100012145

SECOND FIVE-YEAR REVIEW REPORT FOR CAPTAIN JACK MILL SUPERFUND SITE BOULDER COUNTY, COLORADO

Prepared by

U.S. Environmental Protection Agency
Region 8
Denver, Colorado

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LIST OF ABBREVIATIONS AND ACRONYMS

ABA	Absolute Bioavailability
ARAR	Applicable or Relevant and Appropriate Requirement
BLL	Blood Lead Level
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
FYR	Five-Year Review
IC	Institutional Control
IEUBK	Integrated Exposure Uptake Biokinetic Model for Lead in Children
J	Estimated Value
µg/dL	Micrograms per Deciliter
µg/L	Micrograms per Liter
mg/kg	Milligrams per Kilogram
NEUR	Notice of Environmental Use Restrictions
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
PRP	Potentially Responsible Party
RI/FS	Remedial Investigation and Feasibility Study
RBA	Relative Bioavailability
RSL	Regional Screening Level
ROD	Record of Decision
U	Not Detected

I. INTRODUCTION

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues, if any, found during the review and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (40 Code of Federal Regulations Section 300.430(f)(4)(ii)) and considering EPA policy.

This is the second FYR for the Captain Jack Mill Superfund site (the Site). The triggering action for this statutory review is the completion date of the previous FYR. The FYR has been prepared because hazardous substances, pollutants or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure.

The Site consists of one operable unit (OU), which addresses surface waste and the Big Five Mine adit (mine tunnel).

The FYR was led by EPA remedial project manager Joy Jenkins and Colorado Department of Public Health and Environment project manager Mary Boardman. Participants included Jeannine Natterman, the State public information officer, and Kirby Webster and Hagai Nassau from Skeo, the EPA's FYR contractor. The review began on 8/9/2021.

The EPA has determined in the five-year review that the remedy for the Captain Jack Mill Site currently protects human health and the environment in the short-term because exposures from contaminated soil are under control, and the surface water standards have been attained during the past year of the in-tunnel treatment system operation. However, a change in the thallium toxicity value needs to be evaluated further to ensure the surface remedy will be protective if current land uses change from recreational to residential. The subsurface remedy is not fully implemented, and an additional ex-situ system will be designed and installed to ensure protectiveness in the long term.

Site Background

The Site is in a narrow valley about one mile south of the town of Ward in Boulder County, Colorado. The Site is in a rural area near the headwaters of Left Hand Creek, which flows southeast through the Site. Mining for gold and silver began in 1896 and continued intermittently until 1992. The EPA listed the Site on the Superfund program's National Priorities List (NPL) in September 2003. The Site includes the following main areas: the Big Five Mine area, the Captain Jack Mill area, and the White Raven area as well as several other minor areas (see Figures 1, 2 and 3). Prior to cleanup, the Site included mine waste dumps, abandoned mine workings, and associated acid mine drainage.

Viable potentially responsible parties for the Site have not been identified, so the Site's cleanup is financed with federal tax funds appropriated by Congress and by the State of Colorado. Land ownership within the Site includes both private and public ownership, with property boundaries that coincide with mining claims. The current land use on the Site is mainly recreational, with one residence; the future land use at the Site is expected to remain a mix of recreational and residential uses. Surface water at the Site is not used for drinking water and is not expected to be in the future. However, approximately 15 miles downstream of the Site, Left Hand Creek is used as a drinking water source for the Left Hand Water District. The District treats water and distributes it to customers in rural Boulder and Weld Counties. The Site's 2008 remedial investigation found that the three private wells at or near the Site did not exceed maximum contaminant levels. These wells are not permitted by the State and are not used for drinking water. There are currently no permitted drinking water wells at the Site.

Refer to Appendix A for additional resources and to Appendix B for the Site's chronology of events.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Captain Jack Mill		
EPA ID: COD981551427		
Region: 8	State: Colorado	**City/County:** Ward/Boulder
SITE STATUS		
NPL Status: Final		
Multiple OUs? No	**Has the Site achieved construction completion?** No	
REVIEW STATUS		
Lead agency: EPA		
Author name: Joy Jenkins with contractor support provided by Skeo		
Author affiliation: EPA Region 8 and Skeo		
Review period: 8/9/2021 - 8/31/2022		
Date of site inspection: 10/14/2021		
Type of review: Statutory		
Review number: 2		
Triggering action date: 9/26/2017		
Due date *(five years after triggering action date)*: 9/26/2022		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

The mine operators in the 1980's and 1990's received several violations and cease and desist orders from the State of Colorado. Investigations indicated that mining activities resulted in ongoing releases of contamination.

The primary contaminants of concern at the Site for human health were lead, arsenic and thallium found in surface soils at the Site. These contaminants posed a risk to human health through ingestion or inhalation of particulate dust, especially by nearby residents. Additional contaminants of concern, including antimony, cadmium, copper, manganese, and zinc, were present in soil, surface water, sediment and/or groundwater (see Table 1). These contaminants posed a risk to the local environment and aquatic life. The Left Hand Water District, which provides service to over 15,000 residents in rural Boulder and Weld counties, uses water from Left Hand Creek as a drinking water source. There is currently no impact to the water intake, which is about 15 miles

downstream of the Site, but there is the potential for contamination in the future if the sources at the Site are not addressed.

Table 1: Site Contaminants of Concern, by Media

Contaminants of Concern	Media
Antimony, arsenic, cadmium, copper, lead, manganese, thallium, zinc	Soil, tailings, waste rock, surface water, sediment
Cadmium, copper, lead, manganese, zinc	Groundwater
Source: ROD Table 12-3.	

Response Actions

The EPA conducted several separate removal actions to address chemical wastes that were abandoned by unknown entities at the Site. A removal action in 1987 removed drummed material identified as semi-volatile organic compounds from the Site. In 1993, the EPA completed a drum and chemical removal. Around 2000, the EPA led an emergency removal of miscellaneous hazardous wastes from the Site. In 2004 to 2005, the EPA conducted another removal action at the Site to address abandoned drums containing various chemicals.

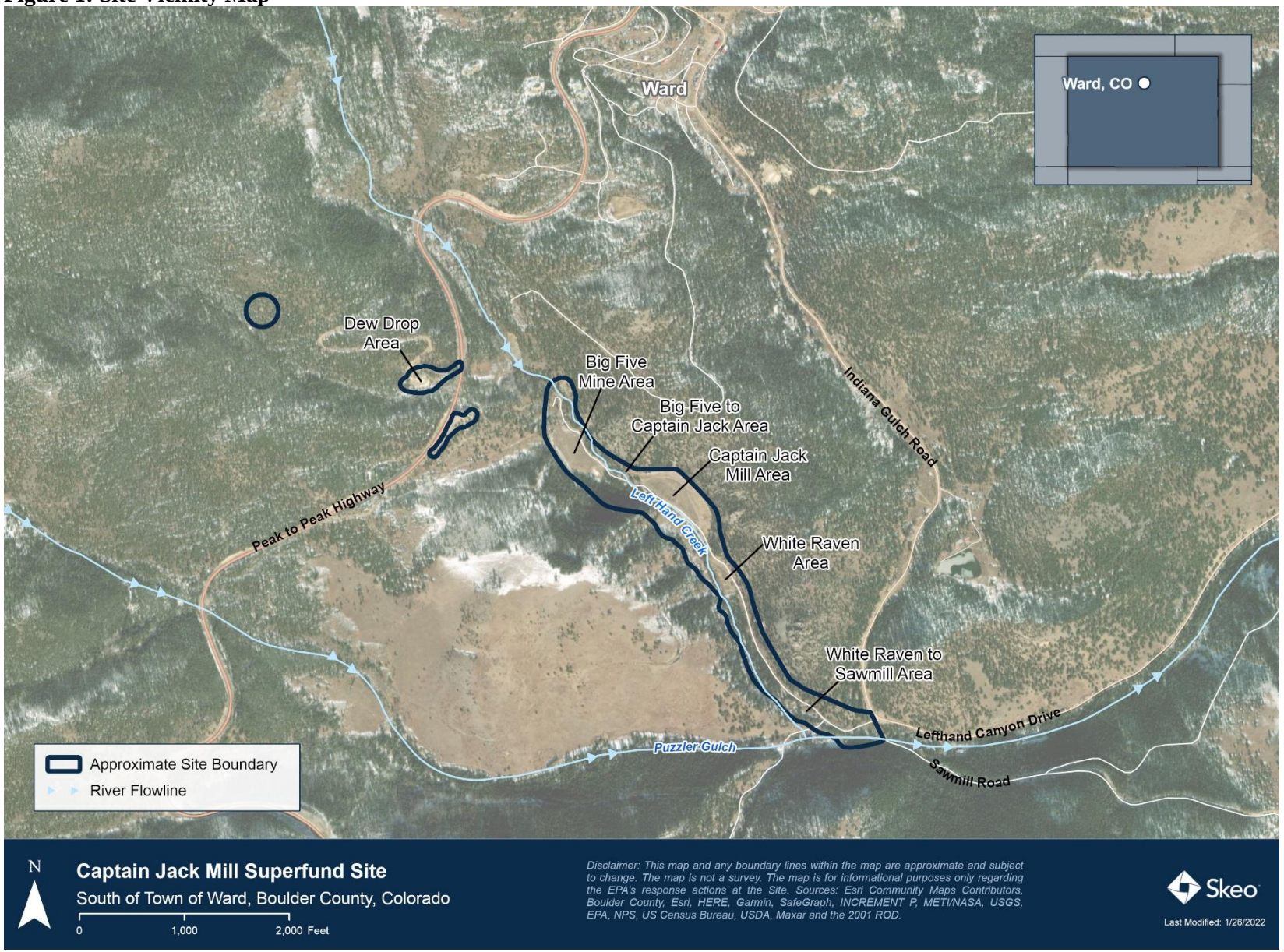
In 2006 and 2007, the EPA conducted an emergency removal action to remove a blockage that was impounding mine water in the Big Five Mine tunnel.

The EPA selected the Site's long-term remedy in the September 2008 Record of Decision (ROD). The selected remedy consists of two components: cleaning up surface contamination and cleaning up subsurface contamination. The EPA issued an Explanation of Significant Differences (ESD) in October 2011 to update the remedy, reducing the number of on-site consolidation cells (by combining two of the contemplated cells at the mill area into one), to change the cover type for the consolidation cell to a simple soil cover with no impermeable liner needed and to revise the cost estimate.

The 2008 ROD identified the following remedial action objectives:

- Soils, Tailings and Waste Rock
    - Reduce [human] exposure to arsenic, lead and thallium from incidental ingestion and/or inhalation of surface tailings/waste rock and other mine wastes.
    - Control and/or reduce run-on and run-off from soils/tailings/waste rock piles.
- Surface Water
    - Reduce in-stream metals concentrations.
    - Ensure that in-stream metals concentrations do not degrade drinking water supplies diverted from Left Hand Creek.
    - Reduce the contaminant pathways to benthic aquatic organisms living at the surface water/ sediment interface or contamination in sediment to levels that are protective of aquatic life, with the ultimate goal of attaining surface water standards to ensure long-term survival of fish and benthic aquatic organisms in Left Hand Creek.
- Groundwater
    - Control and/or reduce metals loading to groundwater from surface sources.
    - Ensure that contaminated groundwater does not adversely impact human health and aquatic ecological receptors.
    - Ensure that contaminated groundwater does not adversely impact receiving surface waters.

Figure 1: Site Vicinity Map



The State and the EPA selected the following remedy for the Site, as stated in the 2008 ROD and the 2011 ESD:

- Surface Remedy
  - Excavate contaminated surface material.
  - Consolidate excavated material at one on-site consolidation cell (Captain Jack Mill consolidation cell).
  - Install a vegetated soil cap on the consolidation cell.
  - Cap the Big Five waste rock pile in place.[1]
  - Divert surface water around the consolidation cell and other capped areas of the Site to provide erosion protection and control run-on/run-off.
  - Install access controls around the consolidation cell and post signs prohibiting trespassing.
  - Implement institutional controls to prevent disturbance of the cap remedy.
- Subsurface Remedy
  - Install a bulkhead in the Big Five mine tunnel (also called the Adit tunnel in the ROD) to impound mine water.
  - Drill an extraction well and a return well into the tunnel to create a neutralization loop (also called a recirculation system).
  - Treat impounded mine water in situ to raise its pH. Consider carbon loading amendments to produce biological sulfate reducing conditions.
  - Monitor surface water quality in Left Hand Creek to assess the effectiveness of in-situ mine pool neutralization.
  - If in-situ mine pool neutralization does not achieve downstream remedial action objectives, treat impounded mine water using an ex-situ treatment system. A sulfate reducing biochemical reactor was contemplated in the ROD.
  - Monitor surrounding area to detect water leaking out of the underground workings through seeps or other previously unknown openings.
  - Implement institutional controls to restrict usage of on-site groundwater.[2]

Table 2 presents the cleanup levels for the surface remedy. The cleanup levels apply to contaminated surface materials such as soil, tailings and waste rock. The cleanup levels were based on residential land use because future residential development was anticipated when the Site's remedial investigation was conducted. The cleanup levels for lead were calculated based on site-specific bioavailability values, which were determined during the Site's remedial investigation by performing in vitro bioavailability tests on samples collected from the Site. The cleanup level for arsenic was based on the $1x10^5$ cancer risk. The cleanup level for thallium was based on the EPA Region 9 preliminary remediation goal for residential soils. Metals other than arsenic, lead and thallium were also detected in tailings and waste rock samples at elevated concentrations but were not assigned remedial goals because the locations of these exceedances were co-located in the area defined by arsenic, lead, and thallium contamination. Institutional controls have been implemented on the Captain Jack Mill consolidation cell and are planned for the Big Five Mine capped area and the single residence in the Site area. These controls will protect the capped areas from digging or well drilling.

[1] This area is now the Big Five Mine Capped Area.

[2] The 2008 ROD stated that "state environmental covenants will also include restrictions and additional requirements on any usage of on-site groundwater and/or surface water for potable water sources" (Section 15.4, Basis and Rationale for RAOs). The EPA has issued a Note to File to document its determination that surface water usage restrictions are not needed at this time (see Appendix G).

Table 2: Surface Contaminant Cleanup Levels

Surface Contaminant	ROD Cleanup Level (milligrams per kilogram [mg/kg])	Basis for Cleanup Level
Arsenic	85	$1x10^5$ cancer risk
Lead	Big Five area: 830 Big Five to Captain Jack area: 860 Captain Jack Mill area: 380 White Raven area: 400 White Raven to Sawmill area: 750	site-specific bioavailability
Thallium	5.2	EPA Region 9 preliminary remediation goal for residential soils
Source: 2008 ROD, Section 15.4. page 15-2.		

The Site's ROD states that the subsurface remedy will be designed to meet surface water standards at a point of compliance on Left Hand Creek downstream of the Site and upstream of the confluence with Puzzler Gulch (see Figure 1). As stated in the ROD, "Because on-site surface water will not be used for beneficial uses (i.e., drinking water), it is appropriate to use this downstream point to assess compliance with ARARs [applicable or relevant and appropriate requirements]." The ROD identifies the following ARARs for surface water, specific numeric criteria were not included in the ROD:

- Clean Water Act Federal Water Quality Criteria.
- Colorado Classification and Numeric Standards for Segments 4a and 4b of St. Vrain Creek, South Platte River Basin: Water Quality Control Division Reg. No. 38 (5 Code of Colorado Regulations 1002-38).[3]
- Colorado Primary Drinking Water Standards (St. Vrain Creek classified for water supply use).

The Site's ROD states that groundwater compliance with ARARs will be determined through monitoring at well WRS-WG-12-101204 as an established point of compliance. However, physical access to this well was compromised and a new monitoring well, CJM-MW-04 was installed just upgradient of Puzzler Gulch. EPA guidance states that, in general, groundwater remediation levels should be attained throughout the contaminant plume.[4] However, for this Site, the point of compliance was determined based on State of Colorado Regulation 41.6.C1a, Section ii, which establishes the downstream extent of contamination as the point of compliance. This monitoring method was determined to be appropriate at the time of the ROD to monitor alluvial groundwater downstream from the influence of the waste piles. The ROD identifies the following ARARs for groundwater; specific numeric criteria were not included in the ROD:

- National Primary Drinking Water Regulations (Maximum Contaminant Levels).
- National Secondary Drinking Water Regulations (Secondary Maximum Contaminant Levels).
- Colorado Primary Drinking Water Standards.
- Basic Standards for Groundwater: Water Quality Control Division Reg. No. 41 (5 Code of Colorado Regulations 1002-41).

The ROD identifies the National Primary Drinking Water Regulation goals (Maximum Contaminant Level Goals) as to-be-considered criteria. The ARARs listed above are the Site's cleanup standards for surface water and groundwater at the established points of compliance (there are no site-specific numerical groundwater and surface water standards).

[3] The state revised the segmentation of St. Vrain Creek since the ROD. The relevant stream segment is now 4a (see pages 187 and 367-368 of 5 CCR 1002-38 available at www.sos.state.co.us/CCR).
[4] Guidance for Evaluating Completion of Groundwater Restoration Remedial Actions (OSWER 9355.0-129, November 2013).

Status of Implementation

In 2012, the State completed construction of the surface remedy. All contaminated surface material has been excavated and capped in a consolidation cell or covered with clean fill and capped in place. Contaminated surface materials from various areas of the Site were placed in the Captain Jack Mill consolidation cell. The cell was then covered with a vegetated soil cover. Excavated areas were backfilled with clean fill and vegetated. In the White Raven area, all contaminated material was excavated and placed in the Captain Jack Mill consolidation cell, growth medium was spread through the excavated area, and the ground was seeded. At the private residence near the Captain Jack Mill area two feet of contaminated material were excavated except in a portion of the property that was not excavated due to the lower grade and the location of the septic system. The entire residential area was capped with two feet of clean fill and growth medium. Figures 2 and 3 depict the capped areas at the Site. The vegetated soil cover systems are well established. The Institutional Control Review section below describes the status of institutional controls at the Site. All the surface remedy components selected in the Site's decision documents have been implemented, except for certain institutional controls.

The ROD stated that access controls around the consolidation cell would likely be required and anticipated that a fence would be built. Instead of a fence, large boulders were systematically placed around the perimeter of the consolidation cell to prevent vehicular traffic. There are signs posted reading "Reclaimed Area Keep Off" at the Captain Jack Mill consolidation cell, the Big Five Mine capped area and the White Raven area. These access controls and informational signs appear to be adequately protecting the remedy.

The State constructed the subsurface remedy from 2015 to 2017. A flow-through concrete bulkhead was constructed in the Big Five mine tunnel, about 650 feet from the portal. Prior to the construction of the bulkhead, 488 tons of crushed limestone were placed in the Big Five mine tunnel upstream of the bulkhead to help neutralize the acidity of the mine pool. A recirculation system was installed to withdraw water from behind the bulkhead and return it to a location about 850 feet upstream of the bulkhead.

Water is piped from the bulkhead to the lined upper settling pond, located adjacent to the portal of the Big Five mine tunnel at the top of the Big Five Mine capped area. A standpipe in the upper settling pond routes mine drainage via a surface pipe to the lower settling pond, located at the foot of the Big Five Mine capped area, thereby preventing the water from contacting the capped mine waste. Water discharges through a standpipe in the lower settling pond to a low-lying area. The water meanders through this area before it enters into Left Hand Creek.

In May 2018, the EPA and the State (the Agencies) closed the valve on the flow-through bulkhead of the Big Five mine tunnel to begin the in-tunnel treatment system remedy. In September 2018, the Agencies partially reopened the valve on the bulkhead because water levels in the mine pool rose more rapidly than anticipated, and a controlled release was necessary to prevent an uncontrolled release in a new location.

In October 2018, the Agencies determined that the controlled release caused a reported fish kill downstream of the Site in Left Hand Creek. Field monitoring indicated that water discharging from the Big Five mine tunnel was more acidic and contained higher levels of metals than in water samples previously collected from boreholes into the tunnel. The Agencies determined that this was due to stratification of the mine pool, where water closer to the surface was near neutral and water toward the tunnel floor was more acidic and had higher metals concentrations. Sampling techniques used during the summer of 2018 were apparently collecting unrepresentative samples.

The high acidity and heavy metals, coupled with the seasonal low flows in Left Hand Creek, resulted in water quality impacts from the Site to about 5 miles downstream. The EPA, in coordination with the State, conducted an emergency response and implemented a temporary external treatment system utilizing lime, polymer and aeration, to treat acid mine drainage water from the Big Five tunnel prior to discharge into Left Hand Creek. Once the water level and water chemistry in the tunnel was returned to pre-remedial conditions, the temporary external water treatment plant was turned off in December 2019.

Several factors appear to have contributed to the poor water quality in the mine pool. The initial flooding of the mine workings may have re-dissolved metals-laden salts, previously deposited from acid mine drainage generation, from the walls of the workings and fracture zones in the subsurface creating more contaminated water. The operation of the recirculation system in 2018 was not effective in mixing the water with the limestone placed in the mine tunnel. The limestone may have been rendered ineffective due to iron armoring, or flow may have bypassed the limestone bed. Additional alkalinity was not deemed necessary at the time due to misleading non-representative sample results.

The ROD acknowledged that the selected remedy is an innovative treatment technology and contemplated an optional approach of adding organic carbon into the mine pool to create a sulfide-reducing bioreactor within the mine pool. Therefore, revised operation of the Big Five in-tunnel treatment is being conducted as a full-scale treatability study demonstration project (treatability study). The objective is to modify and optimize the remedy implementation to improve the water quality within the mine pool. The treatability study is described in the August 2020 In-Tunnel Treatability Study Work Plan. The flow-through valves in the bulkhead were again closed in September 2020 to allow the water level behind the bulkhead to rise. The elevation of the mine pool was increased until the pyritic (acid-generating) minerals were submerged, limiting the amount of air present and reducing acid generation from oxygen contact with the pyritic minerals. Treatment-generated solids (sludge) from the lower settling pond (containing residual alkalinity) and other alkalinity sources (hydrated lime (CaOH) and caustic soda (NaOH)) have been periodically added to the mine pool to lower its acidity. Organic carbon sources (methanol, starch, molasses) have been periodically added to the mine water to provide food and energy sources to stimulate naturally-occurring bacteria. Bacterial metabolism of these amendments creates a lowered reduction-oxidation potential and drives the conversion of iron hydroxide ($Fe(OH)_3$) to iron sulfide (FeS). During this conversion, hydroxide ions are liberated, which also helps neutralize the acidity of the mine pool. As free sulfide is produced, other metals are also precipitated as metal sulfides. It is anticipated that periodic additions of alkalinity and organic carbon will be required. The treatability study is determining the necessary quantity and frequency of future additions.

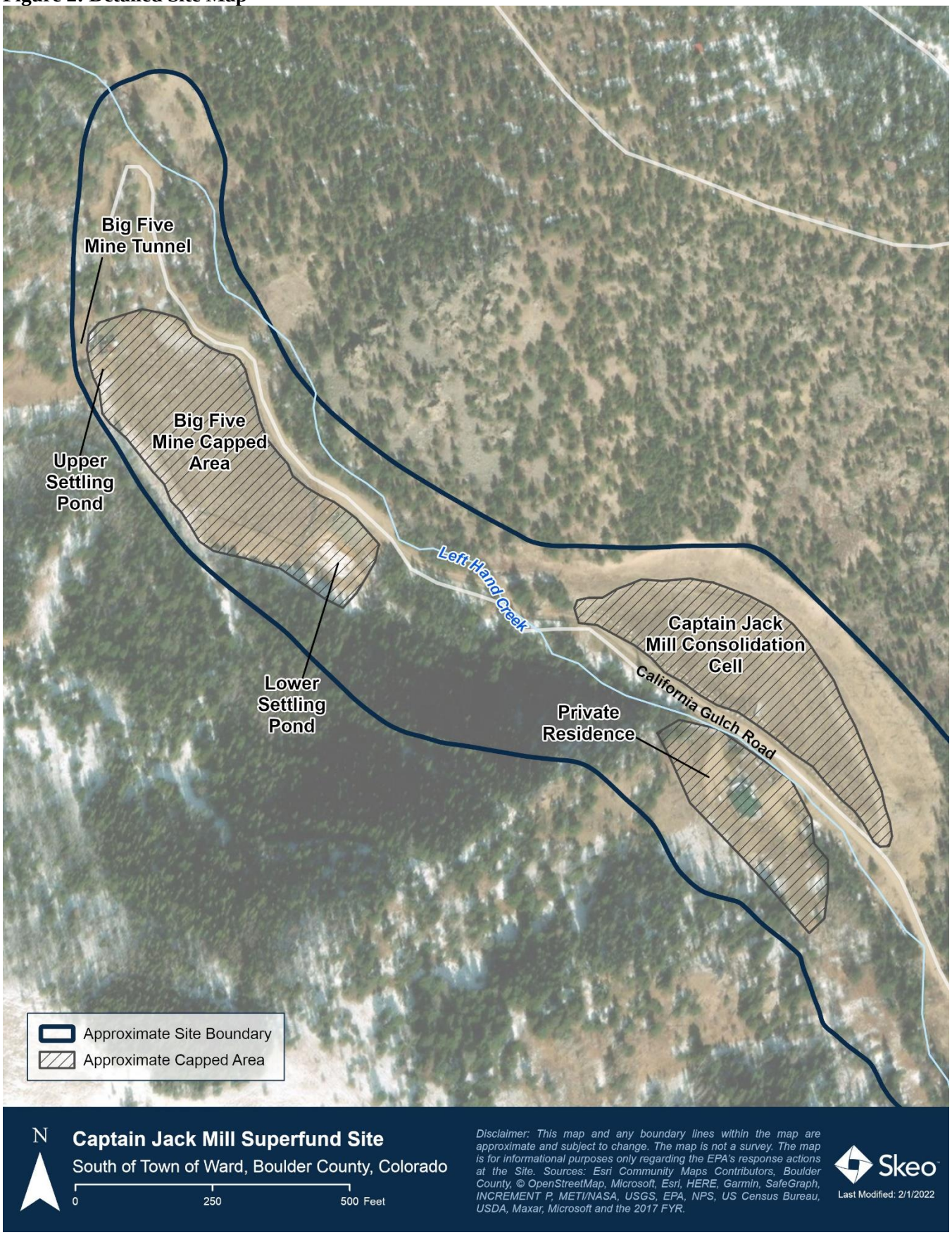
Several changes and improvements to the subsurface remedy were required to implement the treatability study. The recirculation system flow capacity was increased. An updated communication system was also installed to enhance remote monitoring. Additional monitoring, including pH, conductivity, and flow rate, were installed in the discharge line from the bulkhead pipes.

A tracer study determined that water from the seasonal creek at the Dew Drop area (see Figure 2) was infiltrating the ground and entering the Big Five mine tunnel. In fall 2021, EPA contractors lined the creek bed with an impermeable liner, secured in place with riprap, to prevent creek water from infiltrating into the mine tunnel.

Also, the New California Raise, which is a vertical opening that connects into the Big Five Mine workings near the Highway 72, was sealed by the Colorado Division of Reclamation, Mining and Safety. Polyurethane mine foam was used to block oxygen and water from entering the mine tunnel, to reduce the formation of acid mine drainage. Pipes were installed through the foam seal to allow for the future addition of treatment reagents. The area was backfilled with soil and protected from vehicle access by jersey barriers.

Regular surface water and groundwater monitoring began in 2014 to provide a baseline for comparison with surface water quality as mine pool remediation continues. The sample frequency of surface water sampling increased in 2019. Groundwater and mine pool borehole monitoring locations have been sampled at varying frequencies depending on the water level in the mine pool. Seep inspection and sampling is performed quarterly.

Figure 2: Detailed Site Map



Institutional Control (IC) Review

Table 3 presents a summary of the Site's institutional controls. The Site's decision documents require the implementation of institutional controls to prevent disturbance of the remedy caps and to restrict usage of certain on-site groundwater. The State issued a Notice of Environmental Use Restrictions (NEUR) in October 2013 for the Captain Jack Mill consolidation cell that prohibits disturbing the cap and other remedy components. The 2013 Notice of Environmental Use Restrictions also prohibits using groundwater for domestic purposes at the Captain Jack Mill consolidation cell property. A second NEUR was recorded in 2022 for the Dew Drop and Niwot borehole area on the west side of Highway 72. This IC also protects the remedy features and prohibits domestic use of groundwater. Appendix H provides a copy of the 2013 and 2022 NEUR.[5] Boulder County Parks and Open Space, the owner of the Captain Jack Mill consolidation cell property and the Dew Drop and Niwot borehole property, submits an annual inspection report to the State and the EPA documenting compliance with the 2013 and 2022 NEURs.

Institutional controls have not yet been implemented to prevent disturbance of the Big Five capped area and the capped residential yard near the Captain Jack Mill area. Nor have other institutional controls been implemented to restrict potable use of groundwater at the Site.

Table 3: Summary of Institutional Controls (ICs)

Media, Engineered Controls, and Areas That Do Not Support Unlimited Use and Unrestricted Exposure Based on Current Conditions	ICs Needed	ICs Called for in the Decision Documents	IC Objective	Impacted Parcels	Title of IC Instrument Implemented and Date
Subsurface soil	Yes	Yes	Restrict excavation and construction on capped areas.	Captain Jack Mill consolidation cell	10/14/2013 Notice of Environmental Use Restrictions for Captain Jack Mill consolidation cell prohibits disturbing the cap and other remedy components.
				Big Five capped area, capped residential yard at Captain Jack Mill area	No institutional controls have been implemented for the Big Five capped area and the capped residential yard at Captain Jack Mill area.
Groundwater	Yes	Yes	Restrict use of on-site groundwater.	Captain Jack Mill consolidation cell	10/14/2013 Notice of Environmental Use Restrictions for Captain Jack Mill consolidation cell prohibits using groundwater for domestic purposes.

[5] Available online at https://www.colorado.gov/pacific/cdphe/sites-environmental-covenants-and-use-restriction.

Media, Engineered Controls, and Areas That Do Not Support Unlimited Use and Unrestricted Exposure Based on Current Conditions	ICs Needed	ICs Called for in the Decision Documents	IC Objective	Impacted Parcels	Title of IC Instrument Implemented and Date
				Dew Drop and Niwot areas	4/18/2022 Notice of Environmental Use Restrictions for Dew Drop and Niwot areas prohibits using groundwater for domestic purposes and protects subsurface remedy features.
				Big Five Mine area, residential property at Captain Jack Mill area, all other parcels with groundwater contamination	No institutional controls have been implemented for other areas of the Site (Big Five Mine area, residential property at Captain Jack Mill area, all other parcels with groundwater contamination).

Systems Operations/Operation and Maintenance (O&M)

The State conducts long-term Operations and Maintenance (O&M) of the surface remedy. O&M activities include routine inspections and repair of erosion or other damage that may threaten the protectiveness of the remedy, as needed. Inspections include an evaluation of landowners' compliance with the use restrictions contained in environmental covenants. To ensure consistent and reliable monitoring of the surface remedy, an O&M work plan has been finalized (April 2022).

Boulder County Parks and Open Space, the owner of the Captain Jack Mill consolidation cell property, submits an annual inspection report to the Agencies for the Captain Jack Mill property.

In 2019, Boulder County required property owners to clean up debris from squatters near the Dew Drop area. Also, during 2019, there was a wildfire within a mile of the Site. Although the Site had to be evacuated, remote monitoring of the system continued, and the Site was not affected.

III. PROGRESS SINCE THE PREVIOUS REVIEW

This section includes the protectiveness determination and statement from the 2017 FYR as well as the recommendations from the 2017 FYR and the status of those recommendations.

Table 4: Protectiveness Determinations/Statements from the 2017 FYR

OU #	Protectiveness Determination	Protectiveness Statement
1	Will be Protective	The remedy at OU1 is expected to be protective of human health and the environment upon completion. Upon completion, the surface and subsurface remedies are expected to achieve the remedial action objectives for soils, tailings, and waste rock; surface water; and groundwater. In the interim, remedial activities completed to date have adequately addressed all exposure pathways that could result in unacceptable risks to human health. The surface remedy is functioning as designed; the vegetated covers have eliminated exposure to contaminated soil, tailings and waste rock and have eliminated surface water contact with these materials. The subsurface remedy is currently being constructed. Surface water contamination may pose an ecological risk until the subsurface remedy reduces contaminant levels.

Table 5: Status of Recommendations from the 2017 FYR

OU #	Issue	Recommendation	Current Status	Current Implementation Status Description	Completion Date
1	The Site does not have a written O&M plan for the completed surface remedy.	Draft an O&M plan for the surface remedy.	Completed	The O&M plan for the surface remedy was finalized.	4/18/2022
1	Institutional controls have not yet been implemented to prevent disturbance of the capped areas at the Big Five area and the residential yard at the Captain Jack Mill area. Institutional controls have not yet been implemented to restrict use of on-site groundwater, except at the Captain Jack Mill consolidation cell.	Implement institutional controls to prevent disturbance of the capped areas at the Big Five area and the residential yard at the Captain Jack Mill area and to restrict use of on-site groundwater.	Ongoing	The State and the EPA are continuing efforts to implement institutional controls.	N/A

IV. FIVE-YEAR REVIEW PROCESS

Appendix A lists documents reviewed as part of this FYR.

Community Notification, Community Involvement and Site Interviews

A public notice was published in the Boulder *Daily Camera* on 10/27/2021, stating that the FYR was underway and inviting the public to submit any comments to the State or the EPA. Appendix C presents a copy of the public notice. The results of the review and the report will be made available at the Site's information repositories:

- Colorado Department of Public Health and Environment, Hazardous Materials & Waste Management Division Records Center, 4300 Cherry Creek Drive South, Denver, Colorado 80246 (303-692-3331 | toll-free: 888-569-1831 ext. 3331).
- EPA Superfund Records Center, 1595 Wynkoop Street, Denver, Colorado 80202 (303-312-7273 | toll-free in Region 8 only: 800-227-8917 ext. 312-7273).

More Site information is also available online at https://cdphe.colorado.gov/captain-jack-mill-lefthand-canyon and https://www.epa.gov/superfund/captain-jack.

During the FYR process, interviews were conducted to document any perceived problems or successes with the remedy implemented to date. The interviews are summarized below. Appendix D provides the full interview forms.

The Left Hand Water District Board of Directors believes that the current attempt to manage the mine effluent through in-situ methods has been inadequate and that the EPA should proceed with developing an ex-situ mine water treatment system. The Town of Jamestown stated that overall, the Site looks better, but their impression is that the current method of remediation may not be sufficiently effective. They offered a number of observations and recommendations in their response. The Left Hand Watershed Center commended the EPA and CDPHE on the quality of work already accomplished at the Site. They provided recommendations for moving forward with cleanup activities. The St. Vrain and Left Hand Water Conservancy District provided a letter of support for the Left Hand Watershed Center's comments. The District recognizes the quality work already accomplished at the Site by CDPHE and the EPA.

Data Review

This data review focuses on surface water and groundwater since the beginning of the treatability study in the Big Five mine tunnel. Surface water and groundwater samples were analyzed for total recoverable metals, dissolved metals, alkalinity, and anions. Surface water and groundwater have been sampled periodically since 2014. From 2014 through 2017, two sampling events were conducted each year to determine the metal concentrations in the surface water and ground water during high-flow and low-flow conditions. The frequency of sampling increased starting in 2018. The purpose of sampling is to determine the spatial and temporal distribution of contamination, to evaluate remedy performance and to determine if the RAO's are being met. Appendix I provides the surface water and groundwater sampling data for select locations. Figure I-1 shows the sampling locations.

The ROD established a point of compliance for meeting surface water and groundwater RAOs. These are monitored at SW-10 (a sampling location located in Left Hand Creek downstream of the Big Five mine tunnel discharge and upstream of the confluence with Puzzler Gulch) and MW-4 (ground water monitoring location near SW-10). Since the start of the treatability study, more frequent monthly monitoring at SW-10 has been conducted as part of the ongoing treatability study. Discharge from the treatability study began in February 2021. Water quality in the tunnel changed rapidly in response to the treatment amendments and for several months water chemistry in-tunnel swung between high and low pH and higher and lower metals. The external water treatment plant was used to treat discharges to protect the creek during this time frame. Additional modifications including extending the treatment zone by adding the treatment amendments further up gradient in the mine workings resulted in more stable and consistent water chemistry by mid-summer 2021. The results from monthly sampling of the surface water point of compliance (SW-10) from the 12-month period starting in July 2021 were evaluated for attainment with the current surface water standards. Appendix J shows that both the acute and chronic standards were attained starting in July 2021. Table 6 shows the average concentrations detected for surface water COCs at SW-10 (the in-creek point of compliance), SW-06 (upstream of the Big Five tunnel), and SW-02 (Big Five discharge after the lower Settling Pond) since July 2021. Table 7 shows the concentrations detected for groundwater COCs at MW-04 (point of compliance). The data available since the treatability study began shows that this groundwater monitoring point is in compliance with the current standards.

Additionally, macroinvertebrates were sampled during low-flow periods in 2015 through 2021 to determine the composition and health of macroinvertebrate communities. Stream bed pore water was sampled for dissolved metals in 2016 through 2021 during low-flow periods. Sediment was sampled for total recoverable metals in 2016 through 2021. Ongoing monitoring of all media will be analyzed in the future to assess the effectiveness of the next phase of the subsurface remedy.

Table 6: Surface Water Sampling Results

COC	National Recommended Water Quality Criteria - Aquatic Life (µg/L)[a]		State Surface Water Standard (µg/L)[b]		Dissolved Metals Concentration from July 2021 to June 2022 (µg/L)[c]		
	Acute	Chronic	Acute	Chronic	SW-10 (Point of Compliance)	SW-06 (Upstream of Big Five)	SW-02[f] (Big Five Discharge after Lower Settling Pond)
					Avg[e]	Avg[e]	Avg[e]
Arsenic	340	150	340	0.02 (T)	<0.5	<0.5	0.6
Cadmium	0.9	0.43	0.9	0.43	0.13	0.10	<0.088
Copper	--[d]	--[d]	7	5	2.76	1.25	<0.71
Iron	--	1,000	--	1,000 (T)	81 (T)	124 (T)	3,831
Lead	30.1	1.2	30.1	1.2	0.23	0.32	0.23
Manganese	--	--	2,370	1,309	232	3.32	4,788
Zinc	65.1	65.7	85.2	64.5	45	13.2	5.1

Notes:

a. Source: https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table. All criteria are for dissolved concentrations. Hardness-dependent values were calculated using a hardness value of 50 mg/L as a representative value; hardness at these locations ranged from 17 to 670 mg/L.

b. Source: Code of Colorado Regulations, Water Quality Control Commission, Regulation #38 Stream Classifications and Water Quality Standards (5 CCR 1002-38) Segment 4a page 367. Hardness-dependent values were calculated using a hardness value of 50 mg/L as a representative value; hardness at SW-10 ranged from 17 to 140 mg/L. All values are dissolved unless otherwise noted.

c. Source: Excel spreadsheet provided by EPA contractor.

d. The freshwater criteria are calculated using the Biotic Ligand Model: https://www.epa.gov/wqc/aquatic-life-criteria-copper. Two of the 10 required input parameters (dissolved organic carbon and potassium) have not been regularly collected for this calculation; therefore, the national copper standard has not been calculated. For this review the copper concentrations are compared to the State standards.

e. For non-detect results, the detection limit was used to calculate the average. For months when duplicate samples were collected, the higher of the two results was used to calculate the average

f. Monitoring location SW-02 began sampling in November 2021, therefore the range is November 2021-June 2022.

µg/L = micrograms per liter
(T) = total recoverable concentration

Table 7: Groundwater Sampling Results at Point of Compliance

COC	State Groundwater Standard (µg/L)[a]	Dissolved Metals Concentration at MW-04 (µg/L)[b]	
		May 2021	August 2021
Antimony	6	<0.5	<0.5
Arsenic	10	<0.6	<0.6
Cadmium	5	<0.1	0.131 J
Copper	1,300[c]	3.83	3.66
Lead	15[c]	<0.1	<0.1
Manganese	50[d]	<7.5	<7.5
Thallium	2	<1	<1
Zinc	5,000[d]	50.5	75

Notes:
a. Source: Code of Colorado Regulations, Water Quality Control Commission, Regulation #11 Colorado Primary Drinking Water Regulations (5 CCR 1002-11)
b. Source: Excel Spreadsheet provided by EPA contractor. Table includes the maximum between the sample and its duplicate.
c. Value shown in table is the action level. Copper also has a secondary MCL (1,000 µg/L).
d. Secondary MCL

J = estimated value
µg/L = micrograms per liter

Site Inspection

The Site inspection took place on 10/14/2021. Participants included State project manager Mary Boardman, State public information officer Jeannine Natterman, EPA remedial project manager Joy Jenkins, EPA enforcement specialist Crystal Edmunds, and Treat Suomi and Hagai Nassau from EPA FYR contractor Skeo. The purpose of the inspection was to assess the protectiveness of the remedy. Appendix E provides the FYR Site inspection checklist. Appendix F provides photographs from the FYR site inspection.

Site inspection participants toured the following areas of the Site: Big Five, Captain Jack Mill, White Raven, and Dew Drop. All the capped and/or revegetated areas at the Site (Captain Jack Mill consolidation cell, Big Five Mine capped area, White Raven excavation area, residential yard at Captain Jack Mill area) are in excellent condition, with no erosion, settling or cracks evident. Vegetation on the covers is well established; it consists of a variety of grasses and wildflowers. Surface water diversion ditches along the upper slopes of the Captain Jack Mill consolidation cell and the Big Five Mine capped area are functioning to divert surface water away from the capped waste, reducing the generation of leachate. The diversion ditch above the Big Five Mine capped area has some vegetation, including small saplings, growing in the ditch, but there is no evidence that the vegetation impedes water flow in any way that affects the remedy. Ditch cleanout was performed in August 2022.

The soil cover at the residential yard near the Captain Jack Mill area is functioning to prevent exposure to the underlying contaminants, with no erosion or breaches evident.

The mine drainage collection system at the Big Five Mine area is functioning properly. Portions of the pond liner along the banks of the upper settling pond are exposed. The exposed liner is intact, above the water level, and not showing any signs of leakage.

Within the past five years, utility poles with power lines were installed to provide electrical power for the subsurface remedy at the Big Five Mine area. Several of the poles were installed at the edge of the Big Five Mine capped area; the locations were selected to prevent penetration of the cover system.

Site inspection participants viewed a creek at the Dew Drop area that was lined with an impermeable liner in September-October 2021 to prevent creek water from infiltrating into the Big Five mine tunnel.

Locked gates restrict vehicle access to parts of the Site. The Site is not fenced. Boulders were placed along the Captain Jack Mill consolidation cell, the Big Five Mine capped area and the White Raven area to prevent vehicle access to those areas. There has been no evidence of vehicles driving on capped areas. People sometimes trespass on parts of the Site. Within the past five years, trespassers stole solar panels from some of the Site's monitoring wells.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Question A Summary:

The surface remedy is functioning as designed. The vegetated covers at the Captain Jack Mill consolidation cell, the Big Five Mine capped area, and the residential yard at the Captain Jack Mill area have eliminated exposure to contaminated soil, tailings and waste rock and have eliminated surface water contact with these materials. In the White Raven area, all contaminated material was excavated, and the area was revegetated. Any necessary repairs or changes to the upper settling pond to address the exposed liner will be done in conjunction with future work on the external polishing system for the subsurface remedy. No evidence of leakage from the upper settling pond was apparent.

The State conducts O&M of the surface remedy. Maintenance activities include routine inspections and repair of erosion or other damage that may threaten the protectiveness of the remedy, as needed. Inspections include evaluation of landowners' compliance with the use restrictions contained in environmental covenants.

The State recorded a Notice of Environmental Use Restrictions (NEUR) for the Captain Jack Mill consolidation cell in 2013, which prohibits disturbing the cap and other remedy components and prohibits using groundwater for domestic purposes. A second NEUR was recorded in 2022 for the Dew Drop and Niwot borehole area. This IC protects the remedy features and also prohibits domestic use of groundwater. No violations were observed during the FYR site inspection. The property owner submits an annual inspection report to the Agencies.

Institutional controls have not yet been implemented to prevent disturbance of the capped areas at the Big Five area and the residential yard at the Captain Jack Mill area. Institutional controls have not yet been implemented to restrict use of on-Site groundwater, except at the properties mentioned above. Private property owners have been reluctant to place institutional controls on their properties. The State and the EPA reach out to property owners periodically with a focus on properties that may be offered for sale in the near future.

The ROD stated that access controls around the consolidation cell would likely be required; the ROD anticipated that a fence would be built. Instead of a fence, large boulders were systematically placed around the perimeter of the consolidation cell to prevent vehicular traffic; the boulders are effectively preventing vehicular traffic. The Site has signs posted reading "Reclaimed Area Keep Off" at the Captain Jack Mill consolidation cell, the Big Five Mine capped area, and the White Raven area. These access controls and informational signs appear to be adequately protecting the surface remedy.

The subsurface remedy continues to be optimized and modified. During the initial operation of the subsurface remedy to treat the Big Five tunnel acid mine drainage, the water quality worsened and resulted in greater contaminant loading to the Left Hand Creek in 2018. Revised operation of the subsurface remedy is being conducted as a treatability study to modify and optimize the subsurface remedy. The treatability study includes various amendments to the mine pool to reduce acidity and stimulate microbiological growth to prevent further acid mine drainage generation and to remove metals from the water by metal sulfide precipitation.

As the subsurface remedy has been modified and optimized, the State surface water standards have been consistently met starting in July 2021 as measured at SW-10. The Agencies are continuing to optimize the subsurface remedy through the treatability study to determine what additional changes are needed to create a robust system that consistently meets the RAOs. As contemplated in the ROD an external (ex-situ) system will be designed for additional treatment of the discharge from the Big Five In-tunnel treatment system. It is anticipated that once the remedy is fully installed and the two systems are operating together, RAOs will be consistently met for the long term.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels and remedial action objectives used at the time of the remedy selection still valid?

The exposure assumptions, toxicity data, cleanup levels and remedial action objectives used at the time of the remedy selection are still valid, except that a new toxicity value for thallium has been established since the ROD, as described below.

The 2008 ROD established numerical cleanup levels for arsenic, lead, and thallium in surface materials such as soil, tailings, and waste rock (see Table 2). The cleanup levels for arsenic and lead are still protective for residential use and haven't changed since the last five-year review; see the 2017 five-year review for additional analysis.

The 2008 ROD established a surface remedy cleanup level for thallium of 5.2 milligrams per kilogram (mg/kg), based on the EPA Region 9 preliminary remediation goal for residential soils. The non-cancer toxicity value for thallium has changed since the EPA issued the 2008 ROD. The current residential soil screening level is 0.78 mg/kg, which is based on non-cancer hazard. The Site's 2014 Remedial Action Completion Report shows that most of the confirmation samples had no detectable levels of thallium (detection limit = 2.5 mg/kg), but some of the samples contained thallium at estimated concentrations ranging from 0.18 mg/kg to 2.1 mg/kg.

Residential exposures are currently controlled. The single residence at the Site has a clean soil cover of two feet, eliminating the risk of exposure to thallium-contaminated soils. Other areas of the Site are used for passive recreation and do not have residences. The recreational exposure assumptions from the Risk Assessment Report, Vol. 1 (May 2008) were used and evaluated in the Regional Screening Level Calculator (https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search) with this lower thallium screening value. The recreational exposure scenario screening level was calculated at 5.26 mg/kg (Appendix K). This indicates that recreational exposures are not at a level of concern. While exposures are controlled in the short-term, a more thorough evaluation of the thallium levels is recommended to determine if additional actions are needed should land use change from recreational to residential.

For lead in soil, the EPA's Office of Solid Waste and Emergency Response Directives 9355.4-12 (EPA, 1994) and 9200.4- 27P (EPA, 1998), were identified as federal chemical-specific To Be Considered guidance documents. However, since 1994 and 1998 when those documents were issued, increasing evidence has shown that blood lead levels below 10 µg/dL may also have negative health impacts. The EPA is currently evaluating its lead cleanup policy based on recent studies that suggest adverse health effects are associated with blood levels less than 10 µg/dL. The EPA will continue using current lead policy until the Agency provides modified guidance for sites with lead contamination.

Risk assessment methods have not changed in a way that affects the protectiveness of the remedy.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?

No other information has come to light that calls into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the FYR:
None

Issues and Recommendations Identified in the FYR:

OU(s): OU1 (Sitewide)	**Issue Category: Monitoring**			
	Issue: The toxicity value for thallium has changed, so the surface cleanup level selected in the 2008 ROD for residential exposure may no longer be valid. The laboratory detection limit for thallium in the surface remedy confirmation sampling was higher than the current residential soil screening level.			
	Recommendation: Re-evaluate the soil concentrations and exposure pathways and determine whether additional cleanup, institutional controls or other actions are needed to prevent unacceptable exposure to thallium.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	State	EPA	9/30/2025

OU(s): OU1 (Sitewide)	**Issue Category: Institutional Controls**			
	Issue: Institutional controls have not yet been implemented to prevent disturbance of the capped areas at the Big Five area and the residential yard at the Captain Jack Mill area. Institutional controls have not yet been implemented to restrict use of on-Site groundwater, except at two properties.			
	Recommendation: Implement institutional controls to prevent disturbance of the capped areas at the Big Five area and the residential yard at the Captain Jack Mill area and to restrict use of potentially-impacted on-Site groundwater.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	State	EPA	9/30/2025

Other Findings:

Additional findings that do not impact the current protectiveness of the remedy are identified below:

1. The community requests more frequent outreach and information.
2. The State and the EPA have determined that the ex-situ (external) treatment system is needed in conjunction with the in-tunnel system to ensure reliable operations in the long term and to ensure that water quality standards are met consistently.

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement	
Operable Unit: OU1	*Protectiveness Determination:* Short-term Protective
Protectiveness Statement: The remedy currently protects human health and the environment because soil contaminant levels are acceptable for the current land use and the surface water standards have been attained during the past year of the treatability study. However, in order for the remedy to be protective in the long term, the following actions need to be taken to ensure protectiveness: (1) re-evaluate the soil thallium concentrations and exposure pathways and determine whether additional cleanup, institutional controls or other actions are needed to prevent unacceptable exposure to thallium, (2) place institutional controls to protect remedy features and prevent domestic groundwater use, and (3) continue to implement the subsurface remedy and design and construct the ex-situ treatment phase.	

VIII. NEXT REVIEW

The next FYR Report for the Captain Jack Mill Superfund site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

2008. Remedial Investigation and Risk Assessment Report, Vol. 1 & 2. Prepared by Walsh Environmental Scientists and Engineers, LLC for Colorado Department of Public Health and Environment. May 2008. SEMS #1071946 and #1071947.

2008. Final Feasibility Study Report, Captain Jack Mill Superfund Site, Boulder County, Colorado. Prepared by Walsh Environmental Scientists and Engineers, LLC for Colorado Department of Public Health and Environment. May 22, 2008. SEMS #1071945.

2008. Record of Decision, Captain Jack Mill Superfund Site, Boulder County, Colorado. Prepared by Walsh Environmental Scientists and Engineers, LLC for U.S. EPA and Colorado Department of Public Health and Environment. September 2008. SEMS #1085397.

2011. Explanation of Significant Differences, Captain Jack Mill Superfund Site, Ward, Colorado. Prepared by U.S. EPA and Colorado Department of Public Health and Environment. October 2011. SEMS #1224780.

2013. Notice of Environmental Use Restrictions, Captain Jack Mill Superfund Site, Boulder County, Colorado. Effective October 14, 2013. SEMS #100007469. https://www.colorado.gov/pacific/cdphe/sites-environmental-covenants-and-use-restriction.

2014. Remedial Action Completion Report, Captain Jack Mill Superfund Site, Boulder County, Colorado. Prepared by Colorado Department of Public Health and Environment. August 4, 2014. SEMS #1272366.

2014. Vegetation and Erosion Control Inspection Report, Captain Jack Mill Superfund Site, Boulder County, Colorado. Prepared by Professional Wetlands Consulting, Inc. for Colorado Department of Public Health and Environment. August 28, 2014. SEMS #1272369.

2017. First Five-Year Review Report for Captain Jack Mill Superfund Site. U.S. EPA Region 8. September 26, 2017. SEMS #100001994.

2018. Sampling Activities Report – 2017 Sampling Events, Captain Jack Mill Superfund Site, Boulder County, Colorado. Prepared by TechLaw, Inc. for U.S. EPA Region 8. March 2018. SEMS #100006616.

2018. Action Memorandum. Approval and Funding for a Removal Action at the Left Hand Creek Discharge Site in Boulder County, Colorado. U.S. EPA Region 8. December 14, 2018. SEMS #1917601.

2019. Sampling Activities Report – 2018 Sampling Events, Captain Jack Mill Superfund Site, Boulder County, Colorado. Prepared by TechLaw, Inc. for U.S. EPA Region 8. May 2019. SEMS #100007090.

2020. Sampling Activities Report – 2019 Sampling Events, Captain Jack Mill Superfund Site, Boulder County, Colorado. Prepared by TechLaw, Inc. for U.S. EPA Region 8. March 2020. SEMS #100011075.

2020. Captain Jack Mill Superfund Site In-Tunnel Treatability Study Work Plan. Prepared by MineWater LLC for Colorado Department of Public Health and Environment. August 27, 2020. SEMS #100009086.

2021. Sampling Activities Report – 2019-2020 Sampling Events, Captain Jack Mill Superfund Site, Boulder County, Colorado. Prepared by TechLaw, Inc. for U.S. EPA Region 8. January 2021.

2022. Captain Jack Mill Superfund Site Operations and Maintenance Plan. Prepared by Colorado Department of Public Health and the Environment. April 18, 2022. SEMS #100011644

2022. Monthly Status Report for the Captain Jack Mill Superfund Site (Site) In Tunnel Treatability Study. MineWater. January 2022.

2022. Notice of Environmental Use Restrictions, Captain Jack Mill Superfund Site, Boulder County, Colorado. Effective October 14, 2013. https://www.colorado.gov/pacific/cdphe/sites-environmental-covenants-and-use-restriction

APPENDIX B – SITE CHRONOLOGY

Table B-1: Site Chronology

Event	Date
Mining activities conducted at the Site	1896-1992
Boulder County removed more than 25,000 cubic yards of sand and gravel from the north slope of the Captain Jack Mill area for borrow material – (note: this excavated space was used during the milling activities in the 70's through the 1992 and later was used to create the Captain Jack Mill area consolidation cell.)	Prior to 1974
Residence built at Captain Jack Mill area	1974
Buildings and tailings ponds constructed at Captain Jack Mill area	1975
Colorado Mined Land Reclamation Division issued a Cease and Desist Order to the property owner	May 22, 1986
Mine Safety and Health Administration reported the Site to the EPA	September 16, 1986
The EPA conducted a removal action to address chemical wastes left in the area	December 1987 through January 1988
Colorado Division of Minerals and Geology obtained an injunction to prevent further milling operations	October 21, 1992
The EPA completed a drum and chemical removal action.	April 1993
The EPA led an emergency removal of miscellaneous hazardous wastes from the Site	2000
The EPA and the state entered into a Cooperative Agreement for the Site to be under State-lead management	June 5, 2003
The EPA listed the Site on the National Priorities List	September 29, 2003
The EPA conducted an emergency removal action of miscellaneous hazardous wastes from the Site, including a large amount of household waste, debris, paint containers and a variety of chemical wastes	December 2004 through March 2005
The EPA conducted an emergency removal action to rehabilitate the Big Five mine tunnel and remove impounded mine water	August 2006 through May 2007
The state completed the RI/FS	May 2008
The state and the EPA issued the Site's Record of Decision	September 29, 2008
The state started the remedial action (surface remedy)	August 9, 2011
The state and the EPA issued the Site's Explanation of Significant Differences	October 6, 2011
The state completed the remedial design (surface remedy)	December 29, 2011
The state completed the remedial design (subsurface remedy)	September 27, 2013
The state issued the Notice of Environmental Use Restrictions for Captain Jack Mill consolidation cell	October 14, 2013
The state completed the remedial action (surface remedy)	November 8, 2013
The state issued the Remedial Action Completion Report for the surface remedy	August 4, 2014
The state started field construction of the subsurface remedy	October 2015
The EPA issued the Site's first five-year review report	September 26, 2017
The valves were closed on the bulkhead to start the initial subsurface remedy operation	May 2018
Water quality in the mine pool became more concentrated with metals and acidity during a controlled release which impacted Left Hand Creek	October 2018
The state and the EPA started an emergency removal action to temporarily treat mine discharge from the Big Five mine tunnel	October 24, 2018
After returning the water level behind the bulkhead to historic conditions, the state and the EPA shut down the temporary water treatment plant	December 23, 2019
The In-Tunnel Treatability Study Demonstration project began to modify and optimize the subsurface remedy.	August 27, 2020

APPENDIX C – PRESS NOTICE

Public Notice | **Public Notice** | **Public Notice**

The Colorado Department of Public Health and Environment and the U.S. Environmental Protection Agency, Region 8 Announce the Second Five-Year Review for the Captain Jack Mill Superfund Site in Boulder County, Colorado

The Colorado Department of Public Health and Environment and the U.S. Environmental Protection Agency are conducting the second Five-Year Review of the Captain Jack Mill Superfund site in Boulder County, Colorado. Five-Year Reviews provide an opportunity to evaluate the implementation and performance of a remedy to determine whether it remains protective of human health and the environment. The second Five-Year Review will be completed in 2022.

