F	R101	2/12/2019	R	Primary	--	2634466.57	623836.53	2000	R101-002F(02122019)_2000	02/12/2019	3.27		1.19	J	14		395		55700		120		940		0.9		6.8	J			511	
R101-003F	R101	2/12/2019	F	Primary	--	2634484.20	623942.03	2000	R101-003F(02122019)_2000	02/12/2019	4.19		0.68		18.9		366		71100		199		585		1.1		4.6				345	
R101-004F	R101	2/13/2019	F	Primary	--	2634457.44	623753.28	2000	R101-004F(02132019)_2000	02/13/2019	3.19		0.76		20.5		381		56600		126		536		1.2		5.5				253	
	R101	2/13/2019	F	Primary	--	2634457.44	623753.28	250	R101-004F(02132019)_250	02/13/2019	4.37		1.09		24.4		484		65200		183		665		1.7		5.7				282	
R102-001F	R102	2/12/2019	R	Primary	--	2634552.43	624395.64	2000	R102-001F(02122019)_2000	02/12/2019	2.87		2.47	J	9.85		794		28800		114		1060		0.7		7.5	J			900	
R102-002F	R102	2/12/2019	F	Primary	--	2634582.99	624453.95	2000	R102-002F(02122019)_2000	02/12/2019	1.68		0.87		8.41		121		19900		42.2		685		1.1		7.7				225	
R102-003F	R102	2/12/2019	F	Primary	--	2634528.42	624293.36	2000	R102-003F(02122019)_2000	02/12/2019	4.67		0.77		12.8		327		56700		217		621		0.8		5				302	
	R102	2/12/2019	F	Primary	--	2634528.42	624293.36	250	R102-003F(02122019)_250	02/12/2019	6.4		1.05		18.5		381		74800		299		783		0.9		5.3				346	
R120-010F	R120	1/24/2019	F	Primary	--	2632326.07	629343.74	2000	R120-010F(01242019)_2000	01/24/2019	4.9		< 4		14.7		466		56100		322		617		1.2		5.3		< 0.15		322	
R301-001F	R301	3/11/2019	U	Primary	--	2631861.47	635736.70	2000	R301-001F(03112019)_2000	03/11/2019	< 0.3		0.85		16.5		392		60800		0.048	J	930		1.8		7.3	J			418	
R301-002F	R301	3/11/2019	R	Primary	--	2631849.04	635699.75	2000	R301-002F(03112019)_2000	03/11/2019	4.71		2.18		13.5		468		42500		442		1120		1.4		7.8	J			852	
R301-003F	R301	3/11/2019	D	Primary	--	2631893.62	635694.31	2000	R301-003F(03112019)_2000	03/11/2019	3.88		0.58		21.9		411		73900		177		681		2.1		6.7	J			305	
R301-004F	R301	3/11/2019	L	Primary	--	2631867.40	635719.42	2000	R301-004F(03112019)_2000	03/11/2019	4.08		0.79		19.4		472		67400		194		867		2.1		7.5	J			401	
R301-005F	R301	4/5/2019	F	Primary	--	2631860.43	635705.49	2000	R301-005F(04052019)_2000	04/05/2019	4.35		0.61		16.6		331		53100		156		728		1.9		6.7	J			393	
R302-002F	R302	3/11/2019	L	Primary	--	2631550.32	636085.10	2000	R302-002F(03112019)_2000	03/11/2019	3.97		1.75		12.9		447		54900		172		1100		1		7.7	J			712	
R302-003F	R302	3/11/2019	L	Primary	--	2631656.08	636066.67	2000	R302-003F(03112019)_2000	03/11/2019	4.06		2.08		12.2		496		36000		185		1170		1.8		7.6	J			803	
R302-005F	R302	3/11/2019	L	Field Duplicate	R302-003F	2631656.08	636066.67	2000	R302-005F(03112019)_2000	03/11/2019	4.23		2.02		12.2		501		35300		195		1130		1.9		7.5	J			735	
R302-006F	R302	4/5/2019	F	Primary	--	2631511.54	636123.88	2000	R302-006F(04052019)_2000	04/05/2019	2.28		0.25	J	12.3		318		66800		89.6		424		1.2		5.2	J			212	
	R302	4/5/2019	F	Primary	--	2631511.54	636123.88	250	R302-006F(04052019)_250	04/05/2019	3.04		0.49		22.2		538		256000		162		623		1		4.9	J			240	
R303-002F	R303	3/12/2019	L	Primary	--	2631336.45	636672.00	2000	R303-002F(03122019)_2000	03/12/2019	3		2.74		9.92		741		26800		141		2100		2.1		6.6	J			771	
R303-003F	R303	3/12/2019	D	Primary	--	2631406.52	636642.21	2000	R303-003F(03122019)_2000	03/12/2019	3.16		1.07		9.38		525		26300		117		1420		2.2		6.6	J			546	
R304-004F	R304	3/12/2019	R	Primary	--	2631353.80	638320.11	2000	R304-004F(03122019)_2000	03/12/2019	7		4.51		12.7		736		35100		329		1400		2.1		6.2	J			1560	
R304-006F	R304	3/28/2019	F	Primary	--	2631389.08	638400.42	2000	R304-006F(03282019)_2000	03/28/2019	2.08		0.36		10.6		338		51600		91.6		490		1.8		4.5		< 0.15		312	
	R304	3/28/2019	F	Primary	--	2631389.08	638400.42	250	R304-006F(03282019)_250	03/28/2019	2.86		0.46		16.2		545		63200		174		791		2.5		4.4				512	
R304-007F	R304	3/28/2019	F	Primary	--	2631296.58	638268.73	2000	R304-007F(03282019)_2000	03/28/2019	2.22		0.59		12.6		370		49700		133		567		2.3		4.4		0.27		358	
R305-001F	R305	3/26/2019	U	Primary	--	2631003.32	637209.93	2000	R305-001F(03262019)_2000	03/26/2019	4.56		3.1		12.9		736		38800		207		1170		1.3		6.9	J	0.6		1250	
R40-003F	R40	11/19/2018	D	Primary	--	2637248.84	647305.81	2000	R40-003F(11192018)_2000	11/19/2018	5.30		5.44		11.6		632		50100		221		1900		1.3		7.4	J	0.852	J	1850	
R40-004F	R40	11/19/2018	L	Primary	--	2637265.81	647271.54	2000	R40-004F(11192018)_2000	11/19/2018	5.85		3.72	J	12.7		646		54100		273		1400		1.4		7.1	J	< 0.150	UJ	1200	
	R40	11/19/2018	L	Primary	--	2637265.81	647271.54	250	R40-004F(11192018)_250	11/19/2018	7.62		3.25	J	13.6		761		66000		297		1570		1.6		7.1	J	0.249	J	1440	