The Captain Jack Mill is located at the headwaters of upper Left Hand Creek, about 1.5 miles south of Ward, Colorado. It is in a narrow valley known as California Gulch. Mining for gold and silver in the region began in 1860 and ended in 1992. Mining operations contaminated soil and surface water with metals and hazardous chemicals. The site was added to the Superfund program's National Priorities List (NPL) in 2003.

The long-term remedy for Captain Jack Mill was selected in 2008 and updated in 2011 and included both surface contamination sources and subsurface contamination sources. The surface remedy consisted of placing mine waste materials from various areas of the Site into two consolidation cells. The subsurface remedy to address acid mine drainage includes an in-tunnel treatment system and engineered flow-through bulkhead. After initial flooding of the mine workings and a subsequent release of contaminated water from the mine tunnel in 2018, implementation of the remedy began again in September 2020. A demonstration study is currently underway to modify and optimize the in-tunnel treatment system to address the acid mine drainage water.

We want to hear from you! Community members are encouraged to share information that may be helpful in the Five-Year Review process. Community members who have questions or who would like to participate in a community interview are asked to contact the Colorado Department of Public Health and Environment or the Environmental Protection Agency at the contacts below by January 15, 2022:

Jeannine Natterman, State Public Involvement Coordinator
Phone: 303-692-3303
Email: jeannine.natterman@state.co.us

Mary Boardman, State Project Manager
Phone: 303-692-3413
Email: mary.boardman@state.co.us

Joy Jenkins, EPA Remedial Project Manager
Phone: 303-312-6873
Email: jenkins.joy@epa.gov

Site information is available online at: https://cdphe.colorado.gov/captain-jack-mill-lefthand-canyon and http://www.epa.gov/superfund/captain-jack

Published: Boulder Daily Camera October 27, 2021-1841124

APPENDIX D – INTERVIEW FORMS

Left Hand Water District

May 18, 2022

Mary Boardman
State Project Manager
Colorado Dept of Public Health and Environment
mary.boardman@state.co.us

Joy Jenkins
EPA Project Manager
Environmental Protection Agency
jenkins.joy@epa.gov

RE: CAPTAIN JACK MILL FIVE YEAR REVIEW, 2022 – EPA ID COD981551427

On behalf of the Left Hand Water District Board of Directors, we appreciate the opportunity to provide comment on the Captain Jack Mill Superfund Site. The District's continued involvement with this project goes back prior to the naming of Captain Jack Mill as a Superfund Site. Our concern with the quality of the water leaving the mine site has not changed in the past 15-plus years. Directly downstream of the Site, the District maintains a water intake to provide water to over 20,000 residents in Boulder and Weld County through our Spurgeon Water Treatment Plant (PWSID - CO0107471).

Through numerous site visits, the review of recent water quality data, and meetings attended through our participation with other community stakeholders in the Left Hand Watershed, we believe that the current attempt to manage the mine effluent through in-situ methods has been inadequate. To meet the goals of the Captain Jack Record of Decision, it is our position that the EPA should proceed with developing an ex-situ mine water treatment as outlined in the Captain Jack Record of Decision. We share the Left Hand Watershed Centers concern that there be no allowance for a gap between the in-situ treatment and the future ex-situ treatment as the risk to our water users would be too great.

Sincerely,

Left Hand Water District
Christopher Smith, P.E.
General Manager

PO Box 210 ~ Niwot, CO 80544-0210 ~ Phone 303-530-4200 ~ Fax 303-530-5252 ~ www.lefthandwater.org

CAPTAIN JACK MILL SUPERFUND SITE FIVE-YEAR REVIEW INTERVIEW FORM	
Site Name: Captain Jack Mill	
EPA ID: COD981551427	
Interviewer name:	**Interviewer affiliation:**
Subject name: Left Hand Water District Board of Directors - Christopher Smith	**Subject affiliation: General Manager of Left Hand Water District**
Subject contact information: chrissmith@lefthandwater.org	
Interview date: 05/18/2022	**Interview time:**
Interview location:	
Interview format (circle one): In Person Phone Mail **[Email]** Other:	
Interview category: Local Government	

1. Are you aware of the former environmental issues at the Site and the cleanup activities that have taken place to date?

   Yes

2. Do you feel well-informed regarding the Site's activities and remedial progress? If not, how might EPA convey site-related information in the future?

   The Left Hand Water District has been an involved/interested party in the activities of the Site since they began. We are an active participant in the Left Hand Watershed Center and receive regular updates through monthly meetings. Our Treatment Manager has been involved with CDPHE in conversations on the mine release and water quality issues.

3. Have there been any problems with unusual or unexpected activities at the Site, such as vandalism or trespassing or other concerning activities?

   None that we are aware of.

4. Are you aware of any changes to state laws or local regulations that might affect the protectiveness of the Site's remedy?

   No

5. Are you aware of any changes in projected land use(s) at the Site?

   No

6. Has EPA kept involved parties and surrounding neighbors informed of activities at the Site? How can EPA best provide site-related information in the future?

   The District has an employee assigned as a Board member to the Left Hand Watershed Center who keeps our District Board updated on activities. We feel that the State should maintain direct communication with our Treatment Department Manager when any changes to operations/releases are planned as this has direct impacts on our water quality at the Haldi Intake downstream of the Site: waterquality@lefthandwater.org

7. Do you have any comments, suggestions or recommendations regarding the project?

   In our opinion the goals of the remediation have not yet been met with respect to water quality of the mine drainage. It appears that the in-situ treatment may not achieve sufficient improvements to the effluent being sent downstream to a public drinking water system. The Left Hand Water District requests that the CDPHE and EPA begin to develop an "ex situ" treatment system to treat the mine waste.

8. Do you consent to have your name included along with your responses to this questionnaire in the FYR report?

   Yes

CAPTAIN JACK MILL SUPERFUND SITE FIVE-YEAR REVIEW INTERVIEW FORM	
Site Name: Captain Jack Mill	
EPA ID: COD981551427	
Interviewer name:	**Interviewer affiliation:**
Subject name: Town of Jamestown- Govt. Kenneth Lenarcic	**Subject affiliation: Town of Jamestown**
Subject contact information: 303 938-1486	
Interview date: April 26, 2022	**Interview time:**
Interview location:	
Interview format (circle one): In Person Phone Mail **Email** Other:	
Interview category: Local Government	

1. Are you aware of the former environmental issues at the Site and the cleanup activities that have taken place to date?

   Yes

2. Do you feel well-informed regarding the Site's activities and remedial progress? If not, how might EPA convey site-related information in the future?

   The Town of Jamestown is a statutory town located on James Creek in the Left Hand/James Creek Watershed. The municipality has a seat on the Board of Directors of the Left Hand Watershed Center. The Town is informed through meetings and activities of the Watershed Center.

3. What is your overall impression of the project, including cleanup, maintenance and reuse activities (as appropriate)?

   Overall the site looks better, but our impression is that the current method of remediation mat not be sufficiently effective.

4. What have been the effects of this Site on the surrounding community, if any?

   The watershed is affected by various and numerous remains of mining activities in the 19th and early 20th century. The Captain Jack has a direct effect on Left Hand Creek. It is the best interest of mountain communities that the watershed be mitigated.

5. Have there been any problems with unusual or unexpected activities at the Site, such as emergency response, vandalism or trespassing?

   None that we are aware of.

6. Has EPA kept involved parties and surrounding neighbors informed of activities at the Site? How can EPA best provide site-related information in the future?

   The Town has assigned representatives to attend Watershed Center meetings and bring back information to the community and the Town Board of Trustees. That information is disseminated to the community.

7. Do you have any comments, suggestions, or recommendations regarding any aspects of the project?

The Town representative recently attended an inspection of the site with members of the Left Hand Watershed Center (LWC) Staff and Board of directors. Based upon this visit we offer the following observations and recommendations:

1. The criteria for success of the project is unclear. It appears that the mine drainage into Left Hand Creek is somewhat improved but is not meeting all of the criteria set by the contractor, MineWater, LLC. The Captain Jack is going through its second five year review, and while the site looks much better, the effluent affecting Left Hand Creek requires further improvement.

2. We are not scientists or environmental engineers, but we do agree with the LWC staff and consultants that the present method *in situ* treatment be terminated and "*ex situ* mine water treatment" be considered in accordance with the 2008 Record of Decision. We also agree that CDPH&E and EPA should immediately initiate the design of an *ex situ* resolution.

3. Finally, The issues associated with determination of the "point of compliance" and that the CDPH&E and EPA reaffirm as *Left Hand Creek at a point upstream of the confluence with Puzzler Gulch.*

8. Do you consent to have your name included along with your responses to this questionnaire in the FYR report?

Yes.

LEFT HAND
watershed center

May 20, 2022

Joy Jenkins
Environmental Protection Agency
State Project Manager

Mary Boardman
Colorado Department of Public Health and the Environment
State Project Manager

Re: Captain Jack Mill Second Five Year Review, 2022

The Left Hand Watershed Center Board of Directors is pleased to submit Five Year Review feedback on the Captain Jack Mill Record of Decision (ROD). The Watershed Center's board is comprised of 13 diverse stakeholders and community members, all of whom are supportive and invested in the CDPHE and EPA's efforts to successfully implement the remedial action objectives at Captain Jack. We commend CDPHE and EPA on the quality work already accomplished at the site. The surface remediation work areas are abundant with vegetation and has proven resilience through and since the 2013 floods. CDPHE and EPA continue to work hard to reduce the impacts of the mine, and we are proud to work with you to protect the water quality in Left Hand Creek.

At this time, we have identified the following key points of feedback. These points are further described in the questionnaire.

1. We are concerned about the approach and the success of the current treatability study at predicting future performance. In this regard:
    a. We recommend MineWater creates a quantitative model of the mine pool geochemistry and hydrology to properly forecast the future performance of the *in situ* treatment system and to design a system for additions of carbon and strong base.
    b. We are concerned about success of the *in situ* treatment and request that EPA and CDPHE clarify or define their criteria of success (e.g., levels of metals removed, the ability to forecast removal into the future).
2. We request CDPHE and EPA expediently move forward with the *ex situ* treatment outlined in the ROD, based on anticipation that the *in* situ mine pool treatment will be an inadequate long-term solution and ultimately result in another phase of design and implementation. Progress toward the *ex situ* treatment will minimize time during subsequent design and implementation when mine water is not treated and reduce overall time to achieve adequate and sustainable treatment.
3. We request that CDPHE and EPA re-affirm that the point of compliance (upstream of the confluence with Puzzler Gulch) specified in the ROD is and will continue to be the point of compliance used to assess achievement of remedial action objectives for the Site.

These key points are supported by participating entities and individuals on the Watershed Center Board. Our organization values CDPHE and EPA's remediation work and looks forward to continuing our partnership on this important project. Thank you for your consideration, and we look forward to your responses.

LEFT HAND
watershed center

Sincerely,

Jessie Olson
Executive Director
Left Hand Watershed Center
jolson@watershed.center
303-746-7937

CAPTAIN JACK MILL SUPERFUND SITE FIVE-YEAR REVIEW INTERVIEW FORM	
Site Name: Captain Jack Mill	
EPA ID: COD981551427	
Interviewer name:	**Interviewer affiliation:**
Subject name: Left Hand Watershed Center Board of Directors	**Subject affiliation:** Left Hand Watershed Center
Subject contact information: dhummel@watershed.center	
Interview date: 5/20/2022	**Interview time:** N/A
Interview location: email	
Interview format (circle one): In Person Phone Mail **Email** Other:	
Interview category: Local Government/ Organization	

1. Are you aware of the former environmental issues at the Site and the cleanup activities that have taken place to date?

   Yes.

2. Do you feel well-informed regarding the Site's activities and remedial progress? If not, how might EPA convey site-related information in the future?

   The Left Hand Watershed Center has been in direct communication with the EPA throughout the remedial process and has been adequately informed about activities at the site with the exception of the Five-Year Review process. Despite being in close contact, the Watershed Center was not notified directly about the Five-Year Review. We would prefer direct communication about community engagement opportunities to make sure we can reach the intended audience and provide timely responses.

3. Have there been any problems with unusual or unexpected activities at the Site, such as vandalism or trespassing or other concerning activities?

   We have not been aware of unusual or unexpected activities at the Site.

4. Are you aware of any changes to state laws or local regulations that might affect the protectiveness of the Site's remedy?

   No.

5. Are you aware of any changes in projected land use(s) at the Site?

   No.

6. Has EPA kept involved parties and surrounding neighbors informed of activities at the Site? How can EPA best provide site-related information in the future?

Board members that live in communities surrounding the Captain Jack Mill Site have provided and received feedback from their neighbors that they do not feel well informed about activities through EPA outreach. EPA can best provide site-related information by disseminating updates through the Watershed Center, hosting community meetings or issuing direct mailings to local residents.

7. Do you have any comments, suggestions or recommendations regarding the project?

First, we commend CDPHE and EPA on the quality work already accomplished at the site. The surface remediation work areas are abundant with vegetation and have proven resilience through and since the 2013 floods. CDPHE and EPA are continuing to work hard to reduce the impacts of the mine and we are proud to work with them to protect the water quality in Left Hand Creek.

Second, we request that CDPHE and EPA provide clarification about their criteria for success of the *in situ* treatment pilot test being conducted in the Big Five Tunnel at the Site. What levels of metals removal will be considered successful? What ability to forecast removal into the future will be required to be considered successful?

Monitoring of the water released from the Big Five Tunnel has shown substantial, but unsteady, decreases in zinc and copper concentrations, but not much change in the iron concentration, and the oxidation-reduction potential and pH criteria set by the contractor, MineWater LLC, have not consistently been met. These results suggest that the carbon and strong base additions made over the past 18 months are only marginally achieving the desired results of removal of metals by precipitation of metal sulfide minerals – enough sulfide is being generated to remove copper and most of the zinc, but there is no extra sulfide as a backup to increases in metal concentrations coming into the mine pool. For example, we know that climate warming will increase pyrite weathering and metal release (an increase in 2°C will accelerate pyrite oxidation by 16%).

Of greater concern to us is the piecemeal approach to this *in situ* treatment pilot test taken by MineWater LLC, alternately adding more carbon and strong base, trying to prevent inflows, and testing changes in the mine pool elevation. Based on MineWater's monthly reports, there have been no attempts to relate carbon and strong base additions to changes in oxidation-reduction potential, pH, and metal removal. To properly forecast the future performance of the *in situ* treatment system and to design a system for additions of carbon and strong base, MineWater needs a quantitative model of the mine pool geochemistry and hydrology.

As of now, the marginal success for metal removal and the lack of some means to predict the future performance of the *in situ* mine pool treatment suggest that the treatment pilot test has not achieved its goal.

Third, we request that CDPHE and EPA expediently move forward with the *ex situ* mine water treatment outlined in the Record of Decision. We base this request on anticipation that the *in situ* mine pool treatment will be an inadequate long-term solution and ultimately result in another phase of design and implementation. Immediate progress toward the *ex situ* treatment will minimize the time during subsequent design and implementation when the Big Five Tunnel drainage is not treated and reduce the overall time to achieve adequate and sustainable treatment of the Big Five Tunnel drainage.

In the Record of Decision for the Captain Jack Superfund Site issued in September 2008, CDPHE and EPA specified that "water from behind the bulkhead valve will be routed out of the Big Five adit

and into a biochemical reactor(s)" if the first step, the *in situ* mine pool treatment described above, did not solve the problem of acid mine drainage from the Big Five Tunnel "after two years." Solving the problem of acid mine drainage is based on achievement of the remedial action objectives (RAOs) for Left Hand Creek. The Record of Decision referred to this backup plan as "*ex situ* mine-water treatment" and it speculated that this treatment would be a biochemical reactor built below grade or in a "'greenhouse-type' building" to maintain temperatures favorable for treatment.

If the current *in situ* mine pool treatment is deemed to be insufficient to reliably remove metals from the Big Five Tunnel drainage, then CDPHE and EPA expect to move forward with the *ex situ* mine water treatment, based on discussion in a March 2, 2022, meeting with Mary Boardman (CDPHE) and Joy Jenkins (EPA). Moving forward would require time and funding for design and construction of the *ex situ* mine water treatment system, and it seems that this will result in a gap in treatment of the Big Five Tunnel drainage. To avoid, or at least minimize, this treatment gap, we request that CDPHE and EPA immediately initiate design of the *ex situ* treatment system.

Fourth, we request that CDPHE and EPA re-affirm that the point of compliance specified in the Record of Decision is and will continue be the point of compliance used to assess achievement of the remedial action objectives for the Site. In the Record of Decision, the point of compliance was specified as "Left Hand Creek at a point upstream of the confluence with Puzzler Gulch," which is located near the eastern (downstream) end of the Captain Jack Superfund site.

In the past, CPDHE had referred to an interim point of compliance for the Superfund site – where Lickskillet Road crosses Left Hand Creek— during the treatability study pilot. In response to a request for clarification of the point of compliance in the March 2, 2022, meeting, Mary Boardman (CDPHE) and Joy Jenkins (EPA) confirmed that the point of compliance is Left Hand Creek at a point upstream of Puzzler Gulch. It is at this point that we want water quality and aquatic life habitat protected as described in the remedial action objectives.

8. Do you consent to have your name included along with your responses to this questionnaire in the FYR report?

Yes.

ST. VRAIN AND LEFT HAND WATER CONSERVANCY DISTRICT
1715 Iron Horse Drive, Suite 250 • Longmont, CO 80501 • 303-772-4060 • www.svlhwcd.org

May 19, 2022

Joy Jenkins
Environmental Protection Agency ("EPA")
State Project Manager

Mary Boardman
Colorado Department of Public Health and the Environment ("CDPHE")
State Project Manager

Re: Captain Jack Mill Second Five Year Review, 2022

The St. Vrain and Left Hand Water Conservancy District ("District") are pleased to submit to you support for the Left Hand Watershed Center's ("Center") Captain Jack Mill Second Five Year Review.

The Center has provided CDPHE and EPA a detailed opinion of the Captain Jack Mill Record of Decision (ROD) and remedial action objectives at the site to date. As a participating member of the Center's Board of Directors, the District has interest and trust in the Center's technical review and echo their key points of feedback. Additionally, the District recognizes the quality work already accomplished at the site by CDPHE and EPA.

The District looks forward to continuing positive remedial action that incorporates the feedback put forth by the Center.

Sincerely,

Sean T. Cronin
Executive Director
sean.cronin@svlhwcd.org

APPENDIX E – SITE INSPECTION CHECKLIST

FIVE-YEAR REVIEW SITE INSPECTION CHECKLIST

I. SITE INFORMATION

Site Name: Captain Jack Mill	**Date of Inspection:** 10/14/2021
Location and Region: Ward, Colorado; Region 8	**EPA ID:** COD981551427
Agency, Office or Company Leading the Five-Year Review: EPA/CDPHE	**Weather/Temperature:** 32°F, partly sunny

Remedy Includes: (check all that apply)

- ☒ Landfill cover/containment
- ☐ Access controls
- ☒ Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☒ Other: mine water treatment
- ☐ Monitored natural attenuation
- ☐ Groundwater containment
- ☐ Vertical barrier walls

Attachments: ☒ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (check all that apply)

1. **O&M Site Manager** _____ (Name) _____ (Title) _____ (Date)
   Interviewed ☐ at site ☐ at office ☐ by phone Phone: _____
   Problems, suggestions ☐ Report attached: _____

2. **O&M Staff** _____ (Name) _____ (Title) _____ (Date)
   Interviewed ☐ at site ☐ at office ☐ by phone Phone: _____
   Problems/suggestions ☐ Report attached: _____

3. **Local Regulatory Authorities and Response Agencies** (i.e., state and tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices). Fill in all that apply.

   Agency _____
   Contact _____ (Name) _____ (Title) _____ (Date) _____ (Phone No.)
   Problems/suggestions ☐ Report attached: _____

   Agency _____
   Contact _____Name _____ (Title) _____ (Date) _____ (Phone No.)
   Problems/suggestions ☐ Report attached:_____

   Agency _____
   Contact _____ (Name) _____ (Title) _____ (Date) _____ (Phone No.)
   Problems/suggestions ☐ Report attached:_____

   Agency _____
   Contact _____ (Name) _____ (Title) _____ (Date) _____ (Phone No.)
   Problems/suggestions ☐ Report attached: _____

   Agency _____
   Contact _____ _____ _____ _____

	Name	Title	Date	Phone No.	
	Problems/suggestions ☐ Report attached:_____				
4.	**Other Interviews** (optional) ☐ Report attached: _____				
	III. ON-SITE DOCUMENTS AND RECORDS VERIFIED (check all that apply)				
1.	**O&M Documents**				
	☐ O&M manual	☐ Readily available	☐ Up to date	☒ N/A	
	☐ As-built drawings	☒ Readily available	☐ Up to date	☐ N/A	
	☐ Maintenance logs	☒ Readily available	☐ Up to date	☐ N/A	
	Remarks: O&M manual not yet drafted.				
2.	**Site-Specific Health and Safety Plan**	☐ Readily available	☐ Up to date	☒ N/A	
	☐ Contingency plan/emergency response plan	☐ Readily available	☐ Up to date	☒ N/A	
	Remarks: _____				
3.	**O&M and OSHA Training Records**	☐ Readily available	☐ Up to date	☒ N/A	
	Remarks: _____				
4.	**Permits and Service Agreements**				
	☐ Air discharge permit	☐ Readily available	☐ Up to date	☒ N/A	
	☐ Effluent discharge	☐ Readily available	☐ Up to date	☒ N/A	
	☐ Waste disposal, POTW	☐ Readily available	☐ Up to date	☒ N/A	
	☐ Other permits: _____	☐ Readily available	☐ Up to date	☒ N/A	
	Remarks: _____				
5.	**Gas Generation Records**	☐ Readily available	☐ Up to date	☒ N/A	
	Remarks: _____				
6.	**Settlement Monument Records**	☐ Readily available	☐ Up to date	☒ N/A	
	Remarks: _____				
7.	**Groundwater Monitoring Records**	☒ Readily available	☐ Up to date	☐ N/A	
	Remarks: _____				
8.	**Leachate Extraction Records**	☐ Readily available	☐ Up to date	☒ N/A	
	Remarks: _____				

9. **Discharge Compliance Records**

☐ Air ☐ Readily available ☐ Up to date ☒ N/A

☐ Water (effluent) ☐ Readily available ☐ Up to date ☒ N/A

Remarks: _____

10. **Daily Access/Security Logs** ☐ Readily available ☐ Up to date ☒ N/A

Remarks: _____

IV. O&M COSTS

1. **O&M Organization**

☐ State in-house ☒ Contractor for state

☐ PRP in-house ☐ Contractor for PRP

☐ Federal facility in-house ☐ Contractor for Federal facility

☐ _____

2. **O&M Cost Records**

☐ Readily available ☐ Up to date

☒ Funding mechanism/agreement in place ☐ Unavailable

Original O&M cost estimate: _____ ☐ Breakdown attached

Total annual cost by year for review period if available

From: _____ Date	To: _____ Date	_____ Total cost	☐ Breakdown attached
From: _____ Date	To: _____ Date	_____ Total cost	☐ Breakdown attached
From: _____ Date	To: _____ Date	_____ Total cost	☐ Breakdown attached
From: _____ Date	To: _____ Date	_____ Total cost	☐ Breakdown attached
From: _____ Date	To: _____ Date	_____ Total cost	☐ Breakdown attached

3. **Unanticipated or Unusually High O&M Costs during Review Period**

Describe costs and reasons: _____

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. **Fencing Damaged** ☐ Location shown on site map ☒ Gates secured ☐ N/A

Remarks: Locked fence around reagent tanks. Mine tunnels are locked.

B. Other Access Restrictions

1. **Signs and Other Security Measures** ☐ Location shown on site map ☐ N/A

Remarks: Boulders prevent vehicle access to capped areas. Signs are posted telling people to keep off reclaimed areas.

C. Institutional Controls (ICs)

1. **Implementation and Enforcement**

Site conditions imply Ics not properly implemented ☐ Yes ☒ No ☐ N/A

Site conditions imply Ics not being fully enforced ☐ Yes ☒ No ☐ N/A

Type of monitoring (e.g., self-reporting, drive by): Annual reports submitted to the EPA and CDPHE by county (owner of Captain Jack consolidation cell).

Frequency: annual

Responsible party/agency: Boulder County Parks and Open Space

Contact	Janis Whisman	Boulder County Parks and Open Space Department's Real Estate Division Manager	_____	_____
	Name	Title	Date	Phone no.

Reporting is up to date ☒ Yes ☐ No ☐ N/A

Reports are verified by the lead agency ☒ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met ☐ Yes ☒ No ☐ N/A

Violations have been reported ☐ Yes ☒ No ☐ N/A

Other problems or suggestions: ☐ Report attached

2. **Adequacy** ☐ Ics are adequate ☒ Ics are inadequate ☐ N/A

Remarks: Need to implement institutional controls to prevent disturbance of the capped areas at the Big Five area and the residential yard at the Captain Jack Mill area and to restrict use of on-site groundwater.

D. General

1. **Vandalism/Trespassing** ☐ Location shown on site map ☐ No vandalism evident

Remarks: Trespassers stole solar panels from monitoring wells in the past five years. In 2019, the county cleaned up debris from squatters near Dew Drop.

2. **Land Use Changes On Site** ☒ N/A

Remarks: The county recently bought property near Dew Drop and will implement an environmental covenant to protect the remedy.

3. **Land Use Changes Off Site** ☒ N/A

Remarks: _____

VI. GENERAL SITE CONDITIONS

A. Roads ☒ Applicable ☐ N/A

1. **Roads Damaged** ☐ Location shown on site map ☒ Roads adequate ☐ N/A

Remarks: _____

B. Other Site Conditions

Remarks: _____

VII. LANDFILL COVERS ☒ Applicable ☐ N/A

A. Landfill Surface

1. **Settlement** (low spots) ☐ Location shown on site map ☒ Settlement not evident
   Area extent: _____ Depth: _____
   Remarks: _____

2. **Cracks** ☐ Location shown on site map ☒ Cracking not evident
   Lengths: _____ Widths: _____ Depths: _____
   Remarks: _____

3. **Erosion** ☐ Location shown on site map ☒ Erosion not evident
   Area extent: _____ Depth: _____
   Remarks: _____

4. **Holes** ☐ Location shown on site map ☒ Holes not evident
   Area extent: _____ Depth: _____
   Remarks: _____

5. **Vegetative Cover** ☒ Grass ☒ Cover properly established
   ☒ No signs of stress ☐ Trees/shrubs (indicate size and locations on a diagram)
   Remarks: _____

6. **Alternative Cover** (e.g., armored rock, concrete) ☒ N/A
   Remarks: _____

7. **Bulges** ☐ Location shown on site map ☒ Bulges not evident
   Area extent: _____ Height: _____
   Remarks: _____

8. **Wet Areas/Water Damage** ☒ Wet areas/water damage not evident

   ☐ Wet areas ☐ Location shown on site map Area extent: _____
   ☐ Ponding ☐ Location shown on site map Area extent: _____
   ☐ Seeps ☐ Location shown on site map Area extent: _____
   ☐ Soft subgrade ☐ Location shown on site map Area extent: _____
   Remarks: _____

9. **Slope Instability** ☐ Slides ☐ Location shown on site map
   ☒ No evidence of slope instability
   Area extent: _____
   Remarks: _____

B. Benches ☐ Applicable ☒ N/A

(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

1. **Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay

   Remarks: _____

2. **Bench Breached** ☐ Location shown on site map ☐ N/A or okay

   Remarks: _____

3. **Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay

   Remarks: _____

C. Letdown Channels ☐ Applicable ☒ N/A

(Channel lined with erosion control mats, riprap, grout bags or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

D. Cover Penetrations ☐ Applicable ☒ N/A

E. Gas Collection and Treatment ☐ Applicable ☒ N/A

F. Cover Drainage Layer ☐ Applicable ☒ N/A

G. Detention/Sedimentation Ponds ☐ Applicable ☒ N/A

H. Retaining Walls ☐ Applicable ☒ N/A

I. Perimeter Ditches/Off-Site Discharge ☒ Applicable ☐ N/A

1. **Siltation** ☐ Location shown on site map ☒ Siltation not evident

   Area extent: _____ Depth: _____

   Remarks: _____

2. **Vegetative Growth** ☐ Location shown on site map ☐ N/A

   ☒ Vegetation does not impede flow

   Area extent: _____ Type: _____

   Remarks: Some saplings were growing in the surface water diversion ditch above the Big Five Mine capped area.

3. **Erosion** ☐ Location shown on site map ☒ Erosion not evident

   Area extent: _____ Depth: _____

   Remarks: _____

4. **Discharge Structure** ☒ Functioning ☐ N/A

   Remarks: _____

VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A

IX. GROUNDWATER/SURFACE WATER REMEDIES ☒ Applicable ☐ N/A

Mine water treatment

A. Groundwater Extraction Wells, Pumps and Pipelines ☐ Applicable ☒ N/A

1. **Pumps, Wellhead Plumbing and Electrical**

☐ Good condition ☐ All required wells properly operating ☐ Needs maintenance ☐ N/A

Remarks: _____

2. **Extraction System Pipelines, Valves, Valve Boxes and Other Appurtenances**

☐ Good condition ☐ Needs maintenance

Remarks: _____

3. **Spare Parts and Equipment**

☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided

Remarks: _____

B. Surface Water Collection Structures, Pumps and Pipelines ☐ Applicable ☒ N/A

1. **Collection Structures, Pumps and Electrical**

☐ Good condition ☐ Needs maintenance

Remarks: _____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes and Other Appurtenances**

☐ Good condition ☐ Needs maintenance

Remarks: _____

3. **Spare Parts and Equipment**

☐ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided

Remarks: _____

C. Treatment System ☒ Applicable ☐ N/A

1. **Treatment Train** (check components that apply)

☐ Metals removal ☐ Oil/water separation ☒ Bioremediation

☐ Air stripping ☐ Carbon adsorbers

☐ Filters: _____

☒ Additive (e.g., chelation agent, flocculent): Treatment generated solids from the lower settling pond, hydrated lime (CaOH), caustic soda (NaOH), methanol, starch, molasses

☐ Others: _____

☒ Good condition ☐ Needs maintenance

☐ Sampling ports properly marked and functional

☐ Sampling/maintenance log displayed and up to date

☐ Equipment properly identified

☐ Quantity of groundwater treated annually: _____

☐ Quantity of surface water treated annually: _____

Remarks: in-tunnel treatability study demonstration project is underway

2. **Electrical Enclosures and Panels** (properly rated and functional)

☐ N/A ☒ Good condition ☐ Needs maintenance

Remarks: _____

3. **Tanks, Vaults, Storage Vessels**

☐ N/A ☒ Good condition ☒ Proper secondary containment ☐ Needs maintenance

Remarks: _____

4. **Discharge Structure and Appurtenances**

☐ N/A ☒ Good condition ☐ Needs maintenance

Remarks: _____

5. **Treatment Building(s)**

☐ N/A ☒ Good condition (esp. roof and doorways) ☐ Needs repair

☒ Chemicals and equipment properly stored

Remarks: _____

6. **Monitoring Wells** (pump and treatment remedy)

☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition

☐ All required wells located ☐ Needs maintenance ☐ N/A

Remarks: _____

D. Monitoring Data

1. **Monitoring Data**

☐ Is routinely submitted on time ☒ Is of acceptable quality

2. **Monitoring Data Suggests:**

☐ Groundwater plume is effectively contained ☒ Contaminant concentrations are declining

E. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)

☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition

☐ All required wells located ☐ Needs maintenance ☒ N/A

Remarks: _____

X. OTHER REMEDIES

If there are remedies applied at the site and not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is designed to accomplish (e.g., to contain contaminant plume, minimize infiltration and gas emissions).

The surface remedy is designed to eliminate exposure to contaminated soil, tailings and waste rock, and eliminate surface water contact with these materials. The surface remedy is functioning as designed. The subsurface remedy is designed to clean up surface water and groundwater by treating mine water in the underground workings. A treatability study demonstration project is being implemented for the subsurface remedy.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

The O&M plan was not prepared at the time of the Site inspection. However, additional information sharing with EPA and CDPHE indicate that the Site's O&M procedures are adequate.

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.

	None identified.
D.	**Opportunities for Optimization**
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. None identified.

Site inspection attendees:
Joy Jenkins (EPA remedial project manager)
Crystal Edmunds (EPA enforcement specialist)
Mary Boardman (CDPHE project manager)
Jeannine Natterman (CDPHE public information officer)
Hagai Nassau (Skeo, EPA FYR contractor)
Treat Suomi (Skeo, EPA FYR contractor)

APPENDIX F – SITE INSPECTION PHOTOS

Entrance to Big Five Mine tunnel area with signage

Big Five Mine tunnel portal

Reagent tanks at Big Five Mine tunnel area

Temporary treatment plant at Big Five Mine portal area

Tank for temporary treatment plant at Big Five Mine portal area

Big Five Mine capped area

Upper settling pond

Surface water diversion ditch above Big Five Mine capped area

Discharge pipe from upper settling pond to lower settling pond

Lower settling pond with equipment collecting treatment generated solids to put into mine tunnel

Captain Jack Mill consolidation cell, viewed from Big Five Mine area

Captain Jack Mill consolidation cell with boulders and signage

Locked portal access gate to the Black Jack mine tunnel

Residence at Captain Jack Mill area

Locked portal access gate to the White Raven mine tunnel

White Raven mill remediated area

Recently lined creek at Dew Drop Area

Dew Drop monitoring and recirculation boreholes

Recently sealed New California Raise; a vertical access to the underground workings

APPENDIX G – 2017 NOTE TO FILE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

Ref: 8EPR-SR

MEMORANDUM

DATE: July 26, 2017

SUBJECT: Clarification of ROD Language on Institutional Control Requirements on Surface Water for the Captain Jack Mill Superfund Site

FROM: Joy Jenkins, Remedial Project Manager (RPM)

Office of Ecosystems Protection and Remediation

TO: Site File

The purpose of this memorandum, or Note to File, is to clarify language in the 2008 Record of Decision on the requirement for institutional control on surface water for the Captain Jack Mill Superfund Site.

The 2008 ROD stated that "State environmental covenants will also include restrictions and additional requirements on any usage of on-site groundwater and/or surface water for potable water sources" (Section 15.4 Basis and Rationale for RAOs). However, the institutional controls detailed in ROD Section 19.2 Description of the Selected Remedy (page 19-7), do not include future restrictions on surface water. Additionally, as per ROD section 19.4.2 Available Surface Water Uses (page 19-25), surface water on-site is not currently, or anticipated in the future, to be used directly for potable water. There are no water diversions within the Site that would allow such use. Also per section 19.4.2 and 19.4.3 Final Cleanup Levels (page 19-25), the remedy is anticipated to meet surface water standards at the downstream Point of Compliance as well as on-site over time after remedy implementation.

The Left Hand Water District, which provides service to over 15,000 residents in rural Boulder and Weld Counties, uses Left Hand Creek water from an intake 15 miles downstream of the Site as a drinking water source. The district treats the water prior to distribution. There is no evidence that this intake has been directly impacted by the Captain Jack Mill Site.

Since drinking water use of the Left Hand Creek is not anticipated on-site and surface water standards for contaminants related to the Site are anticipated to be met in the future in Left Hand Creek, within and near the Site, institutional controls are not required for the on-site surface water in Left Hand Creek. EPA has issued this Note to File to clarify the language in the 2008 ROD and document the determination that surface water usage restrictions are not required to maintain protectiveness of the remedy in the future.

cc: Steve Wharton, EPA, via electronic delivery
Mary Boardman, CDPHE, via electronic delivery

APPENDIX H – 2013 and 2022 NOTICE OF ENVIRONMENTAL USE RESTRICTIONS

COLORADO
Hazardous Materials & Waste Management Division
Department of Public Health & Environment

Institutional Control ID: RSNOT00006

Covenant Information:

Covenant Date 10/14/2013
Last Modified 10/14/2013
Self Reporting ☑

Media of Concern:

Surface Water: ☐
Ground Water: ☑
Air: ☐
Soil: ☑
Other: ☐

Site Contact Information:

Owner Corp: Boulder County Parks and Open Space
Contact Name: Real Estate Division Manager
Contact Address: 5201 St Vrain Rd
Contact City: Longmont
Contact State: CO
Contact Zip: 80503
Contact Phone: 303-678-6263

Contaminants of Concern:

Lead, Arsnic, Thallium, Antimony, Cadmium, more

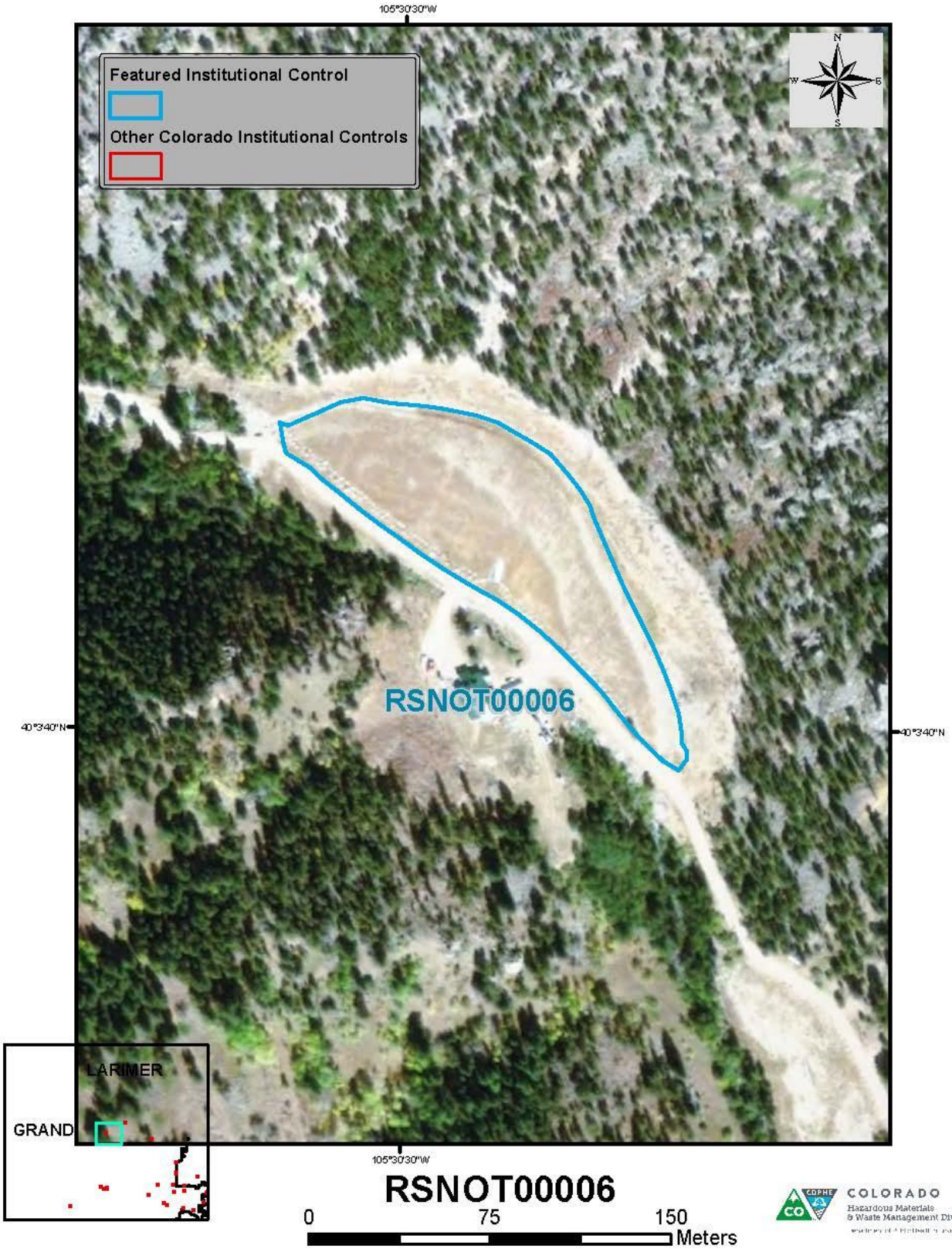
Property Restrictions:

1: No disturbance of mine waste containment cell.
2: No domestic use of water
3:
4:
5:

Site Information:

ID: COD981551427
Name: Captain Jack Mill
Address: California Gulch Road
City: Ward
State: CO
Zip: 80481
Legal Description:
See Restrictive Notice

CAPTAIN JACK MILL



03351690 11/06/2013 11:57 AM
RF: $0.00 DF: $0.00 Page: 1 of 10
Electronically recorded in Boulder County Colorado.
Recorded as received.

10/14/2013 09:01 AM RF: $81.00
Boulder County Clerk, CO

03347571
Page: 1 of 10
DF: $0.00

This property is subject to a Notice of Environmental Use Restrictions imposed by the Colorado Department of Public Health and Environment pursuant to section 25-15-321.5, C.R.S.

Notice of Environmental Use Restrictions

WHEREAS, Boulder County is the owner of certain property located on California Gulch Road, South of Ward, Colorado, more particularly described in Attachment A, attached hereto and incorporated herein by reference as though fully set forth (hereinafter referred to as "the Property") which property is within the Captain Jack Superfund Site ("Site"); and

WHEREAS, for purposes of indexing in the County Clerk and Recorder's office Grantor-Grantee index only, Boulder County shall be considered the **Grantor**, and the Colorado Department of Public Health and Environment (the "Department") shall be considered the **Grantee**; nothing in the preceding clause shall be construed to create or transfer any right, title or interest in the Property; and

WHEREAS, the use restrictions set forth below in Paragraphs 1 through 11 in this Notice of Environmental Use Restrictions (hereinafter "Restrictive Notice") apply to that portion of the Property within the containment cell and related structures constructed by the United States Environmental Protection Agency ("EPA") and the Department. The portion of the containment cell and related structures within the Property (hereinafter referred to as "the Property Subset"), which will be subject to the use restrictions set forth in Paragraphs 1 through 11, below, is more particularly described and illustrated in Attachment B, attached hereto and incorporated herein by reference as though fully set forth herein; and

WHEREAS, the restrictions and requirements set forth in Paragraphs 2 through 11, below, apply to the Property, generally; and

WHEREAS, pursuant to a Record of Decision dated September 29, 2008 and an Explanation of Significant Differences dated October 11, 2011 signed by the EPA and the Department, the Property is the subject of remedial action pursuant to the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§ 9601, et seq. ("CERCLA"); and

WHEREAS, the purpose of this Restrictive Notice is to ensure protection of human health and the environment by restricting future use of, and activities on, the Property and Property Subset; and

WHEREAS, Boulder County has consented to the Department's issuance of this Restrictive Notice as provided in Article 15 of Title 25, Colorado Revised Statutes,

NOW, THEREFORE, the Department issues this Restrictive Notice pursuant to section 25-15-321.5. The Property Subset shall hereinafter be subject to the following requirements set

This document is being re-recorded to correct County's address on page 4

forth in paragraphs 1 through 11, below and the Property shall hereinafter be subject to the following requirements set forth in paragraphs 2 through 11, below, which shall be binding on Boulder County and all parties now or subsequently having any right, title or interest in the Property, Property Subset, or any part thereof, and any persons using the land, as described herein. As used in this Restrictive Notice, the term OWNER means the then current record owner of the Property or Property Subset and, if any, any other person or entity otherwise legally authorized to make decisions regarding the transfer of the Property or Property Subset or placement of encumbrances on the Property or Property Subset, other than by the exercise of eminent domain.

1) Specific Use restrictions for the Property Subset:

No tilling, digging, excavation, grading, construction, or any other activity that disturbs the ground surface or subsurface or that would in any manner interfere with or adversely affect the implementation, integrity, or protectiveness of the remedial action is permitted at the Property Subset, including, but not limited to, activities that directly or indirectly:

Disturb re-vegetated areas;
Disturb the mine waste containment cell;
Expose buried tailings or waste rock;
Disturb the recontoured hillside covering the mine waste containment cell; or
Interfere with or disturb drainage ditches or other surface water diversions.

The mine waste containment cell, as designed, will cover the existing portal of the Black Jack Mine and the design includes the construction of an extension of the portal to the southern edge of the containment cell. Subject to the restrictions above, OWNER may access the new portal.

2) General Use Restrictions for the Property:

- The Property will not be used in any way that interferes with the implementation, operation, and/or maintenance of the CERCLA remedial actions, including, but not limited to, groundwater monitoring wells, any equipment or infrastructure constructed or used in the remedial action, or any cap or covering intended to prevent contact with contaminated materials in the ground or at the surface.
- Groundwater under the Property will not be used for domestic purposes.

3) Modifications: This Restrictive Notice runs with the land and is perpetual, unless modified or terminated pursuant to this paragraph. OWNER may request that the Department approve a modification or termination of the Restrictive Notice. The request shall contain information showing that the proposed modification or termination shall, if implemented, ensure protection of human health and the environment. The Department shall review any submitted information, and may request additional information. If the Department determines that the proposal to modify or terminate the Restrictive Notice will ensure protection of human health and the environment, it shall approve the proposal. No modification or termination of this Restrictive Notice shall be effective unless the Department has approved such modification or termination in

writing. Information to support a request for modification or termination may include one or more of the following:

a) a proposal to perform additional remedial work;

b) new information regarding the risks posed by the residual contamination;

c) information demonstrating that residual contamination has diminished;

d) information demonstrating that the proposed modification would not adversely impact the remedy and is protective of human health and the environment; and

e) other appropriate supporting information.

4) Conveyances: OWNER shall notify the Department at least fifteen (15) days in advance of the closing on any proposed sale or other conveyance of any interest in any or all of the Property.

5) Notice to Lessees: OWNER agrees to incorporate either in full or by reference the restrictions of this Restrictive Notice in any leases, licenses, or other instruments granting a right to use the Property.

6) Notification for proposed construction and land use: OWNER shall notify the Department simultaneously when submitting any application to a local government for a building permit or change in land use.

7) Inspections: The Department shall have the right of entry to the Property at reasonable times with prior notice for the purpose of determining compliance with the terms of this Restrictive Notice. Nothing in this Restrictive Notice shall impair any other authority the Department may otherwise have to enter and inspect the Property.

8) Third Party Beneficiary: The OWNER of the Property and EPA are third party beneficiaries with the right to enforce the provisions of this Restrictive Notice as provided in § 25-15- 322, C.R.S.

9) No Liability: The Department does not acquire any liability under State law by virtue of issuing this Restrictive Notice nor does any other named beneficiary of this Restrictive Notice acquire any liability under State law by virtue of being such a beneficiary.

10) Enforcement: The Department may enforce the terms of this Restrictive Notice pursuant to §25-15-322. C.R.S. The OWNER of the Property and any named beneficiaries of this Restrictive Notice may file suit in district court to enjoin actual or threatened violations of this Restrictive Notice.

11) Owner's Compliance Certification: OWNER shall execute and return a certification form provided by the Department, on an annual basis, detailing OWNER's compliance, and any lack of compliance, with the terms of this Restrictive Notice.

12) Notices: Any document or communication required under this Restrictive Notice shall be sent or directed to:

State of Colorado:

Remediation Program Manager
Hazardous Materials and Waste Management Division
HMWMD-RP-B2
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

With reference to the Captain Jack Mill Site

And to:

Assistant Attorney General
Natural Resources and Environment Section
Hazardous and Solid Waste and CERCLA Litigation Unit
Colorado Department of Law
Robert L. Carr Colorado Judicial Center
1300 Broadway, 7th Floor
Denver, CO 80203

With reference to the Captain Jack Mill Site

EPA:

Remedial Project Manager (8EPR-SR)
Captain Jack Mill Site
U.S. Environmental Protection Agency
1595 Wynkoop Street
Denver, CO 80202-1129

And to:

Regional Institutional Control Coordinator, EPR-SR
U.S. EPA
1595 Wynkoop Street
Denver, CO 80202

Boulder County:

Director, Boulder County Parks and Open Space
5201 St. Vrain Road
Longmont, CO 80503

Boulder County, CO 03347571 5 of 10

This Notice of Environmental Use Restrictions is issued by the Colorado Department of Public Health and Environment this 19th day of July, 2013.

By: Gary W. Baughman

Title: Director, HMWMD

STATE OF Colorado)
) ss:
COUNTY OF Denver)

The foregoing instrument was acknowledged before me this 19 day of July, 2013 by Gary W Baughman on behalf of the Colorado Department of Public Health and Environment.

Notary Public Claudette M. Ferris

Address 4300 Cherry Creek Dr So
Denver, CO 80246

My commission expires: October 21, 2015

Attachment A

Property Description

1) The Cross Millsite, US Survey #10304-B, as legally described in the Treasurer's Deed recorded on May 16, 2012 at Reception Number 3223314 and having an address of 0 California Gulch Road, Ward, Colorado;

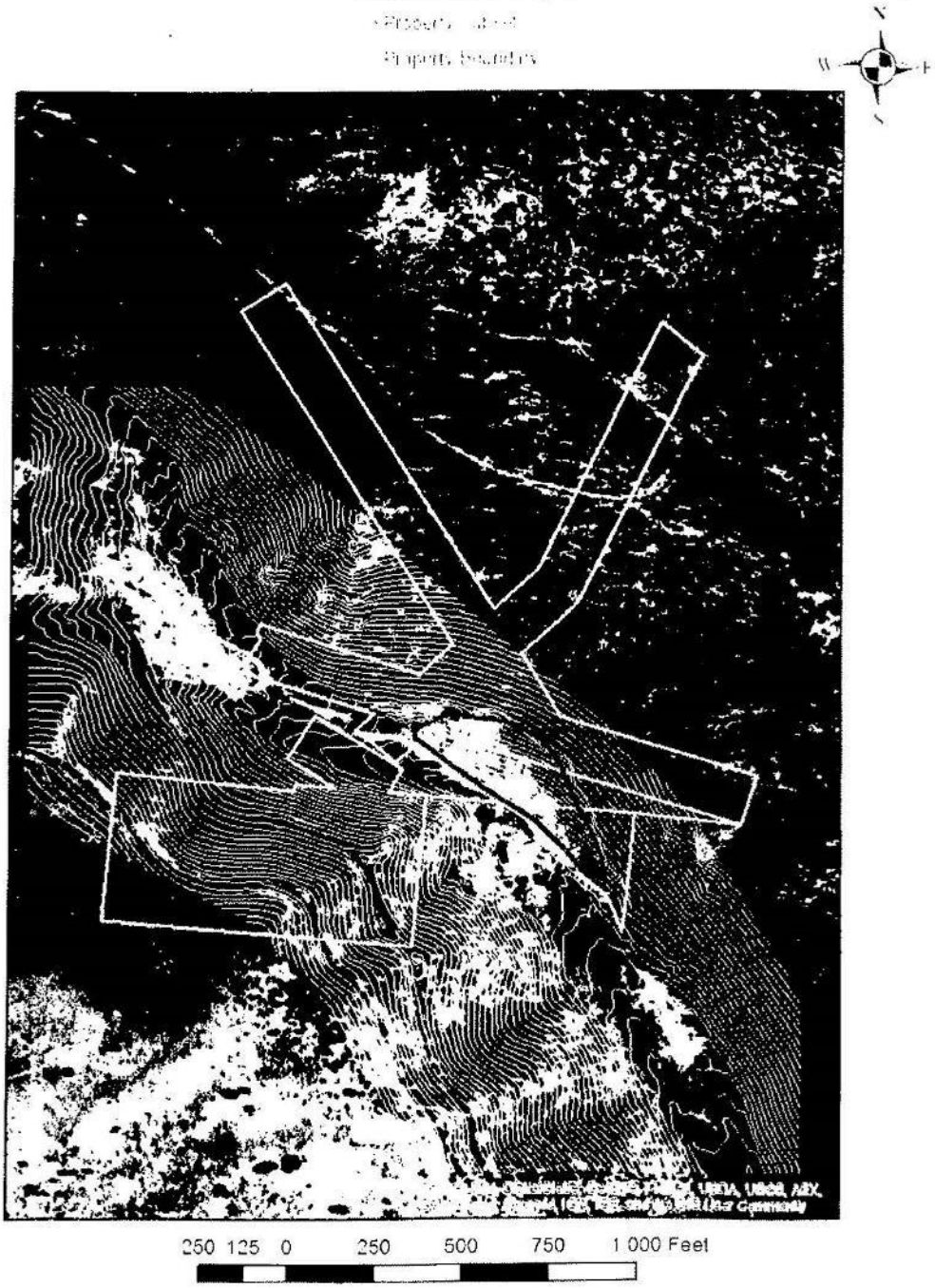
Together with

2)The Gray Bird Lode, US Survey #603A; the southeasterly 300.00 feet of the Quincy Lode, US Survey #9718A; and the Burlington, Captain Jack and Philadelphia Lodes, US Survey #11231, as conveyed by Deed recorded on December 16, 1996 at Reception Number 812653 (the "Captain Jack Deed") and having an address of 42593 Peak to Peak Highway, Ward, Colorado, excepting those portions excepted in the Captain Jack Deed; and together with a surface easement to the Cross Millsite, as said easement is further described in the Captain Jack Deed.

All in Section 12, Township 1 North, Range 73 West of the 6th P.M., Boulder County, Colorado

Attachment B

Attachment B - Page 1

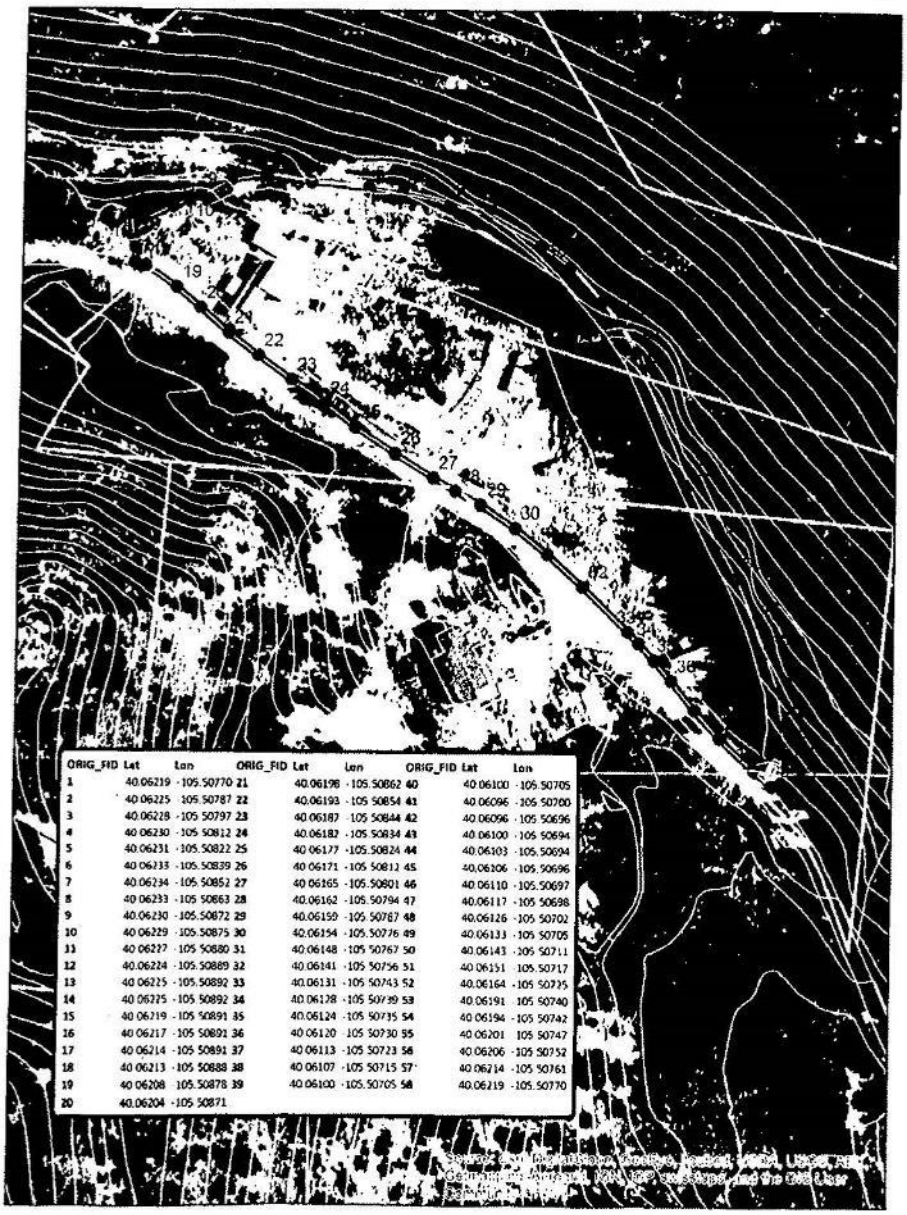


Vector Coordinates Decimal Degrees GCS_North_American_1983

Property Boundary

Property Subset

Attachment B - Page 2



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3	40.06228	-105.50797	23	40.06187	-105.50844	42	40.06096	-105.50696
4	40.06230	-105.50812	24	40.06182	-105.50834	43	40.06100	-105.50694
5	40.06231	-105.50822	25	40.06177	-105.50824	44	40.06103	-105.50694
6	40.06233	-105.50839	26	40.06171	-105.50812	45	40.06106	-105.50696
7	40.06234	-105.50852	27	40.06165	-105.50801	46	40.06110	-105.50697
8	40.06233	-105.50863	28	40.06162	-105.50794	47	40.06117	-105.50698
9	40.06230	-105.50872	29	40.06159	-105.50787	48	40.06126	-105.50702
10	40.06229	-105.50875	30	40.06154	-105.50776	49	40.06133	-105.50705
11	40.06227	-105.50880	31	40.06148	-105.50767	50	40.06143	-105.50711
12	40.06224	-105.50889	32	40.06141	-105.50756	51	40.06151	-105.50717
13	40.06225	-105.50892	33	40.06131	-105.50743	52	40.06164	-105.50725
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15	40.06219	-105.50891	35	40.06124	-105.50735	54	40.06194	-105.50742
16	40.06217	-105.50891	36	40.06120	-105.50730	55	40.06201	-105.50747
17	40.06214	-105.50891	37	40.06113	-105.50723	56	40.06206	-105.50752
18	40.06213	-105.50888	38	40.06107	-105.50715	57	40.06214	-105.50761
19	40.06208	-105.50878	39	40.06100	-105.50705	58	40.06219	-105.50770
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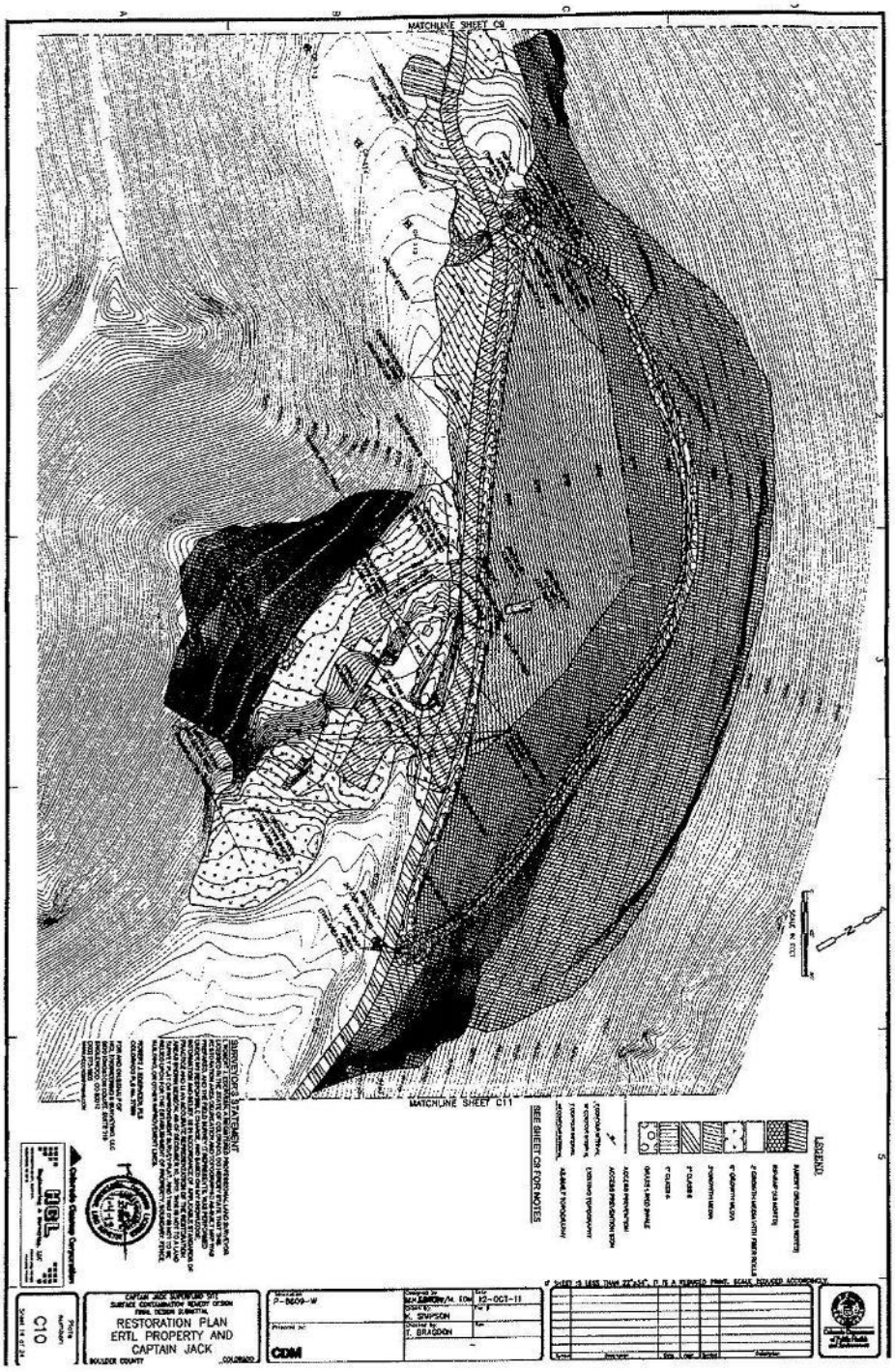


Attachment B - Page 3

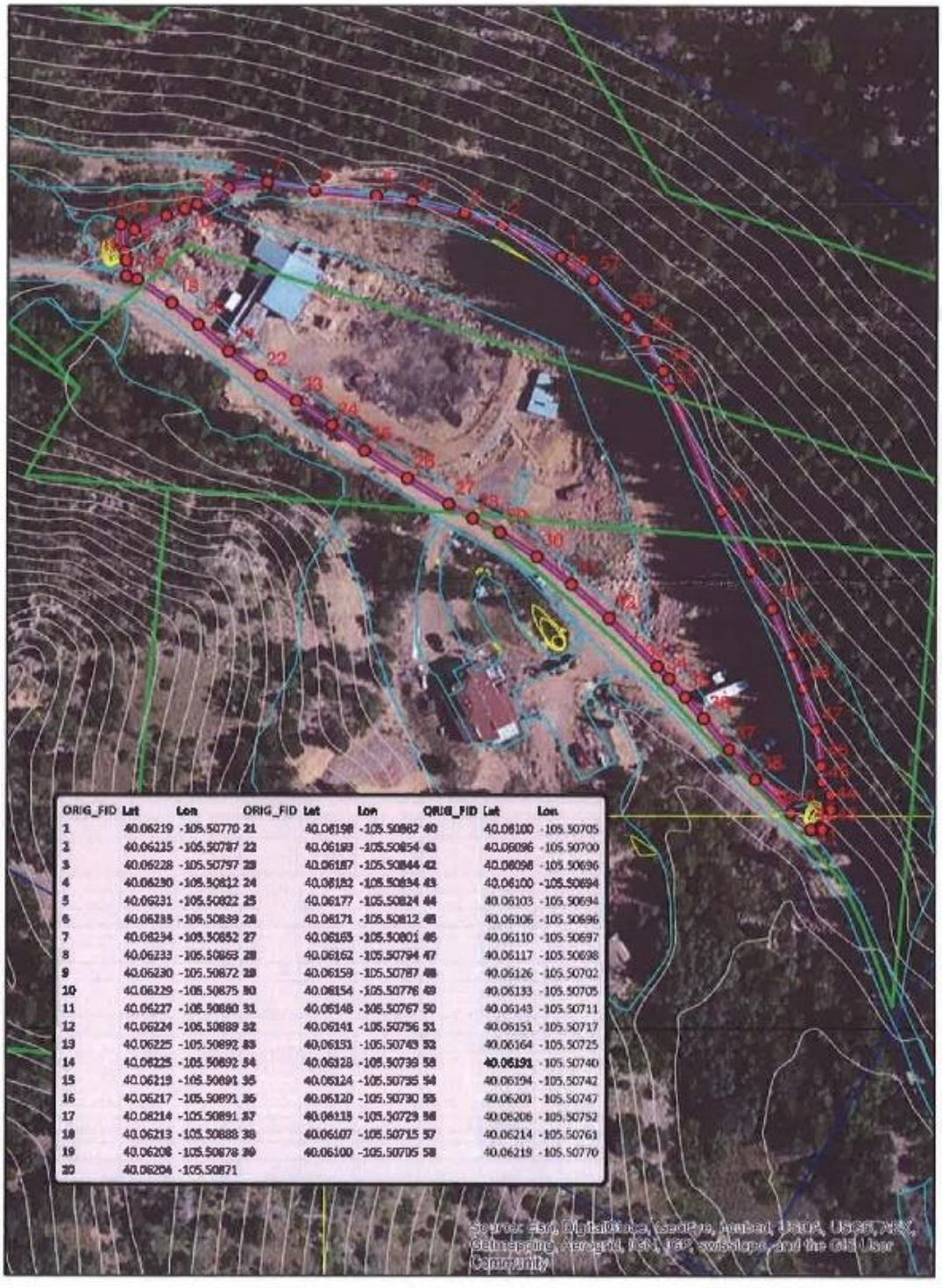
Attachment B- Page 1

Vector Coordinates Decimal Degrees GCS_North_American_1983

Property Boundary

Property Subset

Attachment B - Page 2



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4	40.06230	-105.50812	24	40.06182	-105.50834	43	40.06100	-105.50694
5	40.06231	-105.50822	25	40.06177	-105.50824	44	40.06103	-105.50694
6	40.06235	-105.50839	26	40.06171	-105.50812	45	40.06106	-105.50696
7	40.06234	-105.50852	27	40.06165	-105.50801	46	40.06110	-105.50697
8	40.06233	-105.50863	28	40.06162	-105.50794	47	40.06117	-105.50698
9	40.06230	-105.50872	29	40.06159	-105.50787	48	40.06126	-105.50702
10	40.06229	-105.50875	30	40.06154	-105.50776	49	40.06133	-105.50705
11	40.06227	-105.50880	31	40.06148	-105.50767	50	40.06143	-105.50711
12	40.06224	-105.50889	32	40.06141	-105.50756	51	40.06151	-105.50717
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15	40.06219	-105.50891	35	40.06124	-105.50735	54	40.06194	-105.50742
16	40.06217	-105.50891	36	40.06120	-105.50730	55	40.06201	-105.50747
17	40.06214	-105.50891	37	40.06118	-105.50729	56	40.06206	-105.50752
18	40.06213	-105.50888	38	40.06107	-105.50715	57	40.06214	-105.50761
19	40.06208	-105.50878	39	40.06100	-105.50705	58	40.06219	-105.50770
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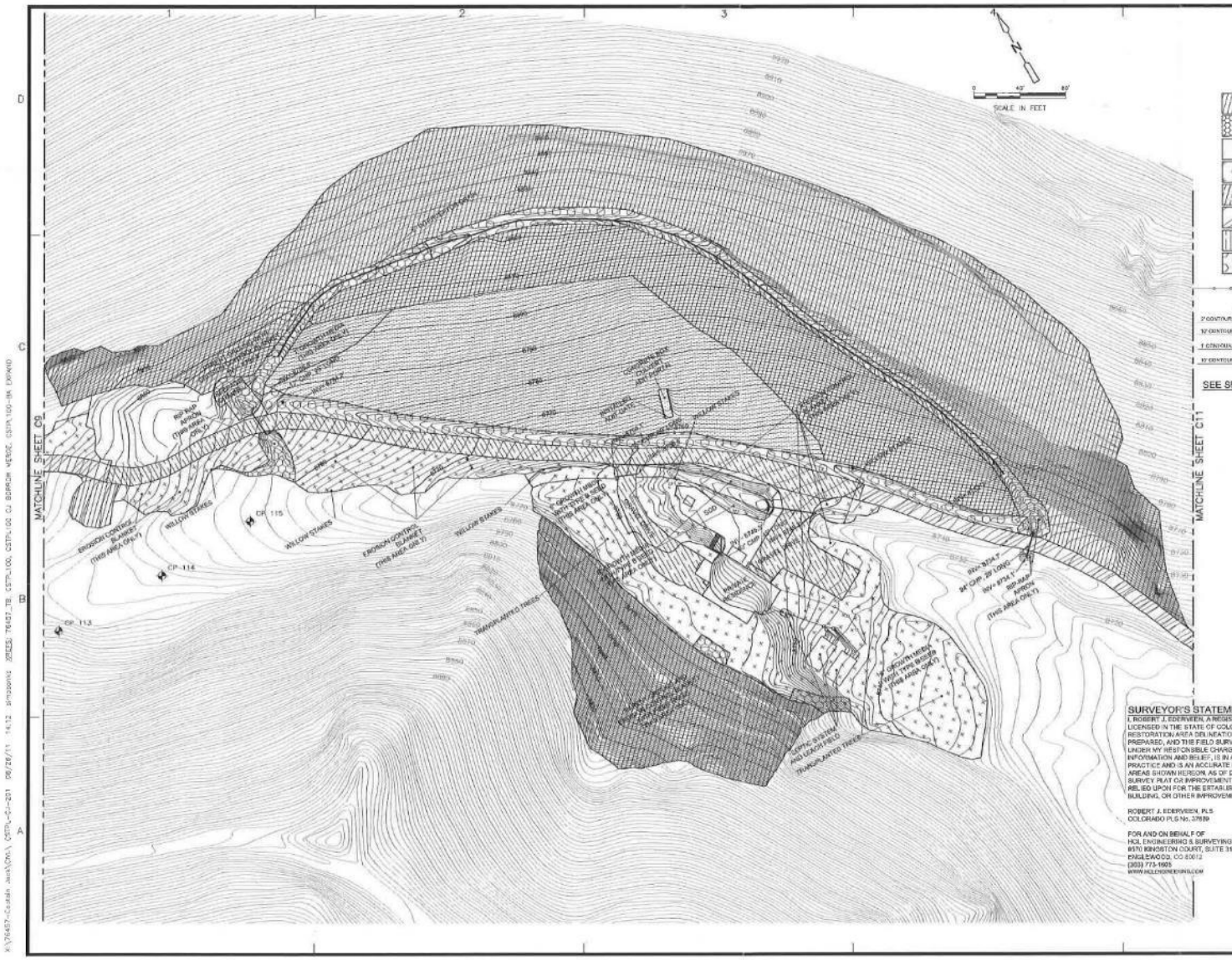

SCALE IN FEET
MATCHLINE SHEET C9
MATCHLINE SHEET C11
SURVEYOR'S STATEM
ROBERT J. EDERVEEN, PLS
COLORADO PLS No. 37839
FOR AND ON BEHALF OF
HOL ENGINEERING & SURVEYING
8570 KINGSTON COURT, SUITE 31
ENGLEWOOD, CO 80012
(303) 773-1605

03957018 04/18/2022 09:36 AM
RF: $0.00 DF: $0.00 Page: 1 of 10
Electronically recorded in Boulder County Colorado. Recorded as received.

This property is subject to a Notice of Environmental Use Restrictions imposed by the Colorado Department of Public Health and Environment pursuant to section 25-15-321.5, Colorado Revised Statutes

NOTICE OF ENVIRONMENTAL USE RESTRICTIONS

WHEREAS, Boulder County ("OWNER") is the owner of certain property located in Boulder County, State of Colorado, more particularly described in Attachment A and depicted in Attachment B, attached hereto and incorporated herein by reference as though fully set forth herein (hereinafter referred to as "the Property"); and

WHEREAS, the Hazardous Materials and Waste Management Division of the Colorado Department of Public Health and the Environment ("Department"), which is located at 4300 Cherry Creek Drive South, Denver, Colorado 80246-1530, is authorized to approve Notices of Environmental Use Restrictions (a/k/a "Restrictive Notices") pursuant to § 25-15-320(4)(a) of the Colorado Hazardous Waste Act, § 25-15-101, et seq. ("CHWA"); and

WHEREAS, for purposes of indexing in the County Clerk and Recorder's office Grantor-Grantee index only, Boulder County shall be considered the **Grantor**, and the Colorado Department of Public Health and Environment shall be considered the **Grantee**. Nothing in the preceding sentence shall be construed to create or transfer any right, title or interest in the Property; and

WHEREAS, portions of the Property are located within the Captain Jack Superfund Mill Site ("Site"), which the U.S. Environmental Protection Agency ("EPA"), pursuant to Section 105 of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. § 9605, placed on the National Priorities List, set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register in 2003; and

WHEREAS, in the Captain Jack Mill Superfund Site Record of Decision dated September 2008 (the "ROD"), the EPA Region 8 Regional Administrator selected a "remedial action" for the Site, which provides, in part, for the following actions:

a. Addressing Surface Contamination Sources;
b. Addressing Subsurface Contamination Sources; and
c. Operational Monitoring.

WHEREAS, pursuant to the ROD and CERCLA, a remedial action is being taken on the Property which involves the installation, operation and maintenance, and use of boreholes, pipeline, ERT arrays, water management structures, and associated features; and

WHEREAS, the purpose of this Restrictive Notice is to ensure protection of human health and the environment by operating, maintaining and potentially upgrading the remedial components at the Property; and

WHEREAS, EPA and the Department and its agents and contractors may need to access portions of the Property to operate and maintain the remedial components and to ensure continued functionality of the remedial action; and

WHEREAS, OWNER has requested that the Department approve this Restrictive Notice as provided in Article 15 of Title 25, Colorado Revised Statutes;

NOW, THEREFORE, the Department approves this Restrictive Notice pursuant to § 25-15-321.5, C.R.S. The Property described in Attachment A shall hereinafter be subject to the following requirements, which shall be binding on the OWNER and all persons now or subsequently having any right, title or interest in the Property, or any part thereof, and any persons using the land, as described herein. As used in this Restrictive Notice, the term OWNER means the then current record owner of the Property and, if any, any other person or entity otherwise legally authorized to make decisions regarding the transfer of the Property or placement of encumbrances on the Property, other than by the exercise of eminent domain.

1) Use Restrictions and Activity Restrictions:

a) No excavation, drilling, grading, digging, tilling or any other soil-disturbing activity is allowed on the Property without written authorization from the Department, which will consult with EPA.

b) Any action that may damage or interfere with the proper operation or maintenance of any engineered component of the remedy on the Property is prohibited.

c) Third party access to the Property is prohibited, except for Department authorized remedial activities, without approval by the Department.

d) OWNER shall provide the Department and EPA, their respective officers, agents, agencies, assigns, delegates, employees, contractors and subcontractors, access to the Property as required to perform any operation and maintenance of the response actions pursuant to this Restrictive Notice.

e) The Property will not be used in any way that interferes with the implementation, operation, and/or maintenance of the CERCLA remedial actions. OWNER shall not place any objects or structures on the Property that would limit authorized vehicular access to the Property.

f) No groundwater from under the Property will be used for a public water system, non-public individual or private water source, or domestic use without notifying and consulting with the Department, which will consult with EPA. "Domestic use" means household or family use, including, but not limited to: drinking, bathing, and gardening.

2) Modifications: This Restrictive Notice shall remain in full force and effect unless modified or terminated in accordance with this paragraph and pursuant to § 25-15-321.5, C.R.S. or any successor statute. OWNER may request that the Department approve a modification or

termination of the Restrictive Notice. The request shall contain information showing that the proposed modification or termination shall, if implemented, ensure protection of human health and the environment. The Department shall review any submitted information, and may request additional information. The Department will consult with EPA and provide EPA an opportunity to comment on any proposed modification. If the Department determines that the proposal to modify or terminate the Restrictive Notice will ensure protection of human health and the environment, it shall approve the proposal. No modification or termination of this Restrictive Notice shall be effective unless the Department has approved such modification or termination in writing. Information to support a request for modification or termination may include one or more of the following:

a) a proposal to perform additional remedial work;
b) new information regarding the risks posed by the residual contamination;
c) information demonstrating that residual contamination has diminished;
d) information demonstrating that an engineered feature or structure is no longer necessary;
e) information demonstrating that the proposed modification would not adversely impact the remedy and is protective of human health and the environment; and
f) other appropriate supporting information.

3) Conveyances: OWNER shall notify the Department at least fifteen (15) days prior to any conveyance of any interest in any or all of the Property. Within thirty (30) days after any conveyance, OWNER shall provide the Department with a copy of the recorded deed transferring any interest in any or all of the Property and provide the name, mailing address, and telephone number of the new OWNER.

4) Notice to Lessees: OWNER agrees to incorporate either in full or by reference the restrictions of this Restrictive Notice in any leases, licenses, or other instruments granting a right to use the Property.

5) Notification for proposed construction and land use: OWNER shall notify the Department simultaneously when submitting any application to a local government for a building permit or change in land use.

6) Inspections: The Department, EPA, and their representatives, agents and contractors, shall have the right of entry to the Property at reasonable times with prior notice for the purpose of determining compliance with the terms of this Restrictive Notice. Nothing in this Restrictive Notice shall impair any other authority the Department or EPA may otherwise have to enter and inspect the Property.

7) Third Party Beneficiary: The OWNER of the Property and EPA are third party beneficiaries with the right to enforce the provisions of this Restrictive Notice as provided in § 25-15- 322, C.R.S.

8) No Liability: The Department does not acquire any liability under State law by virtue of approving this Restrictive Notice nor does any other named beneficiary of this Restrictive Notice acquire any liability under State law by virtue of being such a beneficiary.

9) Enforcement: The Department may enforce the terms of this Restrictive Notice pursuant to § 25-15-322, C.R.S. As third party beneficiaries, OWNER and EPA may file suit in district court to enjoin actual or threatened violations of this Restrictive Notice.

10) Owner's Compliance Certification: OWNER shall execute and return a certification form provided by the Department, on an annual basis, detailing OWNER's compliance, and any lack of compliance, with the terms of this Restrictive Notice.

11) Severability: If any part of this Restrictive Notice shall be decreed to be invalid by any court of competent jurisdiction, all of the other provisions hereof shall not be affected thereby and shall remain in full force and effect.

12) Notices: Any document or communication required under this Restrictive Notice shall be sent or directed to:

Remediation Program Manager
Hazardous Materials and Waste Management Division
Colorado Department of Public Health and the Environment
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

Remedial Project Manager, Captain Jack Mill Superfund Site
SEM-RB
U.S. EPA Region 8
1595 Wynkoop St.
Denver, CO 80202

13) Subdivision of Property: Prior to any subdivision of the Property, OWNER shall submit a plan addressing the certification of compliance set forth in Paragraph 10 of this Restrictive Notice at least ninety (90) days prior to creating the subdivision. The Department shall approve the plan if it determines that the plan reasonably will ensure continued compliance with the requirements of this Restrictive Notice. Any Department notice of disapproval shall include the Department's rationale for its decision, including any additional information or changes to the plan that the Department requires before the plan can be approved. Any appeal of a Department notice of disapproval shall be taken in accordance with section 25-15-305(2), C.R.S. If OWNER fails to obtain approval of such plan prior to subdividing the Property, the owner of each subdivided parcel shall continue to be responsible for certifying compliance with the restrictions set forth in paragraph 10 of this Restrictive Notice.

This Notice of Environmental Use Restrictions is approved by the Colorado Department of Public Health and Environment this 30TH day of MARCH, 2022.

[Remainder of Page Intentionally Blank]

OWNER has caused this instrument to be executed this ____ day of _____, _____.

COUNTY OF BOULDER,
a body corporate and politic

By: _____
Marta Loachamin, Chair, Boulder County Board of Commissioners

State of Colorado
County of Boulder

The foregoing instrument was acknowledged before me this 22 day of Feb, 2022 by Marta Loachamin, Chair of the Board of County Commissioners of Boulder County, Colorado.

Cecilia G. Lacey
(Notary official signature)

08/17/2025
(Commission expiration)

CECILIA G. LACEY
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20014023591
MY COMMISSION EXPIRES 08/17/2025

Accepted by the Colorado Department of Public Health and Environment this 30TH day of MARCH, 2022.

Tracie White, P.E.
Director, Hazardous Materials and Waste Management Division

STATE OF COLORADO)
) ss:
COUNTY OF DENVER)

The foregoing instrument was acknowledged before me this 30 day of March, 2022 by Tracie White on behalf of the Colorado Department of Public Health and Environment.

Notary Public
4950 E. 119th Ct. Thornton, CO 80233
Address

My commission expires: October 27, 2025

CAITLIN TIEHEN
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20214042441
MY COMMISSION EXPIRES OCT 27, 2025

Attachment A - Property Description

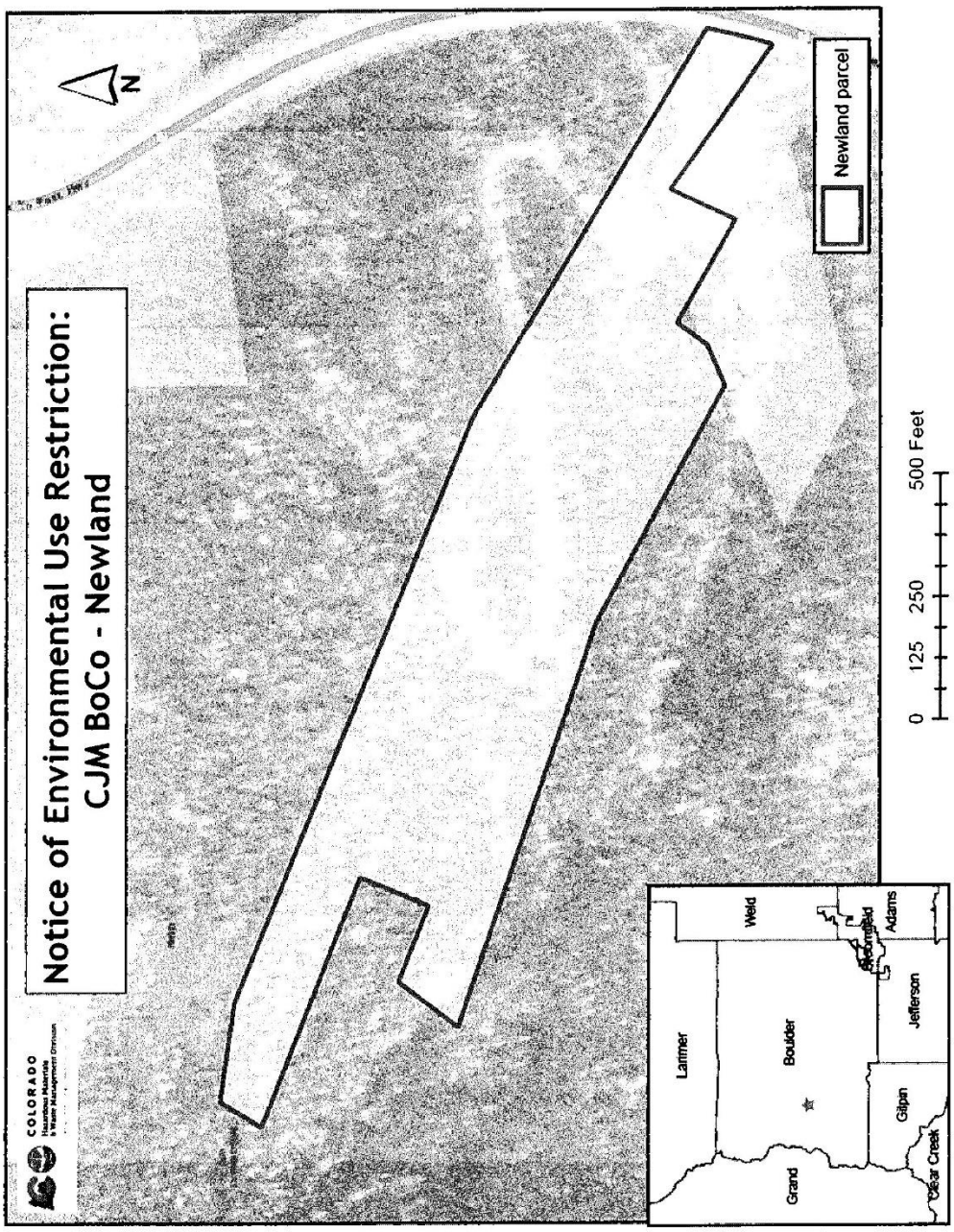
Parcel 1:
The Dew Drop Lode Mining Claim, The Dew Drop Extension Lode Mining Claim, and the Northwesterly portion of the Sunrise Lode Mining Claim, being and lying Northwest of Colorado Highway 72, commonly known as the Peak-to-Peak Highway, all being U.S. Mineral Survey No. 9464A, as described in the United States Patent recorded September 7, 1904, in Book 237 at Page 144,County of Boulder, State of Colorado

Parcel 2:
The Helen C Lode Mining Claim, U.S. Mineral Survey No. 10880, as described in the United States Patent recorded May 9, 1898 in Book 204 at Page 104, EXCEPTING AND EXCLUDING THEREFROM any portion thereof embraced in Survey No. 9264, the Gold Bug and Gold Chief Lode Claims, Survey No. 9462, the Dew Drop and Dew Drop Extension Lode Claims, Survey No.9464A, and the Low Line Lode Claim, unsurveyed, as excepted and excluded by said United States Patent,
County of Boulder, State of Colorado

Parcel 3:
The Redeemer Lode Mining claim, U.S. Mineral Survey No. 10885, as described in the United States Patent recorded June 2, 1898 in Book 204 at Page 107,EXCEPTING AND EXCLUDING THEREFROM any portion thereof embraced in Mining Claims or 9464A, as excepted and excluded by said United States Patent, County of Boulder, State of Colorado

Also described as Boulder County Assessor Parcel 145712000005

Attachment B - Property Location


Notice of Environmental Use Restriction:
CJM BoCo - Newland
N
Newland parcel
0 125 250 500 Feet
10
COLORADO
Weld
Adams
Jefferson
Boulder
Lanmer
Grand
Gilpin
Clear Creek

03957018 04/18/2022 09:36 AM
RF: $0.00 DF: $0.00 Page: 1 of 10
Electronically recorded in Boulder County Colorado. Recorded as received.

This property is subject to a Notice of Environmental Use Restrictions imposed by the Colorado Department of Public Health and Environment pursuant to section 25-15-321.5, Colorado Revised Statutes

NOTICE OF ENVIRONMENTAL USE RESTRICTIONS

WHEREAS, Boulder County ("OWNER") is the owner of certain property located in Boulder County, State of Colorado, more particularly described in Attachment A and depicted in Attachment B, attached hereto and incorporated herein by reference as though fully set forth herein (hereinafter referred to as "the Property"); and

WHEREAS, the Hazardous Materials and Waste Management Division of the Colorado Department of Public Health and the Environment ("Department"), which is located at 4300 Cherry Creek Drive South, Denver, Colorado 80246-1530, is authorized to approve Notices of Environmental Use Restrictions (a/k/a "Restrictive Notices") pursuant to § 25-15-320(4)(a) of the Colorado Hazardous Waste Act, § 25-15-101, et seq. ("CHWA"); and

WHEREAS, for purposes of indexing in the County Clerk and Recorder's office Grantor-Grantee index only, Boulder County shall be considered the **Grantor**, and the Colorado Department of Public Health and Environment shall be considered the **Grantee**. Nothing in the preceding sentence shall be construed to create or transfer any right, title or interest in the Property; and

WHEREAS, portions of the Property are located within the Captain Jack Superfund Mill Site ("Site"), which the U.S. Environmental Protection Agency ("EPA"), pursuant to Section 105 of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. § 9605, placed on the National Priorities List, set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register in 2003; and

WHEREAS, in the Captain Jack Mill Superfund Site Record of Decision dated September 2008 (the "ROD"), the EPA Region 8 Regional Administrator selected a "remedial action" for the Site, which provides, in part, for the following actions:

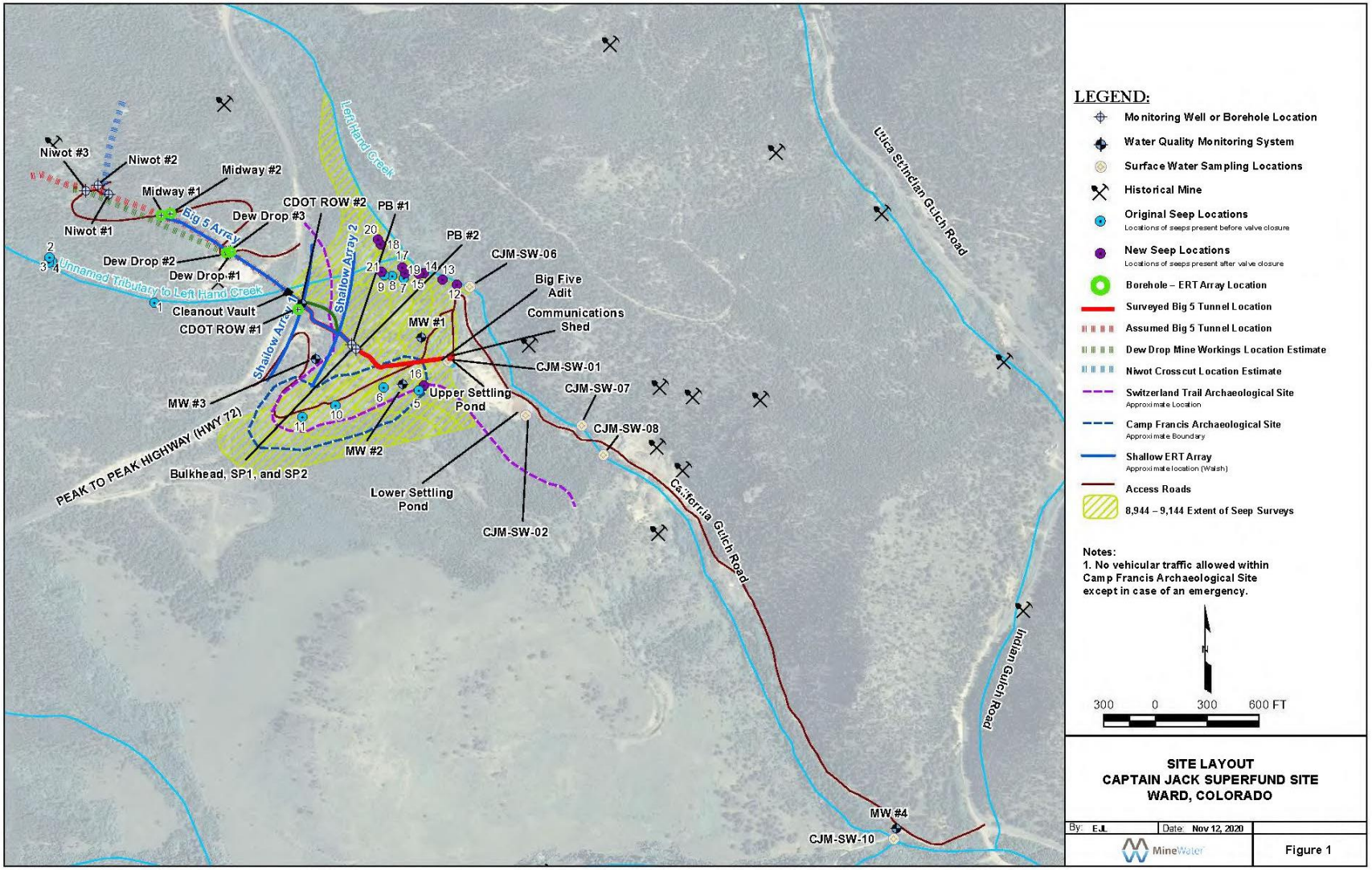
a. Addressing Surface Contamination Sources;
b. Addressing Subsurface Contamination Sources; and
c. Operational Monitoring.

WHEREAS, pursuant to the ROD and CERCLA, a remedial action is being taken on the Property which involves the installation, operation and maintenance, and use of boreholes, pipeline, ERT arrays, water management structures, and associated features; and

WHEREAS, the purpose of this Restrictive Notice is to ensure protection of human health and

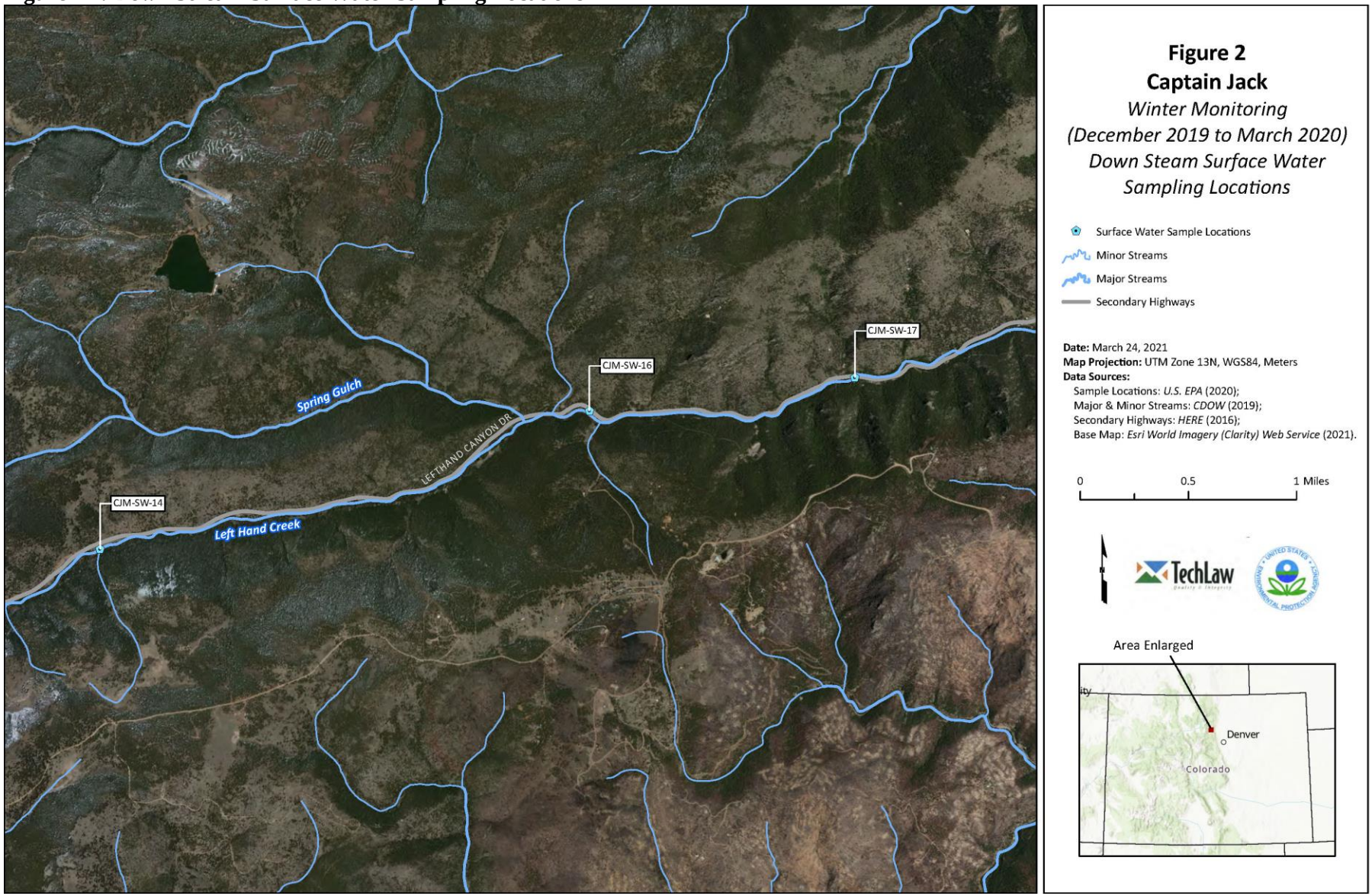
APPENDIX I – SURFACE WATER AND GROUNDWATER SAMPLING DATA, 2018-2021

Figure I-1: Sampling Locations[6]



[6] *Source:* January 2022 Monthly Status Report for the In-Tunnel Treatability Study

Figure I-2: Down Stream Surface Water Sampling Locations[7]



[7] Source: Figure 2 of the 2020 Sampling Activities Report.

Figure I-3: Surface Water and Groundwater Sampling Results, 2018[8]

Table 1 Captain Jack Mill Superfund Site June 2018
Surface Water and Groundwater Dissolved Metals Analytical Results

STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
CJM-GW-DD1	Dissolved Metals	Groundwater	6/19/2018	<20 U	1.08 J+	<0.5 U	20.1	<2 U	0.157 J	77700	1.07 J	0.555	2.46	291	<100 U	0.196 J	23700	302	<1 U	<0.5 U	1210	<1 U	<0.5 U	5270	<1 U	7.25	<2 U	10.2 J
CJM-GW-DD2	Dissolved Metals	Groundwater	6/19/2018	<20 U	6.23	<0.5 U	36.9	<2 U	<0.1 U	96400	2.46	0.175 J	1.89	359	<100 U	0.138 J	28800	571	<1 U	<0.5 U	2090	<1 U	<0.5 U	17000	<1 U	1.38	<2 U	<10 U
CJM-GW-DD3	Dissolved Metals	Groundwater	6/19/2018	52300	6.84 U	7.12 J	<50 U	27.3	92.2	360000	35	646	17900	1550	127000	72.7	158000	26600	10.5	639	514 J	<10 U	<5 U	7830	<10 U	766	<20 U	15900
CJM-GW-MID1	Dissolved Metals	Groundwater	6/19/2018	94.4	8.15 U	<5 U	<50 U	3.5 J	<1 U	238000	11.2 J	8.24	<5 U	918	158000	<1 U	78600	22800	<10 U	37.4	4600	<10 U	<5 U	9550	<10 U	1.3 J	<20 U	47.4
CJM-GW-MID2	Dissolved Metals	Groundwater	6/19/2018	33100	<5 U	<5 U	<50 U	21.2	57.5	343000	18.5 J	442	11600	1380	76800	107	128000	21900	<10 U	444	1810	<10 U	<5 U	8070	<10 U	488	<20 U	11800
CJM-GW-MW1	Dissolved Metals	Groundwater	6/19/2018	<20 U	<1 U	<0.5 U	37.4	<2 U	<0.1 U	26400	1.33 J	0.476	0.839 J	147	2170	<0.1 U	19800	183	1.9	<0.5 U	1570	<1 U	<0.5 U	3930	<1 U	2.63	<2 U	<10 U
CJM-GW-MW2	Dissolved Metals	Groundwater	6/19/2018	<20 U	4	0.588 J	33.7	<2 U	<0.1 U	41800	1.82 J	<0.1 U	0.785 J	146	<100 U	<0.1 U	10200	96.1	<1 U	<0.5 U	1370	<1 U	<0.5 U	12000	<1 U	3.26	<2 U	37
CJM-GW-MW3	Dissolved Metals	Groundwater	6/19/2018	<20 U	4.41	0.875 J	53	<2 U	<0.1 U	54800	1.54 J	0.163 J	0.972 J	195	347	<0.1 U	14200	281	<1 U	<0.5 U	1700	<1 U	<0.5 U	9150	<1 U	2.26	<2 U	<10 U
CJM-GW-MW3 DUP	Dissolved Metals	Groundwater	6/19/2018	<20 U	3.7	0.956 J	54.1	<2 U	<0.1 U	54600	<1 U	0.144 J	0.848 J	195	363	<0.1 U	14200	284	<1 U	<0.5 U	1630	<1 U	<0.5 U	9070	<1 U	2.31	<2 U	<10 U
CJM-GW-MW4	Dissolved Metals	Groundwater	6/19/2018	<20 U	<1 U	<0.5 U	27.2	<2 U	0.12 J	9660	<1 U	<0.1 U	4.09	40	<100 U	0.213	3780	<2 U	<1 U	0.519 J	906 J	<1 U	<0.5 U	3990	<1 U	0.152 J	<2 U	63
CJM-GW-MW4 DUP	Dissolved Metals	Groundwater	6/19/2018	<20 U	<0.5 U	<0.5 U	27	<2 U	0.12 J	9440	<1 U	<0.1 U	4.01	39	<100 U	<0.1 U	3680	<2 U	<1 U	0.503 J	867 J	<1 U	<0.5 U	3880	<1 U	0.153 J	<2 U	61
CJM-GW-ROW1	Dissolved Metals	Groundwater	6/19/2018	<20 U	1.08 J+	0.843 J	110	<2 U	<0.1 U	36200	<1 U	1.27	1.3	140	1730	<0.1 U	12100	580	<1 U	<0.5 U	1510	<1 U	<0.5 U	10100	<1 U	1.42	<2 U	<10 U
CJM-GW-ROW2	Dissolved Metals	Groundwater	6/19/2018	26.1 J	1.84 J+	<0.5 U	68.1	<2 U	0.344	18200	<1 U	0.33	9.75	68	<100 U	0.118 J	5580	28.2	<1 U	0.718 J	1200	<1 U	<0.5 U	21700	<1 U	0.398	<2 U	51.1
CJM-GW-WG01	Dissolved Metals	Groundwater	6/19/2018	102	<1 U	<0.5 U	6.22 J	<2 U	<0.1 U	10700	<1 U	<0.1 U	0.536 J	41	<100 U	<0.1 U	3510	<2 U	<1 U	<0.5 U	747 J	<1 U	<0.5 U	3490	<1 U	0.429	<2 U	<10 U
CJM-SW-01	Dissolved Metals	Surface Water	6/19/2018	<20 U	<2.5 U	<2.5 U	54.3	<2 U	<0.5 U	168000	<5 U	11.6	11.3	594	<100 U	<0.5 U	42600	690	5.22	19.3	6100	<5 U	<2.5 U	16100	<5 U	30.1	<10 U	181
CJM-SW-03	Dissolved Metals	Surface Water	6/19/2018	<20 U	<0.5 U	<0.5 U	6.54 J	<2 U	<0.1 U	1960	<1 U	<0.1 U	0.813 J	7	<100 U	<0.1 U	445	<2 U	<1 U	<0.5 U	392 J	<1 U	<0.5 U	1630	<1 U	<0.1 U	<2 U	<10 U
CJM-SW-03 DUP	Dissolved Metals	Surface Water	6/19/2018	<20 U	<1 U	<0.5 U	6.63 J	<2 U	<0.1 U	1970	<1 U	<0.1 U	0.894 J	7	<100 U	<0.1 U	445	<2 U	<1 U	<0.5 U	381 J	<1 U	<0.5 U	1630	<1 U	<0.1 U	<2 U	<10 U
CJM-SW-04	Dissolved Metals	Surface Water	6/19/2018	<20 U	<1 U	<0.5 U	7.27 J	<2 U	<0.1 U	4020	<1 U	<0.1 U	0.806 J	15	<100 U	<0.1 U	1190	<2 U	<1 U	<0.5 U	444 J	<1 U	<0.5 U	1940	<1 U	<0.1 U	<2 U	<10 U
CJM-SW-05	Dissolved Metals	Surface Water	6/19/2018	26.1 J	<1 U	<0.5 U	8.7 J	<2 U	<0.1 U	4600	<1 U	<0.1 U	1.24	17	<100 U	<0.1 U	1370	<2 U	<1 U	<0.5 U	554 J	<1 U	<0.5 U	2500	<1 U	<0.1 U	<2 U	14.2 J
CJM-SW-06	Dissolved Metals	Surface Water	6/19/2018	21.3 J	<0.5 U	<0.5 U	8.87 J	<2 U	<0.1 U	4590	<1 U	<0.1 U	2.33	17	<100 U	<0.1 U	1350	<2 U	<1 U	<0.5 U	472 J	<1 U	<0.5 U	2500	<1 U	<0.1 U	<2 U	14.6 J
CJM-SW-07	Dissolved Metals	Surface Water	6/19/2018	25.3 J	<0.5 U	<0.5 U	8.87 J	<2 U	<0.1 U	4520	<1 U	<0.1 U	1.47	17	<100 U	<0.1 U	1350	<2 U	<1 U	<0.5 U	497 J	<1 U	<0.5 U	2490	<1 U	<0.1 U	<2 U	12.5 J
CJM-SW-08	Dissolved Metals	Surface Water	6/19/2018	31 J	<0.5 U	<0.5 U	8.08 J	<2 U	<0.1 U	4450	<1 U	<0.1 U	1.39	17	<100 U	0.153 J	1330	<2 U	<1 U	<0.5 U	552 J	<1 U	<0.5 U	2440	<1 U	<0.1 U	<2 U	11.9 J
CJM-SW-09	Dissolved Metals	Surface Water	6/19/2018	91.6	<0.5 U	<0.5 U	10.4	<2 U	<0.1 U	5590	<1 U	0.142 J	8.1	21	<100 U	0.58	1690	24.9	<1 U	<0.5 U	785 J	<1 U	<0.5 U	3030	<1 U	0.128 J	<2 U	24.1
CJM-SW-10	Dissolved Metals	Surface Water	6/19/2018	29.3 J	<0.5 U	<0.5 U	10.6	<2 U	0.113 J	5340	<1 U	0.115 J	11.3	20	<100 U	<0.1 U	1700	16.3	<1 U	<0.5 U	533 J	<1 U	<0.5 U	2790	<1 U	0.144 J	<2 U	53.2
CJM-SW-11	Dissolved Metals	Surface Water	6/19/2018	27.8 J	<0.5 U	<0.5 U	12	<2 U	<0.1 U	4720	<1 U	<0.1 U	8.01	18	<100 U	<0.1 U	1530	14.7	<1 U	<0.5 U	492 J	<1 U	<0.5 U	2790	<1 U	0.107 J	<2 U	35.3
CJM-SW-11 DUP	Dissolved Metals	Surface Water	6/19/2018	29.6 J	<1 U	<0.5 U	11.8	<2 U	<0.1 U	4730	<1 U	0.101 J	7.81	18	<100 U	0.214	1520	14.8	<1 U	<0.5 U	481 J	<1 U	<0.5 U	2780	<1 U	0.111 J	<2 U	35.5
Seep6	Dissolved Metals	Surface Water	6/19/2018	<20 U	<0.5 U	<0.5 U	100	<2 U	<0.1 U	30900	<1 U	0.145 J	0.59 J	105	<100 U	<0.1 U	6850	14.3	<1 U	<0.5 U	1950	<1 U	<0.5 U	50500	<1 U	<0.1 U	<2 U	113
Blank	Dissolved Metals	Water	6/19/2018	<20 U	<0.5 U	<0.5 U	<5 U	<2 U	<0.1 U	<100 U	<1 U	<0.1 U	<0.5 U	<2 U	<100 U	<0.1 U	<100 U	<2 U	<1 U	<0.5 U	<250 U	<1 U	<0.5 U	<250 U	<1 U	<0.1 U	<2 U	<10 U

STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
CJM-SW-03	Dissolved Metals	Surface Water	6/19/2018	<20 U	<0.5 U	<0.5 U	6.54	<2 U	<0.1 U	1960	<1 U	<0.1 U	0.813	7	<100 U	<0.1 U	445	<2 U	<1 U	<0.5 U	392	<1 U	<0.5 U	1630	<1 U	<0.1 U	<2 U	<10 U
CJM-SW-03 DUP	Dissolved Metals	Surface Water	6/19/2018	<20 U	<1 U	<0.5 U	6.63	<2 U	<0.1 U	1970	<1 U	<0.1 U	0.894	7	<100 U	<0.1 U	445	<2 U	<1 U	<0.5 U	381	<1 U	<0.5 U	1630	<1 U	<0.1 U	<2 U	<10 U
		RPD		N/A	N/A	N/A	1.37%	N/A	N/A	0.51%	N/A	N/A	9.49%	0.00%	N/A	N/A	0.00%	N/A	N/A	N/A	2.85%	N/A	N/A	0.00%	N/A	N/A	N/A	N/A

STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
CJM-SW-11	Dissolved Metals	Surface Water	6/19/2018	27.8	<0.5 U	<0.5 U	12	<2 U	<0.1 U	4720	<1 U	<0.1 U	8.01	18	<100 U	<0.1 U	1530	14.7	<1 U	<0.5 U	492	<1 U	<0.5 U	2790	<1 U	0.107	<2 U	35.3
CJM-SW-11 DUP	Dissolved Metals	Surface Water	6/19/2018	29.6	<1 U	<0.5 U	11.8	<2 U	<0.1 U	4730	<1 U	0.101 J	7.81	18	<100 U	0.214	1520	14.8	<1 U	<0.5 U	481	<1 U	<0.5 U	2780	<1 U	0.111	<2 U	35.5
		RPD		6.27%	N/A	N/A	1.68%	N/A	N/A	0.21%	N/A	N/A	2.53%	0.00%	N/A	N/A	0.66%	0.68%	N/A	N/A	2.26%	N/A	N/A	0.36%	N/A	3.67%	N/A	0.56%

STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
CJM-GW-MW3	Dissolved Metals	Groundwater	6/19/2018	<20 U	4.41	0.875	53	<2 U	<0.1 U	54800	1.54 J	0.163	0.972	195	347	<0.1 U	14200	281	<1 U	<0.5 U	1700	<1 U	<0.5 U	9150	<1 U	2.26	<2 U	<10 U
CJM-GW-MW3 DUP	Dissolved Metals	Groundwater	6/19/2018	<20 U	3.7	0.956	54.1	<2 U	<0.1 U	54600	<1 U	0.144	0.848	195	363	<0.1 U	14200	284	<1 U	<0.5 U	1630	<1 U	<0.5 U	9070	<1 U	2.31	<2 U	<10 U
		RPD		N/A	17.51%	8.85%	2.05%	N/A	N/A	0.37%	N/A	12.38%	13.63%	0.00%	4.51%	N/A	0.00%	1.06%	N/A	N/A	4.20%	N/A	N/A	0.88%	N/A	2.19%	N/A	N/A

STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
CJM-GW-MW4	Dissolved Metals	Groundwater	6/19/2018	<20 U	<1 U	<0.5 U	27.2	<2 U	0.12	9660	<1 U	<0.1 U	4.09	40	<100 U	0.213	3780	<2 U	<1 U	0.519	906	<1 U	<0.5 U	3990	<1 U	0.152	<2 U	63
CJM-GW-MW4 DUP	Dissolved Metals	Groundwater	6/19/2018	<20 U	<0.5 U	<0.5 U	27	<2 U	0.12	9440	<1 U	<0.1 U	4.01	39	<100 U	<0.1 U	3680	<2 U	<1 U	0.503	867	<1 U	<0.5 U	3880	<1 U	0.153	<2 U	61
		RPD		N/A	N/A	N/A	0.74%	N/A	0.00%	2.30%	N/A	N/A	1.98%	2.53%	N/A	N/A	2.68%	N/A	N/A	3.13%	4.40%	N/A	N/A	2.80%	N/A	0.66%	N/A	3.23%

Note: Removed flags from values for RPD calculation

Note: Data Qualifier Definitions Listed Below:

U = The analyte was analyzed for, but was not detected above the level of the reported sample Quantitation limit. Reported values represent the method detection limit.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

J- = The result is an estimated quantity and likely to have a low bias. The associated numerical value is the approximate concentration of the analyte in the sample

J+ =The result is an estimated quantity and likely to have a high bias. The associated numerical value is the approximate concentration of the analyte in the sample

[8] *Source:* 2018 Sampling Activities Report.