Sample Location	Excavation ID	Sample Date	Excavation Collection Location[1]	Sample Type	Duplicate Parent Sample	X Coordinate[2]	Y Coordinate[2]	Sieve Size (µm)	Sample ID	Analyte	Arsenic		Cadmium		Chromium		Copper		Iron		Lead		Manganese		Percent Moisture		pH		Total Organic Carbon		Zinc	
										CAS	7440-38-2		7440-43-9		7440-47-3		7440-50-8		7439-89-6		7439-92-1		7439-96-5		ARC-Moist		ARC-pH		ARC-TOC		7440-66-6	
										Units	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		%		SU		%		mg/kg	
										Sample Date	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
R04-002F	R04	12/10/2018	D	Primary	--	2632275.90	631339.85	2000	R4-002F(12102018)_2000	12/10/2018	4.64		0.74	J	8.94		367		27300		185		653		1.8		6.6	J	0.504	J	364	
R04-003F	R04	12/10/2018	L,D	Primary	--	2632259.66	631460.54	2000	R4-003F(12102018)_2000	12/10/2018	2.94		< 4.00		12.9		366		30900		59.2		322		3.6		4	J	0.597	J	283	
	R04	12/10/2018	L,D	Primary	--	2632259.66	631460.54	250	R4-003F(12102018)_250	12/10/2018	2.72		< 4.00		14.2		338		33000		57.3		322	J	3.6		4.1	J	0.338	J	273	
R59-004F	R59	3/25/2019	L	Primary	--	2631729.67	638941.96	2000	R59-004F(03252019)_2000	03/25/2019			2.62		14.2		363		34700				1240		1.2						1170	
	R59	3/25/2019	L	Primary	--	2631729.67	638941.96	250	R59-004F(03252019)_250	03/25/2019	4.04		2.79		14.9		447		48500		218		1450		1.7	J	7.9	J			1050	
R59-005F	R59	5/2/2019	F	Primary	--	2631739.91	638960.87	2000	R59-005F(05022019)_2000	05/02/2019	2.18		0.15	J	18.8		304		45800		117		379		0.8		5.7	J				
R62-001F	R62	12/5/2018	U	Primary	--	2631252.05	638304.19	2000	R62-001F(12052018)_2000	12/05/2018	3.35		2.31	J	11.4		378		40600		163		1170		1.0		7.2	J	< 0.150	UJ	911	
R62-002F	R62	12/5/2018	D	Primary	--	2631030.96	637926.13	2000	R62-002F(12052018)_2000	12/05/2018	4.48		3.17	J	13.5		2160		33600		286		2750		1.4		6.6	J	0.252	J	1560	
	R62	12/5/2018	D	Primary	--	2631030.96	637926.13	250	R62-002F(12052018)_250	12/05/2018	5.11		2.35	J	15.8		1850		46900		350		2160		1.8		6.6	J	0.314	J	1430	
R62-003F	R62	12/5/2018	L	Primary	--	2631108.93	637939.51	2000	R62-003F(12052018)_2000	12/05/2018	4.88		1.19	J	19.2		398		65100		277		753		1.1		6.1	J	< 0.150	UJ	407	

Notes:
1 - Sampling location, relative to removal area, are denoted as follows:
U=Upstream side of removal area
D=Downstream side of removal area
L=Left side of removal area, looking downstream
R=Right side of removal area, looking downstream
F=Floor Sample
2 - State Plane New Mexico West

Arcadis U.S., Inc.

630 Plaza Drive

Suite 100

Highlands Ranch, Colorado 80129

Tel 720 344 3500

Fax 720 344 3535

www.arcadis.com