Table 2 Captain Jack Mill Superfund Site June 2018
Surface Water and Groundwater Total Recoverable Metals Analytical Results

STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
CJM-GW-DD1	Total Recoverable Metals	Groundwater	6/19/2018	14100	<2.5 U	<2.5 U	122	<2 U	<0.5 U	88600	14.9	5.93	34.3	15200	14.2	29100	1000	0.106	<5 U	5.18	3800	<5 U	<2.5 U	5760	<5 U	11.3 J-	16.7	99.6
CJM-GW-DD2	Total Recoverable Metals	Groundwater	6/19/2018	150	6.99	<2.5 U	45.4 J	<2 U	<0.5 U	88400	<5 U	<0.5 U	3.17 J	346	0.686 J	26200	578	<0.1 U	<5 U	<2.5 U	1840	<5 U	<2.5 U	16100	<5 U	1.22 J-	<10 U	<10 U
CJM-GW-DD3	Total Recoverable Metals	Groundwater	6/19/2018	50800	<25 U	<25 U	<250 U	26.1	94.5	335000	50.5 J	702	19000	144000	72.3	146000	25600	<0.1 U	<50 U	700	548 J	<50 U	<25 U	7420	<50 U	670 J-	<100 U	15400
CJM-GW-MID1	Total Recoverable Metals	Groundwater	6/19/2018	286	<5 U	<5 U	<50 U	3.46 J	<1 U	212000	<10 U	12.5	9.39 J	143000	3.67	70100	23100	<0.1 U	<10 U	<5 U	4020	<10 U	<5 U	8700	<10 U	2.05 J-	<20 U	724
CJM-GW-MID2	Total Recoverable Metals	Groundwater	6/19/2018	30500	<5 U	<5 U	<50 U	21.1	56	306000	18.6 J	427	10700	71700	125	113000	21900	0.418	14	407	1010	<10 U	<5 U	7300	<10 U	375 J-	<20 U	11800
CJM-GW-MW1	Total Recoverable Metals	Groundwater	6/19/2018	88.7	<2.5 U	<2.5 U	42.7 J	<2 U	<0.5 U	24500	<5 U	0.585 J	<2.5 U	3020	<0.5 U	18500	191	<0.1 U	<5 U	<2.5 U	1620	<5 U	<2.5 U	3700	<5 U	2.48 J-	<10 U	10.9 J
CJM-GW-MW2	Total Recoverable Metals	Groundwater	6/19/2018	67.5	6.71	<2.5 U	38.4 J	<2 U	<0.5 U	40300	<5 U	<0.5 U	<2.5 U	351	0.797 J	9610	99.2	<0.1 U	<5 U	<2.5 U	1440	<5 U	<2.5 U	11500	<5 U	2.94 J-	<10 U	54.1
CJM-GW-MW3	Total Recoverable Metals	Groundwater	6/19/2018	64.4	11.3	<2.5 U	60.4	<2 U	<0.5 U	51200	<5 U	<0.5 U	4.46 J	446	0.805 J	13100	289	<0.1 U	<5 U	<2.5 U	1550	<5 U	<2.5 U	8510	<5 U	1.95 J-	<10 U	26.1
CJM-GW-MW3 DUP	Total Recoverable Metals	Groundwater	6/19/2018	68	10.4	<2.5 U	58.6	<2 U	<0.5 U	53100	<5 U	0.548 J	11.1 J	464	0.798 J	13700	286	<0.1 U	<5 U	<2.5 U	1540	<5 U	<2.5 U	8780	<5 U	2.17 J-	<10 U	25.9
CJM-GW-MW4	Total Recoverable Metals	Groundwater	6/19/2018	43.4 J	<2.5 U	<2.5 U	29.8 J	<2 U	<0.5 U	9350	<5 U	<0.5 U	4.16 J	<100 U	<0.5 U	3630	<2 U	<0.1 U	<5 U	<2.5 U	834 J	<5 U	<2.5 U	3860	<5 U	<0.5 UJ	<10 U	58.3
CJM-GW-MW4 DUP	Total Recoverable Metals	Groundwater	6/19/2018	40.4 J	<2.5 U	<2.5 U	29.3 J	<2 U	<0.5 U	9110	<5 U	<0.5 U	4.41 J	<100 U	<0.5 U	3550	<2 U	<0.1 U	<5 U	<2.5 U	848 J	<5 U	<2.5 U	3760	<5 U	<0.5 UJ	<10 U	59
CJM-GW-ROW1	Total Recoverable Metals	Groundwater	6/19/2018	161	<2.5 U	<2.5 U	134	<2 U	<0.5 U	33000	<5 U	1.61	4.68 J	2050	2.68	11000	591	0.168	<5 U	<2.5 U	1460	<5 U	<2.5 U	9290	<5 U	1.39 J-	<10 U	22.5
CJM-GW-ROW2	Total Recoverable Metals	Groundwater	6/19/2018	936	8.05	<2.5 U	106	<2 U	1.47	19400	5.65 J	9.72	163	5870	6	6380	878	<0.1 U	<5 U	12.9	1670	<5 U	<2.5 U	21800	<5 U	3 J-	<10 U	157
CJM-GW-WG01	Total Recoverable Metals	Groundwater	6/19/2018	1050	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	9990	<5 U	<0.5 U	4.79 J	1670	1.01	3440	42	<0.1 U	<5 U	6.8	890 J	<5 U	<2.5 U	3280	<5 U	1.37 J-	<10 U	<10 U
CJM-SW-01	Total Recoverable Metals	Surface Water	6/19/2018	246	<2.5 U	<2.5 U	56.5	<2 U	<0.5 U	166000	<5 U	12	16.8	638	2.93	41600	748	<0.1 U	5.13	19.9	6130	<5 U	<2.5 U	16200	<5 U	29.7	<10 U	225
CJM-SW-03	Total Recoverable Metals	Surface Water	6/19/2018	90.2	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	2010	<5 U	<0.5 U	<2.5 U	<100 U	<0.5 U	461	<2 U	<0.1 U	<5 U	<2.5 U	<1000 U	<5 U	<2.5 U	1720	<5 U	<0.5 U	<10 U	<10 U
CJM-SW-03 DUP	Total Recoverable Metals	Surface Water	6/19/2018	77.3	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	1990	<5 U	<0.5 U	<2.5 U	<100 U	<0.5 U	449	<2 U	<0.1 U	<5 U	<2.5 U	<1000 U	<5 U	<2.5 U	1670	<5 U	<0.5 U	<10 U	<10 U
CJM-SW-04	Total Recoverable Metals	Surface Water	6/19/2018	61.1	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	4250	<5 U	<0.5 U	<2.5 U	126 J	<0.5 U	1250	6.5	<0.1 U	<5 U	<2.5 U	<1000 U	<5 U	<2.5 U	2050	<5 U	<0.5 U	<10 U	<10 U
CJM-SW-05	Total Recoverable Metals	Surface Water	6/19/2018	76.4	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	4780	<5 U	<0.5 U	<2.5 U	129 J	<0.5 U	1410	8.08	<0.1 U	<5 U	<2.5 U	<1000 U	<5 U	<2.5 U	2580	<5 U	<0.5 U	<10 U	22.6
CJM-SW-06	Total Recoverable Metals	Surface Water	6/19/2018	80.7	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	4640	<5 U	<0.5 U	<2.5 U	132 J	<0.5 U	1360	7.63	<0.1 U	<5 U	<2.5 U	<1000 U	<5 U	<2.5 U	2520	<5 U	<0.5 U	<10 U	20
CJM-SW-07	Total Recoverable Metals	Surface Water	6/19/2018	155	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	4760	<5 U	<0.5 U	<2.5 U	260	2.03	1430	14.3	<0.1 U	<5 U	<2.5 U	<1000 U	<5 U	<2.5 U	2580	<5 U	<0.5 U	<10 U	20.2
CJM-SW-08	Total Recoverable Metals	Surface Water	6/19/2018	393	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	4740	<5 U	<0.5 U	2.85 J	593	5.94	1460	30.2	<0.1 U	<5 U	<2.5 U	<1000 U	<5 U	<2.5 U	2530	<5 U	<0.5 U	<10 U	22.9
CJM-SW-09	Total Recoverable Metals	Surface Water	6/19/2018	9020	<2.5 U	<2.5 U	109	<2 U	<0.5 U	7620	10.9	4.16	49.4	12500	80.1	4380	488	<0.1 U	<5 U	7.64	3850	<5 U	<2.5 U	3700	<5 U	1.5	15.5	195
CJM-SW-10	Total Recoverable Metals	Surface Water	6/19/2018	78.8	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	5590	<5 U	<0.5 U	12.8	<100 U	0.536 J	1760	20.1	<0.1 U	<5 U	<2.5 U	<1000 U	<5 U	<2.5 U	2860	<5 U	<0.5 U	<10 U	58.5
CJM-SW-11	Total Recoverable Metals	Surface Water	6/19/2018	80.5	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	4980	<5 U	<0.5 U	10.7	102 J	0.623 J	1590	21.2	<0.1 U	<5 U	<2.5 U	<1000 U	<5 U	<2.5 U	2880	<5 U	<0.5 U	<10 U	42.1
CJM-SW-11 DUP	Total Recoverable Metals	Surface Water	6/19/2018	86.6	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	5070	<5 U	<0.5 U	10.9	<100 U	0.607 J	1620	19.6	<0.1 U	<5 U	<2.5 U	<1000 U	<5 U	<2.5 U	2890	<5 U	<0.5 U	<10 U	45.6
Seep6	Total Recoverable Metals	Surface Water	6/19/2018	415	<2.5 U	<2.5 U	103	<2 U	<0.5 U	33200	<5 U	<0.5 U	4.26 J	515	3.93	7370	16	<0.1 U	<5 U	<2.5 U	2150	<5 U	<2.5 U	54500	<5 U	0.817 J	<10 U	144
Blank	Total Recoverable Metals	Water	6/19/2018	<20 U	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	<100 U	<5 U	<0.5 U	<2.5 U	<100 U	<0.5 U	<100 U	<2 U	<0.1 U	<5 U	<2.5 U	<250 U	<5 U	<2.5 U	<250 U	<5 U	<0.5 U	<10 U	<10 U

STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
CJM-SW-03	Total Recoverable Metals	Surface Water	6/19/2018	90.2	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	2010	<5 U	<0.5 U	<2.5 U	<100 U	<0.5 U	461	<2 U	<0.1 U	<5 U	<2.5 U	<1000 U	<5 U	<2.5 U	1720	<5 U	<0.5 U	<10 U	<10 U
CJM-SW-03 DUP	Total Recoverable Metals	Surface Water	6/19/2018	77.3	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	1990	<5 U	<0.5 U	<2.5 U	<100 U	<0.5 U	449	<2 U	<0.1 U	<5 U	<2.5 U	<1000 U	<5 U	<2.5 U	1670	<5 U	<0.5 U	<10 U	<10 U
		RPD		**15.40%**	N/A	N/A	N/A	N/A	N/A	**1.00%**	N/A	N/A	N/A	N/A	N/A	**2.64%**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**2.95%**	N/A	N/A	N/A

STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
CJM-SW-11	Total Recoverable Metals	Surface Water	6/19/2018	80.5	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	4980	<5 U	<0.5 U	10.7	102 J	0.623	1590	21.2	<0.1 U	<5 U	<2.5 U	<1000 U	<5 U	<2.5 U	2880	<5 U	<0.5 U	<10 U	42.1
CJM-SW-11 DUP	Total Recoverable Metals	Surface Water	6/19/2018	86.6	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	5070	<5 U	<0.5 U	10.9	<100 U	0.607	1620	19.6	<0.1 U	<5 U	<2.5 U	<1000 U	<5 U	<2.5 U	2890	<5 U	<0.5 U	<10 U	45.6
		RPD		**7.30%**	N/A	N/A	N/A	N/A	N/A	**1.79%**	N/A	N/A	**1.85%**	N/A	**2.60%**	**1.87%**	**7.84%**	N/A	N/A	N/A	N/A	N/A	N/A	**0.35%**	N/A	N/A	N/A	**7.98%**

STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
CJM-GW-MW3	Total Recoverable Metals	Groundwater	6/19/2018	64.4	11.3	<2.5 U	60.4	<2 U	<0.5 U	51200	<5 U	<0.5 U	4.46	446	0.805	13100	289	<0.1 U	<5 U	<2.5 U	1550	<5 U	<2.5 U	8510	<5 U	1.95	<10 U	26.1
CJM-GW-MW3 DUP	Total Recoverable Metals	Groundwater	6/19/2018	68	10.4	<2.5 U	58.6	<2 U	<0.5 U	53100	<5 U	0.548 J	11.1	464	0.798	13700	286	<0.1 U	<5 U	<2.5 U	1540	<5 U	<2.5 U	8780	<5 U	2.17	<10 U	25.9
		RPD		**5.44%**	**8.29%**	N/A	**3.03%**	N/A	N/A	**3.64%**	N/A	N/A	**85.35%**	**3.96%**	**0.87%**	**4.48%**	**1.04%**	N/A	N/A	N/A	**0.65%**	N/A	N/A	**3.12%**	N/A	**10.68%**	N/A	**0.77%**

STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
CJM-GW-MW4	Total Recoverable Metals	Groundwater	6/19/2018	43.4	<2.5 U	<2.5 U	29.8	<2 U	<0.5 U	9350	<5 U	<0.5 U	4.16	<100 U	<0.5 U	3630	<2 U	<0.1 U	<5 U	<2.5 U	834	<5 U	<2.5 U	3860	<5 U	<0.5 UJ	<10 U	58.3
CJM-GW-MW4 DUP	Total Recoverable Metals	Groundwater	6/19/2018	40.4	<2.5 U	<2.5 U	29.3	<2 U	<0.5 U	9110	<5 U	<0.5 U	4.41	<100 U	<0.5 U	3550	<2 U	<0.1 U	<5 U	<2.5 U	848	<5 U	<2.5 U	3760	<5 U	<0.5 UJ	<10 U	59
		RPD		**7.16%**	N/A	N/A	**1.69%**	N/A	N/A	**2.60%**	N/A	N/A	**5.83%**	N/A	N/A	**2.23%**	N/A	N/A	N/A	N/A	**1.66%**	N/A	N/A	**2.62%**	N/A	N/A	N/A	**1.19%**

Note: Removed flags from values for RPD calculation

Note: Data Qualifier Definitions Listed Below:

U = The analyte was analyzed for, but was not detected above the level of the reported sample Quantitation limit. Reported values represent the method detection limit

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

J- = The result is an estimated quantity and likely to have a low bias. The associated numerical value is the approximate concentration of the analyte in the sample.

J+ =The result is an estimated quantity and likely to have a high bias. The associated numerical value is the approximate concentration of the analyte in the sample.

Table 5 Captain Jack Mill Superfund Site September 2018
Surface Water and Groundwater Dissolved Metals Analytical Results

STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
CJM-GW-DD1	Dissolved Metals	Groundwater	9/11/2018	<20 U	<0.5 U	<0.5 U	26.5	<2 U	<0.1 U	113000	1.38 J	0.986	3.78	416	<100 U	0.108 J	32600	1080	<1 U	<0.5 U	1450	<1 U	<0.5 U	7260	<1 U	7.96	<2 U	28.7 J+
CJM-GW-DD2	Dissolved Metals	Groundwater	9/11/2018	<20 U	0.781 J	<0.5 U	38.9	<2 U	<0.1 U	98000	1.99 J	0.239	7.16	364	128 J	0.133 J	28900	603	<1 U	<0.5 U	2600	1.76 J	<0.5 U	17500	<1 U	1.23	<2 U	<10 U
CJM-GW-DD3	Dissolved Metals	Groundwater	9/11/2018	121000	<5 U	99.9	<50 U	59.5	622	481000	41.3	1370	53400	2260	505000	63.1	257000	112000	13	938	<2500 U	13.8 J	<5 U	7740 J	<10 U	2840	<20 U	112000
CJM-GW-MID1	Dissolved Metals	Groundwater	9/11/2018	261	<2.5 U	<2.5 U	<25 U	8.12	<0.5 U	231000	<5 U	107	6.43	886	64000	<0.5 U	75100	22900	<5 U	82.9	3600	<5 U	<2.5 U	9450	<5 U	4.2	<10 U	575
CJM-GW-MID1 Dup	Dissolved Metals	Groundwater	9/11/2018	271	<2.5 U	<2.5 U	<25 U	8.14	<0.5 U	224000	<5 U	105	4.53 J	858	61900	<0.5 U	72500	22600	<5 U	79.8	3580	<5 U	<2.5 U	9580	<5 U	4.06	<10 U	581
CJM-GW-MW1	Dissolved Metals	Groundwater	9/12/2018	<20 U	<0.5 U	<0.5 U	39.2	<2 U	<0.1 U	29800	2.53	0.567	0.797 J	164	565	<0.1 U	21800	189	<1 U	<0.5 U	1040	<1 U	<0.5 U	3890	<1 U	4.65	<2 U	<10 U
CJM-GW-MW2	Dissolved Metals	Groundwater	9/12/2018	<20 U	0.871 J	0.844 J	32.2	<2 U	<0.1 U	40700	1.7 J	<0.1 U	1.17	142	307	<0.1 U	9860	92.7	<1 U	<0.5 U	1240	<1 U	<0.5 U	11600	<1 U	3.31	<2 U	<10 U
CJM-GW-MW3	Dissolved Metals	Groundwater	9/12/2018	<20 U	3.49	0.915 J	48.6	<2 U	<0.1 U	54000	1 J	0.106 J	<0.5 U	192	127 J	<0.1 U	13800	273	<1 U	<0.5 U	1560	<1 U	<0.5 U	8910	<1 U	2.24	<2 U	<10 U
CJM-GW-MW4	Dissolved Metals	Groundwater	9/12/2018	<20 U	<0.5 U	<0.5 U	24.2	<2 U	0.133 J	8740	<1 U	<0.1 U	3.31	36	<100 U	<0.1 U	3340	<2 U	<1 U	0.781 J	803 J	<1 U	<0.5 U	3400	<1 U	0.14 J	<2 U	60.1
CJM-GW-ROW1	Dissolved Metals	Groundwater	9/11/2018	<20 U	<0.5 U	0.905 J	119	<2 U	<0.1 U	36800	<1 U	1.13	0.61 J	143	2110	<0.1 U	12300	625	<1 U	<0.5 U	1150	<1 U	<0.5 U	10600	<1 U	1	<2 U	<10 U
CJM-GW-ROW2	Dissolved Metals	Groundwater	9/11/2018	<20 U	0.995 J	<0.5 U	35.6	<2 U	0.397	13300	<1 U	0.336	12.2	52	<100 U	<0.1 U	4480	37.1	<1 U	<0.5 U	806 J	<1 U	<0.5 U	12200	<1 U	0.483	<2 U	65.8
CJM-GW-WG01	Dissolved Metals	Groundwater	9/12/2018	<20 U	<0.5 U	<0.5 U	6.27 J	<2 U	<0.1 U	11500	<1 U	<0.1 U	<0.5 U	44	<100 U	<0.1 U	3760	<2 U	<1 U	<0.5 U	715 J	<1 U	<0.5 U	3640	<1 U	0.504	<2 U	<10 U
CJM-GW-WG01 Dup	Dissolved Metals	Groundwater	9/12/2018	<20 U	<0.5 U	<0.5 U	7.86 J+	<2 U	<0.1 U	12000	<1 U	<0.1 U	<0.5 U	46	<100 U	<0.1 U	3930	<2 U	<1 U	<0.5 U	828 J	<1 U	<0.5 U	3790	<1 U	0.554 J+	<2 U	<10 U
CJM-SW-01	Dissolved Metals	Surface Water	9/11/2018	123000	<5 U	188	<50 U	62.4	667	448000	38.6	1350 J	58000 J	2170	623000	50 J	256000	117000	23.2	898 J	<2500 U	19 J	<5 U	7080 J	<10 U	2710 J	21.3 J	123000
CJM-SW-03	Dissolved Metals	Surface Water	9/12/2018	75.7	<0.5 U	<0.5 U	8.36 J	<2 U	<0.1 U	3100	<1 U	<0.1 UJ	1.71 J	11	308	<0.1 U	827	87.3 J-	<1 U	<0.5 UJ	391 J	<1 U	<0.5 U	2070	<1 U	<0.1 U	<2 U	105 J
CJM-SW-04	Dissolved Metals	Surface Water	9/11/2018	<20 U	<0.5 U	<0.5 U	<5 U	<2 U	<0.1 U	2170	<1 U	<0.1 UJ	0.869 J	8	<100 U	<0.1 U	585	8.79 J	<1 U	<0.5 UJ	290 J	<1 U	<0.5 U	1530	<1 U	<0.1 U	<2 U	<10 U
CJM-SW-05	Dissolved Metals	Surface Water	9/11/2018	46.4 J	<0.5 U	<0.5 U	<5 U	<2 U	<0.1 U	2440	<1 U	<0.1 UJ	0.98 J	9	186 J	<0.1 U	637	5 UJ	<1 U	<0.5 UJ	340 J	<1 U	<0.5 U	1610	<1 U	<0.1 U	<2 U	<10 U
CJM-SW-06	Dissolved Metals	Surface Water	9/11/2018	50 U	<0.5 U	<0.5 U	5.49 J+	<2 U	<0.1 U	2650	<1 U	<0.1 U	0.989 J	10	250 U	<0.1 U	725	5 U	<1 U	<0.5 U	426 J	<1 U	<0.5 U	1730	<1 U	<0.1 U	<2 U	<10 U
CJM-SW-06 Dup	Dissolved Metals	Surface Water	9/11/2018	50 U	<0.5 U	<0.5 U	5.51 J+	<2 U	<0.1 U	2550	<1 U	<0.1 UJ	0.933 J	9	250 U	0.115 J+	685	5 UJ	<1 U	<0.5 UJ	360 J	<1 U	<0.5 U	1670	<1 U	<0.1 U	<2 U	<10 U
CJM-SW-07	Dissolved Metals	Surface Water	9/11/2018	50 U	<0.5 U	0.626 J	<5 U	<2 U	0.479 J	2540	<1 U	0.47 J	1.26 J	9	250 U	0.497 J+	701	5 UJ	<1 U	<0.5 UJ	339 J	1.09 J+	<0.5 U	1700	<1 U	0.472 J+	<2 U	<10 U
CJM-SW-07 Dup	Dissolved Metals	Surface Water	9/11/2018	<20 U	<0.5 U	<0.5 U	5.64 J+	<2 U	<0.1 UJ	2550	<1 U	<0.1 UJ	1.27 J	9	250 U	<0.1 UJ	702	5 UJ	<1 U	<0.5 UJ	366 J	<1 U	<0.5 U	1680	<1 U	<0.1 UJ	<2 U	<10 U
CJM-SW-08	Dissolved Metals	Surface Water	9/11/2018	50 U	<0.5 U	<0.5 U	5.56 J+	<2 U	<0.1 U	2610	<1 U	<0.1 UJ	0.984 J	9	250 U	0.101 J+	701	5 UJ	<1 U	<0.5 UJ	302 J	<1 U	<0.5 U	1670	<1 U	<0.1 U	<2 U	<10 U
CJM-SW-09	Dissolved Metals	Surface Water	9/11/2018	73 J+	<0.5 U	<0.5 U	5.69 J+	<2 U	1.59	5470	<1 U	6.48 J	67.4 J	22	<100 U	<0.1 U	1960	513 J-	<1 U	3.6 J	309 J	<1 U	<0.5 U	1810	<1 U	2.27 J+	<2 U	349
CJM-SW-10	Dissolved Metals	Surface Water	9/11/2018	89.9 J+	<0.5 U	<0.5 U	7.58 J+	<2 U	1.68	5700	<1 U	7.21 J	69.4 J	23	<100 U	<0.1 U	2040	444 J-	<1 U	4.06 J	363 J	<1 U	<0.5 U	1910	<1 U	2.52 J+	<2 U	312
CJM-SW-11	Dissolved Metals	Surface Water	9/11/2018	90.5 J+	<0.5 U	<0.5 U	8.17 J+	<2 U	1.7	5580	<1 U	7.07 J	69.9 J	22	<100 U	<0.1 U	2000	469 J-	<1 U	4.09 J	377 J	<1 U	<0.5 U	1870	<1 U	2.58 J+	<2 U	323
Blank	Dissolved Metals	Water	9/11/2018	<20 U	<0.5 U	<0.5 U	<5 U	<2 U	<0.1 U	139 J	<1 U	<0.1 U	<0.5 U	<2 U	<100 U	<0.1 U	<100 U	7.28	<1 U	<0.5 U	<250 U	<1 U	<0.5 U	<250 U	<1 U	<0.1 U	<2 U	10 J
Blank	Dissolved Metals	Water	9/12/2018	<20 U	<0.5 U	<0.5 U	<5 U	<2 U	<0.1 U	<100 U	<1 U	<0.1 U	<0.5 U	<2 U	<100 U	<0.1 U	<100 U	<2 U	<1 U	<0.5 U	<250 U	<1 U	<0.5 U	<250 U	<1 U	<0.1 U	<2 U	<10 U

STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
CJM-GW-MID1	Dissolved Metals	Groundwater	9/11/2018	261	<2.5 U	<2.5 U	<25 U	8.12	<0.5 U	231000	<5 U	107	6.43	886	64000	<0.5 U	75100	22900	<5 U	82.9	3600	<5 U	<2.5 U	9450	<5 U	4.2	<10 U	575
CJM-GW-MID1 Dup	Dissolved Metals	Groundwater	9/11/2018	271	<2.5 U	<2.5 U	<25 U	8.14	<0.5 U	224000	<5 U	105	4.53	858	61900	<0.5 U	72500	22600	<5 U	79.8	3580	<5 U	<2.5 U	9580	<5 U	4.06	<10 U	581
		RPD		**3.76%**	N/A	N/A	N/A	**0.25%**	N/A	**3.08%**	N/A	**1.89%**	**34.67%**	**3.21%**	**3.34%**	N/A	**3.52%**	**1.32%**	N/A	**3.81%**	**0.56%**	N/A	N/A	**1.37%**	N/A	**3.39%**	N/A	**1.04%**

STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
CJM-GW-WG01	Dissolved Metals	Groundwater	9/12/2018	<20.0 U	<0.500 U	<0.500 U	6.27	<2.00 U	<0.100 U	11500	<1.00 U	<0.100 U	<0.500 U	44	<100 U	<0.100 U	3760	<2.00 U	<1.00 U	<0.500 U	715	<1.00 U	<0.500 U	3640	<1.00 U	0.504	<2.00 U	<10.0 U
CJM-GW-WG01 DUP	Dissolved Metals	Groundwater	9/12/2018	<20.0 U	<0.500 U	<0.500 U	7.86	<2.00 U	<0.100 U	12000	<1.00 U	<0.100 U	<0.500 U	46	<100 U	<0.100 U	3930	<2.00 U	<1.00 U	<0.500 U	828	<1.00 U	<0.500 U	3790	<1.00 U	0.554	<2.00 U	<10.0 U
		RPD		N/A	N/A	N/A	**22.51%**	N/A	N/A	**4.26%**	N/A	N/A	N/A	**4.44%**	N/A	N/A	**4.42%**	N/A	N/A	N/A	**14.65%**	N/A	N/A	**4.04%**	N/A	**9.45%**	N/A	N/A

STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
CJM-SW-06	Dissolved Metals	Surface Water	9/11/2018	42	<0.500 U	<0.500 U	5.49	<2.00 U	<0.100 U	2650	<1.00 U	<0.100 U	0.989	10	185	<0.100 U	725	2.96	<1.00 U	<0.500 U	426	<1.00 U	<0.500 U	1730	<1.00 U	<0.100 U	<2.00 U	<10.0 U
CJM-SW-06 DUP	Dissolved Metals	Surface Water	9/11/2018	36.3	<0.500 U	<0.500 U	5.51	<2.00 U	<0.100 U	2550	<1.00 U	<0.100 U	0.933	9	172	0.115	685	3.11	<1.00 U	<0.500 U	360	<1.00 U	<0.500 U	1670	<1.00 U	<0.100 U	<2.00 U	<10.0 U
		RPD		**14.56%**	N/A	N/A	**0.36%**	N/A	N/A	**3.85%**	N/A	N/A	**5.83%**	**10.53%**	**7.28%**	N/A	**5.67%**	**4.94%**	N/A	N/A	**16.79%**	N/A	N/A	**3.53%**	N/A	N/A	N/A	N/A

STATION_ID	ANALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
CJM-SW-07	Dissolved Metals	Surface Water	9/11/2018	22.6	<0.500 U	0.626	<5.00 U	<2.00 U	0.479	2540	<1.00 U	0.47	1.26	9	121	0.497	701	3.3	<1.00 U	<0.500 U	339	1.09	<0.500 U	1700	<1.00 U	0.472	<2.00 U	<10.0 U
CJM-SW-07 DUP	Dissolved Metals	Surface Water	9/11/2018	<20.0 U	<0.500 U	<0.500 U	5.64	<2.00 U	<0.100 U	2550	<1.00 U	<0.100 U	1.27	9	108	<0.100 U	702	3.04	<1.00 U	<0.500 U	366	<1.00 U	<0.500 U	1680	<1.00 U	<0.100 U	<2.00 U	<10.0 U
		RPD		N/A	N/A	N/A	N/A	N/A	N/A	**0.39%**	N/A	N/A	**0.79%**	**0.00%**	**11.35%**	N/A	**0.14%**	**8.20%**	N/A	N/A	**7.66%**	N/A	N/A	**1.18%**	N/A	N/A	N/A	N/A

Note: Removed flags from values for RPD calculation

Note: Data Qualifier Definitions Listed Below:

U = The analyte was analyzed for, but was not detected above the level of the reported sample Quantitation limit. Reported values represent the method detection limit.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

J- = The result is an estimated quantity and likely to have a low bias. The associated numerical value is the approximate concentration of the analyte in the sample.

J+ =The result is an estimated quantity and likely to have a high bias. The associated numerical value is the approximate concentration of the analyte in the sample.

Table 6 Captain Jack Mill Superfund Site
September 2018 Surface Water and Groundwater Total Recoverable Metals Analytical Results

STATION_ID	AN/ALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
CJM-GW-DD1	Total Recoverable Metals	Groundwater	9/11/2018	4840	<2.5 U	<2.5 U	76	<2 U	<0.5 U	116000	17.9	6.48	19.3	12100	5.3	34100	2980	<0.1 U	<5 U	<2.5 U	2610	<5 U	<2.5 U	6850	<5 U	11.4 J+	<10 U	126 J+
CJM-GW-DD2	Total Recoverable Metals	Groundwater	9/11/2018	172	<2.5 U	<2.5 U	47.4 J	<2 U	<0.5 U	99700	<5 U	0.581 J	10.2	520	1.58	29000	576	<0.1 U	<5 U	<2.5 U	2850	<5 U	<2.5 U	17800	<5 U	1.46 J+	<10 U	60.9 J+
CJM-GW-DD3	Total Recoverable Metals	Groundwater	9/11/2018	120000	<5 U	111	<50 U	60.7	617	486000	38.4	1390	53900	512000	66.3	258000	107000	<0.1 U	15.9	946	<2500 U	<10 U	<5 U	7520 J	<10 U	3040 J+	<20 U	113000
CJM-GW-MID1	Total Recoverable Metals	Groundwater	9/11/2018	310	<2.5 U	<2.5 U	<25 U	8.35	18.3	235000	<5 U	106	6.53	65300	<0.5 U	75700	22700	<0.1 U	<5 U	82.6	3600	<5 U	<2.5 U	9620	<5 U	4.67 J+	<10 U	998
CJM-GW-MID1 Dup	Total Recoverable Metals	Groundwater	9/11/2018	291	<2.5 U	<2.5 U	<25 U	8.16	19.2	233000	<5 U	108	4.27 J	64900	<0.5 U	75200	22500	<0.1 U	<5 U	84.5	3440	<5 U	<2.5 U	9460	<5 U	4.61 J+	<10 U	960
CJM-GW-MW1	Total Recoverable Metals	Groundwater	9/12/2018	574	<2.5 U	<2.5 U	48.1 J	<2 U	<0.5 U	30700	<5 U	0.794 J	<2.5 U	1850	0.676 J	22300	205	<0.1 U	<5 U	<2.5 U	1710	<5 U	<2.5 U	3960	<5 U	5.51 J+	<10 U	62.5 J+
CJM-GW-MW2	Total Recoverable Metals	Groundwater	9/12/2018	<20 U	<2.5 U	<2.5 U	36.8 J	<2 U	<0.5 U	41000	<5 U	<0.5 U	<2.5 U	458	<0.5 U	9870	98.2	<0.1 U	<5 U	4.94 J	1320	<5 U	<2.5 U	11600	<5 U	3.43 J+	<10 U	55.6 J+
CJM-GW-MW3	Total Recoverable Metals	Groundwater	9/12/2018	<20 U	7.65	<2.5 U	54	<2 U	<0.5 U	54700	<5 U	<0.5 U	<2.5 U	299	0.71 J	13800	271	<0.1 U	<5 U	<2.5 U	1670	<5 U	<2.5 U	8900	<5 U	2.05 J+	<10 U	56.6 J+
CJM-GW-MW4	Total Recoverable Metals	Groundwater	9/12/2018	21.4 J	<2.5 U	<2.5 U	27.4 J	<2 U	<0.5 U	8890	<5 U	<0.5 U	3.88 J	<100 U	<0.5 U	3390	5.79 J	<0.1 U	<5 U	<2.5 U	873 J	<5 U	<2.5 U	3410	<5 U	<0.5 U	<10 U	110 J+
CJM-GW-ROW1	Total Recoverable Metals	Groundwater	9/11/2018	43.1 J	<2.5 U	<2.5 U	140	<2 U	<0.5 U	37600	<5 U	1.69	<2.5 U	2570	1.28	12500	618	<0.1 U	<5 U	<2.5 U	1220	<5 U	<2.5 U	10700	<5 U	1.43 J+	<10 U	58.6 J+
CJM-GW-ROW2	Total Recoverable Metals	Groundwater	9/11/2018	79.7	3.56 J	<2.5 U	39.5 J	<2 U	<0.5 U	13500	<5 U	<0.5 U	16.4	288	<0.5 U	4550	48.2	<0.1 U	<5 U	<2.5 U	845 J	<5 U	<2.5 U	12300	<5 U	0.77 J+	<10 U	111 J+
CJM-GW-WG01	Total Recoverable Metals	Groundwater	9/12/2018	805	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	12000	<5 U	<0.5 U	3.1 J	1400	0.843 J	4020	40.2	<0.1 U	<5 U	<2.5 U	935 J	<5 U	<2.5 U	3720	<5 U	1.46 J+	<10 U	<50 U
CJM-GW-WG01 Dup	Total Recoverable Metals	Groundwater	9/12/2018	747	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	11700	<5 U	<0.5 U	2.95 J	1300	0.73 J	3940	37.4	<0.1 U	<5 U	<2.5 U	896 J	<5 U	<2.5 U	3650	<5 U	1.36	<10 U	<40 U
CJM-SW-01	Total Recoverable Metals	Surface Water	9/11/2018	128000	<5 U	206	<50 U	75.6	723	469000	35.1	1430 J	62500 J	650000	57.4	266000	116000	0.162	23.7	967 J-	<2500 U	10.9 J	<5 U	7380 J	<10 U	3120 J+	21.7 J	125000
CJM-SW-03	Total Recoverable Metals	Surface Water	9/12/2018	121	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	3180	<5 U	<0.5 U	5.1	150 J	<0.5 U	752	10.7 J	<0.1 U	<5 U	<2.5 U	557 J	<5 U	<2.5 U	2130	<5 U	<0.5 U	<10 U	61.4 J+
CJM-SW-04	Total Recoverable Metals	Surface Water	9/11/2018	219	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	1170 J+	<5 U	0.816 J	3.71 J	961	0.803 J	352	94.1 J	<0.1 U	<5 U	<2.5 UJ	<250 U	<5 U	<2.5 U	746 J	<5 U	<0.5 U	<10 U	<50 U
CJM-SW-05	Total Recoverable Metals	Surface Water	9/11/2018	177	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	926 J+	<5 U	0.784 J	5.15	756	1.04	275	72.8 J	<0.1 U	<5 U	<2.5 UJ	251 J	<5 U	<2.5 U	577 J	<5 U	<0.5 U	<10 U	<50 U
CJM-SW-06	Total Recoverable Metals	Surface Water	9/11/2018	290	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	1820 J+	<5 U	<0.5 U	<2.5 U	1080	0.59 J	554	96.3 J	<0.1 U	<5 U	<2.5 U	335 J	<5 U	<2.5 U	1140	<5 U	<0.5 U	<10 U	<40 U
CJM-SW-06 Dup	Total Recoverable Metals	Surface Water	9/11/2018	228	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	2770 J+	<5 U	<0.5 U	<2.5 U	1140	0.612 J	742	132 J	<0.1 U	<5 U	<2.5 UJ	383 J	<5 U	<2.5 U	1580	10 U	<0.5 U	<10 U	<40 U
CJM-SW-07	Total Recoverable Metals	Surface Water	9/11/2018	107	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	2460 J+	<5 U	<0.5 U	<2.5 U	473	<0.5 U	708	26.1 J	<0.1 U	<5 U	<2.5 UJ	287 J	<5 U	<2.5 U	1570	<5 U	<0.5 U	<10 U	<40 U
CJM-SW-07 Dup	Total Recoverable Metals	Surface Water	9/11/2018	110	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	2490 J+	<5 U	<0.5 U	<2.5 U	479	<0.5 U	716	25.3 J	<0.1 U	<5 U	<2.5 UJ	359 J	<5 U	<2.5 U	1620	<5 U	<0.5 U	<10 U	<40 U
CJM-SW-08	Total Recoverable Metals	Surface Water	9/11/2018	86.7	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	2050 J+	<5 U	<0.5 U	3.28 J	381	<0.5 U	582	20.3 J	<0.1 U	<5 U	<2.5 UJ	360 J	<5 U	<2.5 U	1330	<5 U	<0.5 U	<10 U	<40 U
CJM-SW-09	Total Recoverable Metals	Surface Water	9/11/2018	322	<2.5 U	<2.5 U	<25 U	<2 U	1.49	3010 J+	<5 U	6.32	155	297	0.898 J	1100	279 J	<0.1 U	<5 U	3.6 J-	<250 U	<5 U	<2.5 U	1030	<5 U	4.31	<10 U	212 J+
CJM-SW-10	Total Recoverable Metals	Surface Water	9/11/2018	385	<5 U	<5 U	<50 U	<2 U	3.54	3860 J+	<10 U	14.6	351	344	2.76	1400	361 J	<0.1 U	<10 U	7.68 J-	268 J	<10 U	<5 U	1290	<10 U	9.84	<20 U	264 J+
CJM-SW-11	Total Recoverable Metals	Surface Water	9/11/2018	384	<2.5 U	<2.5 U	<25 U	<2 U	1.69	3870 J+	<5 U	6.57	158	343	1.08	1410	341 J	<0.1 U	<5 U	3.74 J-	345 J	<5 U	<2.5 U	1290	<5 U	4.54	<10 U	262 J+
Blank	Total Recoverable Metals	Water	9/11/2018	<20 U	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	<100 U	<5 U	<0.5 U	<2.5 U	<100 U	<0.5 U	<100 U	50.1	<0.1 U	<5 U	<2.5 U	<250 U	<5 U	<2.5 U	<250 U	7.33 J	<0.5 U	<10 U	59.5 J+
Blank	Total Recoverable Metals	Water	9/12/2018	<20 U	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	<100 U	<5 U	<0.5 U	<2.5 U	<100 U	<0.5 U	<100 U	<2 U	<0.1 U	<5 U	<2.5 U	<250 U	<5 U	<2.5 U	<250 U	<5 U	<0.5 U	<10 U	<40 U

STATION_ID	AN/ALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
CJM-GW-MID1	Total Recoverable Metals	Groundwater	9/11/2018	310	<2.5 U	<2.5 U	<25 U	8.35	18.3	235000	<5 U	106	6.53	65300	<0.5 U	75700	22700	<0.1 U	<5 U	82.6	3600	<5 U	<2.5 U	9620	<5 U	4.67	<10 U	998
CJM-GW-MID1 Dup	Total Recoverable Metals	Groundwater	9/11/2018	291	<2.5 U	<2.5 U	<25 U	8.16	19.2	233000	<5 U	108	4.27	64900	<0.5 U	75200	22500	<0.1 U	<5 U	84.5	3440	<5 U	<2.5 U	9460	<5 U	4.61	<10 U	960
		RPD		**6.32%**	N/A	N/A	N/A	**2.30%**	**4.80%**	**0.85%**	N/A	**1.87%**	**41.85%**	**0.61%**	N/A	**0.66%**	**0.88%**	N/A	N/A	**2.27%**	**4.55%**	N/A	N/A	**1.68%**	N/A	**1.29%**	N/A	**3.88%**

STATION_ID	AN/ALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
CJM-GW-WG01	Total Recoverable Metals	Surface Water	9/12/2018	805	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	12000	<5 U	<0.5 U	3.1	1400	0.843	4020	40.2	<0.1 U	<5 U	<2.5 U	935	<5 U	<2.5 U	3720	<5 U	1.46	<10 U	<50 U
CJM-GW-WG01 Dup	Total Recoverable Metals	Surface Water	9/12/2018	747	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	11700	<5 U	<0.5 U	2.95	1300	0.73	3940	37.4	<0.1 U	<5 U	<2.5 U	896	<5 U	<2.5 U	3650	<5 U	1.36	<10 U	<40 U
		RPD		**7.47%**	N/A	N/A	N/A	N/A	N/A	**2.53%**	N/A	N/A	**4.96%**	**7.41%**	**14.37%**	**2.01%**	**7.22%**	N/A	N/A	N/A	**4.26%**	N/A	N/A	**1.90%**	N/A	**7.09%**	N/A	N/A

STATION_ID	AN/ALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
CJM-SW-06	Total Recoverable Metals	Surface Water	9/11/2018	290	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	1820	<5 U	<0.5 U	<2.5 U	1080	0.59	554	93.6	<0.1 U	<5 U	<2.5 U	335	<5 U	<2.5 U	1140	<5 U	<0.5 U	<10 U	<40 U
CJM-SW-06 Dup	Total Recoverable Metals	Surface Water	9/11/2018	228	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	2770	<5 U	<0.5 U	<2.5 U	1140	0.612	742	132	<0.1 U	<5 U	<2.5 UJ	383	<5 U	<2.5 U	1580	10 U	<0.5 U	<10 U	<40 U
		RPD		**23.94%**	N/A	N/A	N/A	N/A	N/A	**41.39%**	N/A	N/A	N/A	**5.41%**	**3.66%**	**29.01%**	**34.04%**	N/A	N/A	N/A	**13.37%**	N/A	N/A	**32.35%**	N/A	N/A	N/A	N/A

STATION_ID	AN/ALYSIS	MATRIX	SAMPLE DATE	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
CJM-SW-07	Total Recoverable Metals	Surface Water	9/11/2018	107	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	2460	<5 U	<0.5 U	<2.5 U	473	<0.5 U	708	26.1	<0.1 U	<5 U	<2.5 UJ	287	<5 U	<2.5 U	1570	<5 U	<0.5 U	<10 U	<40 U
CJM-SW-07 Dup	Total Recoverable Metals	Surface Water	9/11/2018	110	<2.5 U	<2.5 U	<25 U	<2 U	<0.5 U	2490	<5 U	<0.5 U	<2.5 U	479	<0.5 U	716	25.3	<0.1 U	<5 U	<2.5 UJ	359	<5 U	<2.5 U	1620	<5 U	<0.5 U	<10 U	<40 U
		RPD		**2.76%**	N/A	N/A	N/A	N/A	N/A	**1.21%**	N/A	N/A	N/A	**1.26%**	N/A	**1.12%**	**3.11%**	N/A	N/A	N/A	**22.29%**	N/A	N/A	**3.33%**	N/A	N/A	N/A	N/A

Note: Removed flags from values for RPD calculation

Note: Data Qualifier Definitions Listed Below:

U = The analyte was analyzed for, but was not detected above the level of the reported sample Quantitation limit. Reported values represent the method detection limit

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

J- = The result is an estimated quantity and likely to have a low bias. The associated numerical value is the approximate concentration of the analyte in the sample.

J+ =The result is an estimated quantity and likely to have a high bias. The associated numerical value is the approximate concentration of the analyte in the sample.

Figure I-4: Surface Water Sampling Results, 2019[9]

Table 1 Captain Jack Mill Superfund Site June 2019
Surface Water Dissolved Metals Analytical Results

STATION_ID	ANALYSIS	DATE	TIME	Aluminum µg/L	Antimony µg/L	Arsenic µg/L	Barium µg/L	Beryllium µg/L	Cadmium µg/L	Calcium µg/L	Chromium µg/L	Cobalt µg/L	Copper µg/L	Hardness mg/L	Iron µg/L	Lead µg/L	Magnesium µg/L	Manganese µg/L	Molybdenum µg/L	Nickel µg/L	Potassium µg/L	Selenium µg/L	Silver µg/L	Sodium µg/L	Thallium µg/L	Uranium µg/L	Vanadium µg/L	Zinc ug/L
CJM-SW-01	Dissolved Metals	6/4/2019	16:10	83.9 R	<2.50 R	4.21 R	<25.0 R	<2.00 R	150 R	1800 R	5.06 R	414 R	13200 R	6 R	<100 R	52.7 R	414 R	<2.00 R	<5.00 R	265 R	441 R	<5.00 R	<2.50 R	1610 R	<5.00 R	440 R	<10.0 R	<10.0 R
CJM-SW-02	Dissolved Metals	6/5/2019	9:50	53.7 R	<5.00 R	<5.00 R	<50.0 R	<2.00 R	26.3 R	4220 R	<10.0 R	124 R	19.7 R	15 R	<100 R	<1.00 R	1210 R	2.11 R	<10.0 R	53.0 R	598 R	<10.0 R	<5.00 R	2020 R	<10.0 R	95.9 R	<20.0 R	<10.0 R
CJM-SW-03	Dissolved Metals	6/6/2019	13:30	72.7	<0.500 U	<0.500 U	6.08 J	<2.00 U	<0.100 U	1780	<1.00 U	<0.100 U	1.36	6	<100 U	<0.100 U	413	<2.00 U	<1.00 U	<0.500 U	406 J	<1.00 U	<0.500 U	1610	<1.00 U	0.118 J	<2.00 U	<10.0 U
CJM-SW-04	Dissolved Metals	6/6/2019	12:35	54.3	<0.500 U	<0.500 U	7.33 J	<2.00 U	<0.100 U	4180	<1.00 U	<0.100 U	1.31	15	<100 U	<0.100 U	1200	2.08 J	<1.00 U	<0.500 U	571 J	<1.00 U	<0.500 U	2010	<1.00 U	<0.100 U	<2.00 U	<10.0 U
CJM-SW-04-DUP	Dissolved Metals	6/6/2019	12:35	59.7	<0.500 U	<0.500 U	7.26 J	<2.00 U	<0.100 U	4180	<1.00 U	<0.100 U	1.45	15	<100 U	<0.100 U	1200	2.26 J	<1.00 U	<0.500 U	568 J	<1.00 U	<0.500 U	2000	<1.00 U	<0.100 U	<2.00 U	<10.0 U
CJM-SW-05	Dissolved Metals	6/5/2019	11:20	53.9	<0.500 U	<0.500 U	15.3	<2.00 U	0.157 J	6520	<1.00 U	<0.100 U	4.05	24	<100 U	<0.100 U	1900	5.04	<1.00 U	<0.500 U	749 J	<1.00 U	<0.500 U	5170	<1.00 U	<0.100 U	<2.00 U	54
CJM-SW-06	Dissolved Metals	6/5/2019	10:20	52.6	<0.500 U	<0.500 U	14.1	<2.00 U	0.158 J	5910	<1.00 U	<0.100 U	3.59	22	<100 U	<0.100 U	1710	3.85 J	<1.00 U	<0.500 U	684 J	<1.00 U	<0.500 U	4880	<1.00 U	<0.100 U	<2.00 U	45.1
CJM-SW-07	Dissolved Metals	6/4/2019	15:30	41.6 J	<0.500 U	<0.500 U	15	<2.00 U	0.487	17200	<1.00 U	2.08	4.14	58	<100 U	<0.100 U	3750	481	<1.00 U	1.14	707 J	<1.00 U	<0.500 U	6270	<1.00 U	2.67	<2.00 U	72.9
CJM-SW-08	Dissolved Metals	6/4/2019	14:30	92.9	<0.500 U	<0.500 U	16	<2.00 U	0.781	20800	<1.00 U	2.42	30.2	71	<100 U	0.908	4570	531	<1.00 U	1.71	778 J	<1.00 U	<0.500 U	7030	<1.00 U	2.74	<2.00 U	111
CJM-SW-08-DUP	Dissolved Metals	6/4/2019	14:30	86.9	<0.500 U	<0.500 U	15.1	<2.00 U	0.73	20200	<1.00 U	2.39	27.7	69	<100 U	0.268	4450	532	<1.00 U	1.65	774 J	<1.00 U	<0.500 U	6890	<1.00 U	2.67	<2.00 U	109
CJM-SW-09	Dissolved Metals	6/4/2019	13:30	86.2	<0.500 U	<0.500 U	16.7	<2.00 U	0.861	22900	<1.00 U	2.68	28.2	78	<100 U	0.229	5070	606	<1.00 U	2.09	846 J	<1.00 U	<0.500 U	7200	<1.00 U	2.93	<2.00 U	181
CJM-SW-10	Dissolved Metals	6/4/2019	12:20	81.6	<0.500 U	<0.500 U	18.2	<2.00 U	0.824	21900	<1.00 U	2.24	26.2	75	<100 U	0.257	5030	511	<1.00 U	2.01	827 J	<1.00 U	<0.500 U	7140	<1.00 U	2.35	<2.00 U	181
CJM-SW-11	Dissolved Metals	6/4/2019	11:15	70.9	<0.500 U	<0.500 U	18.7	<2.00 U	0.737	18800	<1.00 U	1.97	21.9	65	<100 U	0.281	4430	429	<1.00 U	1.79	813 J	<1.00 U	<0.500 U	6640	<1.00 U	1.95	<2.00 U	156
CJM-SW-13	Dissolved Metals	6/6/2019	10:00	52.6	<0.500 U	<0.500 U	24.2	<2.00 U	0.152 J	8750	<1.00 U	0.182 J	9.75	32	<100 U	0.224	2470	40.9	<1.00 U	<0.500 U	728 J	<1.00 U	<0.500 U	5460	<1.00 U	0.387	<2.00 U	44.8
CJM-SW-15	Dissolved Metals	6/5/2019	15:10	45.2 J	<0.500 U	<0.500 U	32.1	<2.00 U	0.112 J	10100	<1.00 U	0.137 J	8.54	37	<100 U	0.152 J	2890	33.5	<1.00 U	<0.500 U	816 J	<1.00 U	<0.500 U	6300	<1.00 U	0.313	<2.00 U	39
CJM-SW-16	Dissolved Metals	6/5/2019	14:20	65.3	<0.500 U	<0.500 U	34.6	<2.00 U	<0.100 U	10800	<1.00 U	<0.100 U	6.79	40	<100 U	0.146 J	3110	11.7	<1.00 U	<0.500 U	878 J	<1.00 U	<0.500 U	6400	<1.00 U	0.266	<2.00 U	28.4
CJM-SW-16-DUP	Dissolved Metals	6/5/2019	14:20	64.8	<0.500 U	<0.500 U	34.7	<2.00 U	<0.100 U	10800	<1.00 U	<0.100 U	7.14	40	<100 U	0.151 J	3110	11.6	<1.00 U	<0.500 U	890 J	<1.00 U	<0.500 U	6400	<1.00 U	0.269	<2.00 U	27.2
CJM-SW-17	Dissolved Metals	6/5/2019	13:40	44.9 J	<0.500 U	<0.500 U	34.7	<2.00 U	<0.100 U	12000	<1.00 U	<0.100 U	6.46	45	<100 U	<0.100 U	3630	8.43	<1.00 U	<0.500 U	923 J	<1.00 U	<0.500 U	6530	<1.00 U	0.302	<2.00 U	27.5
Blank	Dissolved Metals	6/4/2019	14:30	<20.0 U	<0.500 U	<0.500 U	<5.00 U	<2.00 U	<0.100 U	<100 U	<1.00 U	<0.100 U	<0.500 U	<2 U	<100 U	<0.100 U	<100 U	<2.00 U	<1.00 U	<0.500 U	<250 U	<1.00 U	<0.500 U	<250 U	<1.00 U	<0.100 U	<2.00 U	<10.0 U
Blank	Dissolved Metals	6/5/2019	13:40	<20.0 U	<0.500 U	<0.500 U	<5.00 U	<2.00 U	<0.100 U	172 J	<1.00 U	<0.100 U	<0.500 U	<2 U	<100 U	<0.100 U	<100 U	<2.00 U	<1.00 U	<0.500 U	<250 U	<1.00 U	<0.500 U	<250 U	<1.00 U	<0.100 U	<2.00 U	<10.0 U
Blank	Dissolved Metals	6/6/2019	13:30	<20.0 U	<0.500 U	<0.500 U	<5.00 U	<2.00 U	<0.100 U	<100 U	<1.00 U	<0.100 U	<0.500 U	<2 U	<100 U	<0.100 U	<100 U	<2.00 U	<1.00 U	<0.500 U	<250 U	<1.00 U	<0.500 U	<250 U	<1.00 U	<0.100 U	<2.00 U	<10.0 U

STATION_ID	ANALYSIS	DATE	TIME	Aluminum µg/L	Antimony µg/L	Arsenic µg/L	Barium µg/L	Beryllium µg/L	Cadmium µg/L	Calcium µg/L	Chromium µg/L	Cobalt µg/L	Copper µg/L	Hardness mg/L	Iron µg/L	Lead µg/L	Magnesium µg/L	Manganese µg/L	Molybdenum µg/L	Nickel µg/L	Potassium µg/L	Selenium µg/L	Silver µg/L	Sodium µg/L	Thallium µg/L	Uranium µg/L	Vanadium µg/L	Zinc ug/L
CJM-SW-04	Dissolved Metals	6/6/2019	12:35	54.3	<0.500 U	<0.500 U	7.33	<2.00 U	<0.100 U	4180	<1.00 U	<0.100 U	1.31	15	<100 U	<0.100 U	1200	2.08	<1.00 U	<0.500 U	571	<1.00 U	<0.500 U	2010	<1.00 U	<0.100 U	<2.00 U	<10.0 U
CJM-SW-04-DUP	Dissolved Metals	6/6/2019	12:35	59.7	<0.500 U	<0.500 U	7.26	<2.00 U	<0.100 U	4180	<1.00 U	<0.100 U	1.45	15	<100 U	<0.100 U	1200	2.26	<1.00 U	<0.500 U	568	<1.00 U	<0.500 U	2000	<1.00 U	<0.100 U	<2.00 U	<10.0 U
			RPD	**9.5%**	N/A	N/A	**1.0%**	N/A	N/A	**0.0%**	N/A	N/A	**10.1%**	**0.0%**	N/A	N/A	**0.0%**	**8.3%**	N/A	N/A	**0.5%**	N/A	N/A	**0.5%**	N/A	N/A	N/A	N/A

STATION_ID	ANALYSIS	DATE	TIME	Aluminum µg/L	Antimony µg/L	Arsenic µg/L	Barium µg/L	Beryllium µg/L	Cadmium µg/L	Calcium µg/L	Chromium µg/L	Cobalt µg/L	Copper µg/L	Hardness mg/L	Iron µg/L	Lead µg/L	Magnesium µg/L	Manganese µg/L	Molybdenum µg/L	Nickel µg/L	Potassium µg/L	Selenium µg/L	Silver µg/L	Sodium µg/L	Thallium µg/L	Uranium µg/L	Vanadium µg/L	Zinc ug/L
CJM-SW-08	Dissolved Metals	6/4/2019	14:30	92.9	<0.500 U	<0.500 U	16	<2.00 U	0.781	20800	<1.00 U	2.42	30.2	71	<100 U	0.908	4570	531	<1.00 U	1.71	778	<1.00 U	<0.500 U	7030	<1.00 U	2.74	<2.00 U	111
CJM-SW-08-DUP	Dissolved Metals	6/4/2019	14:30	86.9	<0.500 U	<0.500 U	15.1	<2.00 U	0.73	20200	<1.00 U	2.39	27.7	69	<100 U	0.268	4450	532	<1.00 U	1.65	774	<1.00 U	<0.500 U	6890	<1.00 U	2.67	<2.00 U	109
			RPD	**6.67%**	N/A	N/A	**5.79%**	N/A	**6.75%**	**2.93%**	N/A	**1.25%**	**8.64%**	**2.86%**	N/A	**108.8%**	**2.66%**	**0.19%**	N/A	**3.57%**	**0.52%**	N/A	N/A	**2.01%**	N/A	**2.59%**	N/A	**1.82%**

STATION_ID	ANALYSIS	DATE	TIME	Aluminum µg/L	Antimony µg/L	Arsenic µg/L	Barium µg/L	Beryllium µg/L	Cadmium µg/L	Calcium µg/L	Chromium µg/L	Cobalt µg/L	Copper µg/L	Hardness mg/L	Iron µg/L	Lead µg/L	Magnesium µg/L	Manganese µg/L	Molybdenum µg/L	Nickel µg/L	Potassium µg/L	Selenium µg/L	Silver µg/L	Sodium µg/L	Thallium µg/L	Uranium µg/L	Vanadium µg/L	Zinc ug/L
CJM-SW-16	Dissolved Metals	6/5/2019	14:20	65.3	<0.500 U	<0.500 U	34.6	<2.00 U	<0.100 U	10800	<1.00 U	<0.100 U	6.79	40	<100 U	0.146	3110	11.7	<1.00 U	<0.500 U	878	<1.00 U	<0.500 U	6400	<1.00 U	0.266	<2.00 U	28.4
CJM-SW-16-DUP	Dissolved Metals	6/5/2019	14:20	64.8	<0.500 U	<0.500 U	34.7	<2.00 U	<0.100 U	10800	<1.00 U	<0.100 U	7.14	40	<100 U	0.151	3110	11.6	<1.00 U	<0.500 U	890	<1.00 U	<0.500 U	6400	<1.00 U	0.269	<2.00 U	27.2
			RPD	**0.77%**	N/A	N/A	**0.29%**	N/A	N/A	**0.00%**	N/A	N/A	**5.03%**	**0.00%**	N/A	**3.37%**	**0.00%**	**0.86%**	N/A	N/A	**1.36%**	N/A	N/A	**0.00%**	N/A	**1.12%**	N/A	**4.32%**

Note: Removed flags from values for RPD calculation

Note: Data Qualifier Definitions Listed Below:

D The analyte was diluted prior to analysis.

U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

R The result has been rejected.

[9] *Source:* 2019 Sampling Activities Report.

Table 2 Captain Jack Mill Superfund Site June 2019
Surface Water Total Recoverable Metals Analytical Results

STATION_ID	ANALYSIS	DATE	TIME	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-01	Total Recoverable Metals	6/4/2019	16:10	23900 R	<2.50 R	5.55 R	<25.0R	13.8 R	151 R	281000 R	<5.00R	410 R	13100 R	193000 R	55.3 R	117000 R	33200 R	<0.100 R	<5.0 R	263 R	1560 R	<5.0 R	<2.50 R	61800 R	<5.00 R	441 R	<10.0 R	26200 R
CJM-SW-02	Total Recoverable Metals	6/5/2019	9:50	147 R	<5.00 R	<5.00 R	<50.0 R	<2.0 R	29.5 R	534000 R	<10.0 R	128 R	191 R	5410 R	<1.00 R	104000 R	22700 R	<0.100 R	<10.0 R	54.9 R	1560 R	<10.0 R	<5.0 R	56300 R	29.8 R	99.1 R	<20.0 R	3150 R
CJM-SW-03	Total Recoverable Metals	6/6/2019	13:30	130	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	1720	<5.00 U	<0.500 U	<2.50 U	<100 U	<0.500 U	410	3.62 J	<0.100 U	<5.00 U	<2.50 U	405 J	<5.00 U	<2.50 U	1620	<5.00 U	<0.500 U	<10.0 U	<10.0 U
CJM-SW-04	Total Recoverable Metals	6/6/2019	12:35	112	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	4180	<5.00 U	<0.500 U	<2.50 U	178 J	<0.500 U	1210	8.7	<0.100 U	<5.00 U	<2.50 U	556 J	<5.00 U	<2.50 U	2050	<5.00 U	<0.500 U	<10.0 U	<10.0 U
CJM-SW-04-DUP	Total Recoverable Metals	6/6/2019	12:35	109	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	4140	<5.00 U	<0.500 U	<2.50 U	176 J	<0.500 U	1210	8.56	<0.100 U	<5.00 U	<2.50 U	528 J	<5.00 U	<2.50 U	2030	<5.00 U	<0.500 U	<10.0 U	<10.0 U
CJM-SW-05	Total Recoverable Metals	6/5/2019	11:20	107	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	6160	<5.00 U	<0.500 U	3.89 JD	<100 U	<0.500 U	1800	9.52	<0.100 U	<5.00 U	<2.50 U	650 J	<5.00 U	<2.50 U	4970	<5.00 U	<0.500 U	<10.0 U	51.8
CJM-SW-06	Total Recoverable Metals	6/5/2019	10:20	116	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	5880	<5.00 U	<0.500 U	3.70 JD	107 J	<0.500 U	1720	8.59	<0.100 U	<5.00 U	<2.50 U	659 J	<5.00 U	<2.50 U	4940	<5.00 U	<0.500 U	<10.0 U	46.7
CJM-SW-07	Total Recoverable Metals	6/4/2019	15:30	148	<2.50 U	<2.50 U	<25.0 U	<2.00 U	0.516 JD	16800	<5.00 U	1.91 D	5.29 D	163 J	0.611 JD	3660	479	<0.100 U	<5.00 U	<2.50 U	755 J	<5.00 U	<2.50 U	6290	<5.00 U	2.51 D	<10.0 U	73.4
CJM-SW-08	Total Recoverable Metals	6/4/2019	14:30	195	<2.50 U	<2.50 U	<25.0 U	<2.00 U	0.814 JD	22100	<5.00 U	2.59 D	34.5 D	199 J	0.644 JD	4830	594	<0.100 U	<5.00 U	<2.50 U	788 J	<5.00 U	<2.50 U	7470	<5.00 U	2.79 D	<10.0 U	123
CJM-SW-08-DUP	Total Recoverable Metals	6/4/2019	14:30	184	<2.50 U	<2.50 U	<25.0 U	<2.00 U	0.718 JD	22800	<5.00 U	2.51 D	34.8 D	201 J	0.766 JD	4950	604	<0.100 U	<5.00 U	<2.50 U	801 J	<5.00 U	<2.50 U	7660	13.2 D	2.89 D	<10.0 U	125
CJM-SW-09	Total Recoverable Metals	6/4/2019	13:30	176	2.58 JD	3.23 JD	<25.0 U	<2.00 U	1.80 D	22700	<5.00 U	3.29 D	25.9 D	187 J	3.75 D	5050	593	<0.100 U	<5.00 U	3.03 JD	801 J	7.78 JD	<2.50 U	7500	8.90 JD	3.25 D	<10.0 U	176
CJM-SW-10	Total Recoverable Metals	6/4/2019	12:20	161	<2.50 U	<2.50 U	<25.0 U	<2.00 U	0.894 JD	23000	<5.00 U	2.21 D	30.8 D	149 J	0.674 JD	5220	542	<0.100 U	<5.00 U	<2.50 U	834 J	<5.00 U	<2.50 U	7520	<5.00 U	2.44 D	<10.0 U	181
CJM-SW-11	Total Recoverable Metals	6/4/2019	11:15	226	<2.50 U	<2.50 U	<25.0 U	<2.00 U	0.624 JD	15000	<5.00 U	1.36 D	20.2 D	283	1.29 D	3660	330	<0.100 U	<5.00 U	<2.50 U	794 J	<5.00 U	<2.50 U	6210	<5.00 U	1.53 D	<10.0 U	120
CJM-SW-13	Total Recoverable Metals	6/6/2019	10:00	271	<2.50 U	<2.50 U	27.5 JD	<2.00 U	<0.500 U	9090	<5.00 U	<0.500 U	23.1 D	383	2.43 D	2570	73.9	<0.100 U	<5.00 U	<2.50 U	778 J	<5.00 U	<2.50 U	5750	<5.00 U	0.969 JD	<10.0 U	56.9
CJM-SW-15	Total Recoverable Metals	6/5/2019	15:10	119	<2.50 U	<2.50 U	32.3 JD	<2.00 U	<0.500 U	10300	<5.00 U	<0.500 U	12.0 D	169 J	0.808 JD	2940	39.7	<0.100 U	<5.00 U	<2.50 U	829 J	<5.00 U	<2.50 U	6470	<5.00 U	<0.500 U	<10.0 U	43.2
CJM-SW-16	Total Recoverable Metals	6/5/2019	14:20	120	<2.50 U	<2.50 U	35.9 JD	<2.00 U	<0.500 U	11200	<5.00 U	<0.500 U	9.70 D	176 J	0.532 JD	3220	23	<0.100 U	<5.00 U	<2.50 U	831 J	<5.00 U	<2.50 U	6690	<5.00 U	<0.500 U	<10.0 U	33.3
CJM-SW-16-DUP	Total Recoverable Metals	6/5/2019	14:20	118	<2.50 U	<2.50 U	36.3 JD	<2.00 U	<0.500 U	11200	<5.00 U	<0.500 U	9.54 D	168 J	0.531 JD	3210	22.2	<0.100 U	<5.00 U	<2.50 U	864 J	<5.00 U	<2.50 U	6650	<5.00 U	<0.500 U	<10.0 U	33.1
CJM-SW-17	Total Recoverable Metals	6/5/2019	13:40	122	<2.50 U	<2.50 U	35.6 JD	<2.00 U	<0.500 U	12100	<5.00 U	<0.500 U	7.19 D	153 J	<0.500 U	3680	16.6	<0.100 U	<5.00 U	<2.50 U	933 J	<5.00 U	<2.50 U	6700	<5.00 U	<0.500 U	<10.0 U	29.2
Blank	Total Recoverable Metals	6/4/2019	14:30	<20.0 U	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	<100 U	<5.00 U	<0.500 U	<2.50 U	<100 U	<0.500 U	<100 U	2.38 J	<0.100 U	<5.00 U	<2.50 U	<250 U	<5.00 U	<2.50 U	<250 U	8.31 JD	<0.500 U	<10.0 U	<10.0 U
Blank	Total Recoverable Metals	6/5/2019	13:40	<20.0 U	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	<100 U	<5.00 U	<0.500 U	<2.50 U	<100 U	<0.500 U	<100 U	2.07 J	<0.100 U	<5.00 U	<2.50 U	<250 U	<5.00 U	<2.50 U	<250 U	<5.00 U	<0.500 U	<10.0 U	10.1 J
Blank	Total Recoverable Metals	6/6/2019	13:30	<20.0 U	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	<100 U	<5.00 U	<0.500 U	<2.50 U	<100 U	<0.500 U	<100 U	2.06 J	<0.100 U	<5.00 U	<2.50 U	<250 U	<5.00 U	<2.50 U	<250 U	<5.00 U	<0.500 U	<10.0 U	<10.0 U

STATION_ID	ANALYSIS	DATE	TIME	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-04	Total Recoverable Metals	6/6/2019	12:35	112	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	4180	<5.00 U	<0.500 U	<2.50 U	178	<0.500 U	1210	8.7	<0.100 U	<5.00 U	<2.50 U	556	<5.00 U	<2.50 U	2050	<5.00 U	<0.500 U	<10.0 U	<10.0 U
CJM-SW-04-DUP	Total Recoverable Metals	6/6/2019	12:35	109	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	4140	<5.00 U	<0.500 U	<2.50 U	176	<0.500 U	1210	8.56	<0.100 U	<5.00 U	<2.50 U	528	<5.00 U	<2.50 U	2030	<5.00 U	<0.500 U	<10.0 U	<10.0 U
			RPD	**2.71%**	N/A	N/A	N/A	N/A	N/A	**0.96%**	N/A	N/A	N/A	**1.13%**	N/A	**0.00%**	**1.62%**	N/A	N/A	N/A	**5.17%**	N/A	N/A	**0.98%**	N/A	N/A	N/A	N/A

STATION_ID	ANALYSIS	DATE	TIME	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-08	Total Recoverable Metals	6/4/2019	14:30	195	<2.50 U	<2.50 U	<25.0 U	<2.00 U	0.814	22100	<5.00 U	2.59	34.5	199	0.644	4830	594	<0.100 U	<5.00 U	<2.50 U	788	<5.00 U	<2.50 U	7470	<5.00	2.79	<10.0 U	123
CJM-SW-08-DUP	Total Recoverable Metals	6/4/2019	14:30	184	<2.50 U	<2.50 U	<25.0 U	<2.00 U	0.718	22800	<5.00 U	2.51	34.8	201	0.766	4950	604	<0.100 U	<5.00 U	<2.50 U	801	<5.00 U	<2.50 U	7660	13.2	2.89	<10.0 U	125
			RPD	**5.80%**	N/A	N/A	N/A	N/A	**12.53%**	**3.12%**	N/A	**3.14%**	**0.87%**	**1.00%**	**17.30%**	**2.45%**	**1.67%**	N/A	N/A	N/A	**1.64%**	N/A	N/A	**2.51%**	N/A	**3.52%**	N/A	**1.61%**

STATION_ID	ANALYSIS	DATE	TIME	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-16	Total Recoverable Metals	6/5/2019	14:20	120	<2.50 U	<2.50 U	35.9	<2.00 U	<0.500 U	11200	<5.00 U	<0.500 U	9.7	176	0.532	3220	23	<0.100 U	<5.00 U	<2.50 U	831	<5.00 U	<2.50 U	6690	<5.00 U	<0.500 U	<10.0 U	33.3
CJM-SW-16-DUP	Total Recoverable Metals	6/5/2019	14:20	118	<2.50 U	<2.50 U	36.3	<2.00 U	<0.500 U	11200	<5.00 U	<0.500 U	9.54	168	0.531	3210	22.2	<0.100 U	<5.00 U	<2.50 U	864	<5.00 U	<2.50 U	6650	<5.00 U	<0.500 U	<10.0 U	33.1
			RPD	**1.68%**	N/A	N/A	**1.11%**	N/A	N/A	**0.00%**	N/A	N/A	**1.66%**	**4.65%**	**0.19%**	**0.31%**	**3.54%**	N/A	N/A	N/A	**3.89%**	N/A	N/A	**0.60%**	N/A	N/A	N/A	**0.60%**

Note: Removed flags from values for RPD calculation

Note: Data Qualifier Definitions Listed Below:

D The analyte was diluted prior to analysis.

U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

R The result has been rejected.

Table 5 Captain Jack Mill Superfund Site October/November 2019
Surface Water Dissolved Metals Analytical Results

STATION_ID	ANALYSIS	DATE	TIME	Aluminum µg/L	Antimony µg/L	Arsenic µg/L	Barium µg/L	Beryllium µg/L	Cadmium µg/L	Calcium µg/L	Chromium µg/L	Cobalt µg/L	Copper µg/L	Hardness mg/L	Iron µg/L	Lead µg/L	Magnesium µg/L	Manganese µg/L	Molybdenum µg/L	Nickel µg/L	Potassium µg/L	Selenium µg/L	Silver µg/L	Sodium µg/L	Thallium µg/L	Uranium µg/L	Vanadium µg/L	Zinc µg/L
Blank	Dissolved Metals	10/1/2019	16:30	<20.0 U	<0.500 U	<0.500 U	<5.00 U	<2.00 U	<0.100 U	<100 U	<1.00 U	<0.100 U	<0.500 U	<2 U	<100 U	<0.100 U	<100 U	<2.00 U	<1.00 U	<0.500 U	<250 U	<1.00 U	<0.500 U	<250 U	<1.00 U	<0.100 U	<2.00 U	<10.0 U
CJM-SW-10	Dissolved Metals	10/1/2019	16:00	52.6	<0.500 U	<0.500 U	6.08 J	<2.00 U	<0.100 U	3530	<1.00 U	0.119 J	4.71	12	120 J	0.160 J	849	24.1	<1.00 U	<0.500 U	353 J	<1.00 U	<0.500 U	1700	<1.00 U	0.111 J	<2.00 U	13.9 J
CJM-SW-11	Dissolved Metals	10/1/2019	15:00	51.7	<0.500 U	<0.500 U	6.10 J	<2.00 U	<0.100 U	3640	<1.00 U	0.136 J	4.79	13	112 J	0.139 J	867	23.7	<1.00 U	<0.500 U	328 J	<1.00 U	<0.500 U	1710	<1.00 U	0.109 J	<2.00 U	14.7 J
CJM-SW-11 Dup	Dissolved Metals	10/1/2019	15:00	57.4	<0.500 U	<0.500 U	6.42 J	<2.00 U	<0.100 U	3790	<1.00 U	0.132 J	5.01	13	143 J	0.172 J	895	24.7	<1.00 U	<0.500 U	355 J	<1.00 U	<0.500 U	1760	<1.00 U	0.116 J	<2.00 U	14.3 J
CJM-SW-13	Dissolved Metals	10/1/2019	14:10	43.1 J	<0.500 U	<0.500 U	11.2	<2.00 U	<0.100 U	5480	<1.00 U	0.146 J	6.41	19	<100 U	0.227	1320	34.8	<1.00 U	<0.500 U	382 J	<1.00 U	<0.500 U	2060	<1.00 U	0.218	<2.00 U	18.3 J
CJM-SW-15	Dissolved Metals	10/1/2019	13:00	44.0 J	<0.500 U	<0.500 U	16.3	<2.00 U	<0.100 U	7140	<1.00 U	0.116 J	7.7	25	120 J	0.278	1700	35.4	<1.00 U	<0.500 U	429 J	<1.00 U	<0.500 U	2200	<1.00 U	0.37	<2.00 U	24.3
CJM-SW-16	Dissolved Metals	10/1/2019	12:00	37.1 J	<0.500 U	<0.500 U	18.3	<2.00 U	<0.100 U	7300	<1.00 U	<0.100 U	7.19	26	<100 U	0.205	1790	19.3	<1.00 U	<0.500 U	449 J	<1.00 U	<0.500 U	2330	<1.00 U	0.322	<2.00 U	23.4
CJM-SW-17	Dissolved Metals	10/1/2019	11:00	39.1 J	<0.500 U	<0.500 U	18.8	<2.00 U	<0.100 U	7690	<1.00 U	<0.100 U	6.97	27	<100 U	0.219	1970	14.5	<1.00 U	<0.500 U	524 J	<1.00 U	<0.500 U	2410	<1.00 U	0.327	<2.00 U	21.4
CJM-SW-01	Dissolved Metals	11/13/2019	14:05	6070 D	<2.50 U	<2.50 U	<25.0 U	<10.0 U	39.3 D	155000 D	<5.00 U	146 D	2830 D	603 D	68500 D	3.48 D	52300 D	13200 D	<5.00 U	99.9 D	<1250 U	<5.00 U	<2.50 U	13900 D	<5.00 U	95.8 D	<10.0 U	8580 D
CJM-SW-02	Dissolved Metals	11/13/2019	13:16	<20.0 U	<2.50 U	<2.50 U	<25.0 U	<2.00 U	11.3 D	254000	<5.00 U	112 D	9.78 D	877	154 J	<0.500 U	59100	14100	<5.00 U	63.5 D	910 J	<5.00 U	<2.50 U	16200	<5.00 U	23.7 D	<10.0 U	2830
CJM-SW-04	Dissolved Metals	11/13/2019	15:40	<20.0 U	<0.500 U	<0.500 U	7.46 J	<2.00 U	<0.100 U	4640	<1.00 U	<0.100 U	<0.500 U	17	<100 U	<0.100 U	1230	3.93 J	<1.00 U	<0.500 U	498 J	<1.00 U	<0.500 U	2200	<1.00 U	<0.100 U	<2.00 U	<10.0 U
CJM-SW-05	Dissolved Metals	11/13/2019	14:45	24.9 J	<0.500 U	<0.500 U	8.96 J	<2.00 U	<0.100 U	5880	<1.00 U	<0.100 U	0.869 J	21	<100 U	<0.100 U	1610	<2.00 U	<1.00 U	<0.500 U	549 J	<1.00 U	<0.500 U	2850	<1.00 U	<0.100 U	<2.00 U	<10.0 U
CJM-SW-06	Dissolved Metals	11/13/2019	13:45	<20.0 U	<0.500 U	<0.500 U	8.97 J	<2.00 U	<0.100 U	5820	<1.00 U	<0.100 U	<0.500 U	21	<100 U	<0.100 U	1600	<2.00 U	<1.00 U	<0.500 U	529 J	<1.00 U	<0.500 U	2800	<1.00 U	<0.100 U	<2.00 U	<10.0 U
CJM-SW-07	Dissolved Metals	11/13/2019	12:30	<20.0 U	<0.500 U	<0.500 U	9.05 J	<2.00 U	<0.100 U	20900	<1.00 U	0.887	0.792 J	70	<100 U	<0.100 U	4330	296	<1.00 U	<0.500 U	588 J	<1.00 U	<0.500 U	3450	<1.00 U	3.08	<2.00 U	<10.0 U
CJM-SW-07 Dup	Dissolved Metals	11/13/2019	12:30	<20.0 U	<0.500 U	<0.500 U	9.06 J	<2.00 U	<0.100 U	20900	<1.00 U	0.899	0.766 J	70	<100 U	<0.100 U	4330	293	<1.00 U	<0.500 U	589 J	<1.00 U	<0.500 U	3440	<1.00 U	3.1	<2.00 U	<10.0 U
CJM-SW-08	Dissolved Metals	11/13/2019	11:40	<20.0 U	<0.500 U	<0.500 U	9.07 J	<2.00 U	<0.100 U	20700	<1.00 U	0.777	1	69	<100 U	<0.100 U	4290	256	<1.00 U	<0.500 U	583 J	<1.00 U	<0.500 U	3480	<1.00 U	3.05	<2.00 U	<10.0 U
CJM-SW-09	Dissolved Metals	11/13/2019	10:30	96.6	<0.500 U	<0.500 U	10.6	<2.00 U	0.571	31300	<1.00 U	2	23.7	107	<100 U	0.152 J	6960	431	<1.00 U	1.02	670 J	<1.00 U	<0.500 U	4310	<1.00 U	2.94	<2.00 U	108
CJM-SW-10	Dissolved Metals	11/13/2019	9:50	71.8	<0.500 U	<0.500 U	14.2	<2.00 U	0.54	29800	<1.00 U	1.59	17.8	102	<100 U	0.232	6680	342	<1.00 U	1.06	659 J	<1.00 U	<0.500 U	4210	<1.00 U	2.4	<2.00 U	111
CJM-SW-11	Dissolved Metals	11/12/2019	14:30	59.7	<0.500 U	<0.500 U	19.5	<2.00 U	0.396	24500	<1.00 U	1.39	12.9	85	<100 U	0.208	5720	316	<1.00 U	0.773 J	616 J	<1.00 U	<0.500 U	4410	<1.00 U	1.88	<2.00 U	88.7
CJM-SW-11 Dup	Dissolved Metals	11/12/2019	14:30	55.1	<0.500 U	<0.500 U	20	<2.00 U	0.409	24000	<1.00 U	1.37	12.7	83	<100 U	0.189 J	5610	315	<1.00 U	0.779 J	635 J	<1.00 U	<0.500 U	4370	<1.00 U	1.86	<2.00 U	86.3
CJM-SW-13	Dissolved Metals	11/12/2019	13:35	20.6 J	<0.500 U	<0.500 U	44.1	<2.00 U	0.207	22000	<1.00 U	0.224	4.43	78	<100 U	0.193 J	5580	74.2	<1.00 U	<0.500 U	805 J	<1.00 U	<0.500 U	5150	<1.00 U	0.675	<2.00 U	61.9
CJM-SW-15	Dissolved Metals	11/12/2019	12:20	<20.0 U	<0.500 U	<0.500 U	56.9	<2.00 U	0.164 J	20500	<1.00 U	0.273	3.28	73	171 J	<0.100 U	5390	123	<1.00 U	<0.500 U	805 J	<1.00 U	<0.500 U	5670	<1.00 U	0.736	<2.00 U	60.9
CJM-SW-16	Dissolved Metals	11/12/2019	11:25	<20.0 U	<0.500 U	<0.500 U	47.9	<2.00 U	<0.100 U	17600	<1.00 U	<0.100 U	2.02	63	<100 U	<0.100 U	4730	12.5	<1.00 U	<0.500 U	714 J	<1.00 U	<0.500 U	5510	<1.00 U	0.187 J	<2.00 U	36.8
CJM-SW-17	Dissolved Metals	11/12/2019	10:10	<20.0 U	<0.500 U	<0.500 U	53	<2.00 U	<0.100 U	24100	<1.00 U	<0.100 U	2.04	92	<100 U	<0.100 U	7660	15.5	<1.00 U	<0.500 U	1000	<1.00 U	<0.500 U	5940	<1.00 U	0.827	<2.00 U	34.7
Blank	Dissolved Metals	11/12/2019	13:20	<20.0 U	<0.500 U	<0.500 U	<5.00 U	<2.00 U	<0.100 U	190 J	<1.00 U	<0.100 U	<0.500 U	<2 U	<100 U	<0.100 U	<100 U	<2.00 U	<1.00 U	<0.500 U	<250 U	<1.00 U	<0.500 U	<250 U	<1.00 U	<0.100 U	<2.00 U	<10.0 U
Blank	Dissolved Metals	11/13/2019	15:15	<20.0 U	<0.500 U	<0.500 U	<5.00 U	<2.00 U	<0.100 U	<100 U	<1.00 U	<0.100 U	<0.500 U	<2 U	<100 U	<0.100 U	<100 U	<2.00 U	<1.00 U	<0.500 U	<250 U	<1.00 U	<0.500 U	<250 U	<1.00 U	<0.100 U	<2.00 U	<10.0 U

STATION_ID	ANALYSIS	DATE	TIME	Aluminum µg/L	Antimony µg/L	Arsenic µg/L	Barium µg/L	Beryllium µg/L	Cadmium µg/L	Calcium µg/L	Chromium µg/L	Cobalt µg/L	Copper µg/L	Hardness mg/L	Iron µg/L	Lead µg/L	Magnesium µg/L	Manganese µg/L	Molybdenum µg/L	Nickel µg/L	Potassium µg/L	Selenium µg/L	Silver µg/L	Sodium µg/L	Thallium µg/L	Uranium µg/L	Vanadium µg/L	Zinc µg/L
CJM-SW-11	Dissolved Metals	10/1/2019	15:00	51.7	<0.500 U	<0.500 U	6.1	<2.00 U	<0.100 U	3640	<1.00 U	0.136	4.79	13	112	0.139	867	23.7	<1.00 U	<0.500 U	328	<1.00 U	<0.500 U	1710	<1.00 U	0.109	<2.00 U	14.7
CJM-SW-11 Dup	Dissolved Metals	10/1/2019	15:00	57.4	<0.500 U	<0.500 U	6.42	<2.00 U	<0.100 U	3790	<1.00 U	0.132	5.01	13	143	0.172	895	24.7	<1.00 U	<0.500 U	355	<1.00 U	<0.500 U	1760	<1.00 U	0.116	<2.00 U	14.3
			RPD	**10.45%**	N/A	N/A	**5.11%**	N/A	N/A	**4.04%**	N/A	**2.99%**	**4.49%**	**0.00%**	**24.31%**	**21.22%**	**3.18%**	**4.13%**	N/A	N/A	**7.91%**	N/A	N/A	**2.88%**	N/A	**6.22%**	N/A	**2.76%**

STATION_ID	ANALYSIS	DATE	TIME	Aluminum µg/L	Antimony µg/L	Arsenic µg/L	Barium µg/L	Beryllium µg/L	Cadmium µg/L	Calcium µg/L	Chromium µg/L	Cobalt µg/L	Copper µg/L	Hardness mg/L	Iron µg/L	Lead µg/L	Magnesium µg/L	Manganese µg/L	Molybdenum µg/L	Nickel µg/L	Potassium µg/L	Selenium µg/L	Silver µg/L	Sodium µg/L	Thallium µg/L	Uranium µg/L	Vanadium µg/L	Zinc µg/L
CJM-SW-07	Dissolved Metals	11/13/2019	12:30	<20.0 U	<0.500 U	<0.500 U	9.05	<2.00 U	<0.100 U	20900	<1.00 U	0.887	0.792	70	<100 U	<0.100 U	4330	296	<1.00 U	<0.500 U	588	<1.00 U	<0.500 U	3450	<1.00 U	3.08	<2.00 U	<10.0 U
CJM-SW-07 Dup	Dissolved Metals	11/13/2019	12:30	<20.0 U	<0.500 U	<0.500 U	9.06	<2.00 U	<0.100 U	20900	<1.00 U	0.899	0.766	70	<100 U	<0.100 U	4330	293	<1.00 U	<0.500 U	589	<1.00 U	<0.500 U	3440	<1.00 U	3.1	<2.00 U	<10.0 U
			RPD	N/A	N/A	N/A	**0.11%**	N/A	N/A	**0.00%**	N/A	**1.34%**	**3.34%**	**0.00%**	N/A	N/A	**0.00%**	**1.02%**	N/A	N/A	**0.17%**	N/A	N/A	**0.29%**	N/A	**0.65%**	N/A	N/A

STATION_ID	ANALYSIS	DATE	TIME	Aluminum µg/L	Antimony µg/L	Arsenic µg/L	Barium µg/L	Beryllium µg/L	Cadmium µg/L	Calcium µg/L	Chromium µg/L	Cobalt µg/L	Copper µg/L	Hardness mg/L	Iron µg/L	Lead µg/L	Magnesium µg/L	Manganese µg/L	Molybdenum µg/L	Nickel µg/L	Potassium µg/L	Selenium µg/L	Silver µg/L	Sodium µg/L	Thallium µg/L	Uranium µg/L	Vanadium µg/L	Zinc µg/L
CJM-SW-11	Dissolved Metals	11/12/2019	14:30	59.7	<0.500 U	<0.500 U	19.5	<2.00 U	0.396	24500	<1.00 U	1.39	12.9	85	<100 U	0.208	5720	316	<1.00 U	0.773	616	<1.00 U	<0.500 U	4410	<1.00 U	1.88	<2.00 U	88.7
CJM-SW-11 Dup	Dissolved Metals	11/12/2019	14:30	55.1	<0.500 U	<0.500 U	20	<2.00 U	0.409	24000	<1.00 U	1.37	12.7	83	<100 U	0.189	5610	315	<1.00 U	0.779	635	<1.00 U	<0.500 U	4370	<1.00 U	1.86	<2.00 U	86.3
			RPD	**8.01%**	N/A	N/A	**2.53%**	N/A	**3.23%**	**2.06%**	N/A	**1.45%**	**1.56%**	**2.38%**	N/A	**9.57%**	**1.94%**	**0.32%**	N/A	**0.77%**	**3.04%**	N/A	N/A	**0.91%**	N/A	**1.07%**	N/A	**2.74%**

Note: Removed flags from values for RPD calculation

Note: Data Qualifier Definitions Listed Below:

D The analyte was diluted prior to analysis.

U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Table 6 Captain Jack Mill Superfund Site October/November 2019
Surface Water Total Recoverable Metals Analytical Results

STATION_ID	ANALYSIS	DATE	TIME	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Blank	Total Recoverable Metals	10/1/2019	16:30	<20.0 U	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	<100 U	<5.00 U	<0.500 U	<2.50 U	<100 U	<0.500 U	<100 U	<2.00 U	<0.100 UJ	<5.00 U	<2.50 U	<250 U	<5.00 U	<2.50 U	<250 U	5.97 JD	<0.500 U	<10.0 U	<10.0 U
CJM-SW-10	Total Recoverable Metals	10/1/2019	16:00	157	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	3610	<5.00 U	<0.500 U	8.56 D	458	0.844 JD	848	56.3	<0.100 UJ	<5.00 U	<2.50 U	355 J	<5.00 U	<2.50 U	1600	<5.00 U	<0.500 U	<10.0 U	16.9 J
CJM-SW-11	Total Recoverable Metals	10/1/2019	15:00	160	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	3500	<5.00 U	<0.500 U	8.34 D	474	1.28 D	887	60.9	<0.100 UJ	<5.00 U	<2.50 U	386 J	<5.00 U	<2.50 U	1620	<5.00 U	<0.500 U	<10.0 U	17.4 J
CJM-SW-11 Dup	Total Recoverable Metals	10/1/2019	15:00	148	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	3380	<5.00 U	<0.500 U	8.08 D	466	0.947 JD	846	54.4	<0.100 UJ	<5.00 U	<2.50 U	340 J	<5.00 U	<2.50 U	1580	<5.00 U	<0.500 U	<10.0 U	18.6 J
CJM-SW-13	Total Recoverable Metals	10/1/2019	14:10	138	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	5130	<5.00 U	<0.500 U	10.9 D	411	1.34 D	1280	67.6	<0.100 UJ	<5.00 U	<2.50 U	411 J	<5.00 U	<2.50 U	1910	<5.00 U	<0.500 U	<10.0 U	23.6
CJM-SW-15	Total Recoverable Metals	10/1/2019	13:00	113	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	6880	<5.00 U	<0.500 U	10.6 D	350	1.09 D	1680	58	<0.100 UJ	<5.00 U	<2.50 U	445 J	<5.00 U	<2.50 U	2080	<5.00 U	0.525 JD	<10.0 U	25
CJM-SW-16	Total Recoverable Metals	10/1/2019	12:00	106	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	7070	<5.00 U	<0.500 U	10.9 D	344	1.03 D	1760	50.1	<0.100 UJ	<5.00 U	<2.50 U	500 J	<5.00 U	<2.50 U	2210	<5.00 U	<0.500 U	<10.0 U	29.8
CJM-SW-17	Total Recoverable Metals	10/1/2019	11:00	122	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	7470	<5.00 U	<0.500 U	11.2 D	366	6.03 D	1950	43.2	<0.100 UJ	<5.00 U	<2.50 U	513 J	<5.00 U	<2.50 U	2250	<5.00 U	<0.500 U	<10.0 U	24.7
CJM-SW-01	Total Recoverable Metals	11/13/2019	14:05	6930	<2.50 U	<2.50 U	<25.0 U	4.36 J	38.7 D	149000	<5.00 U	151 D	2990 D	66400	5.47 D	51700	13100	<0.100 U	<5.00 U	106 D	902 J	<5.00 U	<2.50 U	13800	<5.00 U	103 D	<10.0 U	7840
CJM-SW-02	Total Recoverable Metals	11/13/2019	13:16	147	<2.50 U	<2.50 U	<25.0 U	<2.00 U	12.9 D	239000	<5.00 U	124 D	103 D	3290	<0.500 U	56700	14000	<0.100 U	<5.00 U	72.4 D	871 J	<5.00 U	<2.50 U	15400	<5.00 U	27.9 D	<10.0 U	2790
CJM-SW-04	Total Recoverable Metals	11/13/2019	15:40	25.0 J	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	4250	<5.00 U	<0.500 U	<2.50 U	<100 U	<0.500 U	1190	8.56	<0.100 U	<5.00 U	<2.50 U	472 J	<5.00 U	<2.50 U	2050	<5.00 U	<0.500 U	<10.0 U	<10.0 U
CJM-SW-05	Total Recoverable Metals	11/13/2019	14:45	24.8 J	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	5400	<5.00 U	<0.500 U	<2.50 U	<100 U	<0.500 U	1570	6.85 J	<0.100 U	<5.00 U	<2.50 U	585 J	<5.00 U	<2.50 U	2640	<5.00 U	<0.500 U	<10.0 U	<10.0 U
CJM-SW-06	Total Recoverable Metals	11/13/2019	13:45	25.4 J	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	5380	<5.00 U	<0.500 U	<2.50 U	<100 U	<0.500 U	1560	6.37 J	<0.100 U	<5.00 U	<2.50 U	587 J	<5.00 U	<2.50 U	2660	<5.00 U	<0.500 U	<10.0 U	<10.0 U
CJM-SW-07	Total Recoverable Metals	11/13/2019	12:30	32.8 J	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	19300	<5.00 U	1.04 D	<2.50 U	114 J	<0.500 U	4160	315	<0.100 U	<5.00 U	<2.50 U	594 J	<5.00 U	<2.50 U	3180	<5.00 U	3.02 D	<10.0 U	14.0 J
CJM-SW-07 Dup	Total Recoverable Metals	11/13/2019	12:30	31.0 J	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	19600	<5.00 U	1.05 D	<2.50 U	115 J	<0.500 U	4220	315	<0.100 U	<5.00 U	<2.50 U	569 J	<5.00 U	<2.50 U	3240	<5.00 U	3.06 D	<10.0 U	10.9 J
CJM-SW-08	Total Recoverable Metals	11/13/2019	11:40	22.9 J	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	19900	<5.00 U	0.875 JD	<2.50 U	<100 U	<0.500 U	4290	273	<0.100 U	<5.00 U	<2.50 U	597 J	<5.00 U	<2.50 U	3380	<5.00 U	3.04 D	<10.0 U	<10.0 U
CJM-SW-09	Total Recoverable Metals	11/13/2019	10:30	114	<2.50 U	<2.50 U	<25.0 U	<2.00 U	0.501 JD	30000	<5.00 U	2.13 D	30.9 D	<100 U	<0.500 U	6870	440	<0.100 U	<5.00 U	<2.50 U	678 J	<5.00 U	<2.50 U	4120	<5.00 U	2.93 D	<10.0 U	103
CJM-SW-10	Total Recoverable Metals	11/13/2019	9:50	93.1	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	27900	<5.00 U	1.64 D	22.8 D	<100 U	<0.500 U	6630	348	<0.100 U	<5.00 U	<2.50 U	712 J	<5.00 U	<2.50 U	4090	<5.00 U	2.34 D	<10.0 U	101
CJM-SW-11	Total Recoverable Metals	11/12/2019	14:30	66.9	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	22300	<5.00 U	1.30 D	16.7 D	143 J	<0.500 U	5480	312	<0.100 U	<5.00 U	<2.50 U	665 J	<5.00 U	<2.50 U	4340	<5.00 U	1.85 D	<10.0 U	79.7
CJM-SW-11 Dup	Total Recoverable Metals	11/12/2019	14:30	77.7	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	23100	<5.00 U	1.42 D	17.2 D	130 J	<0.500 U	5640	326	<0.100 U	<5.00 U	<2.50 U	645 J	<5.00 U	<2.50 U	4300	<5.00 U	1.87 D	<10.0 U	82
CJM-SW-13	Total Recoverable Metals	11/12/2019	13:35	25.8 J	<2.50 U	<2.50 U	44.7 JD	<2.00 U	<0.500 U	20200	<5.00 U	<0.500 U	5.69 D	<100 U	<0.500 U	5370	78.2	<0.100 U	<5.00 U	<2.50 U	770 J	<5.00 U	<2.50 U	5900	<5.00 U	0.606 JD	<10.0 U	55.6
CJM-SW-15	Total Recoverable Metals	11/12/2019	12:20	<20.0 U	<2.50 U	<2.50 U	58.6 D	<2.00 U	<0.500 U	19000	<5.00 U	<0.500 U	4.05 JD	196 J	<0.500 U	5210	125	<0.100 U	<5.00 U	<2.50 U	744 J	<5.00 U	<2.50 U	5530	<5.00 U	<0.500 U	<10.0 U	55.8
CJM-SW-16	Total Recoverable Metals	11/12/2019	11:25	<20.0 U	<2.50 U	<2.50 U	50.0 D	<2.00 U	<0.500 U	16400	<5.00 U	<0.500 U	<2.50 U	<100 U	<0.500 U	4680	18.1	<0.100 U	<5.00 U	<2.50 U	758 J	<5.00 U	<2.50 U	5490	<5.00 U	<0.500 U	<10.0 U	34.2
CJM-SW-17	Total Recoverable Metals	11/12/2019	10:10	<20.0 U	<2.50 U	<2.50 U	54.2 D	<2.00 U	<0.500 U	22000	<5.00 U	<0.500 U	<2.50 U	<100 U	<0.500 U	7280	20.1	<0.100 U	<5.00 U	<2.50 U	938 J	<5.00 U	<2.50 U	5800	<5.00 U	0.772 JD	<10.0 U	33.7
Blank	Total Recoverable Metals	11/12/2019	13:20	<20.0 U	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	<100 U	<5.00 U	<0.500 U	<2.50 U	<100 U	<0.500 U	<100 U	2.84 J	<0.100 U	<5.00 U	<2.50 U	<250 U	<5.00 U	<2.50 U	<250 U	<5.00 U	<0.500 U	<10.0 U	<10.0 U
Blank	Total Recoverable Metals	11/13/2019	15:15	<20.0 U	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	<100 U	<5.00 U	<0.500 U	<2.50 U	<100 U	<0.500 U	<100 U	3.19 J	<0.100 U	<5.00 U	<2.50 U	<250 U	<5.00 U	<2.50 U	<250 U	<5.00 U	<0.500 U	<10.0 U	<10.0 U

STATION_ID	ANALYSIS	DATE	TIME	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-11	Total Recoverable Metals	10/1/2019	15:00	160	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	3500	<5.00 U	<0.500 U	8.34	474	1.28	887	60.9	<0.100 UJ	<5.00 U	<2.50 U	386	<5.00 U	<2.50 U	1620	<5.00 U	<0.500 U	<10.0 U	17.4
CJM-SW-11 Dup	Total Recoverable Metals	10/1/2019	15:00	148	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	3380	<5.00 U	<0.500 U	8.08	466	0.947	846	54.4	<0.100 UJ	<5.00 U	<2.50 U	340	<5.00 U	<2.50 U	1560	<5.00 U	<0.500 U	<10.0 U	18.6
			RPD	**7.79%**	N/A	N/A	N/A	N/A	N/A	**3.49%**	N/A	N/A	**3.17%**	**1.70%**	**29.91%**	**4.73%**	**11.27%**	N/A	N/A	N/A	**12.67%**	N/A	N/A	**3.77%**	N/A	N/A	N/A	**6.67%**

STATION_ID	ANALYSIS	DATE	TIME	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-07	Total Recoverable Metals	11/13/2019	12:30	32.8	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	19300	<5.00 U	1.04	<2.50 U	114	<0.500 U	4160	315	<0.100 U	<5.00 U	<2.50 U	594	<5.00 U	<2.50 U	3180	<5.00 U	3.02	<10.0 U	**14**
CJM-SW-07 Dup	Total Recoverable Metals	11/13/2019	12:30	31	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	19600	<5.00 U	1.05	<2.50 U	115	<0.500 U	4220	315	<0.100 U	<5.00 U	<2.50 U	569	<5.00 U	<2.50 U	3240	<5.00 U	3.06	<10.0 U	10.9
			RPD	**5.64%**	N/A	N/A	N/A	N/A	N/A	**1.54%**	N/A	**0.96%**	N/A	**0.87%**	N/A	**1.43%**	**0.00%**	N/A	N/A	N/A	**4.30%**	N/A	N/A	**1.87%**	N/A	**1.32%**	N/A	**24.90%**

STATION_ID	ANALYSIS	DATE	TIME	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-11	Total Recoverable Metals	11/12/2019	14:30	66.9	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	22300	<5.00 U	1.3	16.7	143	<0.500 U	5480	312	<0.100 U	<5.00 U	<2.50 U	665	<5.00 U	<2.50 U	4340	<5.00 U	1.85	<10.0 U	79.7
CJM-SW-11 Dup	Total Recoverable Metals	11/12/2019	14:30	77.7	<2.50 U	<2.50 U	<25.0 U	<2.00 U	<0.500 U	23100	<5.00 U	1.42	17.2	130	<0.500 U	5640	326	<0.100 U	<5.00 U	<2.50 U	646	<5.00 U	<2.50 U	4300	<5.00 U	1.87	<10.0 U	82.0
			RPD	**14.94%**	N/A	N/A	N/A	N/A	N/A	**3.52%**	N/A	**8.82%**	**2.95%**	**9.52%**	N/A	**2.88%**	**4.39%**	N/A	N/A	N/A	**2.90%**	N/A	N/A	**0.93%**	N/A	**1.08%**	N/A	**2.84%**

Note: Removed flags from values for RPD calculation

Note: Data Qualifier Definitions Listed Below:

D The analyte was diluted prior to analysis.

U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Figure I-5: Surface Water Sampling Results, 2020[10]

Table 5 Captain Jack Mill Superfund Site January 2020
Surface Water Dissolved Metals Analytical Results

Location	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Blank	1/16/2020	13:00	<20.0U	<0.500U	<0.500U	<5.00U	<2.00U	<0.100U	<100U	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<100U	<2.00U	<1.00U	<0.500U	<250U	<1.00U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<10.0U
CJM-SW-01	1/16/2020	14:20	992	<0.500U	0.971J	22.5	<2.00U	14.4J	83700	2.46	67.3J	885J	320	30900	0.613	26900	6220	<1.00U	44.9J	830J	<1.00U	<0.500U	11700	<1.00U	25.2J	<2.00U	3770
CJM-SW-02	1/16/2020	13:15	384	<0.500U	<0.500U	22.5	<2.00U	14.7	84700	<1.00U	69	628	323	24400	<0.100U	27100	6260	<1.00U	45.7	834J	<1.00U	<0.500U	11800	<1.00U	7.48	<2.00U	3800
CJM-SW-06	1/16/2020	13:35	<20.0U	<0.500U	<0.500U	9.15J	<2.00U	<0.100U	6560	<1.00U	<0.100U	<0.500U	24	<100U	<0.100U	1940	<2.00U	<1.00U	<0.500U	572J	<1.00U	<0.500U	3250	<1.00U	<0.100U	<2.00U	<10.0U
CJM-SW-11	1/16/2020	12:30	<20.0U	<0.500U	<0.500U	26.8	<2.00U	0.917	20600	<1.00U	2.46	28.2	76	<100U	<0.100U	5890	347	<1.00U	2.59	701J	<1.00U	<0.500U	5350	<1.00U	0.647	<2.00U	245
CJM-SW-14	1/16/2020	11:45	<20.0U	<0.500U	<0.500U	61.1	<2.00U	0.178J	20700	<1.00U	0.331	2.53	76	117J	<0.100U	5780	151	<1.00U	<0.500U	787J	<1.00U	<0.500U	7070	<1.00U	0.196J	<2.00U	71
CJM-SW-16	1/16/2020	11:00	<20.0U	<0.500U	<0.500U	56.7	<2.00U	<0.100U	18100	<1.00U	<0.100U	1.6	67	<100U	<0.100U	5220	3.90J	<1.00U	<0.500U	735J	<1.00U	<0.500U	6640	<1.00U	0.154J	<2.00U	33.6
CJM-SW-16 Dup	1/16/2020	11:00	<20.0U	<0.500U	<0.500U	56.1	<2.00U	<0.100U	18100	<1.00U	<0.100U	1.54	67	<100U	<0.100U	5210	3.91J	<1.00U	<0.500U	711J	<1.00U	<0.500U	6630	<1.00U	0.151J	<2.00U	33.2
CJM-SW-17	1/16/2020	10:15	<20.0U	<0.500U	<0.500U	55.9	<2.00U	<0.100U	23400	1.17J	<0.100U	1.45	91	<100U	<0.100U	7920	4.47J	<1.00U	<0.500U	932J	<1.00U	<0.500U	6870	<1.00U	0.848	<2.00U	37.2

Location	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-16	1/16/2020	11:00	<20.0U	<0.500U	<0.500U	56.7	<2.00U	<0.100U	18100	<1.00U	<0.100U	1.6	67	<100U	<0.100U	5220	3.9	<1.00U	<0.500U	735	<1.00U	<0.500U	6640	<1.00U	0.154	<2.00U	33.6
CJM-SW-16 Dup	1/16/2020	11:00	<20.0U	<0.500U	<0.500U	56.1	<2.00U	<0.100U	18100	<1.00U	<0.100U	1.54	67	<100U	<0.100U	5210	3.91	<1.00U	<0.500U	711	<1.00U	<0.500U	6630	<1.00U	0.151	<2.00U	33.2
		RPD	N/A	N/A	N/A	**1.06%**	N/A	N/A	**0.00%**	N/A	N/A	**3.82%**	**0.00%**	N/A	N/A	**0.19%**	**0.26%**	N/A	N/A	**3.32%**	N/A	N/A	**0.15%**	N/A	**1.97%**	N/A	**1.20%**

Note: Removed flags from values for RPD calculation; final data package includes all data qualifiers.
Note: Data Qualifier Definitions Listed Below:
D The analyte was diluted prior to analysis.
U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

[10] *Source:* 2020 Sampling Activities Report.

Table 9 Captain Jack Mill Superfund Site February 2020
Surface Water Dissolved Metals Analytical Results

Location	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Blank	2/6/2020	12:00	<20.0U	<0.500U	<0.500U	<5.00U	<2.00U	<0.100U	128J	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<100U	<2.00U	<1.00U	<0.500U	<250U	<1.00U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<10.0U
CJM-SW-01	2/6/2020	14:45	770	<0.500U	0.528J	21.7	<2.00U	11.4	80700	2.68	60.5	729	307	27500	0.334	25700	5680	<1.00U	41.3	883J	<1.00U	<0.500U	11500	<1.00U	18.8	<2.00U	3100
CJM-SW-02	2/6/2020	13:30	328	<0.500U	<0.500U	22.2	<2.00U	11.7	82400	<1.00U	62	485	313	19200	<0.100U	26100	5790	<1.00U	42.3	894J	<1.00U	<0.500U	11700	<1.00U	4.83	<2.00U	3130
CJM-SW-06	2/6/2020	14:10	<20.0U	<0.500U	<0.500U	8.82J	<2.00U	<0.100U	6690	1.21J	<0.100U	<0.500U	25	<100U	<0.100U	1970	<2.00U	<1.00U	<0.500U	604J	<1.00U	<0.500U	3290	<1.00U	<0.100U	<2.00U	<10.0U
CJM-SW-11	2/6/2020	12:50	<20.0U	<0.500U	<0.500U	21.4	<2.00U	0.898	22100	<1.00U	2.61	38	81	<100U	<0.100U	6240	371	<1.00U	3.44	718J	<1.00U	<0.500U	5020	<1.00U	0.734	<2.00U	290
CJM-SW-14	2/6/2020	11:40	<20.0U	<0.500U	<0.500U	59.2	<2.00U	0.152J	19900	<1.00U	0.272	2.08	73	117J	<0.100U	5730	122	<1.00U	<0.500U	785J	<1.00U	<0.500U	7010	<1.00U	0.179J	<2.00U	69.3
CJM-SW-16	2/6/2020	10:45	<20.0U	<0.500U	<0.500U	53.9	<2.00U	<0.100U	18000	1.29J	<0.100U	1.5	66	<100U	<0.100U	5240	2.12J	<1.00U	<0.500U	769J	<1.00U	<0.500U	6700	<1.00U	0.128J	<2.00U	32.9
CJM-SW-16 Dup	2/6/2020	10:45	<20.0U	<0.500U	<0.500U	55.3	<2.00U	<0.100U	17700	1.17J	<0.100U	1.47	65	<100U	<0.100U	5170	2.06J	<1.00U	<0.500U	750J	<1.00U	<0.500U	6620	<1.00U	0.127J	<2.00U	32.4
CJM-SW-17	2/6/2020	10:21	<20.0U	<0.500U	<0.500U	53	<2.00U	<0.100U	22900	1.48J	<0.100U	1.35	89	<100U	<0.100U	7800	3.21J	<1.00U	<0.500U	945J	<1.00U	<0.500U	6850	<1.00U	0.785	<2.00U	32.2

Location	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-16	2/6/2020	10:45	<20.0U	<0.500U	<0.500U	53.9	<2.00U	<0.100U	18000	1.29	<0.100U	1.5	66	<100U	<0.100U	5240	2.12	<1.00U	<0.500U	769	<1.00U	<0.500U	6700	<1.00U	0.128	<2.00U	32.9
CJM-SW-16 Dup	2/6/2020	10:45	<20.0U	<0.500U	<0.500U	55.3	<2.00U	<0.100U	17700	1.17	<0.100U	1.47	65	<100U	<0.100U	5170	2.06	<1.00U	<0.500U	750	<1.00U	<0.500U	6620	<1.00U	0.127	<2.00U	32.4
	RPD	N/A	N/A	N/A	**2.56%**	N/A	N/A	**1.68%**	**9.76%**	N/A	**2.02%**	**1.53%**	N/A	N/A	**1.34%**	**2.87%**	N/A	N/A	**2.50%**	N/A	N/A	**1.20%**	N/A	**0.78%**	N/A	**1.53%**

Note: Removed flags from values for RPD calculation; final data package includes all data qualifiers.

Note: Data Qualifier Definitions Listed Below:

D The analyte was diluted prior to analysis.

U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Table 13 Captain Jack Mill Superfund Site March 2020
Surface Water Dissolved Metals Analytical Results

Location	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Blank	3/3/2020	12:05	<20.0U	<0.500U	<0.500U	<5.00U	<2.00U	<0.100U	<100U	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<100U	<2.00U	<1.00U	<0.500U	<250U	<1.00U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<10.0U
CJM-SW-01	3/3/2020	14:55	907	<0.500U	0.652J	20.6	<2.00U	9.62	78700	<1.00U	52.2	605	298	21200	0.185J	24800	5250	<1.00U	37.1	948J	<1.00U	<0.500U	10500	<1.00U	14.4	<2.00U	2620
CJM-SW-02	3/3/2020	13:53	132	<0.500U	<0.500U	19.8	<2.00U	9.3	77400	<1.00U	51.9	233	294	10900	<0.100U	24400	5190	<1.00U	37.1	1010	<1.00U	<0.500U	10500	<1.00U	1.5	<2.00U	2580
CJM-SW-06	3/3/2020	14:20	<20.0U	<0.500U	<0.500U	8.36J	<2.00U	<0.100U	6620	<1.00U	<0.100U	0.510J	25	<100U	<0.100U	2000	<2.00U	<1.00U	<0.500U	646J	<1.00U	<0.500U	3350	<1.00U	<0.100U	<2.00U	<10.0U
CJM-SW-11	3/3/2020	13:00	33.9J	<0.500U	<0.500U	30.9	<2.00U	0.61	19100	<1.00U	1.29	19.6	71	<100U	<0.100U	5630	215	<1.00U	1.81	741J	<1.00U	<0.500U	5670	<1.00U	0.396	<2.00U	196
CJM-SW-14	3/3/2020	11:50	<20.0U	<0.500U	<0.500U	57	<2.00U	0.113J	20000	<1.00U	0.236	2.25	74	<100U	<0.100U	5800	106	<1.00U	<0.500U	729J	<1.00U	<0.500U	7480	<1.00U	0.145J	<2.00U	48.3
CJM-SW-16	3/3/2020	10:50	<20.0U	<0.500U	<0.500U	46.2	<2.00U	<0.100U	17000	<1.00U	<0.100U	1.62	63	<100U	<0.100U	5010	2.65J	<1.00U	<0.500U	692J	<1.00U	<0.500U	7090	<1.00U	0.136J	<2.00U	29
CJM-SW-16 Dup	3/3/2020	10:50	<20.0U	<0.500U	<0.500U	47.3	<2.00U	<0.100U	16900	<1.00U	<0.100U	1.56	63	<100U	<0.100U	4990	2.55J	<1.00U	<0.500U	736J	<1.00U	<0.500U	7070	<1.00U	0.131J	<2.00U	28.5
CJM-SW-17	3/3/2020	10:05	<20.0U	<0.500U	<0.500U	45.6	<2.00U	<0.100U	21700	<1.00U	<0.100U	1.41	84	<100U	<0.100U	7380	6.02	<1.00U	<0.500U	961J	<1.00U	<0.500U	7510	<1.00U	0.652	<2.00U	23.9

Location	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-16	3/3/2020	10:50	<20.0U	<0.500U	<0.500U	46.2	<2.00U	<0.100U	17000	<1.00U	<0.100U	1.62	63	<100U	<0.100U	5010	2.65	<1.00U	<0.500U	692	<1.00U	<0.500U	7090	<1.00U	0.136	<2.00U	29
CJM-SW-16 Dup	3/3/2020	10:50	<20.0U	<0.500U	<0.500U	47.3	<2.00U	<0.100U	16900	<1.00U	<0.100U	1.56	63	<100U	<0.100U	4990	2.55	<1.00U	<0.500U	736	<1.00U	<0.500U	7070	<1.00U	0.131	<2.00U	28.5
		RPD	N/A	N/A	N/A	**2.35%**	N/A	N/A	**0.59%**	N/A	N/A	**3.77%**	**0.00%**	N/A	N/A	**0.40%**	**3.85%**	N/A	N/A	**6.16%**	N/A	N/A	**0.28%**	N/A	**3.75%**	N/A	**1.74%**

Note: Removed flags from values for RPD calculation; final data package includes all data qualifiers.

Note: Data Qualifier Definitions Listed Below:

D The analyte was diluted prior to analysis.

U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Table 17 Captain Jack Mill Superfund Site May 2020
Surface Water Dissolved Metals Analytical Results

Location	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-01	5/28/2020	10:05	5350J	<2.0U	0.61J	22.4	4.9	24.4	177000D	1.7J	95.1J-	5070D	23100J	9.7	39500J	12000D	<10.0U	119	482J	<5.0U	<1.0U	4730	<1.0U	125X*	<5.0U	5320D
CJM-SW-02	5/28/2020	9:21	5270J	<2.0U	0.28J	21.8	4.9	23.5	171000D	1.5J	97.8J-	4770D	19700J	8.9	39600J	11500D	<10.0U	116	486J	<5.0U	<1.0U	4750	<1.0U	124X*	<5.0U	5190D
CJM-SW-03	5/28/2020	11:37	79.5J	<2.0U	0.24J	10.2	<1.0U	<1.0U	1650	0.35J	<1.0UJ	<2.0	<200UJ	<1.0U	344J	1.1	<10.0U	0.3J	317J	<5.0U	<1.0U	1450	<1.0U	<5.0U	<5.0U	3.6
CJM-SW-04	5/28/2020	11:15	152J	<2.0U	0.28J	7.3J	<1.0U	<1.0U	3120	0.61J	<1.0UJ	1.9J	76.1J	<1.0U	817J	1.7	<10.0U	0.57J	362J	<5.0U	<1.0U	1490	<1.0U	<5.0U	<5.0U	<2.0
CJM-SW-05	5/28/2020	9:51	94.5J	<2.0U	0.19J	17.6	<1.0U	<1.0U	4020	0.63J	<1.0UJ	4.1	53.2J	<1.0U	1090J	3.8	<10.0U	0.84J	453J	<5.0U	<1.0U	2780	<1.0U	<5.0U	<5.0U	34
CJM-SW-06	5/27/2020	3:38	67J	<2.0U	0.29J	12.3	<1.0U	<1.0U	3740	0.74J	<1.0UJ	3.7	54.4J	<1.0U	1010J	3.6	<10.0U	0.6J	438J	<5.0U	<1.0U	2700	<1.0U	<5.0U	<5.0U	27.3
CJM-SW-07	5/27/2020	3:10	60.5J	<2.0U	0.26J	12.3	<1.0U	<1.0U	3890	0.88J	<1.0UJ	3.4	50.8J	<1.0U	1040J	2.5	<10.0U	0.62J	438J	<5.0U	<1.0U	2810	<1.0U	<5.0U	<5.0U	28.4
CJM-SW-08	5/27/2020	2:43	168J	<2.0U	0.41J	14.7	<1.0U	0.44J	6730	0.88J	1.6J-	45.7	106J	0.24J	2090J	138	<10.0U	2.4	467J	<5.0U	<1.0U	3230	<1.0U	0.87J	<5.0U	96.2
CJM-SW-09	5/27/2020	1:50	191J	<2.0U	0.44J	14.4	<1.0U	0.43J	6800	1.5J	1.5J-	43.4	106J	0.28J	2100J	134	<10.0U	2.5	465J	<5.0U	<1.0U	3220	<1.0U	0.83J	<5.0U	106
CJM-SW-10	5/27/2020	12:30	119	<2.0U	<1.0U	14	<1.0U	0.41J	7040J	1J	1.2	40.2	58.2J	0.31J	2330	112J	<10.0U	2.8	477J	<5.0U	<1.0U	3400	<1.0U	0.9	<5.0U	99.8
CJM-SW-11	5/27/2020	9:31	90.5	<2.0U	0.54J	42.8	<1.0U	0.27J	5410J	1.6J	0.8J	24.3	56.9J	0.26J	1800	78.6J	<10.0U	1.5	405J	<5.0U	<1.0U	3130	<1.0U	<5.0U	<5.0U	72.7
CJM-SW-14	5/27/2020	12:35	54.9	<2.0U	0.48J	26.1	<1.0U	<1.0U	5910J	1.7J	<1.0U	9.6	<200U	0.25J	1780	17.2J	<10.0U	0.66J	505	<5.0U	<1.0U	4300	<1.0U	<5.0U	<5.0U	30.6
CJM-SW-16	5/27/2020	11:05	30	<2.0U	0.46J	26.2	<1.0U	<1.0U	6800J	1.7J	<1.0U	6.2	<200U	<1.0U	2070	3.9J	<10.0U	0.46J	530	<5.0U	<1.0U	4710	<1.0U	<5.0U	<5.0U	19.9
CJM-SW-16 Dup	5/27/2020	11:05	33.2	<2.0U	0.6J	28.8	<1.0U	<1.0U	7250J	1.7J	<1.0U	6.8	<200U	<1.0U	2220	4.2J	<10.0U	0.45J	576	<5.0U	<1.0U	4940	<1.0U	<5.0U	<5.0U	21.4
CJM-SW-17	5/27/2020	11:25	30.3	<2.0U	0.69J	27.3	<1.0U	<1.0U	7780J	1.6J	<1.0U	6	<200U	<1.0U	2510	3.5J	<10.0U	0.42J	590	<5.0U	<1.0U	4930	<1.0U	<5.0U	<5.0U	18.4
CJM-SW-17 Dup	5/27/2020	11:25	30.4	<2.0U	0.59J	28.9	<1.0U	<1.0U	8000J	1.6J	<1.0U	6.2	<200U	<1.0U	2660	3.6J	<10.0U	0.47J	619	<5.0U	<1.0U	5010	<1.0U	<5.0U	<5.0U	19.7
FB-01	5/27/2020	12:55	<20.0U	<2.0U	0.74J	<10.0U	<1.0U	<1.0U	128J	1.9J	<1.0U	<2.0U	<200U	<1.0U	<500U	0.23J	<10.0U	<1.0U	<500U	<5.0U	<1.0U	<500U	<1.0U	<5.0U	<5.0U	1.3J
FB-02	5/27/2020	3:05	<20.0U	<2.0U	0.21J	<10.0U	<1.0U	<1.0U	197J	0.84J	<1.0U	<2.0U	<200U	<1.0U	<500U	0.23J	<10.0U	<1.0U	<500U	<5.0U	<1.0U	<500U	<1.0U	<5.0U	<5.0U	1.3J
FB-03	5/28/2020	10:35	<20.0U	<2.0U	0.18J	<10.0U	<1.0U	<1.0U	129J	0.85J	<1.0U	<2.0U	<200U	<1.0U	<500U	0.27J	<10.0U	<1.0U	<500U	<5.0U	<1.0U	<500U	<1.0U	<5.0U	<5.0U	0.86J
FB-04	5/28/2020	10:40	<20.0U	<2.0U	0.24J	<10.0U	<1.0U	<1.0U	231J	0.87J	<1.0U	<2.0U	<200U	<1.0U	<500U	0.32J	<10.0U	<1.0U	<500U	<5.0U	<1.0U	<500U	<1.0U	<5.0U	<5.0U	1.5J

Location	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-16	5/27/2020	11:05	30	<2.0U	0.46	26.2	<1.0U	<1.0U	6800	1.7	<1.0U	6.2	<200U	<1.0U	2070	3.9	<10.0U	0.46	530	<5.0U	<1.0U	4710	<1.0U	<5.0U	<5.0U	19.9
CJM-SW-16 Dup	5/27/2020	11:05	33.2	<2.0U	0.6	28.8	<1.0U	<1.0U	7250	1.7	<1.0U	6.8	<200U	<1.0U	2220	4.2	<10.0U	0.45	576	<5.0U	<1.0U	4940	<1.0U	<5.0U	<5.0U	21.4
		RPD	**10.1%**	N/A	**26.4%**	**9.5%**	N/A	N/A	**6.4%**	**0.0%**	N/A	**9.2%**	N/A	N/A	**7.0%**	**7.4%**	N/A	**2.2%**	**8.3%**	N/A	N/A	**4.8%**	N/A	N/A	N/A	**7.3%**

Location	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-17	5/27/2020	11:25	30.3	<2.0U	0.69	27.3	<1.0U	<1.0U	7780	1.6	<1.0U	6	<200U	<1.0U	2510	3.5	<10.0U	0.42	590	<5.0U	<1.0U	4930	<1.0U	<5.0U	<5.0U	18.4
CJM-SW-17 Dup	5/27/2020	11:25	30.4	<2.0U	0.59	28.9	<1.0U	<1.0U	8000	1.6	<1.0U	6.2	<200U	<1.0U	2660	3.6	<10.0U	0.47	619	<5.0U	<1.0U	5010	<1.0U	<5.0U	<5.0U	19.7
		RPD	**0.3%**	N/A	**15.6%**	**5.7%**	N/A	N/A	**2.8%**	**0.0%**	N/A	**3.3%**	N/A	N/A	**5.8%**	**2.8%**	N/A	**11.2%**	**4.8%**	N/A	N/A	**1.6%**	N/A	N/A	N/A	**6.8%**

Note: Removed flags from values for RPD calculation; final data package includes all data qualifiers.

Note: Data Qualifier Definitions Listed Below:

D The analyte was diluted prior to analysis.

U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Table 21 Captain Jack Mill Superfund Site July 2020
Surface Water Dissolved Metals Analytical Results

Location	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Blank	7/8/2020	14:20	<20.0U	<0.500U	<0.500U	<5.00U	<2.00U	<0.100U	114J	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<100U	<2.00U	<1.00U	<0.500U	<250U	<1.00U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<10.0U
Blank	7/8/2020	15:00	<20.0U	<0.500U	<0.500U	<5.00U	<2.00U	<0.100U	156J	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<100U	<2.00U	<1.00U	<0.500U	<250U	<1.00U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<10.0U
Blank	7/9/2020	10:30	<20.0U	<0.500U	<0.500U	<5.00U	<2.00U	<0.100U	142J	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<100U	<2.00U	<1.00U	<0.500U	<250U	<1.00U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<10.0U
CJM-SW-01	7/8/2020	14:33	4890	<2.50U	<2.50U	<25.0U	3.27J	10.5D	95400	<5.00U	73.9D	2450D	390	17400	3.60D	36800	5850	<5.00U	67.0D	1070	<5.00U	<2.50U	8070	<5.00U	52.7D	<10.0U	2450
CJM-SW-02	7/8/2020	13:17	5690	<2.50U	<2.50U	<25.0U	3.39J	10.7D	100000	<5.00U	75.0D	2490D	406	14400	3.77D	37800	6030	<5.00U	67.7D	1090	<5.00U	<2.50U	8400	<5.00U	54.4D	<10.0U	2590
CJM-SW-04	7/9/2020	12:12	<20.0U	<0.500U	<0.500U	9.15J	<2.00U	<0.100U	533D	<1.00U	<0.100U	0.664J	20	<100U	<0.100U	1530	<2.00U	<1.00U	<0.500U	581J	<1.00U	<0.500U	2480	<1.00U	<0.100U	<2.00U	<10.0U
CJM-SW-05	7/9/2020	10:51	<20.0U	<0.500U	<0.500U	10	<2.00U	<0.100U	5790	<1.00U	<0.100U	0.855J	22	<100U	<0.100U	1720	<2.00U	<1.00U	<0.500U	607J	<1.00U	<0.500U	2940	<1.00U	<0.100U	<2.00U	<10.0U
CJM-SW-06	7/8/2020	14:00	<20.0U	<0.500U	<0.500U	10.2	<2.00U	<0.100U	5660	<1.00U	<0.100U	0.818J	21	<100U	<0.100U	1680	<2.00U	<1.00U	<0.500U	610J	<1.00U	<0.500U	2930	<1.00U	<0.100U	<2.00U	11.2J
CJM-SW-07	7/8/2020	13:43	29.0J	<0.500U	<0.500U	10.2	<2.00U	<0.100U	5660	<1.00U	<0.100U	0.924J	21	<100U	<0.100U	1670	<2.00U	<1.00U	<0.500U	600J	<1.00U	<0.500U	2950	<1.00U	<0.100U	<2.00U	12.7J
CJM-SW-08	7/8/2020	12:45	169	<0.500U	<0.500U	11.1	<2.00U	0.494	10500	<1.00U	2.22	73	40	<100U	0.433	3400	245	<1.00U	2.28	668J	<1.00U	<0.500U	3470	<1.00U	1.73	<2.00U	98.9
CJM-SW-09	7/8/2020	12:49	157	<0.500U	<0.500U	11.5	<2.00U	0.41	10500	<1.00U	1.82	56.7	40	<100U	0.341	3410	212	<1.00U	2.06	644J	<1.00U	<0.500U	3540	<1.00U	1.6	<2.00U	104
CJM-SW-10	7/8/2020	11:47	122	<0.500U	<0.500U	13.3	<2.00U	0.357	10500	<1.00U	1.35	42.9	40	<100U	0.309	3440	166	<1.00U	1.64	669J	<1.00U	<0.500U	3550	<1.00U	1.39	<2.00U	88.7
CJM-SW-10 Dup	7/8/2020	11:47	125	<0.500U	<0.500U	13.1	<2.00U	0.371	10600	<1.00U	1.34	43.6	41	<100U	0.322	3450	164	<1.00U	1.67	651J	<1.00U	<0.500U	3570	<1.00U	1.38	<2.00U	86
CJM-SW-11	7/8/2020	10:51	95.1	<0.500U	<0.500U	14.4	<2.00U	0.306	9250	<1.00U	1.1	35.3	35	<100U	0.284	3010	134	<1.00U	1.4	717J	<1.00U	<0.500U	3720	<1.00U	1.1	<2.00U	80.6
CJM-SW-14	7/8/2020	11:00	<20.0U	<0.500U	<0.500U	26.3	<2.00U	0.106J	8470	<1.00U	<0.100U	6.96	32	<100U	0.114J	2630	11.9	<1.00U	<0.500U	627J	<1.00U	<0.500U	4710	<1.00U	0.28	<2.00U	32.2
CJM-SW-14 Dup	7/8/2020	11:00	27.3J	<0.500U	<0.500U	26	<2.00U	<0.100U	8590	<1.00U	<0.100U	7.02	32	<100U	0.121J	2640	11.7	<1.00U	<0.500U	644J	<1.00U	<0.500U	4740	<1.00U	0.275	<2.00U	29.7
CJM-SW-16	7/8/2020	09:50	<20.0U	<0.500U	<0.500U	15.4	<2.00U	<0.100U	5270	<1.00U	<0.100U	2.17	19	<100U	<0.100U	1330	2.89J	<1.00U	<0.500U	459J	<1.00U	<0.500U	2360	<1.00U	<0.100U	<2.00U	10.7J
CJM-SW-17	7/8/2020	10:01	<20.0U	<0.500U	<0.500U	17.2	<2.00U	<0.100U	6520	<1.00U	<0.100U	2.31	24	<100U	<0.100U	1780	4.17J	<1.00U	<0.500U	501J	<1.00U	<0.500U	2530	<1.00U	0.142J	<2.00U	<10.0U

Location	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-10	7/8/2020	11:47	122	<0.500	<0.500	13.3	<2.00	0.357	10500	<1.00	1.35	42.9	40	<100	0.309	3440	166	<1.00	1.64	669	<1.00	<0.500	3550	<1.00	1.39	<2.00	88.7
CJM-SW-10 Dup	7/8/2020	11:47	125	<0.500	<0.500	13.1	<2.00	0.371	10600	<1.00	1.34	43.6	41	<100	0.322	3450	164	<1.00	1.67	651	<1.00	<0.500	3570	<1.00	1.38	<2.00	86
		RPD	**2.43%**	N/A	N/A	**1.52%**	N/A	**3.85%**	**0.95%**	N/A	**0.74%**	**1.62%**	**2.47%**	N/A	**4.12%**	**0.29%**	**1.21%**	N/A	**1.81%**	**2.73%**	N/A	N/A	**0.56%**	N/A	**0.72%**	N/A	**3.09%**

Location	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-14	7/8/2020	11:00	<20.0	<0.500	<0.500	26.3	<2.00	0.106	8470	<1.00	<0.100	6.96	32	<100	0.114	2630	11.9	<1.00	<0.500	627	<1.00	<0.500	4710	<1.00	0.28	<2.00	32.2
CJM-SW-14 Dup	7/8/2020	11:00	27.3	<0.500	<0.500	26	<2.00	<0.100	8590	<1.00	<0.100	7.02	32	<100	0.121	2640	11.7	<1.00	<0.500	644	<1.00	<0.500	4740	<1.00	0.275	<2.00	29.7
		RPD	N/A	N/A	N/A	**1.15%**	N/A	N/A	**1.41%**	N/A	N/A	**0.86%**	**0.00%**	N/A	**5.96%**	**0.38%**	**1.69%**	N/A	N/A	**2.68%**	N/A	N/A	**0.63%**	N/A	**1.80%**	N/A	**8.08%**

Note: Removed flags from values for RPD calculation; final data package includes all data qualifiers.

Note: Data Qualifier Definitions Listed Below:

D The analyte was diluted prior to analysis.

U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Table 25 Captain Jack Mill Superfund Site September 2020
Surface Water Dissolved Metals Analytical Results

Location	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Blank	9/16/2020	16:00	<20.0U	<0.500U	<0.500U	<5.00U	<2.00U	<0.100U	<100U	<1.00U	<0.100U	0.905J	<2U	<100U	<0.100U	<100U	<2.00U	<1.00U	<0.500U	<250U	<1.00U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<10.0U
Blank	9/17/2020	16:00	<20.0U	<0.500U	<0.500U	<5.00U	<2.00U	<0.100U	105J	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<100U	<2.00U	<1.00U	<0.500U	<250U	<1.00U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<10.0U
Blank	9/17/2020	16:07	<20.0U	<0.500U	<0.500U	<5.00U	<2.00U	<0.100U	<100U	<1.00U	<0.100U	0.628J	<2U	<100U	<0.100U	<100U	<2.00U	<1.00U	<0.500U	<250U	<1.00U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<10.0U
CJM-SW-01	9/17/2020	14:06	<20.0U	<0.500U	<0.500U	18	<2.00U	5.34	96300	<1.00U	29.4	50.9	341	5300	<0.100U	24500	2580	<1.00U	15.4	4590	<1.00U	<0.500U	44400	<1.00U	0.909	<2.00U	845
CJM-SW-02	9/17/2020	11:11	<20.0U	<0.500U	1.04J	16.8	<2.00U	5.88	72100	<1.00U	34.6	244	262	<100U	0.107J	19900	3200	19.6	25	5140	<1.00U	<0.500U	69300	<1.00U	3.73	<2.00U	885
CJM-SW-04	9/17/2020	15:00	<20.0U	<0.500U	<0.500U	8.30J	<2.00U	<0.100U	3880	<1.00U	<0.100U	1.63	14	165J	<0.100U	1110	9.56	<1.00U	<0.500U	545J	<1.00U	<0.500U	2140	<1.00U	<0.100U	<2.00U	<10.0U
CJM-SW-05	9/17/2020	13:16	<20.0U	<0.500U	<0.500U	9.19J	<2.00U	<0.100U	4650	<1.00U	<0.100U	1.12	17	141J	<0.100U	1390	4.55J	<1.00U	<0.500U	566J	<1.00U	<0.500U	2690	<1.00U	<0.100U	<2.00U	<10.0U
CJM-SW-06	9/17/2020	11:44	<20.0U	<0.500U	<0.500U	9.03J	<2.00U	<0.100U	4650	<1.00U	<0.100U	0.918J	17	133J	<0.100U	1390	6.6	<1.00U	<0.500U	612J	<1.00U	<0.500U	2690	<1.00U	<0.100U	<2.00U	<10.0U
CJM-SW-06 Dup	9/17/2020	11:44	23.7J	<0.500U	<0.500U	9.13J	<2.00U	<0.100U	4700	<1.00U	<0.100U	0.996J	17	136J	<0.100U	1390	6.61	<1.00U	<0.500U	552J	<1.00U	<0.500U	2720	<1.00U	<0.100U	<2.00U	<10.0U
CJM-SW-07	9/17/2020	10:42	<20.0U	<0.500U	<0.500U	8.71J	<2.00U	<0.100U	4690	<1.00U	<0.100U	1.69	17	116J	<0.100U	1400	4.55J	<1.00U	<0.500U	594J	<1.00U	<0.500U	2680	<1.00U	<0.100U	<2.00U	<10.0U
CJM-SW-08	9/17/2020	10:06	36.0J	<0.500U	<0.500U	10.2	<2.00U	0.135J	6460	<1.00U	2.32	14.7	24	600	0.298	1950	174	<1.00U	<0.500U	612J	<1.00U	<0.500U	3140	<1.00U	0.322	<2.00U	35.7
CJM-SW-09	9/16/2020	16:30	35.4J	<0.500U	<0.500U	11.5	<2.00U	0.178J	6600	<1.00U	1.86	14.8	25	543	0.376	1980	154	<1.00U	0.567J	708J	<1.00U	<0.500U	3250	<1.00U	0.325	<2.00U	68.1
CJM-SW-10	9/16/2020	15:00	34.5J	<0.500U	<0.500U	12.9	<2.00U	0.182J	7000	<1.00U	1.29	12.9	26	476	0.663	2140	121	<1.00U	0.558J	750J	<1.00U	<0.500U	3310	<1.00U	0.308	<2.00U	63
CJM-SW-11	9/16/2020	14:01	29.0J	<0.500U	<0.500U	16.3	<2.00U	0.172J	7040	<1.00U	1	10.8	27	407	0.6	2190	100	<1.00U	<0.500U	708J	<1.00U	<0.500U	3660	<1.00U	0.262	<2.00U	54.3
CJM-SW-14	9/16/2020	13:20	<20.0U	<0.500U	<0.500U	30.8	<2.00U	0.126J	9010	<1.00U	0.234	6.86	34	232J	0.659	2780	145	<1.00U	<0.500U	793J	<1.00U	<0.500U	5250	<1.00U	0.215	<2.00U	31.5
CJM-SW-16	9/16/2020	12:25	<20.0U	<0.500U	<0.500U	14.6	<2.00U	<0.100U	5150	<1.00U	<0.100U	2.24	18	<100U	0.100J	1320	2.85J	<1.00U	<0.500U	459J	<1.00U	<0.500U	2360	<1.00U	<0.100U	<2.00U	<10.0U
CJM-SW-17	9/16/2020	11:10	<20.0U	<0.500U	<0.500U	16.8	<2.00U	<0.100U	6400	<1.00U	<0.100U	2.51	24	<100U	<0.100U	2000	4.74J	<1.00U	<0.500U	539J	<1.00U	<0.500U	2550	<1.00U	0.241	<2.00U	<10.0U
CJM-SW-17 Dup	9/16/2020	11:10	<20.0U	<0.500U	<0.500U	17.1	<2.00U	<0.100U	6400	<1.00U	<0.100U	2.5	24	<100U	<0.100U	1990	4.80J	<1.00U	<0.500U	611J	<1.00U	<0.500U	2540	<1.00U	0.229	<2.00U	<10.0U
Seep 6	9/17/2020	16:54	<20.0U	<0.500U	<0.500U	228	<2.00U	0.266	59200	<1.00U	0.106J	1.21	200	168J	<0.100U	12700	8.09	<1.00U	<0.500U	3200	<1.00U	<0.500U	93400	<1.00U	0.100J	<2.00U	206

Location	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-06	9/17/2020	11:44	<20.0	<0.500	<0.500	9.03	<2.00	<0.100	4650	<1.00	<0.100	0.918	17	133	<0.100	1390	6.6	<1.00	<0.500	612	<1.00	<0.500	2690	<1.00	<0.100	<2.00	<10.0
CJM-SW-06 Dup	9/17/2020	11:44	23.7	<0.500	<0.500	9.13	<2.00	<0.100	4700	<1.00	<0.100	0.996	17	136	<0.100	1390	6.61	<1.00	<0.500	552	<1.00	<0.500	2720	<1.00	<0.100	<2.00	<10.0
		RPD	N/A	N/A	N/A	**1.10%**	N/A	N/A	**1.07%**	N/A	N/A	**8.15%**	**0.00%**	**2.2%**	N/A	**0.00%**	**0.15%**	N/A	N/A	**10.31%**	N/A	N/A	**1.11%**	N/A	N/A	N/A	N/A

Location	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-17	9/16/2020	11:10	<20.0	<0.500	<0.500	16.8	<2.00	<0.100	6400	<1.00	<0.100	2.51	24	<100	<0.100	2000	4.74	<1.00	<0.500	539	<1.00	<0.500	2550	<1.00	0.241	<2.00	<10.0
CJM-SW-17 Dup	9/16/2020	11:10	<20.0	<0.500	<0.500	17.1	<2.00	<0.100	6400	<1.00	<0.100	2.5	24	<100	<0.100	1990	4.8	<1.00	<0.500	611	<1.00	<0.500	2540	<1.00	0.229	<2.00	<10.0
		RPD	N/A	N/A	N/A	**1.77%**	N/A	N/A	**0.00%**	N/A	N/A	**0.40%**	**0.00%**	N/A	N/A	**0.50%**	**1.26%**	N/A	N/A	**12.52%**	N/A	N/A	**0.39%**	N/A	**5.11%**	N/A	N/A

Note: Removed flags from values for RPD calculation; final data package includes all data qualifiers.

Note: Data Qualifier Definitions Listed Below:

D The analyte was diluted prior to analysis.

U The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Figure I-6: Surface Water and Groundwater Sampling Results, 2021[11]

Table 1: Captain Jack Mill Superfund Site February 2021
Surface Water Dissolved Metals Analytical Results

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenu	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-01	2/23/2021	10:23	<500U	<5.00U	<6.00U	<50.0U	<20.0U	<1.00U	108000D	48.9D	37.1D	10.7D	412D	129000D	<1.00U	34900D	7460D	24.7D	<5.00U	23200D	<15.0U	<5.00U	1170000D	<10.0U	30.3D	<20.0U	<150U
CJM-SW-02	2/23/2021	15:27	<500U	<5.00U	<6.00U	<50.0U	<20.0U	<1.00U	72700D	36.1D	10.5D	11.3D	257D	1070JD	<1.00U	18300D	2110D	38.4D	6.56JD	16700D	<15.0U	<5.00U	872000D	<10.0U	29.9D	<20.0U	<150U
CJM-SW-06	2/23/2021	14:46	<50.0U	<0.500U	<0.600U	9.59J	<2.00U	<0.100U	6600	<1.00U	<0.100U	0.666J	25	<100U	<0.100U	2090	<7.50U	<1.00U	<0.500U	661J	<1.50U	<0.500U	3500	<1.00U	<0.100U	<2.00U	<15.0U
CJM-SW-10	2/23/2021	13:59	<50.0U	<0.500U	<0.600U	44.5	<2.00U	0.500	18000	3.18	0.374	8.03	69	<100U	<0.100U	5850	80.4	<1.00U	1.30	1200	<1.50U	<0.500U	65400	<1.00U	0.205	<2.00U	242
CJM-SW-11	2/23/2021	13:07	<50.0U	<0.500U	<0.600U	44.5	<2.00U	0.345	15100	2.65	0.174J	4.94	58	<100U	<0.100U	4980	41.4	<1.00U	0.684J	989J	<1.50U	<0.500U	43200	<1.00U	0.134J	<2.00U	154
CJM-SW-14	2/23/2021	12:22	<50.0U	<0.500U	<0.600U	59.8	<2.00U	<0.100U	15100	1.07J	0.259	2.52	58	108J	<0.100U	4830	124	<1.00U	<0.500U	804J	<1.50U	<0.500U	14400	<1.00U	0.105J	<2.00U	47.0
CJM-SW-16	2/23/2021	11:26	<50.0U	<0.500U	<0.600U	47.9	<2.00U	<0.100U	13000	<1.00U	<0.100U	2.51	49	<100U	<0.100U	4110	<7.50U	<1.00U	<0.500U	797J	<1.50U	<0.500U	8810	<1.00U	<0.100U	<2.00U	27.7J
CJM-SW-16 Dup	2/23/2021	11:26	<50.0U	<0.500U	<0.600U	46.0	<2.00U	<0.100U	13100	<1.00U	<0.100U	1.80	50	<100U	<0.100U	4160	<7.50U	<1.00U	<0.500U	755J	<1.50U	<0.500U	8980	<1.00U	<0.100U	<2.00U	27.7J
CJM-SW-17	2/23/2021	09:52	<50.0U	<0.500U	<0.600U	46.5	<2.00U	<0.100U	18400	<1.00U	<0.100U	3.08	75	<100U	<0.100U	6940	<7.50U	<1.00U	<0.500U	851J	<1.50U	<0.500U	7700	<1.00U	0.802	<2.00U	28.4J
Blank	2/23/2021	14:13	<50.0U	<0.500U	<0.600U	<5.00U	<2.00U	<0.100U	<175U	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<250U	<7.50U	<1.00U	<0.500U	<250U	<1.50U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<15.0U

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenu	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-16	2/23/2021	11:26	<50.0	<0.500	<0.600	47.9	<2.00	<0.100	13000	<1.00	<0.100	2.51	49	<100	<0.100	4110	<7.50	<1.00	<0.500	797	<1.50	<0.500	8810	<1.00	<0.100	<2.00	27.7
CJM-SW-16 Dup	2/23/2021	11:26	<50.0	<0.500	<0.600	46	<2.00	<0.100	13100	<1.00	<0.100	1.8	50	<100	<0.100	4160	<7.50	<1.00	<0.500	755	<1.50	<0.500	8980	<1.00	<0.100	<2.00	27.7
			N/A	N/A	N/A	4.05%	N/A	N/A	0.77%	N/A	N/A	32.95%	2.02%	N/A	N/A	1.21%	N/A	N/A	N/A	5.41%	N/A	N/A	1.91%	N/A	N/A	N/A	0.00%

[11] *Source:* Excel spreadsheet provided by EPA ESAT contractor.

Table 4: Captain Jack Mill Superfund Site May 2021
Surface Water Dissolved Metals Analytical Results

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJ-SW-01	5/13/2021	12:05	629	<5.00U	6.75JD	<50.0U	<2.00U	<1.00U	217000	<10.0U	74.4D	7.11JD	674	138000	<1.00U	31900	7270	<10.0U	45.4D	10600	<15.0U	<5.00U	163000	<10.0U	16.8D	<20.0U	1770
CJ-SW-01 Dup	5/13/2021	12:05	633	<5.00U	7.41JD	<50.0U	<2.00U	<1.00U	221000	<10.0U	76.2D	6.54JD	683	141000	<1.00U	31700	7300	<10.0U	49.2D	10400	<15.0U	<5.00U	163000	<10.0U	16.3D	<20.0U	1770
CJ-SW-02	5/13/2021	11:34	<50.0U	<5.00U	<6.00U	<50.0U	<2.00U	<1.00U	309000	<10.0U	34.4D	5.31JD	881	2810	<1.00U	26600	5540	<10.0U	23.8D	9850	<15.0U	<5.00U	159000	<10.0U	5.70D	<20.0U	222
CJ-SW-03	5/13/2021	13:29	305	<0.500U	<0.600U	6.67J	<2.00U	<0.100U	1800	<1.00U	<0.100U	1.41	6	159J	0.187J	434J	<7.50U	<1.00U	<0.500U	406J	<1.50U	<0.500U	1730	<1.00U	0.107J	<2.00U	<15.0U
CJ-SW-04	5/13/2021	12:41	<50.0U	<0.500U	<0.600U	8.64J	<2.00U	<0.100U	5120	<1.00U	<0.100U	1.88	19	<100U	<0.100U	1550	<7.50U	<1.00U	<0.500U	624J	<1.50U	<0.500U	2500	<1.00U	<0.100U	<2.00U	<15.0U
CJ-SW-05	5/13/2021	13:47	<50.0U	<0.500U	<0.600U	30.3	<2.00U	0.251	11300	<1.00U	<0.100U	3.77	43	<100U	<0.100U	3510	<7.50U	<1.00U	1.00	934J	<1.50U	<0.500U	14000	<1.00U	<0.100U	<2.00U	85.8
CJ-SW-06	5/13/2021	13:06	<50.0U	<0.500U	<0.600U	28.4	<2.00U	0.160J	10800	<1.00U	<0.100U	3.05	41	<100U	<0.100U	3320	<7.50U	<1.00U	0.829J	955J	<1.50U	<0.500U	13100	<1.00U	<0.100U	<2.00U	71.3
CJ-SW-10	5/13/2021	10:59	<50.0U	<0.500U	<0.600U	30.4	<2.00U	0.454	21900	<1.00U	2.17	8.46	76	179J	0.329	5220	592	<1.00U	2.54	1230	<1.50U	<0.500U	16500	<1.00U	0.530	<2.00U	185
CJ-SW-11	5/13/2021	10:30	57.1J	<0.500U	<0.600U	35.0	<2.00U	0.375	19600	<1.00U	1.45	5.85	70	143J	0.316	5120	423	<1.00U	1.82	1180	<1.50U	<0.500U	15600	<1.00U	0.419	<2.00U	136
CJ-SW-11 Dup	5/13/2021	10:30	63.6J	<0.500U	<0.600U	34.8	<2.00U	0.408	19000	<1.00U	1.53	6.06	68	143J	0.311	4990	426	<1.00U	2.03	1160	<1.50U	<0.500U	15300	<1.00U	0.425	<2.00U	138
CJ-SW-14	5/13/2021	10:18	84.2J	<0.500U	<0.600U	47.5	<2.00U	<0.100U	14000	<1.00U	0.171J	6.02	52	<100U	0.316	4240	56.1	<1.00U	0.946J	998J	<1.50U	<0.500U	12500	<1.00U	0.218	<2.00U	48.1
CJ-SW-16	5/13/2021	09:26	153	<0.500U	<0.600U	39.0	<2.00U	<0.100U	11500	<1.00U	<0.100U	4.95	43	105J	0.151J	3530	<7.50U	<1.00U	0.574J	886J	<1.50U	<0.500U	9000	<1.00U	0.255	<2.00U	23.2J
CJ-SW-17	5/13/2021	09:23	179	<0.500U	<0.600U	38.1	<2.00U	<0.100U	13100	<1.00U	<0.100U	4.68	50	123J	0.197J	4250	<7.50U	<1.00U	0.621J	940J	<1.50U	<0.500U	9380	<1.00U	0.344	<2.00U	25.5J
Blank	5/13/2021	14:19	<50.0U	<0.500U	<0.600U	<5.00U	<2.00U	<0.100U	<175U	<1.00U	<0.100U	1.29	<2U	<100U	<0.100U	<250U	<7.50U	<1.00U	<0.500U	<250U	<1.50U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<15.0U
Blank	5/13/2021	15:00	<50.0U	<0.500U	<0.600U	<5.00U	<2.00U	<0.100U	<175U	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<250U	<7.50U	<1.00U	<0.500U	<250U	<1.50U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<15.0U

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJ-SW-01	5/13/2021	12:05	629	<5.00	6.75	<50.0	<2.00	<1.00	217000	<10.0	74.4	7.11	674	138000	<1.00	31900	7270	<10.0	45.4	10600	<15.0	<5.00	163000	<10.0	16.8	<20.0	1770
CJ-SW-01 Dup	5/13/2021	12:05	633	<5.00	7.41	<50.0	<2.00	<1.00	221000	<10.0	76.2	6.54	683	141000	<1.00	31700	7300	<10.0	49.2	10400	<15.0	<5.00	163000	<10.0	16.3	<20.0	1770
			0.63%	N/A	9.32%	N/A	N/A	N/A	1.83%	N/A	2.39%	8.35%	1.33%	2.15%	N/A	0.63%	0.41%	N/A	8.03%	1.90%	N/A	N/A	0.00%	N/A	3.02%	N/A	0.00%

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJ-SW-11	5/13/2021	10:30	57.1	<0.500	<0.600	35	<2.00	0.375	19600	<1.00	1.45	5.85	70	143	0.316	5120	423	<1.00	1.82	1180	<1.50	<0.500	15600	<1.00	0.419	<2.00	136
CJ-SW-11 Dup	5/13/2021	10:30	63.6	<0.500	<0.600	34.8	<2.00	0.408	19000	<1.00	1.53	6.06	68	143	0.311	4990	426	<1.00	2.03	1160	<1.50	<0.500	15300	<1.00	0.425	<2.00	138
			10.77%	N/A	N/A	0.57%	N/A	8.43%	3.11%	N/A	5.37%	3.53%	2.90%	0.00%	1.59%	2.57%	0.71%	N/A	10.91%	1.71%	N/A	N/A	1.94%	N/A	1.42%	N/A	1.46%

Table 10: Captain Jack Mill Superfund Site June 2021
Surface Water Dissolved Metals Analytical Results

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-01	6/9/2021	12:55	<500U	<5.00U	<6.00U	<50.0U	<20.0U	<1.00U	407000D	<10.0U	39.7D	5.66JD	1150D	48000D	<1.00U	32700D	6130D	<10.0U	34.4D	8990JD	<15.0U	<5.00U	77900D	<10.0U	10.1D	<20.0U	687D
CJM-SW-02	6/9/2021	12:21	<500U	<5.00U	<6.00U	<50.0U	<20.0U	<1.00U	431000D	<10.0U	12.2D	9.63JD	1240D	<1000U	<1.00U	39600D	5390D	<10.0U	18.4D	8930JD	<15.0U	<5.00U	71000D	<10.0U	9.48D	<20.0U	343D
CJM-SW-03	6/9/2021	14:55	<50.0U	<0.500U	<0.600U	5.42J	<2.00U	<0.100U	1570	<1.00U	<0.100U	1.04	5	<100U	<0.100U	370J	<7.50U	<1.00U	<0.500U	293J	<1.50U	<0.500U	1460	<1.00U	<0.100U	<2.00U	<15.0U
CJM-SW-04	6/9/2021	13:45	<50.0U	<0.500U	<0.600U	5.88J	<2.00U	<0.100U	2830	<1.00U	<0.100U	1.37	10	<100U	<0.100U	785	<7.50U	<1.00U	<0.500U	359J	<1.50U	<0.500U	1470	<1.00U	<0.100U	<2.00U	<15.0U
CJM-SW-05	6/9/2021	14:10	<50.0U	<0.500U	<0.600U	8.05J	<2.00U	<0.100U	3350	<1.00U	<0.100U	2.28	12	<100U	<0.100U	949	<7.50U	<1.00U	<0.500U	436J	<1.50U	<0.500U	2370	<1.00U	<0.100U	<2.00U	24.5J
CJM-SW-06	6/9/2021	13:00	<50.0U	<0.500U	<0.600U	8.42J	<2.00U	<0.100U	3310	<1.00U	<0.100U	2.14	12	<100U	<0.100U	941	<7.50U	<1.00U	<0.500U	403J	<1.50U	<0.500U	2450	<1.00U	<0.100U	<2.00U	22.6J
CJM-SW-10	6/9/2021	11:43	<50.0U	<0.500U	<0.600U	9.52J	<2.00U	0.113J	4930	<1.00U	0.500	4.49	18	<100U	0.115J	1320	110	<1.00U	0.599J	470J	<1.50U	<0.500U	3200	<1.00U	0.115J	<2.00U	38.9
CJM-SW-11	6/9/2021	11:25	<50.0U	<0.500U	<0.600U	9.18J	<2.00U	<0.100U	4320	<1.00U	0.354	4.59	16	<100U	0.133J	1190	85.4	<1.00U	0.663J	436J	<1.50U	<0.500U	3020	<1.00U	<0.100U	<2.00U	29.5J
CJM-SW-14	6/9/2021	10:20	<50.0U	<0.500U	<0.600U	14.4	<2.00U	<0.100U	4370	<1.00U	<0.100U	4.78	16	<100U	0.179J	1290	19.6	<1.00U	<0.500U	447J	<1.50U	<0.500U	3480	<1.00U	<0.100U	<2.00U	22.5J
CJM-SW-14 Dup	6/9/2021	10:20	<50.0U	<0.500U	<0.600U	14.4	<2.00U	<0.100U	4360	<1.00U	<0.100U	4.72	16	<100U	0.184J	1290	19.5	<1.00U	<0.500U	433J	<1.50U	<0.500U	3490	<1.00U	<0.100U	<2.00U	19.1J
CJM-SW-16	6/9/2021	10:00	<50.0U	<0.500U	<0.600U	18.6	<2.00U	<0.100U	5480	<1.00U	<0.100U	5.19	20	<100U	0.112J	1600	<7.50U	<1.00U	<0.500U	457J	<1.50U	<0.500U	3940	<1.00U	<0.100U	<2.00U	19.5J
CJM-SW-16 Dup	6/9/2021	10:00	<50.0U	<0.500U	<0.600U	18.3	<2.00U	<0.100U	5520	<1.00U	<0.100U	4.97	20	<100U	0.128J	1600	<7.50U	<1.00U	<0.500U	469J	<1.50U	<0.500U	3940	<1.00U	0.102J	<2.00U	20.2J
CJM-SW-17	6/9/2021	09:06	<50.0U	<0.500U	<0.600U	19.2	<2.00U	<0.100U	6510	<1.00U	<0.100U	4.97	25	<100U	0.101J	2060	7.87J	<1.00U	<0.500U	532J	<1.50U	<0.500U	4190	<1.00U	0.160J	<2.00U	20.4J
Blank	6/9/2021	10:49	<50.0U	<0.500U	<0.600U	<5.00U	<2.00U	<0.100U	<175U	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<250U	<7.50U	<1.00U	<0.500U	<250U	<1.50U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<15.0U
Blank	6/9/2021	11:00	<50.0U	<0.500U	<0.600U	<5.00U	<2.00U	<0.100U	<175U	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<250U	<7.50U	<1.00U	<0.500U	<250U	<1.50U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<15.0U

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-14	6/9/2021	10:20	<50.0	<0.500	<0.600	14.4	<2.00	<0.100	4370	<1.00	<0.100	4.78	16	<100	0.179	1290	19.6	<1.00	<0.500	447	<1.50	<0.500	3480	<1.00	<0.100	<2.00	22.5
CJM-SW-14 Dup	6/9/2021	10:20	<50.0	<0.500	<0.600	14.4	<2.00	<0.100	4360	<1.00	<0.100	4.72	16	<100	0.184	1290	19.5	<1.00	<0.500	433	<1.50	<0.500	3490	<1.00	<0.100	<2.00	19.1
			N/A	N/A	N/A	0.00%	N/A	N/A	0.23%	N/A	N/A	1.26%	0.00%	N/A	2.75%	0.00%	0.51%	N/A	N/A	3.18%	N/A	N/A	0.29%	N/A	N/A	N/A	16.35%

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-16	6/9/2021	10:00	<50.0	<0.500	<0.600	18.6	<2.00	<0.100	5480	<1.00	<0.100	5.19	20	<100	0.112	1600	<7.50	<1.00	<0.500	457	<1.50	<0.500	3940	<1.00	<0.100	<2.00	19.5
CJM-SW-16 Dup	6/9/2021	10:00	<50.0	<0.500	<0.600	18.3	<2.00	<0.100	5520	<1.00	<0.100	4.97	20	<100	0.128	1600	<7.50	<1.00	<0.500	469	<1.50	<0.500	3940	<1.00	0.102	<2.00	20.2
			N/A	N/A	N/A	1.63%	N/A	N/A	0.73%	N/A	N/A	4.33%	0.00%	N/A	13.33%	0.00%	N/A	N/A	N/A	2.59%	N/A	N/A	0.00%	N/A	N/A	N/A	3.53%

Table 13: Captain Jack Mill Superfund Site August 2021
Surface Water Dissolved Metals Analytical Results

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-01	8/25/2021	10:33	417JD	<2.50U	<3.00U	<25.0U	<10.0U	<0.500U	125000D	<5.00U	18.6D	3.09JD	459D	119000D	0.952JD	35700D	7070D	<5.00U	3.86JD	12500D	<7.50U	<2.50U	25400D	<5.00U	2.71D	<10.0U	14.9
CJM-SW-02	8/24/2021	15:00	<250U	<2.50U	<3.00U	<25.0U	<10.0U	<0.500U	201000D	<5.00U	18.4D	3.05JD	637D	547JD	<0.500U	32900D	6070D	5.84D	14.4D	12200D	<7.50U	<2.50U	24600D	<5.00U	3.35D	<10.0U	<15.0U
CJM-SW-04	8/25/2021	11:13	<50.0U	<0.500U	<0.600U	6.10J	<2.00U	<0.100U	2770	<1.00U	<0.100U	1.48	10	<100U	<0.100U	805	<7.50U	<1.00U	<0.500U	425J	<1.50U	<0.500U	1570	<1.00U	<0.100U	<2.00U	<15.0U
CJM-SW-05	8/25/2021	09:50	<50.0U	<0.500U	<0.600U	6.46J	<2.00U	<0.100U	3150	<1.00U	<0.100U	1.30	12	<100U	<0.100U	893	<7.50U	<1.00U	<0.500U	465J	<1.50U	<0.500U	1860	<1.00U	<0.100U	<2.00U	<75.0U
CJM-SW-06	8/24/2021	15:42	<50.0U	<0.500U	<0.600U	6.67J	<2.00U	<0.100U	3220	<1.00U	<0.100U	1.38	12	<100U	<0.100U	912	<7.50U	<1.00U	<0.500U	472J	<1.50U	<0.500U	1910	<1.00U	<0.100U	<2.00U	109JD
CJM-SW-10	8/24/2021	13:51	<50.0U	<0.500U	<0.600U	7.60J	<2.00U	<0.100U	4720	<1.00U	0.286	3.50	17	<100U	0.150J	1260	79.3	<1.00U	0.580J	511J	<1.50U	<0.500U	2380	<1.00U	<0.100U	<2.00U	<15.0U
CJM-SW-11	8/24/2021	13:10	<50.0U	<0.500U	<0.600U	8.47J	<2.00U	<0.100U	4800	<1.00U	0.257	3.55	17	<100U	0.174J	1310	78.4	<1.00U	0.533J	544J	<1.50U	<0.500U	2500	<1.00U	<0.100U	<2.00U	<15.0U
CJM-SW-14	8/24/2021	11:45	<50.0U	<0.500U	<0.600U	21.3	<2.00U	<0.100U	7240	<1.00U	<0.100U	5.33	27	<100U	0.317	2060	41.6	<1.00U	0.671J	628J	<1.50U	<0.500U	4260	<1.00U	0.119J	<2.00U	<15.0U
CJM-SW-14 Dup	8/24/2021	11:45	<50.0U	<0.500U	<0.600U	21.5	<2.00U	<0.100U	7800	<1.00U	<0.100U	3.77	29	<100U	0.117J	2350	<7.50U	<1.00U	<0.500U	537J	<1.50U	<0.500U	3690	<1.00U	0.198J	<2.00U	<15.0U
CJM-SW-16	8/24/2021	10:42	<50.0U	<0.500U	<0.600U	19.9	<2.00U	<0.100U	6910	<1.00U	<0.100U	3.88	25	<100U	0.139J	1880	<7.50U	<1.00U	<0.500U	548J	<1.50U	<0.500U	3590	<1.00U	0.111J	<2.00U	<15.0U
CJM-SW-17	8/24/2021	09:45	<50.0U	<0.500U	<0.600U	20.4	<2.00U	<0.100U	7420	<1.00U	<0.100U	4.88	27	<100U	0.277	2060	41.8	<1.00U	0.598J	583J	<1.50U	<0.500U	4120	<1.00U	0.119J	<2.00U	<15.0U
Blank	8/24/2021	14:00	<50.0U	<0.500U	<0.600U	<5.00U	<2.00U	<0.100U	<175U	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<250U	<7.50U	<1.00U	<0.500U	<250U	<1.50U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	6.16
Blank	8/25/2021	13:13	<50.0U	0.565J	<0.600U	<5.00U	<2.00U	<0.100U	<175U	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<250U	<7.50U	<1.00U	<0.500U	<250U	<1.50U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	6.01

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-14	8/24/2021	11:45	<50.0	<0.500	<0.600	21.3	<2.00	<0.100	7240	<1.00	<0.100	5.33	27	<100	0.317	2060	41.6	<1.00	0.671	628	<1.50	<0.500	4260	<1.00	0.119	<2.00	<15.0
CJM-SW-14 Dup	8/24/2021	11:45	<50.0	<0.500	<0.600	21.5	<2.00	<0.100	7800	<1.00	<0.100	3.77	29	<100	0.117	2350	<7.50	<1.00	<0.500	537	<1.50	<0.500	3690	<1.00	0.198	<2.00	<15.0
			N/A	N/A	N/A	0.93%	N/A	N/A	7.45%	N/A	N/A	34.29%	7.14%	N/A	92.17%	13.15%	N/A	N/A	N/A	15.62%	N/A	N/A	14.34%	N/A	49.84%	N/A	N/A

Table 21: Captain Jack Mill Superfund Site November 2021
Surface Water Dissolved Metals Analytical Results

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Blank	11/9/2021	13:22	<50.0U	0.604J	<0.600U	<5.00U	<2.00U	<0.100U	<175U	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<250U	<7.50U	<1.00U	<0.500U	<250U	<1.50U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<15.0U
CJM-SW-01	11/9/2021	13:11	213	0.535J	1.04J	34.1	<2.00U	<0.100U	78200	3.52	0.251	2.55	289	56900	0.811	22700	4980	<1.00U	2.19	11200	<1.50U	<0.500U	22100	<1.00U	0.950	<2.00U	17.9J
CJM-SW-02	11/9/2021	12:20	<50.0U	0.768J	0.849J	21.7	<2.00U	<0.100U	87200	3.44	5.64	1.60	307	14000	<0.100U	21800	4760	4.80	5.14	11600	<1.50U	<0.500U	23000	<1.00U	1.17	<2.00U	<15.0U
CJM-SW-06	11/9/2021	13:13	<50.0U	<0.500U	<0.600U	9.94J	<2.00U	<0.100U	6120	<1.00U	<0.100U	0.595J	23	<100U	<0.100U	1840	<7.50U	<1.00U	<0.500U	552J	<1.50U	<0.500U	3210	<1.00U	<0.100U	<2.00U	<15.0U
CJM-SW-10	11/9/2021	12:20	<50.0U	<0.500U	<0.600U	15.5	<2.00U	0.140J	14800	<1.00U	1.26	3.06	53	<100U	0.144J	3850	511	<1.00U	1.24	1260	<1.50U	<0.500U	5520	<1.00U	0.371	<2.00U	58.7
CJM-SW-11	11/9/2021	11:25	<50.0U	<0.500U	<0.600U	17.6	<2.00U	0.179J	14100	<1.00U	1.04	3.15	50	<100U	0.130J	3720	432	<1.00U	1.25	1130	<1.50U	<0.500U	5470	<1.00U	0.325	<2.00U	45.9
CJM-SW-11	11/9/2021	11:25	<50.0U	<0.500U	<0.600U	17.9	<2.00U	0.137J	14200	<1.00U	1.03	3.07	51	<100U	0.133J	3750	435	<1.00U	1.33	1160	<1.50U	<0.500U	5500	<1.00U	0.332	<2.00U	57.5
CJM-SW-14	11/9/2021	11:25	<50.0U	<0.500U	<0.600U	37.4	<2.00U	<0.100U	12000	<1.00U	0.307	3.12	45	109J	1.91	3510	148	<1.00U	33.6	801J	<1.50U	<0.500U	6310	<1.00U	0.114J	<2.00U	29.3J
CJM-SW-16	11/9/2021	10:26	<50.0U	<0.500U	<0.600U	32.2	<2.00U	<0.100U	10500	<1.00U	<0.100U	2.21	39	<100U	<0.100U	3120	<7.50U	<1.00U	0.593J	648J	<1.50U	<0.500U	5470	<1.00U	0.127J	<2.00U	17.0J
CJM-SW-17	11/9/2021	10:30	<50.0U	<0.500U	<0.600U	34.6	<2.00U	<0.100U	15200	<1.00U	<0.100U	1.96	61	<100U	<0.100U	5530	<7.50U	<1.00U	0.771J	819J	<1.50U	<0.500U	5710	<1.00U	0.673	<2.00U	19.5J

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-SW-11	11/9/2021	11:25	<50.0	<0.500	<0.600	17.6	<2.00	0.179	14100	<1.00	1.04	3.15	50	<100	0.13	3720	432	<1.00	1.25	1130	<1.50	<0.500	5470	<1.00	0.325	<2.00	45.9
CJM-SW-11	11/9/2021	11:25	<50.0	<0.500	<0.600	17.9	<2.00	0.137	14200	<1.00	1.03	3.07	51	<100	0.133	3750	435	<1.00	1.33	1160	<1.50	<0.500	5500	<1.00	0.332	<2.00	57.5
			N/A	N/A	N/A	1.69%	N/A	26.58%	0.71%	N/A	0.97%	2.57%	1.98%	N/A	2.28%	0.80%	0.69%	N/A	6.20%	2.62%	N/A	N/A	0.55%	N/A	2.13%	N/A	22.44%

Table 7: Captain Jack Mill Superfund Site May 2021
Groundwater Dissolved Metals Analytical Results

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CIM-GW-DD1	5/19/2021	14:40	34200D	6.96JD	113D	<50.0U	<20.0U	<1.00U	31400D	79.7D	4.04D	232D	<15U	<1000U	9.43D	<2500U	<75.0U	375D	18.8D	19100D	<15.0U	<5.00U	1820000D	<10.0U	53.7D	28.7JD	<150U
CIM-GW-DD2	5/19/2021	14:00	<50.0U	0.804J	<0.600U	29.3	<2.00U	<0.100U	78600	3.31	0.147J	1.46	293	123J	<0.100U	23400	376	<1.00U	1.07	2040	<1.50U	<0.500U	12800	<1.00U	0.452	<2.00U	49.2
CIM-GW-DD2 Dup	5/19/2021	14:00	<50.0U	1.02	<0.600U	29.0	<2.00U	<0.100U	75600	3.55	0.216	1.55	282	138J	<0.100U	22700	380	<1.00U	1.15	2150	<1.50U	<0.500U	12700	<1.00U	0.511	<2.00U	61.8
CIM-GW-MID1	5/19/2021	11:50	275	<5.00U	<6.00U	<50.0U	7.30	<1.00U	288000	<10.0U	237D	7.90JD	1180	348000	<1.00U	111000	49000E	<10.0U	269D	3660	<15.0U	<5.00U	9820	<10.0U	15.3D	<20.0U	<15.0U
CIM-GW-MID2	5/19/2021	13:20	1870	<5.00U	<6.00U	<50.0U	<2.00U	<1.00U	114000	19.2JD	70.9D	<5.00U	425	124000	<1.00U	34200	8700	<10.0U	45.7D	4850	<15.0U	<5.00U	11700	<10.0U	27.9D	<20.0U	2150
CIM-GW-MW1	5/20/2021	09:50	<50.0U	<0.500U	<0.600U	48.4	<2.00U	<0.100U	37200	5.14	0.137J	0.524J	200	<100U	<0.100U	26000	278	1.07	1.86	1380	<1.50U	<0.500U	4430	<1.00U	7.72	<2.00U	39.0
CIM-GW-MW2	5/20/2021	11:22	<50.0U	<0.500U	<0.600U	42.2	<2.00U	<0.100U	40000	2.48	<0.100U	<0.500U	140	337	<0.100U	9740	138	<1.00U	1.25	1110	<1.50U	<0.500U	11500	<1.00U	3.21	<2.00U	23.5J
CIM-GW-MW3	5/20/2021	13:01	<50.0U	<0.500U	0.701J	81.0	<2.00U	<0.100U	71200	1.18J	0.133J	<0.500U	254	586	<0.100U	18600	331	<1.00U	1.96	1350	<1.50U	<0.500U	10000	<1.00U	2.25	<2.00U	33.9
CIM-GW-MW4	5/20/2021	14:14	52.5J	<0.500U	<0.600U	33.4	<2.00U	<0.100U	11600	<1.00U	<0.100U	3.80	48	<100U	<0.100U	4560	<7.50U	<1.00U	1.11	880J	<1.50U	<0.500U	6870	<1.00U	0.179J	<2.00U	50.5
CIM-GW-MW4 Dup	5/20/2021	14:14	68.0J	<0.500U	<0.600U	32.9	<2.00U	<0.100U	11800	<1.00U	<0.100U	3.83	48	<100U	<0.100U	4580	<7.50U	<1.00U	1.12	902J	<1.50U	<0.500U	6890	<1.00U	0.156J	<2.00U	49.7
CIM-GW-NIW1	5/20/2021	15:30	251	1.61	8.22	9.12J	<2.00U	8.12	33000	<1.00U	18.4	105	122	22900	27.3	9700	2690	9.01	10.5	1860	<1.50U	<0.500U	7240	<1.00U	13.8	<2.00U	1880
CIM-GW-NIW2	5/19/2021	09:37	<50.0U	1.06	<0.600U	24.0	<2.00U	1.49	47000	6.33	0.443	12.4	190	<100U	0.977	17600	1310	<1.00U	6.73	2060	<1.50U	<0.500U	3030	<1.00U	6.67	<2.00U	807
CIM-GW-ROW1	5/20/2021	16:00	<50.0U	1.74	<0.600U	161	<2.00U	<0.100U	37800	1.04J	2.91	2.99	144	752	<0.100U	12100	646	2.77	5.17	1940	<1.50U	<0.500U	16700	<1.00U	0.549	<2.00U	55.6
Blank	5/19/2021	15:50	<50.0U	<0.500U	<0.600U	<5.00U	<2.00U	<0.100U	<175U	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<250U	<7.50U	<1.00U	<0.500U	<250U	<1.50U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<15.0U
Blank	5/20/2021	14:08	<50.0U	<0.500U	<0.600U	<5.00U	<2.00U	<0.100U	<175U	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<250U	<7.50U	<1.00U	<0.500U	<250U	<1.50U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<15.0U

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CIM-GW-DD2	5/19/2021	14:00	<50.0U	0.804	<0.600U	29.3	<2.00U	<0.100U	78600	3.31	0.147	1.46	293	123	<0.100U	23400	376	<1.00U	1.07	2040	<1.50U	<0.500U	12800	<1.00U	0.452	<2.00U	49.2
CIM-GW-DD2 Dup	5/19/2021	14:00	<50.0U	1.02	<0.600U	29.0	<2.00U	<0.100U	75600	3.55	0.216	1.55	282	138	<0.100U	22700	380	<1.00U	1.15	2150	<1.50U	<0.500U	12700	<1.00U	0.511	<2.00U	61.8
			N/A	23.68%	N/A	1.03%	N/A	N/A	3.89%	7.00%	38.02%	5.98%	3.83%	11.49%	N/A	3.04%	1.06%	N/A	7.21%	5.25%	N/A	N/A	0.78%	N/A	12.25%	N/A	22.70%

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CIM-GW-MW4	5/20/2021	14:14	52.5	<0.500U	<0.600U	33.4	<2.00U	<0.100U	11600	<1.00U	<0.100U	3.80	48	<100U	<0.100U	4560	<7.50U	<1.00U	1.11	880	<1.50U	<0.500U	6870	<1.00U	0.179	<2.00U	50.5
CIM-GW-MW4 Dup	5/20/2021	14:14	68	<0.500U	<0.600U	32.9	<2.00U	<0.100U	11800	<1.00U	<0.100U	3.83	48	<100U	<0.100U	4580	<7.50U	<1.00U	1.12	902	<1.50U	<0.500U	6890	<1.00U	0.156	<2.00U	49.7
			25.73%	N/A	N/A	1.51%	N/A	N/A	1.71%	N/A	N/A	0.79%	0.00%	N/A	N/A	0.44%	N/A	N/A	0.90%	2.47%	N/A	N/A	0.29%	N/A	13.73%	N/A	1.60%

Table 16: Captain Jack Mill Superfund Site August 2021
Groundwater Dissolved Metals Analytical Results

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-GW-DD1	8/26/2021	13:40	43200D	<12.5U	109D	<125U	<50.0U	<2.50U	<4380U	61.9D	6.86D	342D	<38U	<2500U	15.9D	<6250U	<188U	416D	26.3D	19000JD	<37.5U	<12.5U	1980000D	<25.0U	54.8D	<50.0U	<375U
CJM-GW-DD2	8/26/2021	13:20	<1250U	<12.5U	<15.0U	<125U	<50.0U	<2.50U	117000D	<25.0U	<2.50U	<12.5U	435D	<2500U	<2.50U	35100D	895D	<25.0U	<12.5U	<6250U	<37.5U	<12.5U	24300JD	<25.0U	<2.50U	<50.0U	471JD
CJM-GW-MID2	8/26/2021	12:45	<250U	<2.50U	<3.00U	<25.0U	<10.0U	<0.500U	234000D	356D	55.3D	4.69JD	870D	82800D	<0.500U	69200D	12300D	<5.00U	42.8D	2250JD	<7.50U	<2.50U	9230D	<5.00U	4.30D	80.9D	299D
CJM-GW-MW1	8/26/2021	10:40	<50.0U	<0.500U	<0.600U	49.0	<2.00U	<0.100U	35900	11.7J	1.07	<0.500U	194	377	<0.100U	25300	379	7.00	2.29	1260	<1.50U	<0.500U	4430	<1.00U	6.71	2.55J	80.0
CJM-GW-MW1 Dup	8/26/2021	10:40	<50.0U	<0.500U	<0.600U	48.9	<2.00U	<0.100U	36000	5.44	1.12	<0.500U	194	374	<0.100U	25300	378	6.78	2.40	1340	<1.50U	<0.500U	4410	<1.00U	6.46	<2.00U	84.8
CJM-GW-MW2	8/26/2021	11:20	<50.0U	<0.500U	<0.600U	41.1	<2.00U	<0.100U	39000	3.10	<0.100U	<0.500U	137	<100U	<0.100U	9580	124	<1.00U	0.907J	1100	<1.50U	<0.500U	11500	<1.00U	3.11	<2.00U	59.1
CJM-GW-MW3	8/26/2021	12:00	<250U	<2.50U	<3.00U	65.3D	<10.0U	<0.500U	61600D	<5.00U	<0.500U	<2.50U	221D	<500U	<0.500U	16300D	320D	<5.00U	<2.50U	1340JD	<7.50U	<2.50U	9300D	<5.00U	1.48D	<10.0U	123JD
CJM-GW-MW4	8/26/2021	09:20	<50.0U	<0.500U	<0.600U	29.8	<2.00U	<0.100U	10500	1.08J	<0.100U	3.56	41	<100U	<0.100U	3600	<7.50U	<1.00U	1.23	946J	<1.50U	<0.500U	5310	<1.00U	0.139J	<2.00U	73.0
CJM-GW-MW4 Dup	8/26/2021	09:20	<50.0U	<0.500U	<0.600U	30.6	<2.00U	0.131J	10500	1.15J	<0.100U	3.66	41	<100U	<0.100U	3600	<7.50U	<1.00U	1.35	1000	<1.50U	<0.500U	5300	<1.00U	0.128J	<2.00U	75.0
CJM-GW-NIW1	8/25/2021	14:00	974	0.602J	27.8J	16.1J	2.03J	<0.100U	61300	329J	24.6J	1.36J	206	56200	<0.100UJ	12800	4970	2.22	14.0J	4290	2.46J	<0.500U	7060	<1.00UJ	21.9J	77.6J	902
CJM-GW-NIW2	8/25/2021	13:18	<50.0U	<0.500U	<0.600U	23.8	<2.00U	0.791	34000	40.8	0.471	4.06	137	<100U	0.178J	12700	1690	<1.00U	5.34	1730	<1.50U	<0.500U	2530	<1.00U	4.16	9.12	460
CJM-GW-ROW1	8/26/2021	14:30	<50.0U	0.922J	<0.600U	159	<2.00U	<0.100U	37900	8.84	2.34	<0.500U	144	727	<0.100U	12000	651	2.20	2.37	1760	<1.50U	<0.500U	16500	<1.00U	0.298	<2.00U	45.0
Blank	8/26/2021	14:44	<50.0U	<0.500U	<0.600U	<5.00U	<2.00U	<0.100U	<175U	<1.00U	<0.100U	<0.500U	<2U	<100U	<0.100U	<250U	<7.50U	<1.00U	<0.500U	<250U	<1.50U	<0.500U	<250U	<1.00U	<0.100U	<2.00U	<15.0U

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-GW-MW1	8/26/2021	10:40	<50.0	<0.500	<0.600	49	<2.00	<0.100	35900	11.7	1.07	<0.500	194	377	<0.100	25300	379	7	2.29	1260	<1.50	<0.500	4430	<1.00	6.71	2.55	80
CJM-GW-MW1 Dup	8/26/2021	10:40	<50.0	<0.500	<0.600	48.9	<2.00	<0.100	36000	5.44	1.12	<0.500	194	374	<0.100	25300	378	6.78	2.4	1340	<1.50	<0.500	4410	<1.00	6.46	<2.00	84.8
			N/A	N/A	N/A	0.20%	N/A	N/A	0.28%	73.05%	4.57%	N/A	0.00%	0.80%	N/A	0.00%	0.26%	3.19%	4.69%	6.15%	N/A	N/A	0.45%	N/A	3.80%	N/A	5.83%

Locaiton	Date	Time	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Hardness	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
CJM-GW-MW4	8/26/2021	09:20	<50.0	<0.500	<0.600	29.8	<2.00	<0.100	10500	1.08	<0.100	3.56	41	<100	<0.100	3600	<7.50	<1.00	1.23	946	<1.50	<0.500	5310	<1.00	0.139	<2.00	73
CJM-GW-MW4 Dup	8/26/2021	09:20	<50.0	<0.500	<0.600	30.6	<2.00	0.131	10500	1.15	<0.100	3.66	41	<100	<0.100	3600	<7.50	<1.00	1.35	1000	<1.50	<0.500	5300	<1.00	0.128	<2.00	75
			N/A	N/A	N/A	2.65%	N/A	N/A	0.00%	6.28%	N/A	2.77%	0.00%	N/A	N/A	0.00%	N/A	N/A	9.30%	5.55%	N/A	N/A	0.19%	N/A	8.24%	N/A	2.70%

Figure I-7: Groundwater Analytical Data for MW-04[12]

Attachment C
Historical Analytical Water Data
Captain Jack Mill Superfund Site

MineWater

Sample Location			MW-04																	
Sample ID			CJM-GW-MW4																	
Water Source			Groundwater																	
Sampling Contractor			TechLaw	TechLaw	TechLaw	TechLaw	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood
Date Sampled			6/21/2016	9/1/2016	6/26/2017	9/6/2017	10/11/2017	3/27/2018	3/27/2018 (Duplicate)	6/12/2018	7/19/2018	7/19/2018 (Duplicate)	9/19/2018	9/17/2018	9/17/2018 (Duplicate)	10/25/2018	10/25/2018 (Duplicate)	11/13/2018	12/12/2018
Total Recoverable Metals	Method	Units																		
Aluminum	USEPA 200.7	µg/L	22,000	30,600	35.2 J	65,800	38,400	24,800	17,100	16,000	19,800	22,000	41,200	24,000	17,000	27,000	27,400	13,000	19,000	
Antimony	USEPA 200.8	µg/L	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	0.38 JB	0.56 JB	
Arsenic	USEPA 200.8	µg/L	2.52 J	17.1	<10.0	9.75 JD	4.24 JD	4.79 JD	<10.0	3.03 JD	2.91 JD	3.09 JD	5.77 JD	2.91 JD	2.68 JD	4.04 JD	3.17 JD	2.5 J	3.8 J	
Beryllium	USEPA 200.7	µg/L																		
Cadmium	USEPA 200.8	µg/L	<1.00	3.44	<1.00	1.61 D	1.71 D	0.963 JD	0.364 JD	0.827 JD	0.675 JD	0.648 JD	1.24 D	0.964 JD	<1.00	1.06 D	0.898 JD	1.3	2.2	
Calcium	USEPA 200.7	µg/L	11,400	23,200	8,480	21,100	13,700	16,000	17,400	15,000	11,000	11,700	14,000	14,300	12,800	21,200	21,400	37,000	45,000	
Chromium	USEPA 200.8	µg/L	14.2	57.3	<10.0	40.7 D	30 D	19.4 D	12.5 D	14.1 D	17.1 D	20.1 D	27.3 D	15.3 D	11.9 D	19 D	19.3 D	10	14	
Copper	USEPA 200.8	µg/L	53.1	273	4.41 JD	136 D	173 D	99.7 D	56.3 D	73.7 D	76.4 D	86.5 D	143 D	90.5 D	70.5 D	98.7 D	94.5 D	48 B	67 B	
Iron	USEPA 200.7	µg/L	25,000	104,000	<250	91,100	60,100	33,000	23,200	21,100	25,000 JD	26,000 JD	51,000	31,000	22,100	33,000	33,300	16,000	24,000	
Lead	USEPA 200.8	µg/L	16.6	332	<1.00	157 D	160 D	70.6 JD	53.4 JD	37.8 D	47.7 JD	54.4 JD	108 D	61.1 D	43.2 D	66.3 D	59.6 D	29	42 B	
Magnesium	USEPA 200.7	µg/L	7,160	24,700	3,830	18,200	12,600	10,600	8,240	6,880	7,480	7,880	11,000	9,330	7,420	15,000	15,200	18,000	19,000	
Manganese	USEPA 200.7	µg/L	462	3,890	<10.0	1,700	1,900	525	677	486	524	630	1210	694	510	920	774	300	490	
Mercury	USEPA 245.1/245.2	µg/L	0.14	NA	<0.100	NS	0.499 D	0.152	<0.100	0.144	<0.100	0.140	0.27	0.332	<0.100	0.140	0.146	NA	0.007 J	
Molybdenum	USEPA 200.8	µg/L	<5.00	7.91	<5.00	<5.00	<5.00	<5.00	5.03 D	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00 J	<5.00 J	1.1 J	1.5 JB	
Nickel	USEPA 200.8	µg/L	19.9	51.8	<5.00	30.6 D	22 D	15.7 D	11.3 D	9.6 D	11.4 D	12.6 D	21.3 D	13.2 D	9.29 D	17.5 D	16.4 D	13	24	
Potassium	USEPA 200.7	µg/L	4,130	15,900	1,470	11,400	5,310	5,570	4,260	3,800	4,460	4,850	7,900	5,000	3,840	6,750	5,320	3,000	5,300	
Selenium	USEPA 200.8	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<5.0	<5.0	
Silver	USEPA 200.8	µg/L	<5.00	7.93	<5.00	5.39 D	<5.00	3.10 JD	<5.00	2.34 JD	3.49 JD	4.27 JD	6.23 D	3.6 JD	<5.00	3.56 JD	3.39 JD	1.7	2.1	
Sodium	USEPA 200.7	µg/L	4,380	5,890	5,220	5,890	4,810	5,240	5,120	4,880	4,800	5,020	6,410	4,920	4,610	5,900	5,460	10,000	22,000	
Thallium	USEPA 200.7	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	0.18 J	0.3 J	
Uranium	USEPA 200.7	µg/L	13	61.7	<0.500	40.4 D	40.2 D	16.6 D	10.6 D	9.74 D	12.4 D	14.1 D	27.3 D	15.7 D	11.7 D	16.2 D	15.6 D	7.7	10 B	
Zinc	USEPA 200.7	µg/L	304	2040	44.1	886	673	546	408	292	320	363	711	415	329	605	587	320	1200	
Dissolved Metals	Method	Units																		
Aluminum	USEPA 200.7	µg/L	117	75.2	<30.0	112	7,840	1,120	886	1,400	1,270	1,710	1,200	788	61	1,320	2,220	66 J	<100	
Antimony	USEPA 200.8	µg/L	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	0.64 J	1.00 J	<1.00	<1.00	<1.00	<1.00	<1.00	0.37 J	<1.0	
Arsenic	USEPA 200.8	µg/L	<2.00	<2.00	<2.00	<2.00	<10.0	0.825 J	<2.00	<2.00	<2.00	<2.00	<2.00	0.511 J	<2.00	<2.00	<2.00	<5.0	<5.0	
Beryllium	USEPA 200.8	µg/L																		
Cadmium	USEPA 200.8	µg/L	0.169 J	0.179 J	0.124 J	0.171 J	<0.500	0.307	0.263	0.228	0.156 J	0.305	0.266	0.156 J	0.156 J	0.624	0.663	0.66 J	2.1 B	
Calcium	USEPA 200.7	µg/L	9,010	9,630	8,000	10,600	10,400	15,000	14,700	9,750	9,800	9,870	6,750	9,560	9,710	26,100	27,000	34,000	43,000	
Chromium	USEPA 200.8	µg/L	<2.00	<2.00	<2.00	<2.00	11 D	3.27	3.23	2.89	3.6	4.77	2.35 J	3.63	3	3.74	3.76	<5.0	<5.0	
Copper	USEPA 200.8	µg/L	4.08	5.2	4.15	3.16	60.9 D	16.6	11.8	20.9	16.6	22.2	13	10.3	6.38	14.5	21.8	5.3 B	5.5	
Iron	USEPA 200.7	µg/L	<250	<250	<250	<250	11,000	1,980	1,360	2,680	2,150	2,940	1,850	1,210	343	2,230	3,780	77 J	<100	
Lead	USEPA 200.8	µg/L	0.236	<0.200	<0.200	0.263	42.2 D	10.4	8.69	10.1	8.78	12.2	7.07 J	4.83	0.922 J	11.1	13	0.2 J	<1.0	
Magnesium	USEPA 200.7	µg/L	3,400	3,740	3,050	4,240	5,420	6,870	6,300	3,580	3,600	3,880	3,580	4,230	3,620	10,100	10,900	13,000	16,000	
Manganese	USEPA 200.7	µg/L	2.35 J	<5.00	<5.00	3.44 J	448	138	94.1	107 J	119	158	93.1	82.9	47.4	198	217	2.5 JB	1.5 JB	
Molybdenum	USEPA 200.8	µg/L	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	0.94 J	0.78 JB	
Nickel	USEPA 200.8	µg/L	0.835 J	0.947 J	<1.00	1.04	5.86 JBD	1.77	1.56	1.58	1.57	2.07	1.28	1.02	<1.00	2.37	2.92	6.1	11	
Potassium	USEPA 200.7	µg/L	1,010	1,090	909 J	1,160	2,000	1,130	1,060	1,190	1,160	1,280	1,000 J	1,290	864 J	1,670	1,630	1,000 J	1,200 J	
Selenium	USEPA 200.8	µg/L	<2.00	<2.00	<2.00	<2.00	<10.0	<2.00	<2.00	<2.00	<2.00	<2.00	1.2 J	<2.00	<2.00	<2.00	<2.00	<5.0	<5.0	
Silver	USEPA 200.8	µg/L	<1.00	<1.00	<1.00	<1.00	<5.00	<1.00	<1.00	<1.00	<1.00	2.91	<1.00	<1.00	<1.00	<1.00	<1.00	0.092 J	<1.0	
Sodium	USEPA 200.7	µg/L	3,740	3,860	3,890	3,850	3,950	4,430	4,330	3,690	3,670	3,880	3,300	3,870	4,550	4,550	10,000	21,000		
Thallium	USEPA 200.8	µg/L	<2.00	<2.00	<2.00	<2.00	<10.0	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00 J	<2.00	<2.00	<2.00	<2.00	<1.0	<1.0	
Uranium	USEPA 200.8	µg/L	0.225	0.151	0.144 J	0.262	11.3 D	3.00	2.15	3.3	2.39	3.64	2.35 J	1.67	0.352	3.06	4.35	0.19 J	0.36 JB	
Zinc	USEPA 200.7	µg/L	59.0 J	69.7	52	71.2	107	149	144	93.9	97.6	105	69.4	69.2	<27	226	266	410	900	
Other Parameters	Method	Units																		
Bromide	USEPA 300.0	mg/L	NA	NA	NA	NA	<0.500 J	<0.500	<0.500	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	
Chloride	USEPA 300.0	mg/L	2.2 Jr	2.3	1.4	2.7	2.3 J	4.7	4.6	4.6	2.9	2.9	3.3	2.1	2.1	3.5	3.3	3.6	3.8 B	
Fluoride	USEPA 300.0	mg/L	<0.200	0.1 J	0.4	<0.100	<0.100 J	<0.200	<0.200	0.3	<2.0	0.1 J	0.2	0.1 J	0.1	<0.1	<0.1	0.092 J	0.52 J	
Hardness	USEPA 2340B	mg/L	37	89	276	44	48	62	60	41	36	38	37	41	40	107	110	150	190	
Ca Hardness as CaCO3	USEPA 300.0	mg/L																		
Mg Hardness as CaCO3	USEPA 300.0	mg/L																		
Nitrate/Nitrite as N	USEPA 300.0	mg/L	<0.200	<0.200	<1.00	<1.00	<1.00 J	<2.00 J	<2.00 J	<2.0 J	<2.0 J	<2.0 J	<2.0 J	<2.0 J	<2.0 J	<2.0 J	<2.0 J	0.18 J	0.21 J	
pH (Lab)	--	--	NA	NA	NA	NA	6.54 J	6.72 J	6.22 J	NA	NA	NA	NA	NA	6.44 J	5.35 J	6.70 J	6.70 J		
pH (Field)			NA	7.35	NA	NA	6.66	3.91	NA	7.05	7.11	7.11	6.73	6.66	6.66	6.20	6.20	6.46	6.04	
Sulfate as SO4	USEPA 300.0	mg/L	19	24.2	19.0	22.3	15.2 J	41.0	41.0	15.0	12.7	13.1	12.8	13.2	16.0	30.4	29.4	110	190	
Sulfide	USEPA SM20 4500 S2 D	mg/L																		
Total Organic Carbon	USEPA SM5310B	mg/L																		
Total Alkalinity	USEPA 310.1	mg CaCO3/L	22.1	24	140	26	26.1	16.8	16.0	26	26.0	26.3	28.6	28.7	27.6	24.1	22.6	22	21	

Abbreviations:
BOLD — Detection above reporting limit
B — Analyte found in sample and associated blank
D — Diluted value quoted
- — ICV/CCV/ICB/CCB, RA, RB, CRI, CRA, DLCK or MRL standard. Instrument related QC is outside acceptance limits.
H1 — MS and/or MSD Recovery is outside acceptance limits
HT — Field Parameter with a holding time of 15 minutes
J — Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
Jv — The analyte was positively identified, the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential positive bias
NA — Not Available
NS — Not Sampled
USEPA — United States Environmental Protection Agency
µg/L — micrograms per liter
mg/L — milligrams per liter
< — Analyte not detected at or above the method detection limit
Shaded text — Data collected is non-representative of natural background conditions due to sampling technique.

Notes:
1. Samples collected prior to October 2017 were collected by Tech Law as surface water flow exiting the mine with the Sample ID CJM-SW-01. October 2017 and March 2018 samples were collected from Sample Port No.1 on this 12" line.
2. Seep runs only indicated in this table after the flows met criteria and been sampled.
3. Sample collected from Sample Point#2 (SP2) located on the Scrubb flow through piping.
4. Sample collected from Treatment Plant Influent (TPI) located on the Tributer System pipeline upstream of reagent addition.

Groundwater Location
Mine Pool Location
Surface Water Location

[12] *Source:* January 2022 Monthly Status Report for the In-Tunnel Treatability Study. Collected by WOOD, PLC and MineWater, LLC

Sample Location			MW-84																									
Sample ID			CJM-GW-MW4																									
Water Source			Groundwater																									
Sampling Contractor			Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood
Date Sampled			1/15/2019	9/15/2019 (Duplicate)	2/18/2019	3/19/2019	4/16/2019	5/13/2019	6/13/2019	7/16/2019	8/14/2019	9/16/2019	10/14/2019	11/13/2019	12/18/2019	1/20/2020	2/19/2020	3/24/2020	4/14/2020	5/18/2020	6/17/2020	6/17/2020 (Duplicate)	7/6/2020	7/6/2020 (Duplicate)
Total Recoverable Metals	Method	Units																										
Aluminum	USEPA 200.7	µg/L	16,000	16,000	5,600	5,700	5,100	8,600	10,000	6,200	8,600	10,000	1,200	14,000	20,000	23,000	12,000	27,000	14,000	27,000	1,300	4,800	7,600	9,700
Antimony	USEPA 200.8	µg/L	0.31 J	0.41 J	<2.0	<2.0	<2.0	<2.0 F1	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.68	<0.68	<0.68	<0.68
Arsenic	USEPA 200.8	µg/L	2.4 J	2.1 J	1.2 J	0.69 J	1.8 J	1.6 J	1 J	1.2 J	3.6 J	<5.0 J	1.7 J	2.6 J	2.5 J	4.2 J	<5.0 J	3.5 J	1.5 J	5 J	2.7 J	4 J	<2.5 J	0.85 J
Beryllium	USEPA 200.7	µg/L																										
Cadmium	USEPA 200.8	µg/L	2.8	3.3	3.7	3.1	1.5	0.84 J	1.1	1.4	1.8	0.83 J	0.51 J	<2.0	<2.0	1.2	0.66 J	1.1	0.45 J	0.79 J	0.63 J	0.74 J	0.43 J	0.38 J
Calcium	USEPA 200.7	µg/L	46,000	47,000	56,000	46,000	28,000	20,000	24,000	23,000	26,000	23,000	16,000	20,000	23,000	26,000	20,000	24,000 B	22,000	18,000	18,000	16,000	14,000	14,000
Chromium	USEPA 200.8	µg/L	11	9	5.5	2.7	8.1	5.9	9	5.3	16	1.8 JB	7.3	11	16	21	13 J	19	6.9	24	12	16	9.94 J	9.7
Copper	USEPA 200.8	µg/L	56	46	35 B	25	40	33	52	100	130	6.9	40	67	81	120	39	100	42	110	72	97	20	28
Iron	USEPA 200.7	µg/L	16,000	16,000	5,600	6,300	14,000	11,000	16,000	6,900	3,900	24,000	1,200	19,000	26,000	35,000	16,000 B	33,000	16,000	34,000 B	7,900	4,200	9,400 B	12,000 B
Lead	USEPA 200.8	µg/L	33	27	15	9.9	21	15	25	53	63	1.3	20	37	47	73	45	69	25	66	44	63	16	17
Magnesium	USEPA 200.7	µg/L	16,000	16,000	17,000	14,000	11,000 B	8,000	9,600	8,400	8,600	11,000	6,600	9,900	10,000	12,000	8,700	13,000 B	9,800	11,000	6,200	6,600	5,000	5,100
Manganese	USEPA 200.7	µg/L	430 B	340 B	160	110	250	210	430	330	430	520	140	490	630	790	310	800	360	730	300	440	200	250
Mercury	USEPA 245.1/245.2	µg/L	0.068 J	<0.20	<0.20	<0.20	0.043 J	<0.20	0.057 J	0.26	<0.20	0.060 J	0.037 J	<2.0	<2.0	<2.0	<0.2	0.16 J	0.1 J	0.11 J	0.12 J	0.06 J	0.056 J	0.066 J
Molybdenum	USEPA 200.8	µg/L	1.3 JB	1.2 JB	0.86 J	<2.0	0.91 J	0.9 J	0.68 J	<2.0	1.3 J	<2.0	1.1 J	<5.0	<5.0	1.4 J	<2.0	<1.6	0.84 J	2.6 J	1.6 J	1.3 J	<0.37	<0.37
Nickel	USEPA 200.8	µg/L	25	22	24	17	14	8.1	11	8.7	15	6 B	7.4	12	14	19	8.8	16	7.2	19 B	10 E	16 B	2.2	4
Potassium	USEPA 200.7	µg/L	5,100	5,200	2,200 J	2,800 J	3,000	3,200	4,400 B	2,200 J	2,400	4,600	1,000 J	3,300	4,600 *	5,800	3,000	5,300	3,600	6,500	2,200 J	1,700 J	2,500 J	2,900 J
Selenium	USEPA 200.8	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	USEPA 200.8	µg/L	1.8	1.5	0.89 J	0.41 J	1.2	0.9 J	1.6 B	0.46 J	2.1	0.005 J	1.7	2.1 J	2.3 J	3.7	0.29 J	3.1	1.1	3.3	2.1	3.2	0.26 J	0.66 J
Sodium	USEPA 200.7	µg/L	14,000	16,000	11,000	9,700	7,300 B	6,000 B	6,800 B	9,200 B	6,400	6,600 B	4,800 J B	4,800	5,600	9,300	6,200	9,100 B	8,400	6,500	5,300 E	4,800 JB	5,300	5,200
Thallium	USEPA 200.8	µg/L	0.16 J	0.13 J	0.11 J	<1.0	0.16 J	0.14 J	0.16 J	<1.0	0.23 J	<1.0 J	0.13 J	<1.0	<1.0	0.29 J	<1.0	0.24 J	0.092 J	0.35 J	0.2 J	0.27 J	<0.066	<0.066
Uranium	USEPA 200.7	µg/L	8.6	6.9	3.8	3.3	6	3.8	7.2	23	21	0.64 J	5.5	8.6	13	20 B	5.0	15	6.8	16	12	17	3.8	5.3
Zinc	USEPA 200.7	µg/L	1100	1000	1000	1200	800	270	400	460	500	550	140 B	380 B	430	620	330	520 B	270	420	230	230	100	210
Dissolved Metals	Method	Units																										
Aluminum	USEPA 200.7	µg/L	50 J	1,600	69 J	620	5,900	3,100	600	3,800	11,000	710	46 J	920	6,500	14,000	2,000	3,800	<100 *	<18	410	6,600	35 J	630
Antimony	USEPA 200.8	µg/L	<2.0	0.21 JB	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<5.0	<5.0	<2.0	<2.0	<2.0	<2.0	<0.68	<0.68	<0.68	<0.68	<0.68
Arsenic	USEPA 200.8	µg/L	<5.0	<5.0	<5.0	<5.0	0.87 J	<5.0	<5.0	<5.0	1.5 J	1.7 J	<5.0	<5.0	<5.0	2.6 J	0.5 J	0.86 J	1.83 J	<2.5	<2.5	1.10 J	<2.5	<2.5
Beryllium	USEPA 200.8	µg/L																						
Cadmium	USEPA 200.8	µg/L	2.6	2.3	3.3	2.6	1.5	0.95 J	0.32 J	0.76 J	0.68 J	0.89 JB	0.26 J	<2.0	<2.0	0.92 J	0.61 J	0.7 J	0.71 J	0.22 J	<0.068	0.23 J	0.12 J	0.23 J
Calcium	USEPA 200.7	µg/L	47,000	48,000	62,000	44,000	26,000	21,000	19,000	20,000	22,000	20,000	16,000	17,000	20,000	23,000	19,000	20,000	17,000	14,000	12,000	13,000	13,000	13,000
Chromium	USEPA 200.8	µg/L	<3.0	1.1 J	<3.0	<3.0	4.4	1.8 J	<3.0	5.3	7.6	<3.0	<3.0	3.7 J	5.3	11	1.8 J	3	9.7	<0.68	<0.68	4.5	<0.68	<0.68
Copper	USEPA 200.8	µg/L	5.4 B	6.2 B	5	5.4	37 F1	10	5.3 B	33	35	5	15	8.4 J	20	51	21	19	52	6	5.5	24	3.6	5.4
Iron	USEPA 200.7	µg/L	50 J	1,600	100	620	5,900	3,200 B	800 B	4,000	12,000	760	200	1,000	6,900	15,000	2,200	5,100	26	24 J	510 E	6,600 B	80 J B	640 B
Lead	USEPA 200.8	µg/L	0.2 J	2.7	0.45 J	1.3	13 F1	5	0.95 J	20	22	1.8	<1.0	2.9 J	16	42	4.6	9.4	2.8	<0.23	1.1	12	<0.23	1.2
Magnesium	USEPA 200.7	µg/L	16,000	17,000	16,000	13,000	11,000	8,100	8,000	7,500	8,300	7,400	6,900	6,900	8,400	9,900	6,800	9,000	6,100	6,200	5,000	6,100	4,600	4,600
Manganese	USEPA 200.7	µg/L	23 JB	22 B	3.5 J	16	160	68	16	570	220	17	2.4 J	36	190	270	49	130	<10	<1.8	12	130	<1.8	12
Molybdenum	USEPA 200.8	µg/L	0.2 JB	0.21 JB	<2.0	<2.0	0.66 J	0.39 J	<2.0	0.76 J	0.76 J	<2.0	<2.0	<5.0	<5.0	0.86 J	<2.0	0.44 J	0.69 J	<0.37	<0.37	0.38 J	0.55 J	<0.37
Nickel	USEPA 200.8	µg/L	17	17	18	15	12 F1	4.1	3.4 B	8.3	7.8	4.3	4.7 J	9.8	8.9	11	4.7	4.8	10 B	1.6 J	1.5 J	4.8	6	1.5 J
Potassium	USEPA 200.7	µg/L	1,400 J	1,600 J	1,400 J	1,500 J	2,700 J	2,000 J	1,300 J	1,800 J	3,000 J	1,600 JB	1,100 J	1,300 J	2,300	3,900 J	1,300 J	2,100 JB	1,200 U	970 J	960 J	1,900 J	1,100 J	1,200 J
Selenium	USEPA 200.8	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	USEPA 200.8	µg/L	<1.0	0.11 J	0.024 J	0.044 J	0.8 J	0.25 J	0.068 J	1	0.88 J	0.15 J	<1.0	1 J	<5.0	<5.0	0.34 J	0.56 J	1.6	0.07 J	0.052 J	0.63 J	<0.045	0.084 J
Sodium	USEPA 200.7	µg/L	13,000	15,000	11,000	9,400	6,900 B	6,200 B	6,000	6,500	5,600	5,600 B	4,200 J B	4,000 B	6,200	8,500	4,600 J	8,200 B	5,700 B	5,300	4,900 J	5,200	5,100	5,000
Thallium	USEPA 200.8	µg/L	<1.0	<1.0	<1.0	<1.0	0.43 J	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	0.17 J	0.055 J	<1.0	<1.0	<0.066	<0.066	<0.066	<0.066	<0.066
Uranium	USEPA 200.8	µg/L	0.13 JB	0.09 JB	0.04 J	0.07 J	3.2	1.2	0.4 J	5.6	5.6	0.69 J	0.17 J	<5.0	4.3	9.8	1.4	2.6	7.6	0.16 J	0.43 J	3.1	0.23 J	0.49 J
Zinc	USEPA 200.7	µg/L	1,400	1,400	1,000	1,100	690	220	210	300 E	330	280	90	190 B	280	370	200	400	110	70	61	160	64	69
Other Parameters	Method	Units																						
Bromide	USEPA 300.0	mg/L	<0.20	<0.20	<0.20	<0.20	<0.5	<0.5	<0.20	<0.5	<0.5	<0.50	<2.0	<5.5	<0.5	<0.5 F1	<0.5	<0.5	<0.5	<0.23	<0.23	<0.23	<0.23	<0.23
Chloride	USEPA 300.0	mg/L	4.7	4.7	4.2	4.0	9.2	5.2	6.3	4.8	3.9	3.4	<16	2.9 J	3.2	3.6	4.3	5.1	5.1	7.2	4.4	4.3	4.2	4.2
Fluoride	USEPA 300.0	mg/L	<0.5	<0.5	<0.5	0.16 JB	0.061 J	0.091 JB	0.069 J	<0.50	<0.50	<0.50	<2.5	<0.5	<0.5	<0.5	0.17 J	<0.5	<0.5	<0.17	<0.17	<0.17	<0.17	<0.17
Hardness	USEPA 2340B	mg/L	190	200	200	170	110	88	100	91	100	100	68	89	95	110	87	110 B	94	88	64	65	59	59
Ca Hardness as CaCO3	USEPA 300.0	mg/L																						
Mg Hardness as CaCO3	USEPA 300.0	mg/L																						
Nitrate/Nitrite as N	USEPA 300.0	mg/L	0.24	0.25 J	0.26 J	0.19 J	NA	NA	0.068 J	<0.50	<0.50	<0.50	<2.5	0.45 J	0.2 J	0.37 J	0.53	0.89	0.62	0.28 J B	<0.045	<0.045	<0.045	<0.045
pH (Lab)	...	...	6.68	6.75	6.80 J	6.39	6.66	6.39	6.55 H F	6.60 HF	6.60 HF	6.73 HF	6.39 J	6.39 J	6.60 J HF	6.60 J HF	6.40 HF	7.00 J HF	6.73 J HF	6.66 HF	6.40 HF	6.36 HF	6.40 HF	6.39 HF
pH (Field)	...	...	6.28	6.28	6.30	6.39	6.67	6.89	6.65	6.76	6.69	6.92	6.35	6.19	6.59	6.71	6.80	6.22	6.28	6.42	6.47	6.47	6.07	6.07
Sulfate as SO4	USEPA 300.0	mg/L	190	190	190	180	100	83	90	89	83	76	63	57	57	69	66	62	43	30	28	28	29	29
Sulfide	USEPA 9034/4500 S2 D	mg/L																						
Total Organic Carbon	USEPA SM5310B	mg/L																						
Total Alkalinity	USEPA 310.1	mg CaCO3/L	13	11	11	11	15	24	18	24	25	23	27	15	21	16	16	17	21	25	17	17	21	21

Abbreviations:

MDL/D	Detection above reporting limit
B	Analyte found in sample and associated blank
D	Diluted value qualifier
^	ICV/CCV/CB CCB, ISA ISB, ORI, ORA, DLCK or MRL standard. Instrument passed QC to validate acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance limits
eF	Field Parameters with a holding time of 15 minutes
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
Jb	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential positive bias
NA	Not Available
NS	Not Sampled
USEPA	United States Environmental Protection Agency
µg/L	microgram per liter
mg/L	milligram per liter
U	Analyte not detected at or above the method detection limit
Underlined Italics	Data collected in non-representative of actual mine pool conditions due to sample technique.

Notes:

1. Samples collected prior to October 2017 were collected by Tech Law as surface water this exiting the mine with the Sample ID CJM-SW01. October 2017 and March 2018 samples were collected from Sample Port No.1 on the 12" line.
2. Seeps are only included in this table after they have met criteria and been sampled.
3. Sample collected from Sample Port #2 (SP2) located on the Siloch feed through piping.
4. Sample collected from Treatment Plant Influent (TPI) located on the Transfer System pipeline upstream of reagent addition.

Groundwater Location
Mine Pool Location
Surface Water Location

Figure I-8: Surface Water Analytical Data for SW-02, SW-06 and SW-10[13]

Table 6
Analytical Water Data
Captain Jack Mill Superfund Site

	Sample Location		Surface Water #2														
	Water Source		CJM SW-02														
	Sampling Contractor		Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater
	Date Sampled		1/21/2020	2/19/2020	3/24/2020	4/14/2020	5/19/2020	5/19/2020 (Duplicate)	8/17/2020	7/19/2020	11/5/2021	11/22/2021	12/1/2021	12/22/2021	1/13/2022	1/27/2022	1/27/2022 (Duplicate)
Total Recoverable Metals	Method	Units															
Aluminum	USEPA 200.7	µg/L	1,400	910	670	440	7,300	7,600	7,800	5,100	52 J	37 J*+	45 J	67	69	110 B	76 B
Antimony	USEPA 200.8	µg/L	<2.0	<2.0	<2.0	<2.0	<0.68	<0.68	<0.68	<0.68							
Arsenic	USEPA 200.8	µg/L	0.66 J	0.69 J	<5.0	<5.0	0.88 J	0.73 J	1.1 J	0.57 J	3.2	2.8	2.8	4.5	6.2	2.8	2.8
Beryllium	USEPA 200.7	µg/L									<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Cadmium	USEPA 200.8	µg/L	16	15	9.8	8.6	31	32	16	10	0.27	0.13 J	0.16 J	0.18 J	<0.066	0.11 J	0.14 J
Calcium	USEPA 200.7	µg/L	69,000	69,000	76,000 B	74,000	140,000	140,000	120,000	96,000	100,000	70,000	110,000	100,000	90,000	100,000	100,000
Chromium	USEPA 200.8	µg/L	<3.0	<3.0	<3.0	<3.0	1.4 J	<0.88	<1.7 J	<0.88	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Copper	USEPA 200.8	µg/L	670	530	420	300	3200	3100	3000	2400	13	8.6	8.3	9.9	13	5.2	5.2
Iron	USEPA 200.7	µg/L	29,000	22,000	14,000	13,000	31,000 B	30,000	24,000	17,000 B	11,000	20,000	8,900	14,000	32,000	11,000	11,000
Lead	USEPA 200.8	µg/L	1.5	0.71 J	0.35 J	0.47 J	5.9	5.6	8.4	4.2	7.1	6.1	4.8	7.0	7.7	3.4	3.5
Magnesium	USEPA 200.7	µg/L	27,000	27,000	26,000 B	24,000	52,000	53,000	52,000	36,000	43,000	43,000	26,000	24,000	20,000	20,000	20,000
Manganese	USEPA 200.7	µg/L	6,100	5,600	4,600	4,300	8,600	8,100	7,700	5,800	4,600	4,100	3,800	4,100	4,300	4,000	4,000
Mercury	USEPA 245.1/245.2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.027	<0.027	<0.027	<0.027							
Molybdenum	USEPA 200.8	µg/L	0.41 J	<2.0	<2.0	<2.0	<0.37	<0.37	<0.37	<0.37	8.1	6.3	9.0	8.7	5.7	4.4	4.7
Nickel	USEPA 200.8	µg/L	57	46	41	34	120 F1 B	110	95 B	69	34	1.2	2.0	0.61 J	3.2	0.83 J	0.88 J
Potassium	USEPA 200.7	µg/L	1,100 J	980 J	<1,200	1,000 J	1,200 J	1,000 J	940 J	670 J							
Selenium	USEPA 200.8	µg/L	<5.0	<5.0	<5.0	<5.0	<1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	USEPA 200.8	µg/L	<1.0	<1.0	<1.0	<1.0	<0.045	<0.045	<0.045	<0.045	0.027 J	0.12 J	0.11 J	0.17 J B	0.16 J	<0.045	<0.045
Sodium	USEPA 200.7	µg/L	12,000	12,000 B	13,000 B	11,000	11,000	11,000	9,200 B	8,800	23,000	23,000	20,000	25,000	25,000	25,000	26,000
Thallium	USEPA 200.7	µg/L	<1.0	<1.0	<1.0	<1.0	<0.068	<0.068	<0.068	<0.068							
Uranium	USEPA 200.7	µg/L	26	16	11	8.8	93	92	95	60	1.8 B	1.3	1.6	2.1	1.6	1.7 B	1.8 B
Zinc	USEPA 200.7	µg/L	3,400	2,900	2,100 B	1,900	4,400	4,200	3,500	2,400	62	56	50	68	96	43	41
Dissolved Metals	Method	Units															
Aluminum	USEPA 200.7	µg/L	920	24 J	200	<100	7300	7200	7600	5100	21 J*+	30 J	<15	<15	<15	19 J	24 J
Antimony	USEPA 200.8	µg/L	<2.0	<2.0	<2.0	<2.0	<0.68	<0.68	<0.68								
Arsenic	USEPA 200.8	µg/L	0.63 J	<5.0	<5.0	<5.0	0.8 J	<0.5	0.64 J	<0.5	0.66 J	<0.50	1.4 J	0.83 J	<0.50	0.61 J	0.68 J
Beryllium	USEPA 200.8	µg/L									<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Cadmium	USEPA 200.8	µg/L	16	11	9.1	7.6	29	22	15	11	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066	<0.066
Calcium	USEPA 200.7	µg/L	81,000	82,000	74,000	69,000	140,000	140,000	115,000	94,000	110,000	75,000	110,000	97,000	75,000	97,000	96,000
Chromium	USEPA 200.8	µg/L	<3.0	<3.0	<3.0	<3.0	<0.88	<0.88	1.7 J	<0.88	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Copper	USEPA 200.8	µg/L	560	490	390	330	3000	3000	2900	2400	<0.71	<0.71	<0.71	<0.71	<0.71	<0.71	<0.71
Iron	USEPA 200.7	µg/L	26,000 B	16,000	9,700	7,600	31,000	31,000	22,000 B	15,000 B	68 J*+	4,000	40 J	120 J	100 J	<22	<22
Lead	USEPA 200.8	µg/L	0.52 J	0.33 J	<1.0	0.46 J	5.5	5	7.6	3.7	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	0.25
Magnesium	USEPA 200.7	µg/L	27,000	27,000	24,000	22,000	53,000	52,000	54,000	37,000	59,000	59,000	26,000	24,000	21,000	20,000	20,000
Manganese	USEPA 200.7	µg/L	6,000	5,600	4,600	4,300	8,700	8,600	7,600	5,800	4,200	4,200	3,900	3,900	4,200	3,900	3,900
Molybdenum	USEPA 200.8	µg/L	<2.0	<2.0	<2.0	<2.0	<0.37	<0.37	<0.37	<0.37	7.6	6.0	8.6	8.0	4.6	4.2	4.7
Nickel	USEPA 200.8	µg/L	61	50	41	37 B	130	120	100	69	2	0.97 J	0.89 J	0.48 J	3.2 B	0.83 J	0.75 J
Potassium	USEPA 200.7	µg/L	1,100 J	1,000 J	1,100 JB	1,000 U	1,100 J	1,100 J	940 J	680 J							
Selenium	USEPA 200.8	µg/L	<5.0	<5.0	<5.0	<5.0	2.6 JB	<1.0 MB	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	USEPA 200.8	µg/L	<1.0	<1.0	<1.0	<1.0	<0.045	<0.045	0.046 J	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045
Sodium	USEPA 200.7	µg/L	11,000	11,000 B	12,000 B	11,000 B	11,000	11,000	9,700	8,900	23,000	23,000	20,000	25,000	22,000	26,000	27,000
Thallium	USEPA 200.8	µg/L	<1.0	<1.0	<1.0	<1.0	0.079 J	<0.068	<0.068	<0.068 U							
Uranium	USEPA 200.8	µg/L	16	5.0	2.7	3.1	99.0	96.0	80.0	54.0	1.8	0.58	1.7 B	1.50	0.83 B	1.4 B	1.4 B
Zinc	USEPA 200.7	µg/L	3,400	2,800	2,200	1,800	4,600	4,400	3,200	2,100	<4.5	<4.5	<4.5	<4.5	11 J	5.3 J	5.4 J
Other Parameters	Method	Units															
Bromide	USEPA 300.0	mg/L	<2.5	<0.5	<0.5	<0.5	<0.23	0.04	<0.23	<0.23							
Chloride	USEPA 300.0	mg/L	2.1 J	2.1 J	2.2 J	2.6	4.1	4.2	5.4	3.7	1.9 J	1.6 J	1.8 J	1.6 J	2.0	1.9 J	1.8 J
Fluoride	USEPA 300.0	mg/L	0.72	1.3	0.87	0.88	1.6	1.2	1.4	1.1							
Hardness	USEPA 2340B	mg/L	300	330	290 B	260	520	530	500	390	330	260	370	340	300	300	300
Ca Hardness as CaCO3	USEPA 200.0	mg/L															
Mg Hardness as CaCO3	USEPA 200.0	mg/L															
Nitrate/Nitrite as N	USEPA 300.0	mg/L	<0.5	<0.5	<0.5	<0.5	<0.09 R	<0.09 R	<0.089	<0.089							
pH (Lab)			6.30 HF	6.40 HF	6.40 J HF	6.60 J HF	4.60 HF	4.60 HF	5.40 HF	5.80 HF							
pH (Field)			6.68	6.42	6.80	6.10	5.06	5.06	5.60	5.50	6.80	6.64	7.26	6.64	6.44	6.71	6.71
Sulfate as SO4	USEPA 300.0	mg/L	430	330	360	300	850	790	670	600	270	200	270	260	260	270	260
Sulfide	USEPA SM4500 S2 D	mg/L									0.033 J	<0.02	0.039 J	0.039 J	<0.020 F1	<0.02	
Total Organic Carbon	USEPA SM5310B	mg/L									41	13 B	24	5.7	5.3	5.9	6.0
Total Alkalinity	USEPA 310.1	mg CaCO3/L	<10	<10	<10	<10	<3.1	<3.1 *	<3.1	<3.1	140 B	90 B	160	160	92	130	130

Abbreviations:
BRL0 Detection above reporting limit
B Analyte found in sample and associated blank
D Diluted value qualifier
* RPD(DUP)/LCS/LCSD, ISA, ISB, CRI, CRA, DLCK or MRL standard. Instrument related QC is outside acceptance limits.
F1 MS and/or MSD Recovery is outside acceptance limits.
HF Field Parameters with a holding time of 15 minutes
J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
J+ The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample., and may have a potential positive bias
NA Not Available
NS Not Sampled
USEPA United States Environmental Protection Agency
µg/L micrograms per liter
mg/L milligrams per liter
U Analyte not detected at or above the method detection limit
Underlined Data collected is not a representative of natural mine pool conditions due to sampling technique.

Notes:
1. Samples collected prior to October 2017 were collected by Tech Law as surface water flow exiting the mine with the Sample ID CJM SW 01. October 2017 and March 2018 samples were collected from Sample Port No.1 on the 12"Line.
2. Seeps are entry noted in the table when they have met criteria and been sampled.
3. Sample collected from Sample Point 2 (SP2) located on the 2-inch line through tubing.
4. Sample collected from Treatment Plant Influent (TPI) located on the Transfer System pipeline upstream of reagent addition.
5. Sample collected from Treatment Plant Outfall (TPO) or that point where water treatment was and before release into the receiving environment. Sample collected at the end of 12" corrugated pipe.

Highlighted text/figure used to identify newly collected data
Ground water Location
Mine Pool Location
Surface Water Location

[13] *Source:* January 2022 Monthly Status Report for the In-Tunnel Treatability Study. Collected by Wood, PLC and MineWater, LLC.

Table 6
Analytical Water Data
Captain Jack Mill Superfund Site

Sample Location			Surface Water #6																							
			CJM SW-06																							
Water Source			Surface Water																							
Sampling Contractor			Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater
Date Sampled			1/21/2020	2/19/2020	3/24/2020	4/6/2020	5/18/2020	6/17/2020	6/17/2020 (Duplicate)	7/9/2020	2/23/2021	3/19/2021	4/27/2021	4/27/2021 (Duplicate)	5/23/2021	6/11/2021	7/22/2021	7/29/2021 (Duplicate)	8/26/2021	9/15/2021	10/19/2021	10/22/2021	12/1/2021	12/1/2021 (Duplicate)	1/27/2022
Total Recoverable Metals	Method	Units																								
Aluminum	USEPA 200.7	µg/L	<100.0	<100 *	<100	32 J	210 J	63 J	63 J	35 J	240 B	98 J	24 J	29 J	170	58	92	60	78	77	34 J*1+	<18 *1+	20 J	<18	67 B	
Antimony	USEPA 200.8	µg/L	<2.0	<2.0	<2.0	<2.0	<0.68	<0.68	<0.68	<0.68	<0.68															
Arsenic	USEPA 200.8	µg/L	<5.0	<5.0	<5.0	<5.0	<3.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Beryllium	USEPA 200.7	µg/L									16 B	<0.17	<0.17	<0.17	<0.17	0.22 J	<0.17	<0.17	<0.17	0.22 J	<0.17	0.72 J	<0.17	<0.17	<0.17	
Cadmium	USEPA 200.8	µg/L	<1.0	<1.0	<1.0	<1.0	0.1 J	0.06 J	0.088	<0.388	<0.088	<0.088	<0.088	<0.088	0.1 J	<0.088	<0.088	<0.088	<0.088	<0.088	<0.088	<0.088 F1	<0.088	<0.088	<0.088	
Calcium	USEPA 200.7	µg/L	6,800	7,200	7,600 B	13,000	5,700	5,300	5,200	6,200	9,900 B	7,400	14,000	15,000	7,500	3,600	6,200	6,100	3,300	2,900	5,400	5,700	6,800	6,900	7,500	
Chromium	USEPA 200.8	µg/L	<3.0	<3.0	<3.0	<3.0	<2.66	<2.66	<2.66	<2.66	55	<0.66	<0.66	<0.66	0.83 J	0.77 J	1.2 J	1.3 J	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	
Copper	USEPA 200.8	µg/L	<2.0	<2.0	0.86 J	0.82 J	4.60	2.46	1.85 J	0.98 J	<0.71	<0.71	0.77 J	0.90 J	5.5	2.1	1.1	1.1	1.7	1.3	0.97 J	<0.71	<0.71	<0.71	0.89 J	
Iron	USEPA 200.7	µg/L	36 J	36 J	<100	78.0 J	280.0 B	110.0 J	76.0 J	80.0 J B	2,100 B	67 J B	110 J B	110 J B	210 J B	92 J B	270 B	190 J B	210 J B	200	89 B	52 J	70 J	47 J	44 J	
Lead	USEPA 200.8	µg/L	<1.0	<1.0	<1.0	<1.0	0.31 J	<0.23	<0.23	<0.23	<0.23	<0.23	0.46	<0.23	0.33	<0.23	<0.23	<0.23	<0.23	0.00	<0.23	<0.23	<0.23	<0.23	0.64	
Magnesium	USEPA 200.7	µg/L	2,100	2,200	2,400 B	4,000	1,700	1,600	1,600	1,900	3,000 B	2,200	4,600	4,600	2,200	1,100	1,800	1,800	910	800	1,600	2,100	2,100	2,100	2,300	
Manganese	USEPA 200.7	µg/L	2 J	<10	1.9 J	6.5 J	14	8.5 J	5.8 J	4.6 J	110 B	4.5 J B	4.7 J	6.0	16	5.8 J	10	5.9	9.3	14	8.9	4.4 J	3.8 J	3.6 J	3.0 J	
Mercury	USEPA 245.1/7612-2	µg/L	<0.2	<0.2	<0.2	<0.2	<0.027	<0.027	<0.027	<0.027	<0.027															
Molybdenum	USEPA 200.8	µg/L	0.6 J	<2.0	<2.0	<2.0	<0.37	<0.37	<0.37	<0.37	0.56 J	0.45 J F1	<0.37	<0.37	<0.37	<0.37	0.56 J	0.37 J	<0.37	0.40 J	0.45 J	<0.37	<0.37	<0.37	<0.37	
Nickel	USEPA 200.8	µg/L	<2.0	<2.0	<2.0	0.96 J	0.91 J B	<0.64 J B	<0.64 J B	<0.20 J	0.40 J	<0.20	0.31 J	0.23 J	0.83 J	<0.40 J B	0.27 J	<0.20	0.29 J	<0.20	<0.23	<0.20	<0.23	<0.23	<0.23	
Potassium	USEPA 200.7	µg/L	760 J	790 J	<760	760 J	720 J	680 J	640 J	710 J		660														
Selenium	USEPA 200.8	µg/L	<5.0	<5.0	<5.0	<5.0	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Silver	USEPA 200.8	µg/L	<1.0	<1.0	<1.0	<1.0	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	
Sodium	USEPA 200.7	µg/L	3,400 J	3,700 JB	4,200 JB	10,000	4,700 J	2,900 J B	2,800 J B	3,400 J	23,000 B	3,200 J	16,000	15,000	6,700 J	2,600 J B	3,900 J B	3,900 J B	1,900 J	1,600 J	2,200 J	3,400 J	3,200 J	3,300 J	4,000 J B	
Thallium	USEPA 200.8	µg/L	<1.0	<1.0	<1.0	<1.0	<0.009	<0.009	<0.009	<0.009																
Uranium	USEPA 200.7	µg/L	0.06 J	<1.0	0.05 J	0.45 J	0.14 J	0.07 J	0.06 J	0.07 J	0.054 J	0.252 J F1	<0.03	<0.03	0.038 J	0.049 J	0.047 J	0.034 J	0.033 J	0.034 J	0.043 J	0.031 J	0.042 J	0.066 J	<0.095 J B	
Zinc	USEPA 200.7	µg/L	<20	<20	<5.2	17.0 J	39.0	20.0 J	22.0 J	9.4 J	66	8.3 J	19 J	21	44	18 J	16 J	32	<4.5	<4.5	<4.5	<4.5	<4.5	<4.5	5.1 J	
Dissolved Metals	Method	Units																								
Aluminum	USEPA 200.7	µg/L	<100	<100	<100	<100 *	80 J	25 J	24 J	<18	<18	<18	<18	<18	<18	52 B	<18	<18	28 J	32 J	<18	<18	<18	<18	<18	
Antimony	USEPA 200.8	µg/L	<2.0	<2.0	<2.0	<2.0	<0.68	<0.68	<0.68	<0.68																
Arsenic	USEPA 200.8	µg/L	<5.0	<5.0	<5.0	<5.0	<3.6	<0.5	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<0.5	<0.5 F1	<0.50	<0.50	<0.50	<0.50	<0.50	
Beryllium	USEPA 200.8	µg/L									0.46 J	<0.17	<0.17	<0.17	<0.17	<0.17	0.42 J	0.24 J	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	
Cadmium	USEPA 200.8	µg/L	<1.0	<1.0	<1.0	<1.0	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	0.12 J	<0.009	0.11 J	0.091 J	<0.009	<0.009 F1	<0.009	<0.009	0.029 J	<0.009	<0.009	
Calcium	USEPA 200.7	µg/L	6,800	7,200	7,800	12,000	5,600	5,100	4,900	5,800	7,700	7,400	15,000	15,000	7,500 J	4,000	6,400	5,300	3,300	2,900	5,400	5,600	6,800	6,700	6,900	
Chromium	USEPA 200.8	µg/L	<3.0	<2.0	<2.0	<2.0	<0.66	<0.66	<0.66	<0.66	0.81 J	<0.66	<0.66	<0.66	<0.66	<0.66	0.88 J B	<0.66	<0.66	<0.66	<0.66	1.7	<0.66	<0.66	<0.66	
Copper	USEPA 200.8	µg/L	1.1 J	<2.0	0.82 J	1.0 J	5.60	3.20	2.60	1.34 J	<0.71	<0.71	1.0 J	<0.71	3.4 J	2.2 J	1.1 J	0.91 J	1.2 J	1.0 B	0.73 J	<0.71	<0.71	<0.71	<0.71	
Iron	USEPA 200.7	µg/L	<100 J B	<100	<100	<100	100 J	<45 J B	<51 J B	49 J	91 J B	<22	60 J B	60 J B	74 J B	57 J B	93 J	160 J	330	120 J	38 J	25 J	<22	<22	<22	
Lead	USEPA 200.8	µg/L	<1.0	<1.0	<1.0	<1.0	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	0.28 J	<0.23	<0.23	<0.23	<0.23	<0.23	<0.23	0.044 B	<0.23	<0.23	0.21 J	<0.23	<0.23	
Magnesium	USEPA 200.7	µg/L	2,000 J	2,200 J	2,200 J	3,800 J	1,600 J	1,700 J	1,700 J	2,000 J	2,200 J	2,200 J	4,700 J	4,700 J	2,300 J	1,100 J	2,000 J	2000 J	910 J	770 J	1,600 J	2,100 J	2,200 J	2,200 J	2,300 J	
Manganese	USEPA 200.7	µg/L	<10	<10	<10	<10	8.5 J	2.2 J	4.4 J	<1.9 J	4.8 J	2.2 J	3.8 J	2.3 J	4.0 J	<1.9 J	6.3 J	5.7 J	3.4 J	3.5 J	4.8 J	2.5 J	<1.9 J	<1.9 J	<1.9 J	
Molybdenum	USEPA 200.8	µg/L	<2.0 J B	<2.0	<2.0	<2.0	<0.37	0.64 J	0.67 J	0.46 J B	0.52 J	<0.37	<0.37	<0.37	<0.37	0.52 J	<0.37	0.55 J	<0.37	0.41 J F1	0.47 J	<0.37	0.53 J F1	<0.37 *+	<0.37	
Nickel	USEPA 200.8	µg/L	0.29 J	0.44 J	0.31 J	0.52 U	1.1 J	0.34 J	0.35 J	<0.20 J	0.20 J	1.2 J	0.28 J	<0.20	0.72 J	0.49 J	<0.20	<0.20	<0.23	0.70 J	<0.23	<0.20	1.0 J	<0.20		
Potassium	USEPA 200.7	µg/L	860 J	770 J	960 JB	1,100 U	770 J	610 J	480 J	660 J																
Selenium	USEPA 200.8	µg/L	<5.0	<5.0	<5.0	<5.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0 F1	<1.0	<1.0	<1.0	<1.0	<1.0	
Silver	USEPA 200.8	µg/L	<1.0	<1.0	<1.0	<1.0	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	
Sodium	USEPA 200.7	µg/L	3,300 J	3,900 JB	4,200 JB	10,000 B	4,600 J	3,100 J	3,000 J	3,400 J	5,900	3,600 J	16,000	15,000	5,400 B	3,000 J	3,900 J B	3,800 J B	2,000 J	1,600 J	2,300 J	3,600 J	3,800 J	3,900 J	3,700 J	
Thallium	USEPA 200.8	µg/L	<1.0	<1.0	<1.0	<1.0	<0.068	<0.068	<0.068	<0.068																
Uranium	USEPA 200.8	µg/L	0.056 J	0.054 J	<1.0	0.048 J	0.140 J	0.060 J	<0.03	<0.03	<0.030	0.034 J	<0.030	<0.030	0.070 J	0.062 J B	0.043 J	<0.030	0.042 J	0.034 J F1	0.041 J	<0.030	0.058 J	<0.030	0.14 J B	
Zinc	USEPA 200.7	µg/L	<20	8.8 J	5.0 J	16.0 J	34.0	21.0	22.0	7.0 J	4.7 J	6.4 J	18 J	19 J	37	20	25	17 J	<4.5	<4.5	<4.5	<4.5	<4.5	<4.5	5.2 J	
Other Parameters	Method	Units																								
Bromide	USEPA 300.0	mg/L	<0.5	<0.5	<0.5	<0.5	<0.23	<0.23	<0.23	<0.23																
Chloride	USEPA 300.0	mg/L	5.6	5.4	6.3	20.0	12	8.7 J	8.7 J	8.9 J	9.0	8.2	40	43	16	8.6	4.8	4.6	<1.0	<1.0	3.6	6.0	6.3	6.2	9.8	
Fluoride	USEPA 300.0	mg/L	<0.5	0.17 J	<0.5	<0.5	<0.17	<0.17	<0.17	<0.17																
Hardness	USEPA 2340B	mg/L	26	27	28 B	43	21	20	19	23	39 B	26	66	66	28	13	23	23	12	11	20	25	26	26	28	
Ca Hardness as CaCO3	USEPA 200.0	mg/L																								
Mg Hardness as CaCO3	USEPA 200.0	mg/L																								
Nitrate/Nitrite as N	USEPA 300.0	mg/L	0.13 J	0.16 J	0.26 J	0.097 J	2.6 B	<0.049	<0.049	<0.049																
pH (Lab)	--	--	7.40 JHF	7.40	6.80 JHF	6.80 JHF	7.40 JHF	7.60 JHF	6.90 JHF	7.20 HF																
pH (Field)	--	--	8.31	8.43	8.58	8.69	8.64	8.44	8.44	7.29	7.40	7.85	6.89	6.89	8.03	7.04	6.82	8.62	8.62	8.60	8.60	8.60	7.43	8.86	8.34	
Sulfate as SO4	USEPA 300.0	mg/L	3.8 J	3.8 J	4.0 J	4.0 J	4.0 J	4.6 J	4.7 J	3.6 J	3.8	4.1	4.8	4.8	5.2	4.0	4.1	4.1	4.8	5.3	3.8	3.6	4.2	4.3	3.9	
Sulfide	USEPA SM20 4500 S2 D	mg/L									<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	R2
Total Organic Carbon	USEPA SW 9210	mg/L									0.97 J	1.1	1.1	1.1	2.3	2.4	9.2 F1	1.9	3.0	4.6	1.7	1.3 B	1.6	1.6	0.80 J	
Total Alkalinity	USEPA 310.1	mg/L as CaCO3	24	24	25	22	11	14	14	21	25 B	23	22	20	14 B	12	26 B	26 B	12 B	8.4 B	27 B	35 B	23	24	25	

Abbreviations:
BDLD Detection above reporting limit
B Analyte found in sample and associated blank
D Diluted value qualifier
* ICV/CCV/LCS/LCSD, ISA, RB, CRI, CRA, DLCK or MRL standard. Instrument related QC is outside acceptance limits.
F1 MS and/or MSD Recovery is outside acceptance limits
HF Field Parameter with a holding time of 15 minutes
J Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
J+ The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential positive bias
NA Not Available
NS Not Sampled
USEPA United States Environmental Protection Agency
µg/L micrograms per liter
mg/L milligrams per liter
U Analyte not detected at or above the method detection limit
Unqualified Data collected in non-representative of natural mine pool conditions due to sampling technique.

Notes:
1. Samples collected prior to October 2017 were collected by Tech Law as portions were left over after filling the mine with the Sample ID CJM SW-01. October 2017 and March 2018 samples were collected from Sample Port No.1 on the 12" line.
2. Seeps are only included in the table after they have been flowing and been sampled.
3. Sample collected from Sample Port #2 (SP2) located on the 3-inch flow-through piping.
4. Sample collected from Treatment Plant Influent (TPI) located on the Transfer Systems pump upstream of reagent addition.
5. Sample collected from Treatment Plant Outfall (TPO) or final point where water treatment occurred before release into the receiving environment. Sample collected at the end of 12" corrugated pipe.

Highlighted heading used to identify easily collected data
Groundwater Location
Mine Pool Location
Surface Water Location

Table 6
Analytical Water Data
Captain Jack Mill Superfund Site

MineWater

Sample Location			Surface Water IP6																										
			CJM SW 10																										
Water Source			Surface Water																										
Sampling Contractor			Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	Wood	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater
Date Sampled			1/20/2020	1/20/2020 (Duplicate)	2/19/2020	3/24/2020	4/14/2020	4/14/2020 Duplicate	5/18/2020	6/17/2020	7/9/2020	10/26/2020	11/30/2020	12/8/2020	1/19/2021	1/19/21 (Duplicate)	2/23/2021	3/19/2021	4/27/2021	5/20/2021	6/11/2021	7/20/2021	8/26/2021	9/15/2021	10/19/2021	10/19/2021 (Duplicate)	11/22/2021	12/9/2021	1/27/2022
Total Recoverable Metals	**Method**	**Units**																											
Aluminum	USEPA 200.7	µg/L	270	260	120	150	310	700	200	200	160	21 J	23 J	<10	<10 *+	24 J *+	23 J B	21 J	320	200	51	36 J	92	30	26 J*+	26 J*+	<10 *+	<10	54 B
Antimony	USEPA 200.8	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.68	<0.68	<0.68																		
Arsenic	USEPA 200.8	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.5	<5.5	<5.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.5	<0.5	<0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Beryllium	USEPA 200.7	µg/L									0.22 J	0.69 J	0.17 J	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	0.19 J	<0.17	0.29 J	<0.17	<0.17	<0.17	<0.17	<0.17
Cadmium	USEPA 200.8	µg/L	1.30	1.20	0.66 J	0.62 J	0.84 J	1.10	0.46 J	0.32 J	0.44 J	0.25 J	<0.088 J	0.17 J	0.17 J	0.15 J	0.43 J	1.1	0.84 J B	0.31 J	<0.088 J	<0.088 J	<0.088 J	<0.088 J	<0.088 J	0.17 J	0.21 J	0.12 J	0.21 J
Calcium	USEPA 200.7	µg/L	25,000	25,000	20,000	25,000	25,000	25,000	9,900	9,700	11,000	8,700	9,900	9,200	9,100	8,700	19,000 B	29,000	37,000	16,000	9,900	19,000	7,500	6,900	7,800	7,700	16,000	19,000	19,000
Chromium	USEPA 200.8	µg/L	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<0.66	<0.66	<0.66	<0.66	0.34 J	0.83 J	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Copper	USEPA 200.8	µg/L	64	56	48	48	73	110	36	27	51	5.1	5.4	5.5	4.5	5.1	7.8	14	16	12	5.7	5.2	4.9	3.1	3.8	3.4	3.3	2.9	3
Iron	USEPA 200.7	µg/L	160	160	<170 E	95 J	360	810	<210 B M3	89 J	75 J B	36 J	23 J	<22	<22	<22	41 J B	890 B	1,200 B	600 B	320 B	300 B	270 B	330	97 JB	160 JB	99 J	63 J	52 J
Lead	USEPA 200.8	µg/L	0.92 J	1 J	0.38 J	0.61 J	1.8 J	1.9 J	0.78 J	0.54 J	0.66 J	0.40 J	<0.21 J	<0.21 J	<0.21 J	0.27 J	0.30 J	0.45 J	2.0 J	1.0 J	0.49 J	0.43 J	0.49 J	0.60 J	0.33 J	0.29 J	<0.21 J	<0.21 J	0.29 J
Magnesium	USEPA 200.7	µg/L	7,400	7,400	7,000	8,100	7,400	7,600	3,200	3,200	3,600	2,900	2,900	2,900	2,800	2,800	5,300 B	10,000 B	9,100 B	3,600 B	1,900 B	4,100 B	1,700 B	1,200 B	2,400 B	2,400 B	4,300 B	4,200 B	5,000 B
Manganese	USEPA 200.7	µg/L	600	610	390	390	280	530	160	160	180	65 J	57 J	20 J	12 J	12 J	75 B	1,900 B	1,600 B	590 B	160 B	440 B	160 B	100 B	130 B	130 B	480 B	400 B	340 B
Mercury	USEPA 245.1/1631E	µg/L	<0.20	<0.20	<0.2	<0.2	<0.2	<0.2	<0.027	<0.027	<0.027																		
Molybdenum	USEPA 200.8	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.37	<0.37	0.43 J	0.40 J	<0.37	<0.37	<0.37	<0.37	<0.37	0.81 J	1.2 J	0.44 J	<0.37	0.72 J	0.42 J	0.42 J	0.37 J	<0.37	0.89 J	0.76 J	0.45 J
Nickel	USEPA 200.8	µg/L	9.1	8.8	4.6	5.1	5.0	<2.0	2.3 B	2.4 B	2.2 J	0.28 J	0.75 J	0.82 J B	0.70 J	0.91 J	4.2 J B	6.3	6.1	1.6	0.79 J B	1.2	0.69 J	0.57 J	<0.26	<0.26	0.80 J	0.82 J	0.44 J
Potassium	USEPA 200.7	µg/L	660 J	660 J	720 J	<690	940 J	970 J	770 J	640 J	740 J																		
Selenium	USEPA 200.8	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0 *	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	USEPA 200.8	µg/L	<1.0	<1.0	<1.0	0.049 J	<1.0	0.0276 J	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	0.045 J	0.067 J	0.053 J	0.075 J	0.053 J	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	0.053 J B	<0.045	<0.045	<0.045
Sodium	USEPA 200.7	µg/L	5,200	5,200	4,900 J	5,600	11,000	11,000	5,400	3,800 J	3,900 J	3,400 J B	4,200 J B	4,200 J B	4,000 J B	3,900 J B	11,000 B	30,000	24,000	16,000	4,100 J B	9,400 B	2,800 J	2,000 J	3,400 J	3,400 J	8,100	9,200	7,300 B
Thallium	USEPA 200.7	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.095	<0.095	<0.095																		
Uranium	USEPA 200.7	µg/L	1.8 B	1.7 B	1.0 J	0.95 J	1.40	2.00	0.77 J	1.00	1.00	0.20	0.25	0.21	0.18 J	0.22	0.26	0.82	1.8	0.46	0.32	0.42	0.22	0.18 J	0.43 J	0.44 J	0.80	0.76	0.70 B
Zinc	USEPA 200.7	µg/L	370	370	330	360	280	300	120	110	110	71	63	57	50	52	240	400	280	88	40	66	21	15 J	30	30	59	66	51
Dissolved Metals	**Method**	**Units**																											
Aluminum	USEPA 200.7	µg/L	27 J	27 J	33 J	26 J	170 J	31 J	110 J	100 J	130 J	<18	<18	<18	<18 *+	<18 *+	<18	<18	19 J	69 J	51 B	<18	10 J	25 J	<18	<18	<18	<18	<18
Selenium	USEPA 200.8	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.68	<0.68	<0.68																		
Aquatic	USEPA 200.8	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.5	<5.5	<5.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Beryllium	USEPA 200.8	µg/L									<0.17	<0.17	0.22 J	<0.17	<0.17	0.26 J	<0.17	<0.17	<0.17	0.23 J	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
Cadmium	USEPA 200.8	µg/L	1.30	1.00	1.10	0.66 J	0.62 J	1.10	0.43 J	0.26 J	0.43 J	0.26 J	0.22 J	0.15 J	0.12 J	0.14 J	0.44 J	1.4	0.83 J	0.22 J	0.23 J	0.29 J	<0.088 J	<0.088 J	0.12 J	0.11 J	0.10 J	0.20 J	<0.088 J
Calcium	USEPA 200.7	µg/L	25,000	24,000	25,000	25,000	22,000	22,000	9,900	9,000	11,000	8,200	9,600	8,800	9,300	8,100	20,000	35,000	38,000	15,000	11,000	19,000	7,700	6,800	7,700	7,700	16,000	19,000	19,000
Chromium	USEPA 200.8	µg/L	<3.0	<2.0	<2.0	<2.0	<3.0	<2.0	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66	<0.66
Copper	USEPA 200.8	µg/L	50	46	36	23 J	74	140	33	20	44	5.1	4.3	4.3	3.6	4.0	6.0	6.5	5.7	5.0	5.6	4.0	3.6	2.4	3.0	3.2	2.3	3.2	2.6
Iron	USEPA 200.7	µg/L	40 J	36 J	<150	27 J	61 J	<100	160 J	<82 J B	84 J B	<22	<22	<22	<22	<22 J B	37 J B	24 J	110 J B	120 J B	170 J B	170 J	460	120 J	52 J	52 J	42 J	29 J	22 J
Lead	USEPA 200.8	µg/L	<1.0	<1.0	<1.0	<1.0	1.0 J	0.3 J	0.31 J	0.27 J	0.43 J	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	0.69	0.29 J	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21	<0.21
Magnesium	USEPA 200.7	µg/L	7,100	7,000	7,000	7,400	6,700	6,900	3,200	3,000	3,600	2,700	3,100	2,900	2,900	2,800	5,200	10,000	9,200	3,700	2,000	4,300	1,800	1,200	2,100	2,100	4,400	4,200	5,200
Manganese	USEPA 200.7	µg/L	480	470	390	370	260	260	150	150	190	68	36	22	11	11	80	1,900	1,600	310	170	460	170	84	130	130	470	460	330
Molybdenum	USEPA 200.8	µg/L	0.6 J	<2.0	<2.0	<2.0	<2.0	<2.0	<0.37	<0.37	0.46 J	<0.37	<0.37	<0.37	<0.37	<0.37	<0.37	0.91 J	1.4 J	0.61 J	0.42 J	0.72 J	0.53 J	0.46 J	0.64 J	0.64 J	0.80 J	0.89 J	0.62 J
Nickel	USEPA 200.8	µg/L	9.2	8.9	5.2	4.7	4.6 B	4.9 B	2.6 B	2.4 B	2.6 J	0.69 J	0.84 J B	0.75 J B	0.71 J B	0.94 J B	2.6 J B	4.7	6.0	1.6 J	0.97 J	1.2 J	1.3 J	0.68 J	0.26 J	0.28 J	0.64 J	1.60 J	0.92 J
Potassium	USEPA 200.7	µg/L	620 J	600 J	670 J	1,100 J B	1,200 B	1,200 B	750 J	660 J	720 J																		
Selenium	USEPA 200.8	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	USEPA 200.8	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	0.0545 J	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	0.051 J	0.048 J
Sodium	USEPA 200.7	µg/L	5,000	4,900 J	5,000	5,200 E	11,000 E	11,000 E	5,100	3,700 J	4,100 J	3,700 J	4,300 J B	4,100 J B	5,100 E	4,000 J B	69,000	31,000	25,000	13,000 B	4,700 J	9,600 B	3,000 J	2,000 J	3,400 J	3,400 J	8,300	7,600	7,200
Thallium	USEPA 200.8	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.095	<0.095	<0.095																		
Uranium	USEPA 200.8	µg/L	1.1 J	1.1 J	0.72 J	0.62 J	1.40	2.10	0.76 J	0.90 J	1.00 J	0.25 J	0.20 J	0.18 J	0.16 J	0.16 J	0.21 J	0.44 J	1.4 J	0.26 J	0.36 B	0.42 J	0.18 J	0.10 J	0.43 J	0.42 J	0.87 J	0.81 J	0.77 B
Zinc	USEPA 200.7	µg/L	350	340	330	320 J	260 J	260 J	120 J	110 J	99 J	69 J	60 J	73 J	56 J	64 J	250 J	330 J	240 J	80 J	45 J	66 J	23 J	12 J	32 J	32 J	57 J	62 J	50 J
Other Parameters	**Method**	**Units**																											
Bromide	USEPA 300.0	mg/L	<0.50	<0.50	<0.5	<0.5	<0.5	<0.5	<0.23	<0.23	<0.23																		
Chloride	USEPA 300.0	mg/L	4.6	4.7	5.5	12	29	33	8.8	9.0	9.4	4.8	6.2	6.7	6.7	6.7	9.6	6.1	27	18	9.3	5.7	1.3 J	<1.0	3.0	3.0	6.2	5.7	6.2
Fluoride	USEPA 300.0	mg/L	<0.5	<0.5	0.2 J	<0.5	<0.5	<0.5	0.61 J	<0.17	<0.17																		
Hardness	USEPA 314B	mg/L	84	86	87	95	93	94	39	39	41	33	37				74 B	140	130	62	32	63	27	17	28	37	67	67	68
Ca Hardness as CaCO3	USEPA 3500	mg/L										22	37	34	36	33													
Mg Hardness as CaCO3	USEPA 3500	mg/L										12																	
Nitrate/Nitrite as N	USEPA 300.0	mg/L	0.14 J	0.14 J	0.19 J	0.14 J	0.19 J	<0.5	<0.09 H	<0.089 H	<0.089 H																		
pH (Lab)	--	--	6.30 JHF	7.20 JHF	6.70 HF J	6.60 J HF	6.70 J HF	6.80 J HF	6.70 HF	6.40 HF	6.20 HF																		
pH (Field)	--	--	6.60	6.60	6.40	6.50	6.70	6.70	6.66	7.00	7.01	7.44	7.30	6.81	8.04	8.04	7.12	7.47	6.81	7.58	6.96	6.63	6.66	6.63	6.82	6.82	6.92	6.76	6.74
Sulfate as SO4	USEPA 300.0	mg/L	74	74	86	77	46	63	18	21	27	16	18	16	18	17	170	330	88	26	22	46	17	15	13	13	35	42	42
Sulfide	USEPA SM20 4500 S2 D	mg/L													<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022 K	<0.022	<0.022	<0.022	<0.022	<0.022
Total Organic Carbon	USEPA SM 5310D	mg/L															51	53	32	4.0	3.6	1.6	2.3	3.9	1.6	1.8	1.4	2.0	1.0
Total Alkalinity	USEPA 310.1	mg/L as CaCO3	15	15	13	12	14	13	11	6 J	16	10	17 B	16	16	14	21 B	20	37	10	13	32 B	14 B	11 B	25 B	24 B	37 B	36	34

Abbreviations:
MDLD: Detection above reporting limit
B: Analyte found in sample and associated blank
D: Diluted value qualifier
*: ICV/CCV/LCS/LCSD, ITA/ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
H1: MS and/or MSD Recovery is outside acceptance limits
HF: Field Parameter with a holding time of 15 minutes
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
J+: The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample, and may have a potential positive bias
NA: Not Available
NS: Not Sampled
USEPA: United States Environmental Protection Agency
µg/L: micrograms per liter
mg/L: milligrams per liter
U: Analyte not detected at or above the method detection limit
Underline: Data collected in non-representative of natural mine pool conditions due to sampling technique.

Noted:
1. Samples collected prior to October 2017 were collected by Tech Law as surface water flow exiting the mine with the Sample ID CJM SW 01. October 2017 and March 2018 samples were collected from Sample Port No 1 on the 12" line.
2. Seeps are where noted in this table; otherwise have mine waters been sampled.
3. Sample collected from Sample Port #2 (SP2) located on the 5 inch flow through piping.
4. Sample collected from Treatment Plant Influent (TPI) located on the Sinnator System's pipeline upstream of reagent addition.
5. Sample collected from Treatment Plant Outfall (TPO) or field grab where water treatment was not before release into the receiving environment. Sample collected at the end of 12" corrugated pipe.

Highlighted heading used to identify exactly collected data
Groundwater Location
Mine Pool Location
Surface Water Location

APPENDIX J – SURFACE WATER STANDARD ATTAINMENT ANALYSIS, 2021-2022

Chronic Standard Attainment		CJM-SW-10																														Attainment Evaluation*
Water Source		Left Hand Creek Point of Compliance																														% times exceeded must
Sampling Contractor		MineWater		MineWater		MineWater		MineWater		MineWater		MineWater		MineWater		MineWater		MineWater		MineWater		MineWater		MineWater		MineWater		MineWater		MineWater		be less than 15%
Date Sampled		7/20/2021		8/26/2021		9/15/2021		10/18/2021		10/18/2021		11/22/2021		12/1/2021		1/27/2022		2/21/2022		3/22/2022		3/22/2022		4/28/2022		5/31/2022		6/24/2022		Percent Eceedance
Dissolved Metals (unless specified)	**Units**																															14 samples
Aluminum	µg/L	18	BDL	19	J	26	J	18	BDL	18	BDL	18	BDL	18	BDL	18	BDL	18	BDL	18	BDL	18	BDL	18	BDL	30	J	20	J			
TVS Std Harness based		259	Pass	81	Pass	43	Pass	85	Pass	125	Pass	226	Pass	282	Pass	288	Pass	276	Pass	329	Pass	347	Pass	311	Pass	130	Pass	94	Pass	0		
Arsenic (Total Recoverable)	µg/L	0.5	BDL	0.5	BDL	0.5	BDL	0.5	BDL	0.5	BDL	0.5	BDL	0.5	BDL	0.5	BDL	0.5	BDL	0.5	BDL	0.5	BDL	0.5	BDL	0.5	BDL	0.5	BDL			
Numeric standard for segment 4a		0.02	SBDL	0.02	SBDL	0.02	SBDL	0.02	SBDL	0.02	SBDL	0.02	SBDL	0.02	SBDL	0.02	SBDL	0.02	SBDL	0.02	SBDL	0.02	SBDL	0.02	SBDL	0.02	SBDL	0.02	SBDL	SBDL		
Cadmium	µg/L	0.29		0.088	BDL	0.088	BDL	0.13	J	0.11	J	0.18	J	0.20		0.088	BDL	0.14	J B	0.088	BDL	0.088	J	0.088	BDL	0.14	J	0.088	BDL			
TVS Std Harness based		0.51	Pass	0.27	Pass	0.19	Pass	0.28	Pass	0.34	Pass	0.47	Pass	0.53	Pass	0.54	Pass	0.53	Pass	0.58	Pass	0.60	Pass	0.56	Pass	0.35	Pass	0.29	Pass	0		
Chromium	µg/L	0.66	BDL	0.66	BDL	0.66	BDL	0.66	BDL	0.66	BDL	0.66	BDL	0.66	BDL	0.66	BDL	0.66	BDL	0.73	J	0.66	BDL	0.66	BDL	0.66	BDL	0.66	BDL			
TVS Std Harness based (Cr III)		51	Pass	25	Pass	17	Pass	26	Pass	33	Pass	47	Pass	53	Pass	54	Pass	53	Pass	59	Pass	60	Pass	57	Pass	34	Pass	28	Pass	0		
TVS for Cr VI		11	Pass	11	Pass	11	Pass	11	Pass	11	Pass	11	Pass	11	Pass	11	Pass	11	Pass	11	Pass	11	Pass	11	Pass	11	Pass	11	Pass	0		
Copper	µg/L	4.0		3.6		2.4		3.0		3.2		2.3		3.2		2.6		2.1		2.1		2.0		2.5		2.8		2.9				
TVS Std Harness based		6.0	Pass	2.9	Exceed	2.0	Exceed	3.0	Pass	3.8	Pass	5.5	Pass	6.4	Pass	6.4	Pass	6.3	Pass	7.0	Pass	7.2	Pass	6.8	Pass	3.9	Pass	3.2	Pass	14%		
Iron	µg/L	170	J	450		120	J	52	J	52	J	42	J	29	J	22	BDL	22	BDL	22	BDL	22	BDL	28	J B	130	J B	63	J B			
Water supply Standard		300	Pass	300	Exceed	300	Pass	300	Pass	300	Pass	300	Pass	300	Pass	300	Pass	300	Pass	300	Pass	300	Pass	300	Pass	300	Pass	300	Pass	7.1%		
Iron (Total Recoverable)	µg/L	300	B	270	B	330		97	JB	110	JB	98	J	83	J	62	J	66	J	110	J B	100	J B	150	J B	430		270	B			
Numeric standard for segment 4a		1,000	Pass	1,000	Pass	1,000	Pass	1,000	Pass	1,000	Pass	1,000	Pass	1,000	Pass	1,000	Pass	1,000	Pass	1,000	Pass	1,000	Pass	1,000	Pass	1,000	Pass	1,000	Pass	0		
Lead	µg/L	0.29		0.23	BDL	0.23	BDL	0.23	BDL	0.23	BDL	0.23	BDL	0.23	BDL	0.23	BDL	0.23	BDL	0.23	BDL	0.23	BDL	0.23	BDL	0.23	BDL	0.23	BDL			
TVS Std Harness based		1.5	Pass	0.6	Pass	0.3	Pass	0.6	Pass	0.8	Pass	1.4	Pass	1.6	Pass	1.6	Pass	1.6	Pass	1.8	Pass	1.9	Pass	1.8	Pass	0.9	Pass	0.7	Pass	0		
Manganese	µg/L	450		170		84		130		130		470		460		330		270		170		190		180	B	130		82				
TVS Std Harness based		1414	Pass	1067	Pass	914	Pass	1080	Pass	1185	Pass	1368	Pass	1444	Pass	1451	Pass	1436	Pass	1499	Pass	1519	Pass	1479	Pass	1195	Pass	1105	Pass	0		
Molybdenum (Total Recoverable)	µg/L	0.72	J	0.42	J	0.42	J	0.37	J	0.37	BDL	0.59	J	0.75	J	0.45		0.60	J	0.57	J	0.62	J	0.43	J	0.37	BDL	0.37	BDL			
Numeric standard for segment 4a		150	Pass	150	Pass	150	Pass	150	Pass	150	Pass	150	Pass	150	Pass	150	Pass	150	Pass	150	Pass	150	Pass	150	Pass	150	Pass	150	Pass	0		
Nickel	µg/L	1.2		1.3		0.64	J	0.28	BDL	0.28	BDL	0.64	J	1.00		0.60	J	0.29	J	0.28	BDL	0.28	BDL	0.77	J	0.75	J	0.39	J			
TVS Std Harness based		35	Pass	17	Pass	12	Pass	18	Pass	22	Pass	32	Pass	37	Pass	38	Pass	37	Pass	41	Pass	42	Pass	39	Pass	23	Pass	19	Pass	0		
Nickel (Total Recoverable)	µg/L	1.2		0.69	J	0.37	J	0.28	BDL	0.28	BDL	0.80	J	0.82	J	0.44	J	0.53	J	0.74	J	0.45	J	0.54	J	0.31	J	0.54	J			
Numeric standard for segment 4a		100	Pass	100	Pass	100	Pass	100	Pass	100	Pass	100	Pass	100	Pass	100	Pass	100	Pass	100	Pass	100	Pass	100	Pass	100	Pass	100	Pass	0		
Selenium	µg/L	1	BDL	1	BDL	1	BDL	1	BDL	1	BDL	1	BDL	1	BDL	1	BDL	1	BDL	1	BDL	1	BDL	1	BDL	1	BDL	1	BDL			
TVS Numeric Standard		4.6	Pass	4.6	Pass	4.6	Pass	4.6	Pass	4.6	Pass	4.6	Pass	4.6	Pass	4.6	Pass	4.6	Pass	4.6	Pass	4.6	Pass	4.6	Pass	4.6	Pass	4.6	Pass	0		
Silver	µg/L	0.045	BDL	0.045	BDL	0.045	BDL	0.045	BDL	0.045	BDL	0.045	BDL	0.051	J	0.049	J	0.045	BDL	0.045	BDL	0.045	BDL	0.045	BDL	0.045	BDL	0.045	BDL			
TVS Std Harness based for Trout		0.0339	SBDL	0.0079	SBDL	0.0036	SBDL	0.0084	SBDL	0.0136	SBDL	0.0286	SBDL	0.0377	SBDL	0.0387	SBDL	0.0367	SBDL	0.0458	Pass	0.0490	Pass	0.0427	SBDL	0.0142	SBDL	0.0095	SBDL	SBDL		
Uranium	µg/L	0.42		0.16	J	0.10	J	0.13	J	0.12	J	0.47		0.81		0.77	B	0.39		0.89		0.88		0.38		0.034	J	0.120	J			
As per section 38.5(3)		16.8	Pass	16.8	Pass	16.8	Pass	16.8	Pass	16.8	Pass	16.8	Pass	16.8	Pass	16.8	Pass	16.8	Pass	16.8	Pass	16.8	Pass	16.8	Pass	16.8	Pass	16.8	Pass	0		
Zinc	µg/L	66		23		12	J	32		32		57		52		60		56		56		53		58		41		29				
TVS Std Harness based		80	Pass	37	Pass	24	Pass	38	Pass	49	Pass	73	Pass	84	Pass	85	Pass	83	Pass	93	Pass	97	Pass	90	Pass	50	Pass	41	Pass	0		
Other Parameters	**Units**																															
Hardness	**mg/L**	63		27		17		28		37		57		67		68		66		75		78		72		38		30				
Sulfate as SO_4	mg/L	46		17		10		13		13		35		42		42		48		49		50		31		18		24				
Water supply Standard		250	Pass	250	Pass	250	Pass	250	Pass	250	Pass	250	Pass	250	Pass	250	Pass	250	Pass	250	Pass	250	Pass	250	Pass	250	Pass	250	Pass	0		
Sulfide	mg/L	0.022	BDL	0.022	BDL	0.022	BDL	0.022	BDL	0.022	BDL	0.022	BDL	0.022	BDL	0.022	BDL	0.022	BDL	0.022	BDL	0.022	BDL	0.022	BDL	0.022	BDL	0.022	BDL			
Chronic standard		0.002	SBDL	0.002	SBDL	0.002	SBDL	0.002	SBDL	0.002	SBDL	0.002	SBDL	0.002	SBDL	0.002	SBDL	0.002	SBDL	0.002	SBDL	0.002	SBDL	0.002	SBDL	0.002	SBDL	0.002	SBDL	SBDL		

Abbreviations:

BDL = Number is the detection limit, analyte was not detected
Pass = Does not exceed the standard, hardness based calculation included where appropriate
Exceed= Value exceeds the standard, hardness based calculation included where appropriate
B = Analyte found in sample and associated blank
J= Estimated Value
SBDL =Standard value is below detection limit

Notes:

1. Attainment of Chronic Standards was evaluated with methods outlined in the "CDPHE Section 303(d) Listing Methodology 2024 Listing Cycle" March 2022 (https://drive.google.com/file/d/1jlgq37fgFV5MpUC3HPA5misOmvhKeMrZ/view). NOTE: A single monthly sample was collected rather than a 30 day average of multiple samples.
2. When the State defined Practical Quantitation Limit is above the standard, the standard is met as per the "Colorado Water Quality Control Division Implementation Policy, Practical Quantitation Limits (PQLs)" Effective Date: February 3, 2015. (https://drive.google.com/file/d/17lVCWfxzKsKR_u-L8zRumANEiBID73P2/view)

Silver PQL = 0.5 ug/L Arsenic PQL = 1 ug/L Sulfide (as H2S) PQL = 0.1 mg/L

Acute Standard Attainment		CJM-SW-10													
Water Source		Left Hand Creek Point of Compliance													
Sampling Contractor		MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater	MineWater
Date Sampled		7/20/2021	8/26/2021	9/15/2021	10/18/2021	10/18/2021 (Duplicate)	11/22/2021	12/1/2021	1/27/2022	2/21/2022	3/22/2022	3/22/2022 (Duplicate)	4/28/2022	5/31/2022	6/24/2022
Dissolved Metals (unless specified)	Units														
Aluminum	µg/L	18 BDL	19 J	26 J	18 BDL	18 BDL	18 BDL	18 BDL	18 BDL	18 BDL	18 BDL	18 BDL	18 BDL	30 J	20 J
TVS Std Harness based		1,817 Pass	569 Pass	302 Pass	598 Pass	877 Pass	1,584 Pass	1,977 Pass	2,017 Pass	1,936 Pass	2,307 Pass	2,434 Pass	2,181 Pass	909 Pass	658 Pass
Arsenic	µg/L	0.5 BDL	0.5 BDL	0.5 BDL	0.5 BDL	0.5 BDL	0.5 BDL	0.5 BDL	0.5 BDL	0.5 BDL	0.5 BDL	0.5 BDL	0.5 BDL	0.5 BDL	0.5 BDL
Numeric std for segment 4a		340 Pass	340 Pass	340 Pass	340 Pass	340 Pass	340 Pass	340 Pass	340 Pass	340 Pass	340 Pass	340 Pass	340 Pass	340 Pass	340 Pass
Cadmium	µg/L	0.29	0.088 BDL	0.088 BDL	0.13 J	0.11 J	0.18 J	0.20	0.088 BDL	0.14 J B	0.088 BDL	0.088 J	0.088 BDL	0.14 J	0.088 BDL
TVS Std, Brown Trout, Harness based		1.16 Pass	0.53 Pass	0.34 Pass	0.55 Pass	0.71 Pass	1.06 Pass	1.23 Pass	1.25 Pass	1.22 Pass	1.37 Pass	1.42 Pass	1.32 Pass	0.73 Pass	0.58 Pass
Cadmium (total recoverable)	µg/L	0.31	0.088 BDL	0.088 BDL	0.088 BDL	0.17 J	0.17 J	0.21	0.12 J	0.13 J	0.13 J	0.090 J	0.10 J	0.14 J	0.088 BDL
Numeric std for segment 4a		5.00 Pass	5.00 Pass	5.00 Pass	5.00 Pass	5.00 Pass	5.00 Pass	5.00 Pass	5.00 Pass	5.00 Pass	5.00 Pass	5.00 Pass	5.00 Pass	5.00 Pass	5.00 Pass
Chromium	µg/L	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL	0.73 J	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL
TVS Numeric Standard (Cr VI)		16 Pass	16 Pass	16 Pass	16 Pass	16 Pass	16 Pass	16 Pass	16 Pass	16 Pass	16 Pass	16 Pass	16 Pass	16 Pass	16 Pass
Chromium (Total Recoverable)	µg/L	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL	0.66 BDL
Numeric std for segment 4a (Cr III)		50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass
Copper	µg/L	4.0	3.6	2.4	3.0	3.2	2.3	3.2	2.6	2.1	2.1	2.0	2.5	2.8	2.9
TVS Std Harness based		8.7 Pass	3.9 Pass	2.5 Pass	4.1 Pass	5.3 Pass	7.9 Pass	9.2 Pass	9.3 Pass	9.1 Pass	10.2 Pass	10.6 Pass	9.9 Pass	5.4 Pass	4.3 Pass
Lead	µg/L	0.29	0.23 BDL	0.23 BDL	0.23 BDL	0.23 BDL	0.23 BDL	0.23 BDL	0.23 BDL	0.23 BDL	0.23 BDL	0.23 BDL	0.23 BDL	0.23 BDL	0.23 BDL
TVS Std Harness based		39 Pass	15 Pass	9 Pass	16 Pass	22 Pass	35 Pass	42 Pass	42 Pass	41 Pass	47 Pass	49 Pass	45 Pass	22 Pass	17 Pass
Lead (Total Recoverable)	µg/L	0.43	0.46	0.60	0.33	0.29	0.23 BDL	0.23 BDL	0.29	0.24	0.23 BDL	0.23 BDL	0.24	0.47	0.75
Numeric std for segment 4a		50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass	50 Pass
Manganese	µg/L	450	170	84	130	130	470	460	330	270	170	190	180 B	130	82
TVS Std Harness based		2,560 Pass	1,930 Pass	1,655 Pass	1,954 Pass	2,144 Pass	2,476 Pass	2,613 Pass	2,626 Pass	2,600 Pass	2,713 Pass	2,749 Pass	2,676 Pass	2,163 Pass	1,999 Pass
Nickel	µg/L	1.2	1.3	0.64 J	0.28 BDL	0.28 BDL	0.64 J	1.00	0.60 J	0.29 J	0.28 BDL	0.28 BDL	0.77 J	0.75 J	0.39 J
TVS Std Harness based		317 Pass	155 Pass	105 Pass	160 Pass	202 Pass	291 Pass	334 Pass	338 Pass	329 Pass	367 Pass	379 Pass	355 Pass	207 Pass	169 Pass
Selenium	µg/L	1 BDL	1 BDL	1 BDL	1 BDL	1 BDL	1 BDL	1 BDL	1 BDL	1 BDL	1 BDL	1 BDL	1 BDL	1 BDL	1 BDL
TVSNumeric Standard		18.4 Pass	18.4 Pass	18.4 Pass	18.4 Pass	18.4 Pass	18.4 Pass	18.4 Pass	18.4 Pass	18.4 Pass	18.4 Pass	18.4 Pass	18.4 Pass	18.4 Pass	18.4 Pass
Silver	µg/L	0.045 BDL	0.045 BDL	0.045 BDL	0.045 BDL	0.045 BDL	0.045 BDL	0.051 J	0.049 J	0.045 BDL	0.045 BDL	0.045 BDL	0.045 BDL	0.045 BDL	0.045 BDL
TVS Std Harness based		0.92 Pass	0.21 Pass	0.10 Pass	0.23 Pass	0.37 Pass	0.77 Pass	1.02 Pass	1.05 Pass	0.99 Pass	1.24 Pass	1.32 Pass	1.15 Pass	0.38 Pass	0.26 Pass
Uranium	µg/L	0.42	0.16 J	0.10 J	0.13 J	0.12 J	0.47	0.81	0.77 B	0.39	0.89	0.88	0.38	0.034 J	0.120 J
As per section 38.5(3)		16.8 Pass	16.8 Pass	16.8 Pass	16.8 Pass	16.8 Pass	16.8 Pass	16.8 Pass	16.8 Pass	16.8 Pass	16.8 Pass	16.8 Pass	16.8 Pass	16.8 Pass	16.8 Pass
Zinc	µg/L	66	23	12 J	32	32	57	52	60	56	56	53	58	41	29
TVS Std Harness based		105 Pass	49 Pass	32 Pass	50 Pass	65 Pass	96 Pass	111 Pass	113 Pass	110 Pass	123 Pass	128 Pass	119 Pass	66 Pass	54 Pass
Other Parameters	Units														
Hardness	mg/L	63	27	17	28	37	57	67	68	66	75	78	72	38	30
pH (Field)	--	6.53	6.65	6.53	6.82	6.82	6.92	6.75	6.71	7.30	7.19	7.19	6.65	6.90	6.89
Total Organic Carbon	mg/L	1.6	2.9	3.8	1.6	1.6	1.4 B	2.0	1.0	0.95 J	1.1	1.1	1.5	2.1	2.4
Total Alkalinity	mg CaCO3/L	32 B	14 B	11 B	25 B	24 B	37 B	35	34	29	35	34	37	11 B	23

Abbreviations:

BDL = Number is the detection limit, analyte was not detected

Pass = Does not exceed the standard, hardness based calculation included where appropriate

Exceed= Value exceeds the standard, hardness based calculation included where appropriate

B = Analyte found in sample and associated blank

J= Estimated Value

Notes:

1. When the State defined Practical Quantitation Limit is above the standard, the standard is met as per the "Colorado Water Quality Control Division Implementation Policy, Practical Quantitation Limits (PQLs)" Effective Date: February 3, 2015. (https://drive.google.com/file/d/17lVCWfxzKsKR_u-L8zRumANEi8ID73P2/view)

Silver PQL = 0.5 ug/L

Arsenic PQL = 1 ug/L

Sulfide (as H2S) PQL = 0.1 mg/L

APPENDIX K – RECREATIONAL EXPOSURE SCREENING LEVEL FOR THALLIUM

Site-specific Recreator Soil Inputs

1

Variable	Recreator Soil Default Value	Site-Specific Value
A (PEF Dispersion Constant)	16.2302	16.2302
A (VF Dispersion Constant)	11.911	11.911
A (VF Dispersion Constant - mass limit)	11.911	11.911
B (PEF Dispersion Constant)	18.7762	18.7762
B (VF Dispersion Constant)	18.4385	18.4385
B (VF Dispersion Constant - mass limit)	18.4385	18.4385
City (PEF Climate Zone) Selection	Default	Default
City (VF Climate Zone) Selection	Default	Default
C (PEF Dispersion Constant)	216.108	216.108
C (VF Dispersion Constant)	209.7845	209.7845
C (VF Dispersion Constant - mass limit)	209.7845	209.7845
foc (fraction organic carbon in soil) g/g	0.006	0.006
F(x) (function dependent on U_m/U_t) unitless	0.194	0.194
n (total soil porosity) L_{pore}/L_{soil}	0.43396	0.43396
ρ_b (dry soil bulk density) g/cm ^{3}	1.5	1.5
ρ_b (dry soil bulk density - mass limit) g/cm ^{3}	1.5	1.5
PEF (particulate emission factor) m ^{3}/kg	1359344438	1359344438
ρ_s (soil particle density) g/cm ^{3}	2.65	2.65
Q/C_{rate} (g/m^2-s per kg/m^3)	93.77	93.77
Q/C_{vol} (g/m^2-s per kg/m^3)	68.18	68.18
Q/C_{vol} (g/m^2-s per kg/m^3 - mass limit)	68.18	68.18
A_s (PEF acres)	0.5	0.5
A_s (VF acres)	0.5	0.5
A_s (VF mass-limit acres)	0.5	0.5
AF_{0-2} (skin adherence factor) mg/cm ^{2}	0.2	0.2
AF_{2-6} (skin adherence factor) mg/cm ^{2}	0.2	0.2
AF_{6-16} (skin adherence factor) mg/cm ^{2}	0.07	0.07
AF_{16-30} (skin adherence factor) mg/cm ^{2}	0.07	0.07
$AF_{rec,a}$ (skin adherence factor - adult) mg/cm ^{2}	0.07	0.07
$AF_{rec,c}$ (skin adherence factor - child) mg/cm ^{2}	0.2	0.2
AT_{rec} (averaging time)	365	365

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Site-specific Recreator Soil Inputs

2

Variable	Recreator Soil Default Value	Site-Specific Value
$BW_{(1-2)}$ (body weight) kg	15	15
$BW_{(2-6)}$ (body weight) kg	15	15
$BW_{(6-16)}$ (body weight) kg	80	80
$BW_{(16-30)}$ (body weight) kg	80	80
$BW_{(16-30)}$ (body weight - adult) kg	80	80
$BW_{(1-6)}$ (body weight - child) kg	15	15
$DFS_{(adj-soil)}$ (age-adjusted soil dermal factor) mg/kg	.	15360.8
$DFSM_{(mo-soil)}$ (mutagenic age-adjusted soil dermal factor) mg/kg	.	63627.2
$ED_{(exp)}$ (exposure duration - recreator) years	26	26
$ED_{(1-2)}$ (exposure duration) year	2	2
$ED_{(2-6)}$ (exposure duration) year	4	4
$ED_{(6-16)}$ (exposure duration) year	10	10
$ED_{(16-30)}$ (exposure duration) year	10	10
$ED_{(child)}$ (exposure duration - child) years	6	6
$EF_{(exp)}$ (exposure frequency) days/year	.	52
$EF_{(1-2)}$ (exposure frequency) days/year	.	52
$EF_{(2-6)}$ (exposure frequency) days/year	.	52
$EF_{(6-16)}$ (exposure frequency) days/year	.	52
$EF_{(16-30)}$ (exposure frequency) days/year	.	52
$EF_{(adult)}$ (exposure frequency - adult) days/year	.	52
$EF_{(child)}$ (exposure frequency - child) days/year	.	52
$ET_{(exp)}$ (exposure time - recreator) hours/day	.	2
$ET_{(1-2)}$ (exposure time) hours/day	.	2
$ET_{(2-6)}$ (exposure time) hours/day	.	2
$ET_{(6-16)}$ (exposure time) hours/day	.	2
$ET_{(16-30)}$ (exposure time) hours/day	.	2
$ET_{(adult)}$ (adult exposure time) hours/day	.	2
$ET_{(child)}$ (child exposure time) hours/day	.	2
THQ (target hazard quotient) unitless	0.1	1
$IFS_{(adj-soil)}$ (age-adjusted soil ingestion factor) mg/kg	.	5460
$IFSM_{(mo-adj)}$ (mutagenic age-adjusted soil ingestion factor) mg/kg	.	24786.667

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Site-specific
Recreator Soil Inputs

3

Variable	Recreator Soil Default Value	Site-Specific Value
IRS_{adj} (soil intake rate) mg/day	200	200
IRS_{adult} (soil intake rate) mg/day	200	200
IRS_{child} (soil intake rate) mg/day	100	100
IRS_{avg} (soil intake rate) mg/day	100	100
$IRS_{avg,a}$ (soil intake rate - adult) mg/day	100	100
$IRS_{avg,c}$ (soil intake rate - child) mg/day	200	200
LT (lifetime - recreator) years	70	70
SA_{adj} (skin surface area) cm ^{2}/day	2373	2373
SA_{adult} (skin surface area) cm ^{2}/day	2373	2373
SA_{child} (skin surface area) cm ^{2}/day	6032	6032
SA_{avg} (skin surface area) cm ^{2}/day	6032	6032
$SA_{avg,a}$ (skin surface area - adult) cm ^{2}/day	6032	6032
$SA_{avg,c}$ (skin surface area - child) cm ^{2}/day	2373	2373
TR (target risk) unitless	1.0E-06	1.0E-04
T_{gw} (groundwater temperature) Celsius	25	25
$Theta_a$ (air-filled soil porosity) L_{air}/L_{soil}	0.28396	0.28396
$Theta_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15	0.15
T (exposure interval) s	819936000	819936000
T (exposure interval) yr	26	26
U_m (mean annual wind speed) m/s	4.69	4.69
U_t (equivalent threshold value)	11.32	11.32
V (fraction of vegetative cover) unitless	0.5	0.5

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Site-specific

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Recreator Regional Screening Levels (RSL) for Soil

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; D = OW; W = TEF applied; E = RPF applied; G = see user's guide; U = user provided; ca = cancer; nc = noncancer; * = where: nc SL < 100X ca SL; ** = where nc SL < 10X ca SL; SSL values are based on DAF=1; max = ceiling limit exceeded; sat = Csat exceeded.

Chemical	CAS Number	Mutagen?	Volatile?	Chemical Type	SF_o $(mg/kg\text{-}day)^{-1}$	SF_o Ref	IUR $(ug/m^3)^{-1}$	IUR Ref	RfD (mg/kg-day)	RfD Ref	RfC (mg/m^3)	RfC Ref	GIABS
Thallium (Soluble Salts)	7440-28-0	No	No	Inorganics	-		-		1.00E-05	X	-		1

ABS	RBA	Soil Saturation Concentration (mg/kg)	S (mg/L)	K_{oc} (cm^3/g)	K_d (cm^3/g)	HLC (atm-m^3/mole)	Henry's Law Constant Used in Calcs (unitless)	H` and HLC Ref	Normal Boiling Point BP (K)	BP Ref	Critical Temperature T_c (K)	T_c Ref
-	1	-	-	-	7.10E+01	-	-		1730.15	PHYSPROP	4648.06	YAWS

Chemical Type	D_{ia} (cm^2/s)	D_{iw} (cm^2/s)	D_A (cm^2/s)	Particulate Emission Factor (m^3/kg)	Volatilization Factor Unlimited Reservoir (m^3/kg)	Volatilization Factor Mass Limit (m^3/kg)	Volatilization Factor Selected (m^3/kg)	Ingestion SL TR=0.0001 (mg/kg)	Dermal SL TR=0.0001 (mg/kg)	Inhalation SL TR=0.0001 (mg/kg)
INORGANIC	-	-	-	1.36E+09	-	-	-	-	-	-

Carcinogenic SL TR=0.0001 (mg/kg)	Ingestion SL Child THQ=1 (mg/kg)	Dermal SL Child THQ=1 (mg/kg)	Inhalation SL Child THQ=1 (mg/kg)	Noncarcinogenic SL Child THI=1 (mg/kg)	Ingestion SL Adult THQ=1 (mg/kg)	Dermal SL Adult THQ=1 (mg/kg)	Inhalation SL Adult THQ=1 (mg/kg)	Noncarcinogenic SL Adult THI=1 (mg/kg)	Screening Level (mg/kg)
-	5.26E+00	-	-	5.26E+00	5.62E+01	-	-	5.62E+01	5.26E+00 nc

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